2023 Annual Groundwater Monitoring and Corrective Action Report

Former LOS Ponds 2 and 3 Multi-Unit

Leland Olds Station
Stanton, North Dakota
Basin Electric Power Cooperative

January 31, 2024
Project #60634880

Basin Electric Power Cooperative
Bismarck, North Dakota

Quality information

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List of Acronyms

AECOM	AECOM Technical Services, Inc.
Basin	Basin Electric Power Cooperative
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
cm/sec	centimeters per second
ft amsl	feet above mean sea level
ft bgs	feet below ground surface
ft/day	feet per day
GWPS	groundwater protection standard
LOS	Leland Olds Station
LPL	lower prediction limit
mg/L	milligrams per liter
Multi-Unit	Ponds 2 and 3 Multi-Unit
SAP	Sampling and Analysis Plan
SSI	statistically significant increase
TDS	total dissolved solids
UPL	upper prediction limit

Executive Summary

This report summarizes groundwater monitoring and corrective action activities completed between January 1 and December 31, 2023, at the former Ponds 2 and 3 Multi-Unit (Multi-Unit) at Leland Olds Station (LOS), as required by 40 Code of Federal Regulations (CFR) Section 257.90(e) of the United States Environmental Protection Agency Coal Combustion Residuals (CCR) Rule.

The relative location of the Multi-Unit with respect to the LOS power plant is presented as **Figure 1**. The location of the monitoring wells installed for monitoring of the groundwater at the Multi-Unit, including CCR program wells and other supporting wells, is presented as **Figure 2**.

Detection monitoring of the Multi-Unit was initiated on November 11, 2019. Detection monitoring through 2023 identified no statistically significant increases (SSIs) of Appendix III constituents (boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids [TDS]) in the downgradient monitoring wells MW-2017-2, MW-2017-3, MW-2017-4, MW-2017-5, MW-2017-6, and MW-2017-7.

Other activities and conditions for the 2023 annual reporting period include:

- Semiannual Detection monitoring events were conducted in June and September. Monitoring involved sampling of two background monitoring wells and six downgradient monitoring wells.
- Collection of groundwater samples from characterization monitoring wells MW-2017-10 and MW-2017-11 coinciding with the June and September 2023 Detection monitoring events.
- No well repair or decommissioning of the existing program monitoring networks was conducted.
- No program transitions (Detection to Assessment or vice versa) were triggered.
- No programmatic problems were encountered, so no remedies were required.

Anticipated activities for the next annual reporting period include:

- Completion of two semiannual Detection monitoring events.
- Statistical evaluation of groundwater data for Appendix III indicator parameters.

1. Introduction

On behalf of Basin Electric Power Cooperative, (Basin), AECOM Technical Services, Inc. (AECOM) has prepared the 2023 annual report documenting groundwater monitoring and corrective action for the Coal Combustion Residuals (CCR) Ponds 2 and 3 Multi-Unit (henceforth referred to as the Multi-Unit) at Basin's Leland Olds Station (LOS). This is the sixth annual groundwater monitoring and corrective action report prepared for this site.

Section 1 provides background information on the power generating facility, the CCR unit(s) present at the facility, and the physical setting of the CCR unit(s), specifically regarding groundwater conditions. Section 2 summarizes CCR groundwater monitoring activities conducted prior to January 2023. Section 3 summarizes the groundwater monitoring and corrective action activities completed between January and December 2023, and references attachments to this report that contain detailed documentation of those activities. Section 4 provides general information about the program including transitions and problems encountered in 2023 and actions planned for 2024. Section 5 presents summary and conclusions for the reporting period (January through December 2023). Section 6 lists references cited in this report.

Regulatory Background

The CCR rule, effective on October 19, 2015, established standards for the disposal of CCR in landfills and surface impoundments (CCR units). In particular, the rule set forth groundwater monitoring and corrective action requirements for CCR units. The rule includes the requirement for an "annual groundwater monitoring and corrective action report" (annual report), submitted to the operating record annually on or before January 31 for inactive CCR units, including the Multi-Unit. The annual reports are intended to document the status of the groundwater monitoring and corrective action program for each CCR unit, summarize key actions completed in the previous year, and project key activities for the upcoming year.

Facility Location and Operational History

LOS is a coal-based generating station located southeast of Stanton, North Dakota (**Figure 1**). The plant began operating in 1966 and consists of two power generating units with a total power output capacity of 669 megawatts.

CCR produced at LOS includes fly ash, bottom ash, and flue gas desulfurization waste.

CCR Unit Description

The Multi-Unit is located on the east side of the LOS power plant (**Figure 1**). Closure of Bottom Ash Pond 2 and Pond 3 was completed in two phases. Phase I construction included the roughly southern half of Ash Pond 2 and was completed in 2017. Phase II construction, which addressed the remainder of Pond 2 and all of Pond 3, began in 2019 and was completed in the third quarter of 2020. A closure notification, completed in accordance with the CCR Rule, including certification by a qualified professional engineer that the closure was completed in accordance with the written closure plan and the requirements of 40 Code of Federal Regulations (CFR) §257.102, was posted on October 26, 2020.

Pond 2 and Pond 3 are now Closed-in-Place with their last operational configuration presented as **Figure 2**.

Physical Setting

The Multi-Unit is situated in the valley of the Missouri River. The valley floor is relatively flat, with two relatively poorly defined terraces ranging from 1,670 feet above mean sea level (ft amsl) to a maximum elevation of 1,715 ft amsl near

the southern property boundary. Seven of the CCR monitoring system monitoring wells are located on the lower (first) terrace level, while one is located on the upper (second) terrace (**Figure 2**).

The geology underlying the Multi-Unit is generally comprised of a minimum of 50 feet of alluvial silt, silty sand, and gravel deposits. The upper terrace level appears to be underlain by at least 25 more feet of alluvial deposits than is found adjacent to the Multi-Unit. The alluvial deposits are underlain by the Sentinel Butte Formation, which is described as 1,000 feet or more of continental deposits consisting of dense clay, weakly cemented sandstone, and mudstone interlaced with occasional lignite beds that typically range from 5 to 10 feet in thickness.

Groundwater at the lower terrace locations is found within alluvial deposits comprised primarily of silty, fine to medium-grained sand at depths ranging roughly from 17 to 35 feet below ground surface (ft bgs). Aquifer testing completed at monitoring wells MW-2017-3, MW-2017-4, MW-2017-5, and MW-2017-6 indicates hydraulic conductivity values within the monitored aquifer range from 1.28×10^{-2} to 6.94×10^{-4} centimeters per second (cm/sec) with a geometric mean of approximately 2.0×10^{-3} cm/sec (5.67 feet per day [ft/day]). The potentiometric surface of the uppermost groundwater underlying the lower terrace area is typically encountered at elevations between 1,658 to 1,662 ft amsl depending on the stage of the adjacent Missouri River. Although the direction of groundwater flow is highly influenced by changes in the elevation of the Missouri River, the net flow direction is expected to be eastward in the general direction of river flow with some flow northward into the river. Groundwater at the upper terrace is perched at a considerably higher elevation with limited hydraulic connection to the lower terrace. As a result, the groundwater from the upper terrace is expected to act as a limited background/upgradient influence on the uppermost aquifer at the Multi-Unit.

2. CCR Groundwater Monitoring and Corrective Action Activities Prior to January 2023

The regulatory process for CCR groundwater monitoring and corrective action is established by 40 CFR Sections 257.90 through 257.98. The process includes a phased approach to groundwater monitoring, leading (if applicable) to the establishment of groundwater protection standards (GWPSs) for each CCR unit. Exceedances of the GWPSs that are determined to be statistically significant can trigger requirements for additional groundwater characterization and Assessment of Corrective Measures followed by selection of remedy and remedy implementation.

The following paragraphs provide a summary of CCR groundwater monitoring activities performed prior to 2023.

Groundwater monitoring at the Multi-Unit is performed using a network of monitoring wells that includes both wells to monitor background water quality that is not potentially influenced by the presence of the CCR unit, and wells placed at the downgradient boundary of the unit (**Figure 2**). The hydro-stratigraphic position of the CCR monitoring wells selected for sampling background and downgradient groundwater quality for the LOS CCR unit is summarized below:

CCR unit	Background wells	Downgradient wells
Ponds 2 and 3 Multi-Unit	MW-2017-1 and MW-2017-8	MW-2017-2, MW-2017-3, MW-2017-4, MW-2017-5, MW-2017-6, and MW-2017-7

Baseline monitoring for the Multi-Unit, initiated in September 2017, involved sampling groundwater for 40 CFR Part 257 Appendix III and IV constituents over eight monitoring events. Baseline monitoring events were performed in general accordance with procedures established in the site-specific Sampling and Analysis Plan (SAP; [AECOM 2019a]), updated on June 22, 2022 [AECOM 2022a], for a change in the purging method from bladder pump to submersible pump in two monitoring wells. A copy of the SAP is included in the facility's Operating Record. The SAP describes the procedures for equipment calibration, monitoring well water level measurement, monitoring well purging and sampling, sample custody, sample shipping, laboratory analysis, and documentation requirements for each groundwater sample submitted.

The results of baseline monitoring were presented and discussed in the First Annual Groundwater Monitoring and Corrective Action Report, Fall 2017-Spring 2019 (AECOM 2019b) issued on July 31, 2019. The LOS Multi-Unit was placed in Detection monitoring in the fall of 2019 with the first groundwater sampling event completed in November 2019, then twice annually thereafter. The results of Detection monitoring at the Multi-Unit completed between August 2019 and December 2022 are presented and discussed in the Second, Third, Fourth, and Fifth Annual Groundwater Monitoring and Corrective Action Reports issued January 31, 2020 (AECOM 2020); January 31, 2021 (AECOM 2021); January 31, 2022 (AECOM 2022b); and January 31, 2023 (AECOM 2023).

3. CCR Groundwater Monitoring and Corrective Action Activities (January-December 2023)

This section summarizes the groundwater monitoring and corrective action activities conducted at the LOS CCR Multi-Unit between January 1 and December 31, 2023. To comply with the requirements of the CCR Rule, this report presents:

- Detection Monitoring Activities:
  - monitoring system evaluations in June and September 2023
  - groundwater monitoring completed in June 2023
  - groundwater monitoring completed in September 2023
  - laboratory analysis for the June 2023 and September 2023 events
- Groundwater Characterization activities:
  - groundwater sampling of MW-2017-10 and MW-2017-11 completed in June 2023
  - groundwater sampling of MW-2017-10 and MW-2017-11 completed in September 2023
- Statistical analysis of the Detection monitoring results for the June and September 2023 events.

Further details concerning each of these activities, including a brief discussion of work completed during the reporting period are provided below.

Detection Monitoring Activities

Monitoring System Evaluation

As described in the CCR Groundwater Monitoring System Report (AECOM 2019c), monitoring wells were installed around the CCR Multi-Unit with appropriate total depth and placement of the well screen to: (1) facilitate collection of representative groundwater samples from the uppermost aquifer; and (2) accurately measure water table elevations to support evaluation of groundwater gradient and flow direction. All monitoring wells comprising the Multi-Unit monitoring system were found to be in good condition during the detection monitoring events conducted in 2023.

Potentiometric surface maps were constructed using the depth-to-groundwater measurements obtained at the beginning of each detection monitoring event as presented in **Attachment A**. The direction of groundwater flow observed in both the June and September events was generally northeast toward the Missouri River. Baseline and detection monitoring completed between fall of 2017 through 2022 indicated that groundwater flow is generally northeast toward the Missouri River, but that reverse flow and parallel flow conditions, as observed during the June 2020 event, are to be expected, depending on prevailing river stage conditions at the time the event is conducted. The general groundwater flow direction observed during the 2023 detection monitoring events support the designation of the wells noted in Section 2 above to represent background groundwater quality and the quality of groundwater downgradient of the Multi-Unit.

Groundwater Sampling and Analysis

The Detection monitoring events completed in 2023 included analysis of collected groundwater samples for the constituents listed in Part 257 Appendix III. The tabulated laboratory analytical results are presented in **Attachment A**, along with potentiometric surface maps for the uppermost aquifer, inferred groundwater flow direction and estimated velocities, and a tabulated summary of field measurements.

Sampling and analysis were performed in general accordance with procedures established in the SAP (AECOM 2022a).

Two additional monitoring wells, identified as MW-2017-10 and MW-2017-11, were sampled in coordination with the Detection monitoring events that were completed in June and September 2023. The groundwater samples obtained from these wells were submitted for the constituents listed in Part 257 Appendix III and IV to further evaluate the groundwater conditions along the eastern edge of the former Ponds 2 and 3 footprints. Tabulated analytical results and laboratory reports for these characterization sampling events are included in **Attachment A**.

Statistical Procedures and Analysis

The cumulative Detection monitoring data collected for Appendix III indicator parameters at the LOS Multi-Unit were evaluated in accordance with the statistical procedures as certified on April 17, 2019 (AECOM 2019c). Program monitoring wells MW-2017-1 and MW-2017-8 are the designated background monitoring well locations for the LOS Multi-Unit for statistical comparison to downgradient monitoring wells MW-2017-2 through MW-2017-7 during the 2023 reporting period.

The Appendix III groundwater quality data collected in 2023 were evaluated using an interwell approach that statistically compared constituent concentrations at downgradient monitoring wells to those present at the background monitoring wells.

ProUCL Version 5.1 was selected for the development of site-specific background upper prediction limits (UPLs) with a 95-percent confidence for each Appendix III constituent utilizing monitoring well data from background monitoring wells MW-2017-1 and MW-2017-8 collected between March 2018 and October 2020. The input file used for development of the UPLs as well as the output file are provided as **Attachment B**. A lower prediction limit (LPL) was also developed for pH, which is a two-sided parameter by calculating nonparametric upper and lower prediction limits. Because ProUCL does not calculate LPLs, Excel was used to match the UPL calculated by ProUCL and calculate a corresponding LPL. The concentrations of detected Appendix III constituents were entered as reported by the laboratory (non-detections set to Reporting Limit and evaluated using ProUCL to determine if the population exhibited a normal, lognormal, or nonparametric distribution).

Data from the downgradient monitoring wells were compared to the UPL to identify SSIs over background. For pH, the data were also compared to determine whether it was below the LPL. The results of the analyses, including the UPLs, and LPL for pH, are provided in **Table 1**.

Table 2 provides a summary of the Appendix III constituents with verified and unverified SSIs above background. No SSIs were identified for boron, calcium, chloride, fluoride, pH, sulfate, or TDS. Therefore, it is recommended the Multi-Unit continue Detection monitoring for 2024.

4. General Information

The following subsections summarize any problems encountered in the LOS Multi-Unit CCR program through 2023, any resolutions to those problems, and upcoming actions planned for 2024.

Program Transitions 2023

There were no program transitions during the January to December 2023 monitoring period.

Problems Encountered

No problems were encountered during the January to December 2023 monitoring period.

Actions Planned for 2024

Basin plans to continue the Detection monitoring program for the Multi-Unit in 2024. The monitoring program will include semi-annual groundwater sampling events and the required statistical evaluations.

Basin plans to continue sample collection from monitoring wells MW-2017-10 and MW-2017-11 to further evaluate the groundwater conditions along the eastern edge of former Ponds 2 and 3. The sampling is anticipated to coincide with the Detection monitoring events to be completed for the Multi-Unit program wells in the first and second half of 2024. The samples are anticipated to be submitted for laboratory analysis for CCR Rule Part 257 Appendix III and Appendix IV constituents for spatial and historical comparison.

5. Summary and Conclusions

Basin conducted two rounds of CCR groundwater Detection monitoring at the Multi-Unit in June and September 2023. The results were used to establish background groundwater quality for Appendix III constituents in the uppermost aquifer, identify appropriate UPLs, and determine whether any UPLs represent SSIs downgradient of the Multi-Unit.

The statistical analysis results indicate that none of the Appendix III constituent concentrations represent SSIs over background. Based on these results, assessment monitoring is not required at the LOS Multi-Unit. Detection monitoring will continue at the site in 2024. Additionally, Basin will continue to sample monitoring wells MW-2017-10 and MW-2017-11 submitted for Rule Part 257 Appendix III and Appendix IV constituents to further evaluate conditions along the eastern edge of former Ponds 2 and 3 in anticipation that these wells may be added to the compliance groundwater monitoring network at a later date. The timing of sample collection in 2024 is anticipated to coincide with the first and second half Detection monitoring events.

6. References

AECOM Technical Services, Inc. (AECOM). 2019a. Pond 2 and Pond 3 Multi-Unit Sampling and Analysis Plan, CCR Monitoring Program, Leland Olds Station, Stanton, North Dakota. Basin Electric Power Cooperative. April 2019.

AECOM. 2019b. First Annual Groundwater Monitoring and Corrective Action Report, Fall 2017- Spring 2019, Pond 2 and Pond 3 Multi-Unit, Leland Olds Station, Stanton, North Dakota. Basin Electric Power Cooperative. July 31, 2019.

AECOM. 2019c. Pond 2 and Pond 3 Multi-Unit CCR Groundwater Monitoring System Report, Leland Olds Station, Stanton, North Dakota. Basin Electric Power Cooperative. October 2017.

AECOM. 2020. Second Annual Groundwater Monitoring and Corrective Action Report, 2019 issued January 31, 2020.

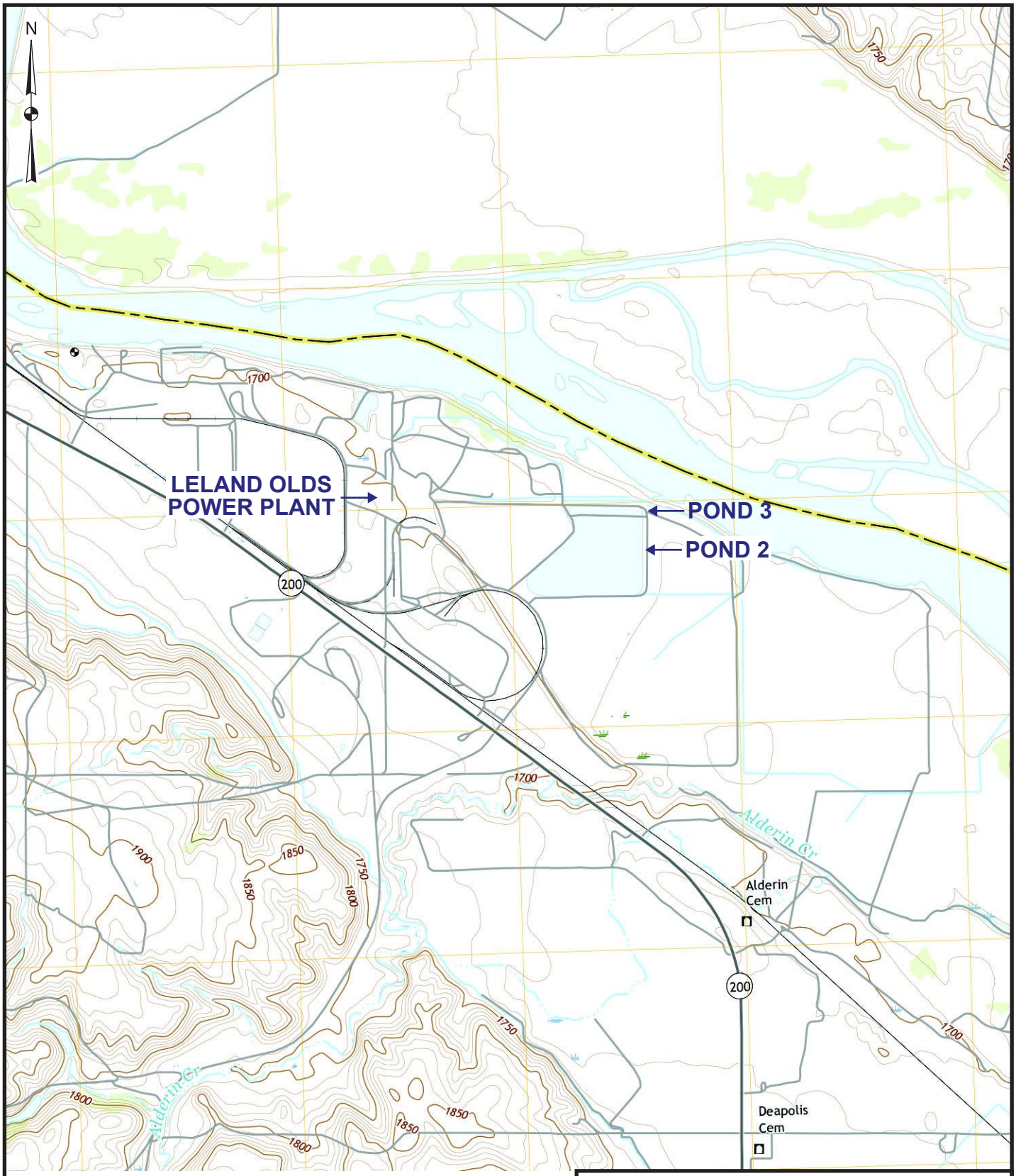
AECOM. 2021. Third Annual Groundwater Monitoring and Corrective Action Report, 2020 issued January 31, 2021.

AECOM. 2022a. Pond 2 and Pond 3 Multi-Unit Sampling and Analysis Plan, CCR Monitoring Program, Leland Olds Station, Stanton, North Dakota. Basin Electric Power Cooperative. June 2022.

AECOM. 2022b. Fourth Annual Groundwater Monitoring and Corrective Action Report, 2021 issued January 31, 2022.

AECOM. 2023. Fifth Annual Groundwater Monitoring and Corrective Action Report, 2023 issued January 31, 2023.

Figures



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APPROXIMATE SCALE IN FEET

ND

Quadrangle Location

BASE MAP SOURCE: USGS 7½ minute topographic quadrangle mapStanton SE, North Dakota 2018.

BASIN ELECTRIC POWER COOPERATIVE

FIGURE 1
SITE VICINITY MAP
LOS POND 2 AND POND 3 MULTI-UNIT

JOB NO. 60634880

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LEGEND

- CCR RULE COMPLIANCE WELL
- SITE CHARACTERIZATION WELL
- Terrace Boundary (Inferred)
- Approximate LOS Pond 2 and Pond 3 Multi-unit Boundary

BASIN ELECTRIC POWER COOPERATIVE

LELAND OLDS STATION
STANTON, NORTH DAKOTA

FIGURE 2
WELL LOCATION MAP
LOS POND 2 AND POND 3 MULTI-UNIT

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Table 1
2023 Statistical Analysis Methods and Background Upper/Lower Prediction Limits
LOS Pond 2 and Pond 3 (Multi-Unit) CCR Monitoring Well Network
Leland Olds Station – Stanton, North Dakota

Parameter (Units)	Number of Samples	Percent Nondetects	Normal or Lognormal Distribution?	Statistical Method	Background Prediction Limit
Boron (mg/L)	18	0	No/No	Nonparametric 95% UPL	2.37
Calcium (mg/L)	18	0	Yes/No	Parametric 95% UPL	167
Chloride (mg/L)	18	0	No/No	Nonparametric 95% UPL	25
Fluoride (mg/L)	18	83	No/No	Nonparametric 95% UPL	4.68
pH (std units)	18	0	Yes/Yes	Parametric 95% LPL/UPL	6.80/7.59
Sulfate (mg/L)	18	0	No/No	Nonparametric 95% UPL	2,100
TDS (mg/L)	18	0	No/No	Nonparametric 95% UPL	4,000

Notes:
Note analytical data from the background monitoring wells collected between March 2018 and October 2020 were used to develop an upper prediction limit (UPL) for all Appendix III constituents, and a lower prediction limit (LPL) for pH, at 95 percent confidence.
mg/L= milligrams per liter
TDS = total dissolved solids

Table 2
2023 Statistical Method Analysis and Results
LOS Pond 2 and Pond 3 (Multi-Unit) CCR Monitoring Well Network
Leland Olds Station – Stanton, North Dakota

Well	Location	B	Ca	Cl	F	pH (LPL/UPL)		SO_4	TDS
MW-2017-2	Downgradient								
MW-2017-3	Downgradient								
MW-2017-4	Downgradient								
MW-2017-5	Downgradient								
MW-2017-6	Downgradient								
MW-2017-7	Downgradient								

Notes:

SSIs determined using interwell upper prediction limits (UPLs) at background monitoring wells MW-2017-1 and MW-2017-8

Less than or equal to background upper prediction limit (UPL) or greater than lower prediction limit (LPL) for pH

Unverified statistically significant increase (SSI) over background UPL or below background LPL for pH

Verified SSI over background UPL or below background LPL for pH

Attachment A
2023 Sampling and Analysis Report, Former LOS Pond 2 and Pond 3 Multi-Unit CCR Monitoring Program

AECOM Imagine it. Delivered.

2023 Sampling and Analysis Report, Former LOS Pond 2 and Pond 3 Multi-Unit CCR Monitoring Program

Leland Olds Station
Stanton, North Dakota

Basin Electric Power Cooperative

January 31, 2024

Prepared for:

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Project #60634880

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Table 1B Second Half 2023 - Groundwater Level Measurements and Elevations, September 11-12, 2023
Table 2 Estimated Groundwater Gradient and Seepage Velocity
Table 3 2023 Detection-Mode (Appendix III) Analytical Results Summary
Table 4 2023 Characterization (Appendix III and IV) Analytical Results Summary

Appendix

Appendix A Analytical Laboratory Reports, 2023 Detection Monitoring and Characterization Events

List of Acronyms

AECOM	AECOM Technical Services, Inc.
Basin	Basin Electric Power Cooperative
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
LOS	Leland Olds Station

1. Introduction

On behalf of Basin Electric Power Cooperative (Basin), AECOM Technical Services, Inc. (AECOM) prepared this Coal Combustion Residuals (CCR) Groundwater Sampling and Analysis Report for the Pond 2 and Pond 3 Multi-Unit at Basin's Leland Olds Station (LOS). The objective of the report is to provide a description of the field and office activities performed between January and December of 2023.

This Sampling and Analysis Report was prepared to present the results of sampling and analysis of groundwater conducted for the monitoring requirements of the United States Environmental Protection Agency (EPA) CCR rule (Chapter 40 of the Code of Federal Regulations [CFR], Sections 257.90 to 257.98). Specifically, the report presents the data collected for the groundwater Detection monitoring events conducted in June and September of 2023.

2. Groundwater Flow

As required by 40 CFR Section 257.93(c), groundwater elevations were measured for each well prior to purging each time groundwater was sampled. The measurements, presented in **Tables 1A** and **1B**, were used to create potentiometric surface maps for the uppermost aquifer for the Detection monitoring events completed in June and September 2023, respectively. The resulting potentiometric surface maps, presented as **Figures 1** and **2**, were used to evaluate the direction of groundwater flow and hydraulic gradient for the subject CCR unit for each event. The potentiometric surface and direction of groundwater flow at the site is primarily controlled by changes in the river stage elevation of the Missouri River. In both June and September 2023, groundwater flow was generally northeast toward the Missouri River. The seasonal flow directions observed in 2023 are generally consistent with those observed during previous monitoring events. Previous reporting periods have, on occasion, observed groundwater flow to the south-southwest away from the Missouri River and swinging broadly down-valley to the east-southeast. Groundwater flow velocities for the 2023 Detection monitoring events were calculated and are summarized in **Table 2**. The velocities calculated for the 2023 events are generally consistent with those observed historically.

Based on the groundwater flow conditions documented in this chapter, the relative functions of the monitoring wells employed in the LOS CCR groundwater monitoring system are as follows:

CCR unit	Background wells	Downgradient wells
Pond 2 and Pond 3 Multi-Unit	MW-2017-1 and MW-2017-8	MW-2017-2, MW-2017-3, MW-2017-4, MW-2017-5, MW-2017-6, and MW-2017-7

Additional evaluation of site background was initiated in 2020, including gauging, sampling, and installation MW-2017-8D which was installed in the vicinity of MW-2017-8 to confirm the presence of clay observed at the bottom of MW-2017-8, establishing the top of bedrock at this location. The boring was advanced through this clay to a depth of 61.5 feet below ground surface where a 2.5-foot-thick groundwater-yielding lignite bed was identified. MW-2017-8D was screened across this lignite to allow for further evaluation of the groundwater chemistry. Another well, identified as MW-2017-9, was installed in October 2020 to aid in the characterization of the area southwest of the Multi-Unit. Two additional wells identified as Characterization wells MW-2017-10 and MW-2017-11 were installed in October 2022 to further evaluate groundwater quality on the east side of former Pond 2 and Pond 3. The surveyed location of each of these wells is presented in the Potentiometric Surface Maps **(Figure 1** and **Figure 2).**

3. Groundwater Quality

The analytical testing laboratory provided a report presenting the results of laboratory analysis for the June and September 2023 Detection monitoring events and the baseline characterization events for new wells MW-2017-10 and MW-2017-11. The laboratory reports are included in the operating record and were reviewed for completeness against the project-required methods and the chain-of-custody forms. The laboratory reports were also reviewed for holding times, and to check that the data was appropriately flagged based on the quality assurance/quality control data provided. The Detection monitoring (Appendix III) analytical results for 2023 are compiled into summary form as presented in **Table 3.** The characterization (Appendix III and IV) analytical results for samples collected from MW-2017-10 and MW-2017-11 are presented in **Table 4.** A copy of the final laboratory report for each event is included as **Appendix A**.

Figures

MW-2017-1
(1658.92)

MW-2017-2
(1658.73)

MW-2017-3
(1658.81)

Missouri River Elevation
(1657.98) @ 12:00 PM on 6/06/2023

MW-2017-4
(1658.70)

1658.8'

MW-2017-11
(1659.02)*

MW-2017-5
(1658.87)

1659.0'

MW-2017-9
(1671.36)*

MW-2017-10
(1658.82)*

MW-2017-6
(1659.04)

MW-2017-7
(1659.04)

MW-2017-8D
(1665.32)*

MW-2017-8
(1688.53)*

SCALE 1" = 200'
200' 0 200' 400'

DRAWING: NORTH DAKOTA STATE PLANE NAD27 SOUTH ZONE-FT
PHOTO: NAIP MERCER COUNTY FALL OF 2017 / UTM NAD83 ZONE 14N-METERS

LEGEND

- CCR RULE COMPLIANCE WELL
- SITE CHARACTERIZATION WELL
- Terrace Boundary (Inferred)
- (1658.92) Groundwater Elevation feet, msl.
- (1688.53)* Omitted from Potentiometric Surface Contouring
- 0.2-FEET POTENTIOMETRIC SURFACE CONTOUR
  Dashed where Inferred
- GROUNDWATER FLOW DIRECTION

BASIN ELECTRIC POWER COOPERATIVE

LELAND OLDS STATION
STANTON, NORTH DAKOTA

FIGURE 1
POTENTIOMETRIC SURFACE MAP
LOS POND 2 AND POND 3 MULTIUNIT
JUNE 6, 2023

JOB NO. 60634880

AECOM

LEGEND

- CCR RULE COMPLIANCE WELL
- SITE CHARACTERIZATION WELL
- Terrace Boundary (Inferred)
- (1658.99) Groundwater Elevation feet, msl.
- (1688.53)* Omitted from Potentiometric Surface Contouring
- 0.2-Feet Potentiometric Surface Contour
- Dashed where inferred
- Groundwater Flow Direction
- Approximate LOS Pond 2 and Pond 3 Multiunit Boundary

BASIN ELECTRIC POWER COOPERATIVE

LELAND OLDS STATION
STANTON, NORTH DAKOTA

FIGURE 2
POTENTIOMETRIC SURFACE MAP
LOS POND 2 AND POND 3 MULTIUNIT
SEPTEMBER 11-12, 2023

JOB NO. 60634880

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Tables

Table 1A. First Half 2023 - Groundwater Monitoring Water Levels and Elevations

CCR Monitoring Wells
LOS Pond 2 and Pond 3 - Multi-unit
Stanton, North Dakota

	Reference Elevation	June 6, 2023	Groundwater
	Top of Casing	Depth to Water	Elevation
Well ID	(feet, NAVD 88)	(feet)	(feet, NAVD 88)
MW-2017-1	1,683.86	24.94	1,658.92
MW-2017-2	1,681.03	22.30	1,658.73
MW-2017-3	1,682.36	23.55	1,658.81
MW-2017-4	1,684.13	25.43	1,658.70
MW-2017-5	1,691.72	32.85	1,658.87
MW-2017-6	1,693.44	34.40	1,659.04
MW-2017-7	1,698.25	39.21	1,659.04
MW-2017-8	1,717.23	28.70	1,688.53
MW-2017-8D	1,716.27	50.95	1,665.32
MW-2017-9	1,709.93	38.57	1,671.36
*MW-2017-10	1692.15	33.33	1,658.82
*MW-2017-11	1698.21	39.19	1,659.02
**Missouri River elevation at approximately 12:00 pm on 9/11/2023			1,657.98

Notes:

* Pending Verification of Top of Casing Elevation

** Elevation as reported at Leland Olds Station River Intake in Stanton ND.

Table 1B. Second Half 2023 - Groundwater Monitoring Water Levels and Elevations

CCR Monitoring Wells
LOS Pond 2 and Pond 3 - Multi-unit
Stanton, North Dakota

	Reference Elevation	September 11-12, 2023	Groundwater
	Top of Casing	Depth to Water	Elevation
Well ID	**(feet, NAVD 88)**	**(feet)**	**(feet, NAVD 88)**
MW-2017-1	1683.86	24.91	1,658.95
MW-2017-2	1681.03	22.25	1,658.78
MW-2017-3	1682.36	23.53	1,658.83
MW-2017-4	1684.13	25.32	1,658.81
MW-2017-5	1691.72	32.91	1,658.81
MW-2017-6	1693.44	34.45	1,658.99
MW-2017-7	1698.25	39.26	1,658.99
MW-2017-8	1717.23	28.70	1,688.53
MW-2017-8D	1716.27	38.24	1,678.03
MW-2017-9	1709.93	Not Measured	Not Measured
*MW-2017-10	1692.15	33.48	1,658.67
*MW-2017-11	1698.21	39.20	1,659.01
**Missouri River elevation at approximately 12:00 pm on 9/11/2023			1,958.60

Notes:

* Pending Verification of Top of Casing Elevation

** Elevation as reported at Leland Olds Station River Intake in Stanton ND.

Table 2. Estimated Groundwater Gradient and Seepage Velocity
CCR Monitoring Wells
LOS Pond 2 And Pond 3 - Multi-Unit
Stanton, North Dakota

Date of event	d_l (ft)	d_h (ft)	i (ft/ft)	n_e	K (ft/day)	v_s (ft/day)
3/12/2018	Insufficient Data: Limited site access due to high water					
4/17/2018	307	0.25	0.00081	0.33	1.16E+01	2.86E-02
6/14/2018*	493	0.25	0.00051	0.33	1.16E+01	1.78E-02
7/23/2018*	397	0.5	0.00126	0.33	1.16E+01	4.43E-02
9/27/2018*	480	0.25	0.00052	0.33	1.16E+01	1.83E-02
3/12/2019	337	0.5	0.00148	0.33	1.16E+01	5.22E-02
3/27/2019	300	0.5	0.00167	0.33	1.16E+01	5.86E-02
4/9/2019	303	0.75	0.00248	0.33	1.16E+01	8.70E-02
11/11/2019*	300	0.1	0.00033	0.33	1.16E+01	1.17E-02
6/8/2020*	960	0.29	0.00030	0.33	1.16E+01	1.06E-02
10/5/2020	810	0.6	0.00074	0.33	1.16E+01	2.60E-02
5/11/2021	620	0.2	0.00032	0.33	1.16E+01	1.13E-02
9/21/2021	700	0.4	0.00057	0.33	1.16E+01	2.01E-02
6/21/2022	610	0.04	0.000066	0.33	1.16E+01	2.30E-03
10/4/2022	840	0.4	0.00048	0.33	1.16E+01	1.67E-02
6/6/2023	1000	0.3	0.0003	0.33	1.16E+01	1.06E-02
9/11/2023	1800	0.18	0.0001	0.33	1.16E+01	3.52E-03

d_l = Horizontal separation between upgradient and downgradient locations perpendicular to potentiometric contours

d_h = Change in hydraulic head between upgradient and downgradient locations

i = Hydraulic gradient (change in elevation over distance)

n_e = Site average porosity of 33%

K = Site average hydraulic conductivity of 11.6 ft/day from slug tests at site

v_s = Seepage velocity (ft/day)

* = Groundwater flow direction during event was from river to aquifer

Hydraulic Gradient Governing Equation[1] – $$i = -dh/dl$$

Seepage Velocity Governing Equation[2] – $$v_s = -K * i / n_e$$

Table 3. 2023 Detection Monitoring (Appendix III) Analytical Results Summary
CCR Monitoring Wells
LOS Pond 2 and Pond 3 - Multi-unit
Stanton, North Dakota

		Analytical Method	Appendix III Constituents						
		Chemical Name	SW6010C Boron	SW6010C Calcium	SW9056A Chloride	SW9056A Fluoride	Field Measure pH	SW9056A Sulfate	SM2540C TDS
		Unit	mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
Well ID	Event	Date							
MW-2017-1	Event 16	6/13/23	0.62	182	13.4	0.34	7.08	243	1050
MW-2017-1 Dup	Event 16	6/13/23	0.62	182	13.5	0.33	7.08	261	1070
MW-2017-1	Event 17	9/12/23	0.47	208	13.9	0.34	7.10	268	1180
MW-2017-2	Event 16	6/13/23	0.99	132.0	12.60	0.34	7.21	286	957
MW-2017-2	Event 17	9/12/23	1.01	101	12.2	0.38	7.30	285	822
MW-2017-3	Event 16	6/13/23	1.41	116.0	12.3	0.45	7.31	136	933
MW-2017-3	Event 17	9/12/23	1.28	113	12.0	0.48	7.34	140	952
MW-2017-4	Event 16	6/7/23	1.12	134	13.2	0.78	7.27	364	774
MW-2017-4	Event 17	9/12/23	1.10	144	11.8	0.77	7.26	292	874
MW-2017-5	Event 16	6/13/23	0.79	85.5	12.3	0.92	7.26	289	660
MW-2017-5	Event 17	9/12/23	0.74	85.6	12.0	0.91	7.48	262	641
MW-2017-6	Event 16	6/13/23	1.56	66.4	12.0	0.57	7.49	203	612
MW-2017-6	Event 17	9/11/23	1.40	65.6	11.8	0.60	7.57	177	589
MW-2017-7	Event 16	6/7/23	1.87	64.8	13.2	1.51	7.59	344	695
MW-2017-7	Event 17	9/11/23	2.07	73.1	12.4	1.34	7.58	240	693
MW-2017-8	Event 16	6/7/23	0.41	132	27.2	0.37	7.45	1900	3740
MW-2017-8	Event 17	9/11/23	0.40	137	25.7	0.38	7.44	1720	3720
MW-2017-8D	Event 16	6/7/23	0.65	8.55	18.7	0.61	8.04	489	1930
MW-2017-8D	Event 17	9/11/23	0.69	8.97	17.6	0.59	8.01	365	1960

Notes:
mg/L = milligrams per liter
SU = standard units
TDS = total dissolved solids

Table 4. 2023 Characterization (Appendix III and IV) Analytical Results Summary
CCR Monitoring Wells
LOS Pond 2 and Pond 3 - Multi-unit
Stanton, North Dakota

			Appendix III Constituents							Appendix IV Constituents													
Analytical Method			SW6010C	SW6010C	SW9056A	SW9056A	Field Measure	SW9056A	SM2540C	SW6020A	SW6020A	SW6020A	SW6020A	SW6020A	SW6020A	SW6020A	SW6020A	SW6010C	7470A	SW6020A	Ra226_Ra228	SW6020A	SW6020A
	Chemical Name		Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Radium 226+228	Selenium	Thallium
		Unit	mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	mg/L	mg/L
Well ID	Event	Date																					
MW-2017-10	Event 01	5/3/23	1.02	86.2	12.0	0.76	7.25	269	640	< 0.001	0.0025	0.0806	< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.0005	< 0.02	< 0.0002	0.0082	0.75	< 0.005	< 0.0005
MW-2017-10	Event 02	6/6/23	0.95	86.1	12.2	0.80	7.50	265	670	< 0.001	0.0029	0.0796	< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.0005	< 0.02	< 0.0002	0.0079	0.75	< 0.005	< 0.0005
MW-2017-10-Dup	Event 02	6/6/23	0.97	88.7	12.3	0.79	7.50	353	655	< 0.001	0.0031	0.0795	< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.0005	< 0.02	< 0.0002	0.0083	0.80	< 0.005	< 0.0005
MW-2017-10	Event 03	6/26/23	0.97	90.8	11.7	0.77	7.47	328	682	< 0.001	0.0032	0.0837	< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.0005	< 0.02	< 0.0002	0.0085	0.75	< 0.005	< 0.0005
MW-2017-10	Event 04	9/12/23	0.93	90.3	11.6	0.81	7.47	298	667	< 0.001	0.0032	0.0737	< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.0005	< 0.02	< 0.0002	0.0080	0.60	< 0.005	< 0.0005
MW-2017-11	Event 01	5/3/23	1.29	65.4	12.2	0.75	7.28	189	577	< 0.001	0.0084	0.0485	< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.0005	0.0321	< 0.0002	0.0095	0.75	< 0.005	< 0.0005
MW-2017-11 Dup	Event 01	5/3/23	1.23	63.2	12.1	0.75	7.28	184	581	< 0.001	0.0083	0.0445	< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.0005	0.0308	< 0.0002	0.0093	0.75	< 0.005	< 0.0005
MW-2017-11	Event 02	6/6/23	1.23	63.1	12.4	0.77	7.57	175	504	< 0.001	0.0088	0.0458	< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.0005	0.0319	< 0.0002	0.0097	0.75	< 0.005	< 0.0005
MW-2017-11	Event 03	6/26/23	1.30	68.3	11.7	0.70	7.50	219	571	< 0.001	0.0100	0.0493	< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.0005	0.0323	< 0.0002	0.0100	0.70	< 0.005	< 0.0005
MW-2017-11 Dup	Event 03	6/26/23	1.31	68.8	11.9	0.71	7.50	223	583	< 0.001	0.0100	0.0490	< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.0005	0.0324	< 0.0002	0.0108	0.75	< 0.005	< 0.0005
MW-2017-11	Event 04	9/12/23	1.17	63.7	11.7	0.73	7.49	199	592	< 0.001	0.0084	0.0392	< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.0005	0.0294	< 0.0002	0.0090	0.70	< 0.005	< 0.0005
MW-2017-11 Dup	Event 04	9/12/23	1.20	65.6	11.8	0.72	7.49	202	581	< 0.001	0.0089	0.0399	< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.0005	0.0302	< 0.0002	0.0090	0.65	< 0.005	< 0.0005

Notes:
mg/L = milligrams per liter
SU = standard units
pCi/L = picocuries per liter
TDS = total dissolved solids
< = value less than reporting limit, not detected

Appendix A

Analytical Laboratory Reports
2023 Detection-Mode Monitoring and Characterization Events

MAY 2023

MINNESOTA VALLEY TESTING LABORATORIES, INC.
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2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.MVTL.com

Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: New LOS CCR Wells (14750) **PO:** 790708-04 LOS

Mark Dihle
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck, ND 58503

Certificate of Analysis

Approval

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

Analyses performed under Minnesota Department of Health Accreditation conforms to the current TNI standards.

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Workorder Summary

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

Unreported samples to update sample identifications on 14750003 and 14750004. CC 8Jun23

Analysis Results Comments

14750004 (MW-2016-13)

Matrix spike and/or matrix spike duplicate recovery was high; the associated laboratory fortified blank recovery was acceptable.(Chloride)

14750004 (MW-2016-13)

Matrix spike and/or matrix spike duplicate recovery was low; the associated laboratory control sample recovery was acceptable.(Sulfate)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14750001 **Date Collected:** 05/03/2023 13:45 **Matrix:** Groundwater
Sample ID: MW-2017-10 **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**269**	mg/L	5	1	05/10/2023 11:49	05/10/2023 11:49	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	05/09/2023 11:11	05/09/2023 11:40	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.02**	mg/L	0.1	1	05/05/2023 17:01	05/11/2023 09:23	MDE	
Calcium	**86.2**	mg/L	1	1	05/05/2023 17:01	05/09/2023 11:40	MDE	
Lithium	<0.02	mg/L	0.02	1	05/05/2023 17:01	05/11/2023 13:44	MDE	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	05/05/2023 17:01	05/12/2023 17:14	MDE	
Arsenic	**0.0025**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:14	MDE	
Barium	**0.0806**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:14	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 17:14	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 17:14	MDE	
Chromium	<0.002	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:14	MDE	
Cobalt	<0.002	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:14	MDE	
Lead	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 17:14	MDE	
Molybdenum	**0.0082**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:14	MDE	
Selenium	<0.005	mg/L	0.005	5	05/05/2023 17:01	05/12/2023 17:14	MDE	
Thallium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 17:14	MDE	

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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.MVTL.com

Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14750001 **Date Collected:** 05/03/2023 13:45 **Matrix:** Groundwater
Sample ID: MW-2017-10 **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**12.0**	mg/L	2.0	1	05/09/2023 13:56	05/09/2023 13:56	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.76**	mg/L	0.1	1	05/09/2023 14:41	05/09/2023 14:41	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**640**	mg/L	10	1	05/09/2023 16:10	05/09/2023 16:10	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14750002 **Date Collected:** 05/03/2023 11:40 **Matrix:** Groundwater
Sample ID: MW-2017-11 **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**189**	mg/L	5	1	05/10/2023 11:50	05/10/2023 11:50	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	05/09/2023 11:11	05/09/2023 11:40	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.29**	mg/L	0.1	1	05/05/2023 17:01	05/11/2023 09:25	MDE	
Calcium	**65.4**	mg/L	1	1	05/05/2023 17:01	05/09/2023 11:40	MDE	
Lithium	**0.0321**	mg/L	0.02	1	05/05/2023 17:01	05/11/2023 13:46	MDE	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	05/05/2023 17:01	05/12/2023 16:55	MDE	
Arsenic	**0.0084**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 16:55	MDE	
Barium	**0.0485**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 16:55	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 16:55	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 16:55	MDE	
Chromium	<0.002	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 16:55	MDE	
Cobalt	<0.002	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 16:55	MDE	
Lead	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 16:55	MDE	
Molybdenum	**0.0095**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 16:55	MDE	
Selenium	<0.005	mg/L	0.005	5	05/05/2023 17:01	05/12/2023 16:55	MDE	
Thallium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 16:55	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14750002 **Date Collected:** 05/03/2023 11:40 **Matrix:** Groundwater
Sample ID: MW-2017-11 **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**12.2**	mg/L	2.0	1	05/09/2023 13:57	05/09/2023 13:57	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.75**	mg/L	0.1	1	05/09/2023 15:01	05/09/2023 15:01	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**577**	mg/L	10	1	05/09/2023 16:10	05/09/2023 16:10	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14750003 **Date Collected:** 05/04/2023 08:37 **Matrix:** Groundwater
Sample ID: MW-2016-12 **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**53.9**	mg/L	5	1	05/10/2023 11:51	05/10/2023 11:51	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	05/09/2023 11:11	05/09/2023 11:40	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.23**	mg/L	0.1	1	05/05/2023 17:01	05/11/2023 09:26	MDE	
Calcium	**36.7**	mg/L	1	1	05/05/2023 17:01	05/09/2023 11:41	MDE	
Lithium	<0.02	mg/L	0.02	1	05/05/2023 17:01	05/11/2023 13:46	MDE	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	05/05/2023 17:01	05/12/2023 16:59	MDE	
Arsenic	<0.002	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 16:59	MDE	
Barium	**0.0628**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 16:59	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 16:59	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 16:59	MDE	
Chromium	<0.002	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 16:59	MDE	
Cobalt	<0.002	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 16:59	MDE	
Lead	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 16:59	MDE	
Molybdenum	**0.0150**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 16:59	MDE	
Selenium	<0.005	mg/L	0.005	5	05/05/2023 17:01	05/12/2023 16:59	MDE	
Thallium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 16:59	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14750003 **Date Collected:** 05/04/2023 08:37 **Matrix:** Groundwater
Sample ID: MW-2016-12 **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**37.5**	mg/L	2.0	1	05/09/2023 13:58	05/09/2023 13:58	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.55**	mg/L	0.1	1	05/09/2023 15:07	05/09/2023 15:07	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**1240**	mg/L	10	1	05/09/2023 16:10	05/09/2023 16:10	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14750004 **Date Collected:** 05/04/2023 09:18 **Matrix:** Groundwater
Sample ID: MW-2016-13 **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**58.1**	mg/L	5	1	05/10/2023 11:52	05/10/2023 11:52	AMC	*

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	05/09/2023 11:11	05/09/2023 11:40	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.34**	mg/L	0.1	1	05/05/2023 17:01	05/11/2023 09:26	MDE	
Calcium	**29.7**	mg/L	1	1	05/05/2023 17:01	05/09/2023 11:42	MDE	
Lithium	<0.02	mg/L	0.02	1	05/05/2023 17:01	05/11/2023 13:47	MDE	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	05/05/2023 17:01	05/12/2023 17:04	MDE	
Arsenic	<0.002	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:04	MDE	
Barium	**0.0928**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:04	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 17:04	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 17:04	MDE	
Chromium	<0.002	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:04	MDE	
Cobalt	<0.002	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:04	MDE	
Lead	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 17:04	MDE	
Molybdenum	**0.0651**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:04	MDE	
Selenium	<0.005	mg/L	0.005	5	05/05/2023 17:01	05/12/2023 17:04	MDE	
Thallium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 17:04	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14750004 **Date Collected:** 05/04/2023 09:18 **Matrix:** Groundwater
Sample ID: MW-2016-13 **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**56.0**	mg/L	2.0	1	05/09/2023 13:59	05/09/2023 13:59	AMC	*

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.48**	mg/L	0.1	1	05/09/2023 15:15	05/09/2023 15:15	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**1460**	mg/L	10	1	05/09/2023 16:10	05/09/2023 16:10	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14750005 **Date Collected:** 05/03/2023 11:40 **Matrix:** Groundwater
Sample ID: Dup **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**184**	mg/L	5	1	05/10/2023 12:03	05/10/2023 12:03	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	05/09/2023 11:11	05/09/2023 11:40	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.23**	mg/L	0.1	1	05/05/2023 17:01	05/11/2023 09:27	MDE	
Calcium	**63.2**	mg/L	1	1	05/05/2023 17:01	05/09/2023 11:43	MDE	
Lithium	**0.0308**	mg/L	0.02	1	05/05/2023 17:01	05/11/2023 13:48	MDE	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	05/05/2023 17:01	05/12/2023 17:09	MDE	
Arsenic	**0.0083**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:09	MDE	
Barium	**0.0445**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:09	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 17:09	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 17:09	MDE	
Chromium	<0.002	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:09	MDE	
Cobalt	<0.002	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:09	MDE	
Lead	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 17:09	MDE	
Molybdenum	**0.0093**	mg/L	0.002	5	05/05/2023 17:01	05/12/2023 17:09	MDE	
Selenium	<0.005	mg/L	0.005	5	05/05/2023 17:01	05/12/2023 17:09	MDE	
Thallium	<0.0005	mg/L	0.0005	5	05/05/2023 17:01	05/12/2023 17:09	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14750005 **Date Collected:** 05/03/2023 11:40 **Matrix:** Groundwater
Sample ID: Dup **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**12.1**	mg/L	2.0	1	05/09/2023 14:00	05/09/2023 14:00	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.75**	mg/L	0.1	1	05/09/2023 15:21	05/09/2023 15:21	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**581**	mg/L	10	1	05/09/2023 16:10	05/09/2023 16:10	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

QC Results Summary — WO #: 14750

Sulfate — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			100	93.4		85	115		
LFB			100	103.0		85	115		
LFB			100	92.8		85	115		
LFB			100	95.3		85	115		
LFB			100	101.0		85	115		
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MSD	14345001		500	84.5	87.9	85	115	2.0	20
MSD	14570002		100	74.9	73.0	85	115	0.8	20
MSD	14750004		100	77.3	77.1	85	115	0.0	20
MSD	14750005		100	88.8	92.9	85	115	1.5	20

Chloride — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			30	93.0		90	110		
LFB			30	93.2		90	110		
LFB			30	93.3		90	110		
LFB			30	93.3		90	110		
LFB			30	93.9		90	110		
LFB			30	94.7		90	110		
LFB			30	94.5		90	110		
MB		<2.00							
MB		<2.00							
MB		<2.00							
MB		<2.00							
MB		<2.00							
MB		<2.00							

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Chloride Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<2.0							
MSD	14232003		30	89.5	90.0	80	120	0.3	20
MSD	14485001		150	132.1	131.1	80	120	0.8	20
MSD	14750004		30	131.0	130.2	80	120	0.2	20

Calcium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
PDSD	14750005		100	97.6	98.5	75	125	0.6	20

Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	104.0		85	115		
MB		<0.001							
MSD	14644003		0.4	107.0	104.0	70	130	2.8	20

Arsenic Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	96.2		85	115		
MB		<0.003							
MSD	14644003		0.4	104.0	103.0	70	130	1.0	20

Barium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	103.0		85	115		
MB		<0.002							
MSD	14644003		0.4	103.0	102.0	70	130	1.0	20

Beryllium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	98.2		85	115		
MB		<0.0005							
MSD	14644003		0.4	108.0	106.0	70	130	1.9	20

Cadmium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	110.0		85	115		
MB		<0.0001							
MSD	14644003		0.4	110.0	110.0	70	130	0.0	20

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Chromium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	110.0		85	115		
MB		<0.003							
MSD	14644003		0.4	112.0	112.0	70	130	0.0	20

Cobalt Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	110.0		85	115		
MB		<0.007							
MSD	14644003		0.4	111.0	110.0	70	130	0.9	20

Lead Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	99.4		85	115		
MB		<0.0005							
MSD	14644003		0.4	106.0	105.0	70	130	1.0	20

Molybdenum Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	112.0		85	115		
MB		<0.002							
MSD	14644003		0.4	114.0	112.0	70	130	1.8	20

Selenium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	97.8		85	115		
MB		<0.01							
MSD	14644003		0.4	106.0	103.0	70	130	2.9	20

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	98.8		85	115		
MB		<0.0005							
MSD	14644003		0.4	106.0	105.0	70	130	1.0	20

Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPKD	14106001		0.1	92.9	93.2	75	125	0.3	20
SPK	14750001		0.1	97.1		75	125		

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Arsenic — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPKD	14106001		0.1	90.1	88.2	75	125	2.1	20
SPK	14750001		0.1	95.8		75	125		

Barium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPKD	14106001		0.1	89.8	89.5	75	125	0.3	20
SPK	14750001		0.1	95.4		75	125		

Beryllium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	14106001		0.1	94.2		75	125		
SPKD	14106001		0.1	92.7	88.4	75	125	4.8	20

Cadmium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPKD	14106001		0.1	97.6	92.3	75	125	0.4	20

Chromium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPKD	14106001		0.1	95.3	97.7	75	125	2.7	20
SPK	14750001		0.1	103.0		75	125		

Cobalt — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPKD	14106001		0.1	96.0	96.8	75	125	0.8	20
SPK	14750001		0.1	103.0		75	125		

Lead — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPKD	14106001		0.1	89.4	88.9	75	125	0.5	20
SPK	14750001		0.1	95.0		75	125		

Molybdenum — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPKD	14106001		0.1	94.7	93.6	75	125	1.2	20
SPK	14750001		0.1	97.2		75	125		

Selenium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPKD	14106001		0.1	84.2	85.9	75	125	2.0	20
SPK	14750001		0.1	90.7		75	125		

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPKD	14106001		0.1	83.9	84.6	75	125	0.1	20
SPK	14750001		0.1	89.8		75	125		

Boron Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-OE			0.4	99.3		85	115		
MB		<0.1							
MSD	14750001		0.4	98.3	105.0	75	125	1.9	20

Calcium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MI			100	109.0		85	115		
MB		<1							
DUP	14705001							2.9	20

Lithium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-OE			0.4	103.0		85	115		
MB		<0.04							
MSD	14750001		0.4	100.0	100.0	75	125	0.1	20

Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	92.9		80	120		
MB		<0.001							
MSD	14750001		0.4	95.9	99.3	75	125	3.3	20

Arsenic Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	92.1		80	120		
LFB-TC			0.1	101.0		80	120		
MB		<0.002							
MSD	14750001		0.4	94.6	98.3	75	125	3.9	20

Barium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	95.5		80	120		
MB		<0.002							
MSD	14750001		0.4	97.7	98.9	75	125	1.2	20

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Cadmium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	101.0		80	120		
MB		<0.0003							
MSD	14750001		0.4	100.0	102.0	75	125	2.0	20

Chromium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	105.0		80	120		
MB		<0.007							
MSD	14750001		0.4	104.0	102.0	75	125	1.7	20

Cobalt Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	105.0		80	120		
MB		<0.001							
MSD	14750001		0.4	102.0	102.0	75	125	0.0	20

Lead Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	96.8		80	120		
MB		<0.0005							
MSD	14750001		0.4	101.0	101.0	75	125	0.0	20

Molybdenum Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	98.5		80	120		
MB		<0.002							
MSD	14750001		0.4	96.2	97.3	75	125	1.1	20

Selenium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	91.9		80	120		
LFB TC			0.1	96.6		80	120		
MB		<0.005							
MSD	14750001		0.4	96.7	98.0	75	125	1.3	20

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	92.0		80	120		
MB		<0.0005							

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MSD	14750001		0.4	96.4	96.4	75	125	0.3	20

Mercury Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			0.002	105.0		85	115		
LRB		<0.0002							
MSD	11691001		0.002	107.0	100.0	70	130	6.9	20
MSD	14644002		0.002	65.6	67.8	70	130	3.3	20
MSD	14750005		0.002	99.1	94.1	70	130	10.5	20

Fluoride Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			3.39	98.8		83.8	111		
LFB-F			0.5	104.0		90	110		
LFB-F			0.5	104.0		90	110		
MB-F		<0.1							
MB-F		<0.1							
MSD-F	14750001		0.5	108.0	114.0	80	120	1.1	20

Total Dissolved Solids Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			736	90.0		90.35	110.88		
MB		<10							
DUP	14750005							1.2	20

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Minnesota Valley Testing Laboratories,
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Phone: (701) 258-9720
Toll Free: (800) 279-6885 Fax: (701) 258-9724

Basin Electric Power Coope **Custody Record**
WO: 14750
Page 1 of 1

BASIN ELECTRIC POWER COOP.
Leland Olds Station
3901 HIGHWAY 200A
STANTON, ND 58571

Phone #: 701-400-7751
Contact: Casey Mutzenberger
Email: aknutson@bepc.com cmutzenberger@bepc.com
Name of Sampler: MB
For e-mail report check box ☒
Quote Number
Date Submitted: 5-5-23
Project Name/Number: New LOS CCR Wells
Purchase Order #: 6752606-04

Lab Use Only Lab Number	Sample ID	Sample Matrix (PW- Potable Water, GW - Groundwater, WW - Wastewater, SW - Surface Water, S - Soil/Sludge, O- Other)	Date Sampled	Time Sampled	Filtered Y or N	Bottle Type: Untreated	Sterile	500 ml HNO3	1000 ml ~~H2SO4~~ HNO3	250 ml H2SO4	1000 ml NaOH	Amber HCl	Amber Unpres.	VOC Vials HCl	Amber H2SO4	40 ml Vials H2SO4	Other:	Analysis Required
001	MW-2017-10	GW	5-3-23	1345				X	X									B, Ca, Cl, F, SO4
002	MW-2017-11	GW	5-3-23	1140				X	X									Sb, As, Ba, Be, Cd
003	MW-2017-12	GW	5-4-23	0837				X	X									Cr, Co, Pb, Li, Hg
004	MW-2017-13	GW	5-4-23	0918				X	X									Mo, Se, TL
005	Dup.	GW	5-3-23	1140				X	X									Radium 226 + 228
																		TDS

Comments:

	Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Time:	Temp:
1.	Millenium Express	5-5-23			C. Cantu	5May23	1105	4.8°C
2.								TM920
3.								

Please submit the top two copies with your samples. We will return the completed original with your results.

N1157-0 0118

Form # 80-90003-1 See above for page number Effective Date: 15 Jan 2018

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Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: New LOS CCR Wells (14751) **PO:** 790708-04 LOS

Mark Dihle
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck, ND 58503

Certificate of Analysis

Approval

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

Analyses performed under Minnesota Department of Health Accreditation conforms to the current TNI standards.

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016 SD SDWA

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

Report Date: Friday, June 9, 2023 2:29:39 PM **Corrected 14751 - 1381304**

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Workorder Summary

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

Unreported samples to update sample identifications on 14751003 and 14751004. CC 8Jun23

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14751001 **Date Collected:** 05/03/2023 13:45 **Matrix:** Groundwater
Sample ID: MW-2017-10 **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	06/02/2023 14:58	06/02/2023 14:58	SUBv	
Radium 228	See Attached			1	06/02/2023 14:58	06/02/2023 14:58	SUBv	

Report Date: Friday, June 9, 2023 2:29:39 PM **Corrected 14751 - 1381304**

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14751002 **Date Collected:** 05/03/2023 11:40 **Matrix:** Groundwater
Sample ID: MW-2017-11 **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	06/02/2023 14:58	06/02/2023 14:58	SUBv	
Radium 228	See Attached			1	06/02/2023 14:58	06/02/2023 14:58	SUBv	

Report Date: Friday, June 9, 2023 2:29:39 PM **Corrected 14751 - 1381304**

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14751003 **Date Collected:** 05/04/2023 08:37 **Matrix:** Groundwater
Sample ID: MW-2016-12 **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	06/02/2023 14:58	06/02/2023 14:58	SUBv	
Radium 228	See Attached			1	06/02/2023 14:58	06/02/2023 14:58	SUBv	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14751004 **Date Collected:** 05/04/2023 09:18 **Matrix:** Groundwater
Sample ID: MW-2016-13 **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	06/02/2023 14:58	06/02/2023 14:58	SUBv	
Radium 228	See Attached			1	06/02/2023 14:58	06/02/2023 14:58	SUBv	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 14751005 **Date Collected:** 05/03/2023 11:40 **Matrix:** Groundwater
Sample ID: Dup **Date Received:** 05/05/2023 16:05 **Collector:** Client

Temp @ Receipt (C): 4.8

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	06/02/2023 14:58	06/02/2023 14:58	SUBv	
Radium 228	See Attached			1	06/02/2023 14:58	06/02/2023 14:58	SUBv	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

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ANALYTICAL SUMMARY REPORT

June 09, 2023

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C23050455 Quote ID: C15480
Project Name: 14751

Energy Laboratories, Inc. Casper WY received the following 5 samples for Minnesota Valley Testing Laboratories on 5/10/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23050455-001	14751001; MW-2017-10	05/03/23 13:45	05/10/23	Groundwater	Radium 226, Total Radium 228, Total
C23050455-002	14751002; MW-2017-11	05/03/23 11:40	05/10/23	Groundwater	Same As Above
C23050455-003	14751003; MW-2016-12	05/03/23 9:37	05/10/23	Groundwater	Same As Above
C23050455-004	14751004; MW-2016-13	05/03/23 9:18	05/10/23	Groundwater	Same As Above
C23050455-005	14751005; Dup	05/03/23 11:40	05/10/23	Groundwater	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Ashley Wilson
Project Manager

Digitally signed by
Ashley L. Wilson
Date: 2023.06.09 13:14:41 -06:00

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CLIENT: Minnesota Valley Testing Laboratories
Project: 14751
Work Order: C23050455

Revised Date: 06/09/23
Report Date: 06/01/23

CASE NARRATIVE

Revised 6/9/2023

Sample ID 14751003; MW-2017-12 (C23050455-003) has been updated to 14751003; MW-2016-12 and Sample ID 14751004; MW-2017-13 (C23050455-004) has been updated to 14751004; MW-2016-13 per the emailed request from Claudette Carroll on 6/08/2023. No analytical data was affected.

This revised report replaces any previously issued reports in its entirety.

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 14751
Lab ID: C23050455-001
Client Sample ID: 14751001; MW-2017-10

Revised Date: 06/09/23
Report Date: 06/01/23
Collection Date: 05/03/23 13:45
DateReceived: 05/10/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	05/23/23 11:12 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 228	0.5	pCi/L	U			RA-05	05/18/23 13:08 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	05/18/23 13:08 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 14751
Lab ID: C23050455-002
Client Sample ID: 14751002; MW-2017-11

Revised Date: 06/09/23
Report Date: 06/01/23
Collection Date: 05/03/23 11:40
DateReceived: 05/10/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	05/23/23 11:12 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 228	0.1	pCi/L	U			RA-05	05/18/23 13:08 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	05/18/23 13:08 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 14751
Lab ID: C23050455-003
Client Sample ID: 14751003; MW-2016-12

Revised Date: 06/09/23
Report Date: 06/01/23
Collection Date: 05/03/23 09:37
DateReceived: 05/10/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.3	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 228	0.05	pCi/L	U			RA-05	05/18/23 13:08 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	05/18/23 13:08 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 14751
Lab ID: C23050455-004
Client Sample ID: 14751004; MW-2016-13

Revised Date: 06/09/23
Report Date: 06/01/23
Collection Date: 05/03/23 09:18
DateReceived: 05/10/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	05/23/23 11:12 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 228	0.2	pCi/L	U			RA-05	05/18/23 13:08 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	05/18/23 13:08 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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Member ACIL

Account #: 2040 **Client:** Basin Electric Power Cooperative

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Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 14751
Lab ID: C23050455-005
Client Sample ID: 14751005; Dup

Revised Date: 06/09/23
Report Date: 06/01/23
Collection Date: 05/03/23 11:40
DateReceived: 05/10/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	05/23/23 11:12 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 228	0.6	pCi/L	U			RA-05	05/18/23 13:08 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	05/18/23 13:08 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories **Work Order:** C23050455 **Report Date:** 05/24/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-10894
Lab ID: LCS-RA226-10894	3	Laboratory Control Sample				Run: TENNELEC-3_230512B				05/23/23 11:12
Radium 226		11	pCi/L		114	70	130			
Radium 226 precision (±)		2.3	pCi/L							
Radium 226 MDC		0.22	pCi/L							
Lab ID: MB-RA226-10894	3	Method Blank				Run: TENNELEC-3_230512B				05/23/23 11:12
Radium 226		0.1	pCi/L							U
Radium 226 precision (±)		0.2	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23050423-001FDUP	3	Sample Duplicate				Run: TENNELEC-3_230512B				05/23/23 11:12
Radium 226		1.9	pCi/L					5.6	30	
Radium 226 precision (±)		0.48	pCi/L							
Radium 226 MDC		0.23	pCi/L							

- The RER result is 0.15.

Qualifiers:

RL - Analyte Reporting Limit
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories **Work Order:** C23050455 **Report Date:** 05/24/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05									Batch: RA228-7094	
Lab ID: LCS-228-RA226-10894	3	Laboratory Control Sample				Run: TENNELEC-3_230512A			05/18/23 13:08	
Radium 228		5.7	pCi/L		81	70	130			
Radium 228 precision (±)		1.4	pCi/L							
Radium 228 MDC		1.2	pCi/L							
Lab ID: MB-RA226-10894	3	Method Blank				Run: TENNELEC-3_230512A			05/18/23 13:08	
Radium 228		2	pCi/L							
Radium 228 precision (±)		0.8	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23050423-001FDUP	3	Sample Duplicate				Run: TENNELEC-3_230512A			05/18/23 13:08	
Radium 228		2.2	pCi/L					11	30	
Radium 228 precision (±)		0.91	pCi/L							
Radium 228 MDC		1.3	pCi/L							

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories C23050455

Login completed by: Manford E. Hurley Date Received: 5/10/2023
Reviewed by: cjohnson Received by: slr
Reviewed Date: 5/15/2023 Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	12.0°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

None

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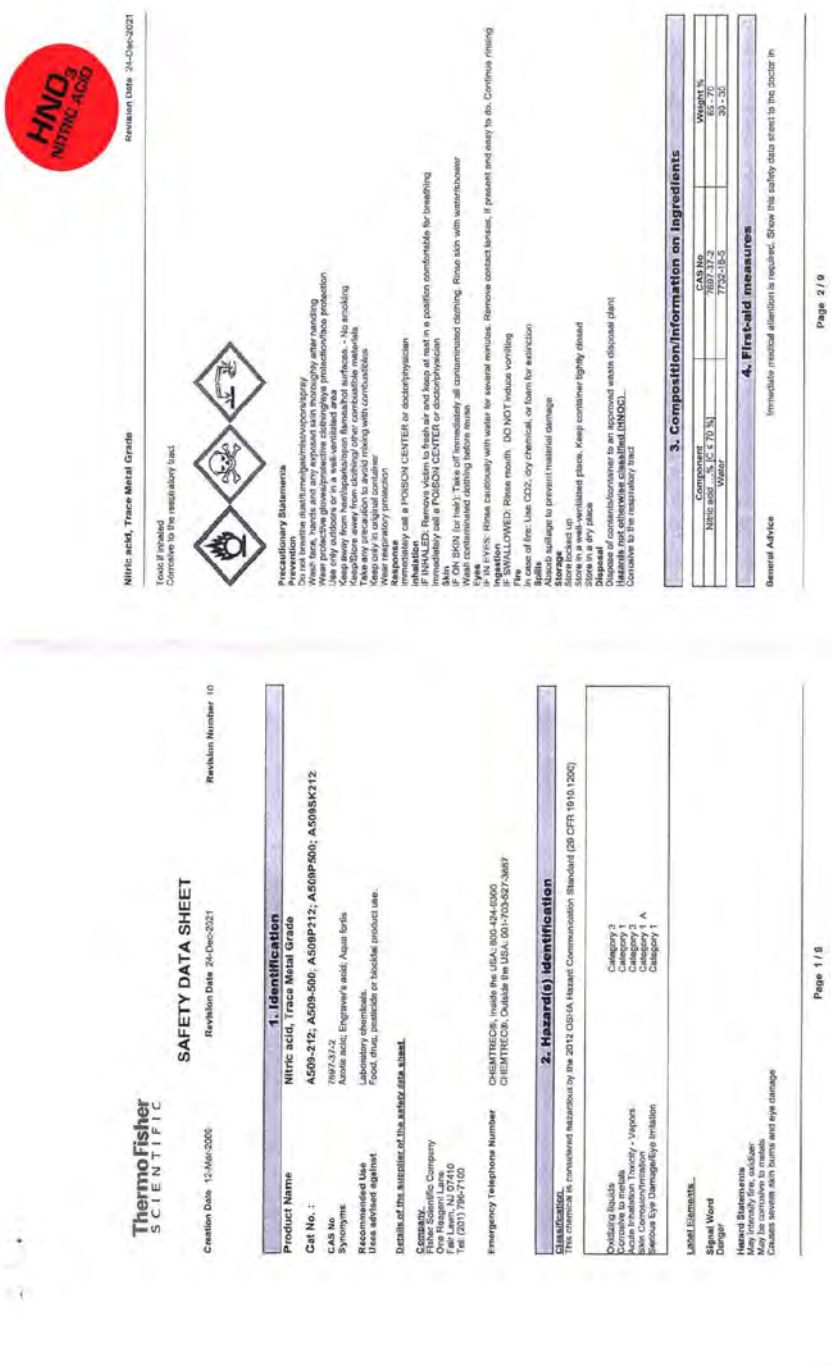
Account #: 2040 **Client:** Basin Electric Power Cooperative



ThermoFisher SCIENTIFIC

SAFETY DATA SHEET

Creation Date 12-Mar-2006 Revision Date 24-Dec-2021 Revision Number 10

1. Identification

Product Name Nitric acid, Trace Metal Grade

Cat No. : A509-212; A509-500; A509P212; A509P500; A5095K212

CAS No 7697-37-2

Synonyms Azotic acid; Engraver's acid; Aqua fortis

Recommended Use Laboratory chemicals.

Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Oxidizing liquids	Category 2
Corrosive to metals	Category 1
Acute Inhalation Toxicity - Vapors	Category 3
Skin Corrosion/Irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1

Label Elements

Signal Word
Danger

Hazard Statements
May intensify fire; oxidizer
May be corrosive to metals
Causes severe skin burns and eye damage

Page 1 / 8

Revision Date 24-Dec-2021

Nitric acid, Trace Metal Grade

Toxic if inhaled
Corrosive to the respiratory tract

Precautionary Statements
Prevention
Do not breathe mist/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Take off contaminated clothing and wash it before reuse
Keep away from clothing/ other combustible materials
Keep only in original container
Wear respiratory protection
Keep locked up
Immediately call a POISON CENTER or doctor/physician
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Ingestion
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
Spills
Absorb spillage to prevent material damage
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Store in an airy place
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Corrosive to the respiratory tract

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Nitric acid	7697-37-2	65 - 70
Water	7732-18-5	30 - 35

4. First-aid measures

General Advice Immediate medical attention is required. Show this safety data sheet to the doctor in

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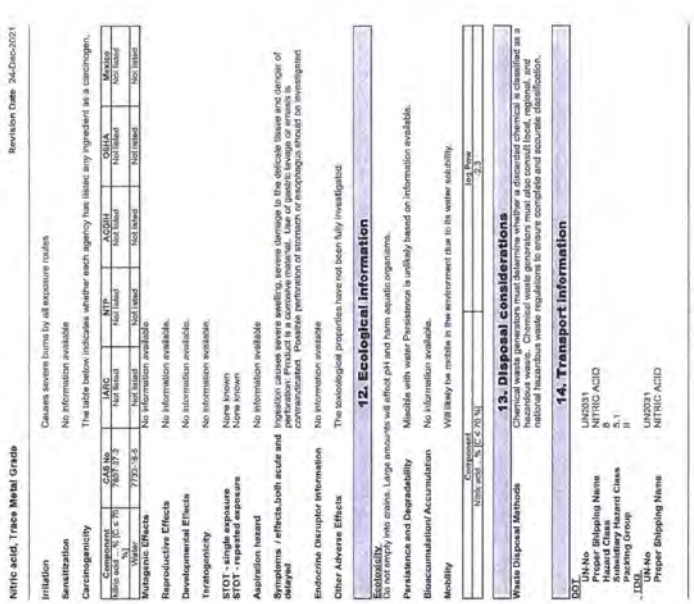
Account #: 2040 **Client:** Basin Electric Power Cooperative



Nitric acid, Trace Metal Grade — Revision Date: 24-Dec-2021

Irritation: Causes severe burns by all exposure routes

Sensitization: No information available

Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Nitric acid - % (C ≥ 70)	7697-37-2	Not listed	Not listed	Not listed	Not listed	Not listed
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects: No information available.

Reproductive Effects: No information available.

Developmental Effects: No information available.

Teratogenicity: No information available.

STOT - single exposure: None known

STOT - repeated exposure: None known

Aspiration hazard: No information available

Symptoms / effects,both acute and delayed: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated

Endocrine Disruptor Information: No information available

Other Adverse Effects: The toxicological properties have not been fully investigated

12. Ecological information

Ecotoxicity: Do not empty into drains. Large amounts will effect pH and harm aquatic organisms.

Persistance and Degradability: Miscible with water Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation: No information available.

Mobility: Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Nitric acid - % (C ≤ 70 %)	-2.3

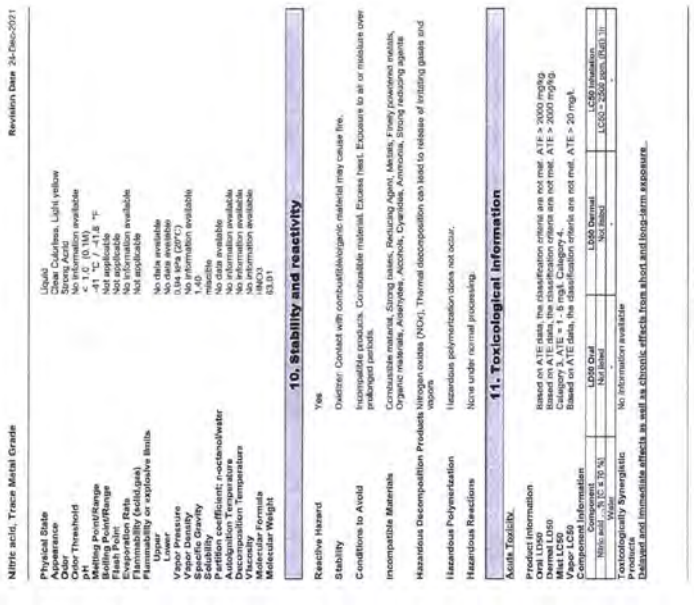
13. Disposal considerations

Waste Disposal Methods: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT
UN-No: UN2031
Proper Shipping Name: NITRIC ACID
Hazard Class: 8
Subsidiary Hazard Class: 5.1
Packing Group: II

IDG
UN-No: UN2031
Proper Shipping Name: NITRIC ACID



Nitric acid, Trace Metal Grade — Revision Date: 24-Dec-2021

Physical State: Liquid
Appearance: Clear Colorless, Light yellow
Odor: Strong Acrid
Odor Threshold: No information available
pH: < 1 C (0.1M)
Melting Point/Range: -41 °C / -41.8 °F
Boiling Point/Range: Not applicable
Flash Point: Not applicable
Evaporation Rate: No information available
Flammability (solid,gas): Not applicable
Flammability or explosive limits
Upper: No data available
Lower: No data available
Vapor Pressure: 0.94 kPa (20°C)
Vapor Density: No information available
Specific Gravity: 1.40
Solubility: miscible
Partition coefficient: n-octanol/water: No data available
Autoignition Temperature: No information available
Decomposition Temperature: No information available
Viscosity: No information available
Molecular Formula: HNO3
Molecular Weight: 63.01

10. Stability and reactivity

Reactive Hazard: Yes

Stability: Oxidizer. Contact with combustible/organic material may cause fire.

Conditions to Avoid: Incompatible products. Combustible material. Excess heat. Exposure to air or moisture over prolonged periods.

Incompatible Materials: Combustible material, Strong bases, Reducing Agent, Metals, Finely powdered metals, Organic materials, Aldehydes, Alcohols, Cyanides, Ammonia, Strong reducing agents

Hazardous Decomposition Products: Nitrogen oxides (NOx). Thermal decomposition can lead to release of irritating gases and vapors

Hazardous Polymerization: Hazardous polymerization does not occur.

Hazardous Reactions: None under normal processing

11. Toxicological information

Acute Toxicity:

Product Information
Oral LD50: Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg
Dermal LD50: Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg
Vapor LC50: Category 3, ATE = 5 mg/l, Category 4
Vapor LC50: Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

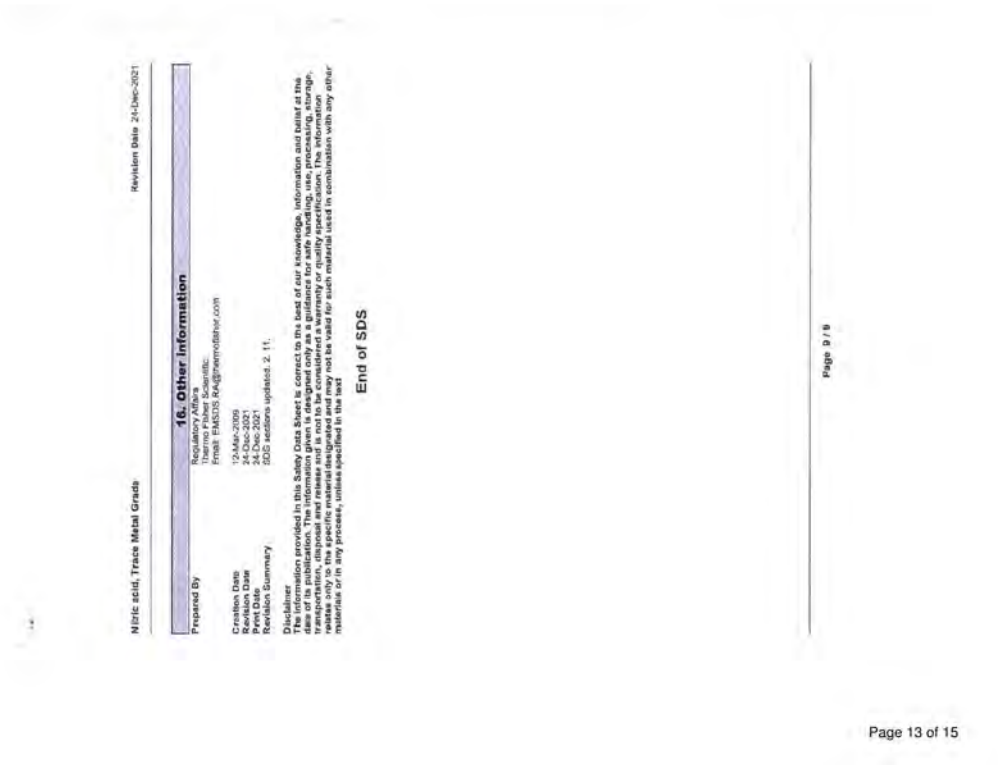
Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nitric acid - % (C ≥ 70 %)	Not listed	Not listed	LC50 = 2500 ppm (Rat) 1h
Water	No information available	-	-

Toxicologically Synergistic Products: No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure:

Account #: 2040 **Client:** Basin Electric Power Cooperative



Nitric acid, Trace Metal Grade Revision Date 24-Dec-2021

16. Other Information

Prepared By: Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date: 12-Mar-2009
Revision Date: 24-Dec-2021
Print Date: 24-Dec-2021
Revision Summary: SDS sections updated: 2, 11.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

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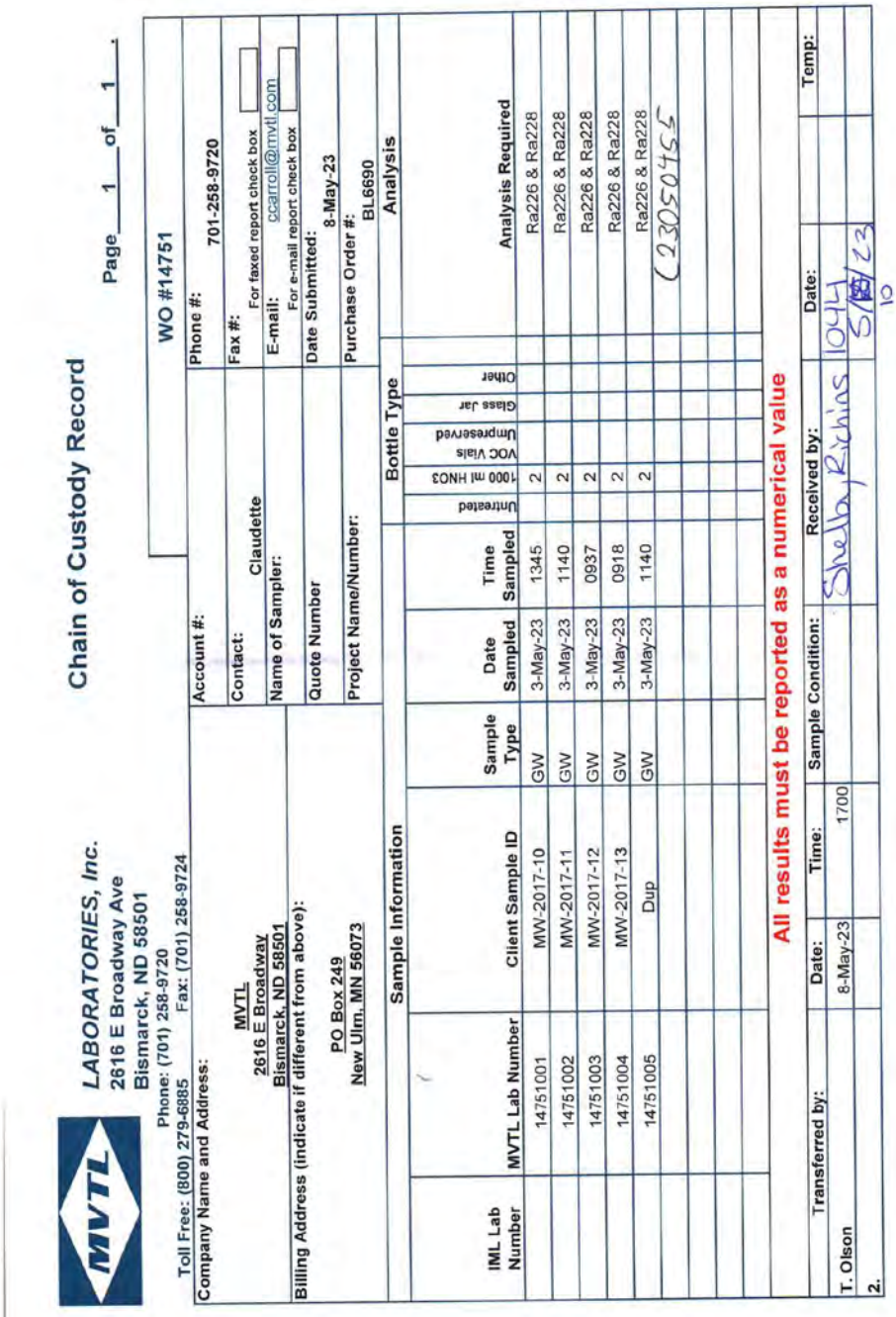

LABORATORIES, Inc.
2616 E Broadway Ave
Bismarck, ND 58501
Phone: (701) 258-9720
Toll Free: (800) 279-6885 Fax: (701) 258-9724

Chain of Custody Record

Page 1 of 1

WO #14751

Company Name and Address: MVTL, 2616 E Broadway, Bismarck, ND 58501

Billing Address (indicate if different from above): PO Box 249, New Ulm, MN 56073

Account #:
Contact: Claudette
Name of Sampler:
Quote Number
Project Name/Number:

Phone #: 701-258-9720
Fax #: For faxed report check box
E-mail: ccarroll@mvtl.com For e-mail report check box
Date Submitted: 8-May-23
Purchase Order #: BL6690

IML Lab Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Bottle Type: Unpreserved	1000 ml HNO3	VOC Vials	Unpreserved	Glass Jar	Other	Analysis Required
	14751001	MW-2017-10	GW	3-May-23	1345		2					Ra226 & Ra228
	14751002	MW-2017-11	GW	3-May-23	1140		2					Ra226 & Ra228
	14751003	MW-2017-12	GW	3-May-23	0937		2					Ra226 & Ra228
	14751004	MW-2017-13	GW	3-May-23	0918		2					Ra226 & Ra228
	14751005	Dup	GW	3-May-23	1140		2					Ra226 & Ra228

Sample Information

All results must be reported as a numerical value

Transferred by: Date: 8-May-23 Time: 1700 Sample Condition:
T. Olson
2.

Received by: Shelby Richins Date: 5/8/23 1044 Temp: 10

C23050455

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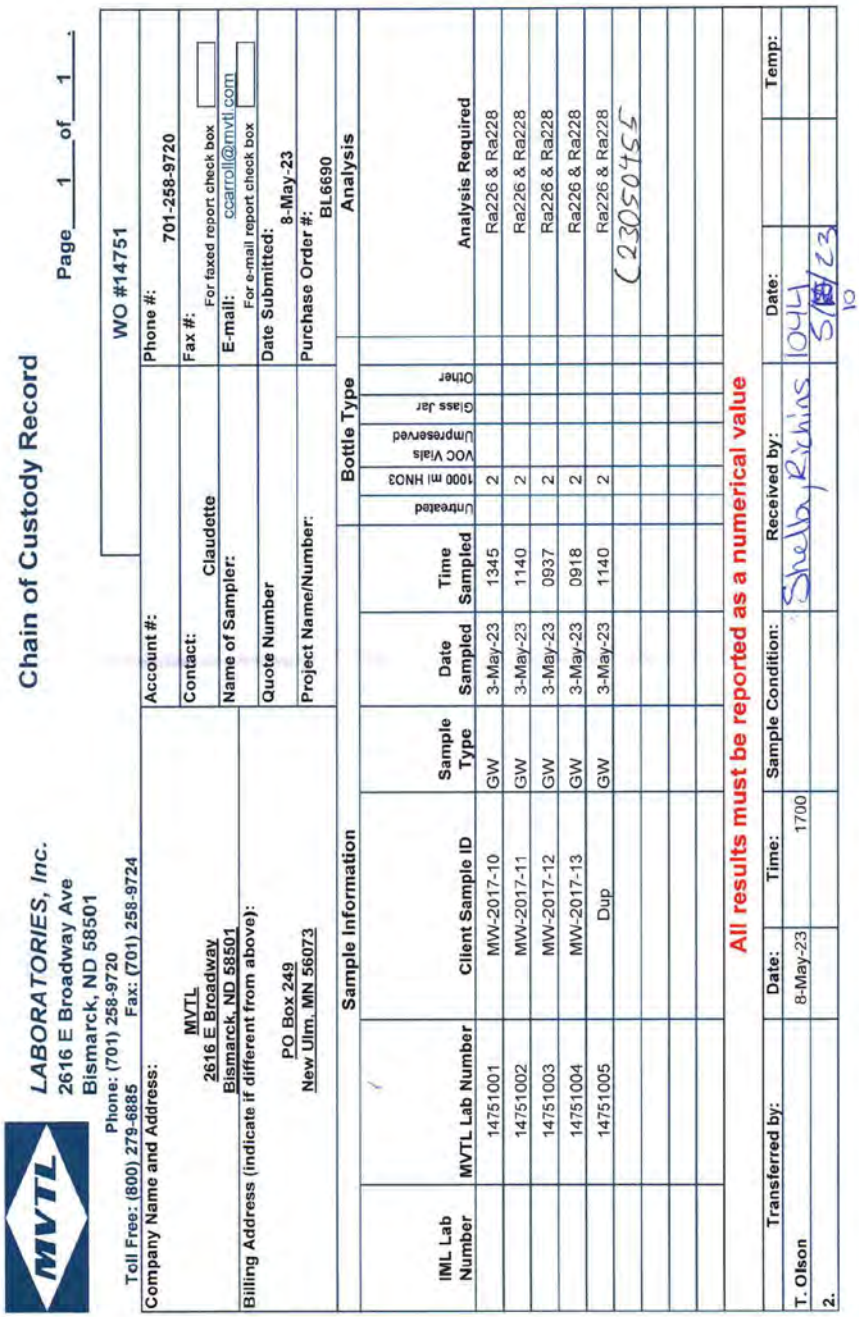
Account #: 2040 **Client:** Basin Electric Power Cooperative



LABORATORIES, Inc.
2616 E Broadway Ave
Bismarck, ND 58501
Phone: (701) 258-9720
Toll Free: (800) 279-6885 Fax: (701) 258-9724

Chain of Custody Record

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WO #14751

Company Name and Address: MVTL, 2616 E Broadway, Bismarck, ND 58501
Account #:
Contact: Claudette
Name of Sampler:
Billing Address (indicate if different from above): PO Box 249, New Ulm, MN 56073
Phone #: 701-258-9720
Fax #: For faxed report check box
E-mail: ccarroll@mvtl.com For e-mail report check box
Date Submitted: 8-May-23
Quote Number
Project Name/Number:
Purchase Order #: BL6690

IML Lab Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Bottle Type: Untreated	1000 ml HNO3	VOC Vials	Unpreserved	Glass Jar	Other	Analysis Required
	14751001	MW-2017-10	GW	3-May-23	1345		2					Ra226 & Ra228
	14751002	MW-2017-11	GW	3-May-23	1140		2					Ra226 & Ra228
	14751003	MW-2017-12	GW	3-May-23	0937		2					Ra226 & Ra228
	14751004	MW-2017-13	GW	3-May-23	0918		2					Ra226 & Ra228
	14751005	Dup	GW	3-May-23	1140		2					Ra226 & Ra228

Analysis

All results must be reported as a numerical value

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Temp:
T. Olson	8-May-23	1700		Shelby Rykins	5/8/23 1044	
2.						

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Account #: 2040 **Client:** Basin Electric Power Cooperative

ANALYTICAL SUMMARY REPORT

June 01, 2023

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C23050455 Quote ID: C15480
Project Name: 14751

Energy Laboratories, Inc. Casper WY received the following 5 samples for Minnesota Valley Testing Laboratories on 5/10/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23050455-001	14751001; MW-2017-10	05/03/23 13:45	05/10/23	Groundwater	Radium 226, Total Radium 228, Total
C23050455-002	14751002; MW-2017-11	05/03/23 11:40	05/10/23	Groundwater	Same As Above
C23050455-003	14751003; MW-2017-12	05/03/23 9:37	05/10/23	Groundwater	Same As Above
C23050455-004	14751004; MW-2017-13	05/03/23 9:18	05/10/23	Groundwater	Same As Above
C23050455-005	14751005; Dup	05/03/23 11:40	05/10/23	Groundwater	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Digitally signed by
Jeannie G. Gharib
Date: 2023.06.01 17:53:51 -06:00

MINNESOTA VALLEY TESTING LABORATORIES, INC.
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Account #: 2040 **Client:** Basin Electric Power Cooperative

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Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 14751
Lab ID: C23050455-001
Client Sample ID: 14751001; MW-2017-10

Report Date: 06/01/23
Collection Date: 05/03/23 13:45
DateReceived: 05/10/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	05/23/23 11:12 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 228	0.5	pCi/L	U			RA-05	05/18/23 13:08 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	05/18/23 13:08 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 14751
Lab ID: C23050455-002
Client Sample ID: 14751002; MW-2017-11

Report Date: 06/01/23
Collection Date: 05/03/23 11:40
DateReceived: 05/10/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	05/23/23 11:12 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 228	0.1	pCi/L	U			RA-05	05/18/23 13:08 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	05/18/23 13:08 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 14751
Lab ID: C23050455-003
Client Sample ID: 14751003; MW-2017-12

Report Date: 06/01/23
Collection Date: 05/03/23 09:37
DateReceived: 05/10/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.3	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 228	0.05	pCi/L	U			RA-05	05/18/23 13:08 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	05/18/23 13:08 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 14751
Lab ID: C23050455-004
Client Sample ID: 14751004; MW-2017-13

Report Date: 06/01/23
Collection Date: 05/03/23 09:18
DateReceived: 05/10/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	05/23/23 11:12 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 228	0.2	pCi/L	U			RA-05	05/18/23 13:08 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	05/18/23 13:08 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 14751
Lab ID: C23050455-005
Client Sample ID: 14751005; Dup

Report Date: 06/01/23
Collection Date: 05/03/23 11:40
DateReceived: 05/10/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	05/23/23 11:12 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 228	0.6	pCi/L	U			RA-05	05/18/23 13:08 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	05/18/23 13:08 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

Account #: 2040 **Client:** Basin Electric Power Cooperative

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories **Work Order:** C23050455 **Report Date:** 05/24/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-10894
Lab ID: LCS-RA226-10894	3	Laboratory Control Sample				Run: TENNELEC-3_230512B				05/23/23 11:12
Radium 226		11	pCi/L		114	70	130			
Radium 226 precision (±)		2.3	pCi/L							
Radium 226 MDC		0.22	pCi/L							
Lab ID: MB-RA226-10894	3	Method Blank				Run: TENNELEC-3_230512B				05/23/23 11:12
Radium 226		0.1	pCi/L							U
Radium 226 precision (±)		0.2	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23050423-001FDUP	3	Sample Duplicate				Run: TENNELEC-3_230512B				05/23/23 11:12
Radium 226		1.9	pCi/L					5.6	30	
Radium 226 precision (±)		0.48	pCi/L							
Radium 226 MDC		0.23	pCi/L							

- The RER result is 0.15.

Qualifiers:

RL - Analyte Reporting Limit
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories **Work Order:** C23050455 **Report Date:** 05/24/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-7094
Lab ID: LCS-228-RA226-10894	3	Laboratory Control Sample				Run: TENNELEC-3_230512A				05/18/23 13:08
Radium 228		5.7	pCi/L		81	70	130			
Radium 228 precision (±)		1.4	pCi/L							
Radium 228 MDC		1.2	pCi/L							
Lab ID: MB-RA226-10894	3	Method Blank				Run: TENNELEC-3_230512A				05/18/23 13:08
Radium 228		2	pCi/L							
Radium 228 precision (±)		0.8	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23050423-001FDUP	3	Sample Duplicate				Run: TENNELEC-3_230512A				05/18/23 13:08
Radium 228		2.2	pCi/L					11	30	
Radium 228 precision (±)		0.91	pCi/L							
Radium 228 MDC		1.3	pCi/L							

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories C23050455

Login completed by: Manford E. Hurley Date Received: 5/10/2023
Reviewed by: cjohnson Received by: slr
Reviewed Date: 5/15/2023 Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	12.0°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

None

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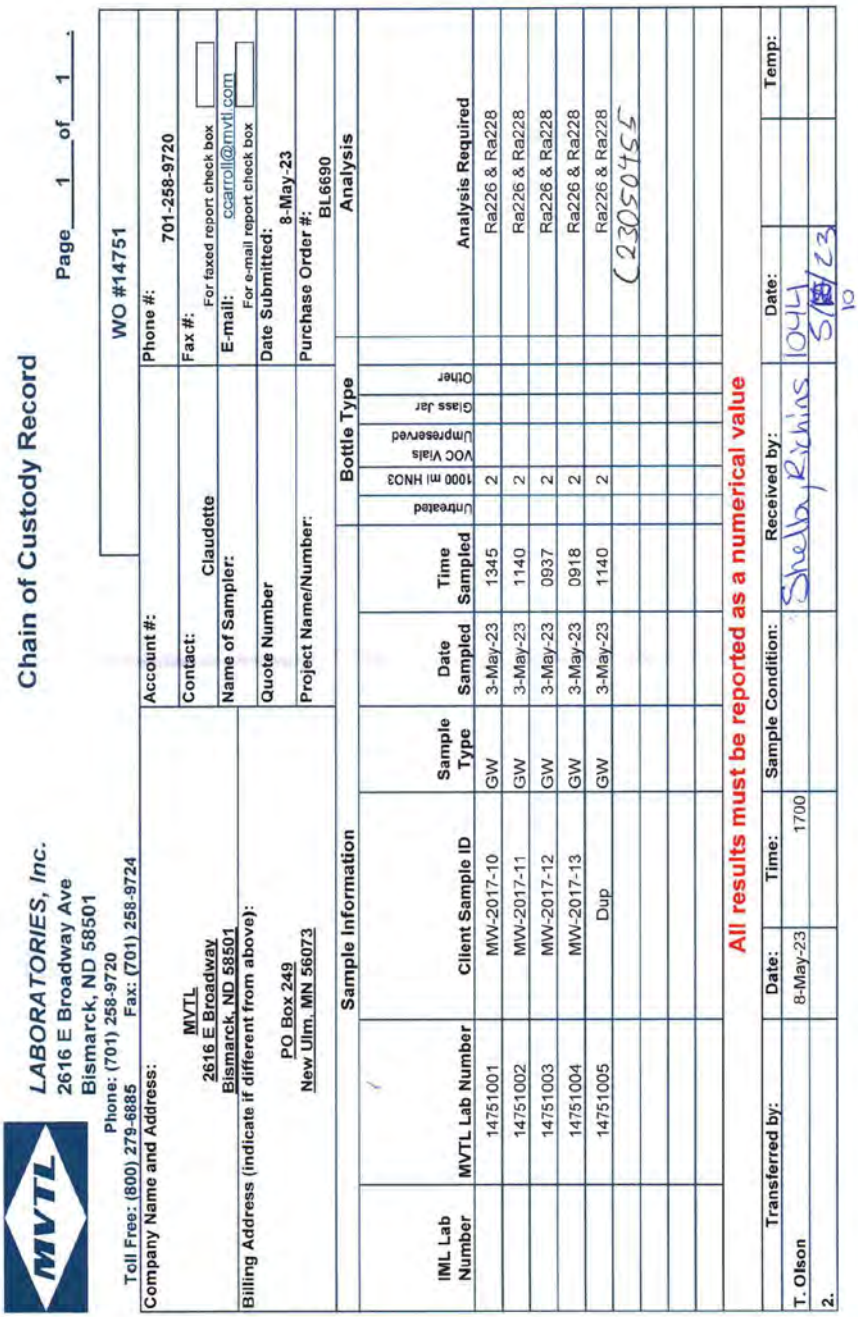

Chain of Custody Record

Page 1 of 1

WO #14751

LABORATORIES, Inc.
2616 E Broadway Ave
Bismarck, ND 58501
Phone: (701) 258-9720
Toll Free: (800) 279-6885 Fax: (701) 258-9724

Company Name and Address:
MVTL
2616 E Broadway
Bismarck, ND 58501

Billing Address (indicate if different from above):
PO Box 249
New Ulm, MN 56073

Account #:
Contact: Claudette
Name of Sampler:
Quote Number
Project Name/Number:

Phone #: 701-258-9720
Fax #: For faxed report check box
E-mail: ccarroll@mvtl.com For e-mail report check box
Date Submitted: 8-May-23
Purchase Order #: BL6690

IML Lab Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Bottle Type: Untreated	1000 ml HNO3	VOC Vials	Unpreserved	Glass Jar	Other	Analysis Required
	14751001	MW-2017-10	GW	3-May-23	1345		2					Ra226 & Ra228
	14751002	MW-2017-11	GW	3-May-23	1140		2					Ra226 & Ra228
	14751003	MW-2017-12	GW	3-May-23	0937		2					Ra226 & Ra228
	14751004	MW-2017-13	GW	3-May-23	0918		2					Ra226 & Ra228
	14751005	Dup	GW	3-May-23	1140		2					Ra226 & Ra228

Sample Information

All results must be reported as a numerical value

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Temp:
T. Olson	8-May-23	1700		Shelby Rykins	5/8/23 1044	
2.						

C23050455

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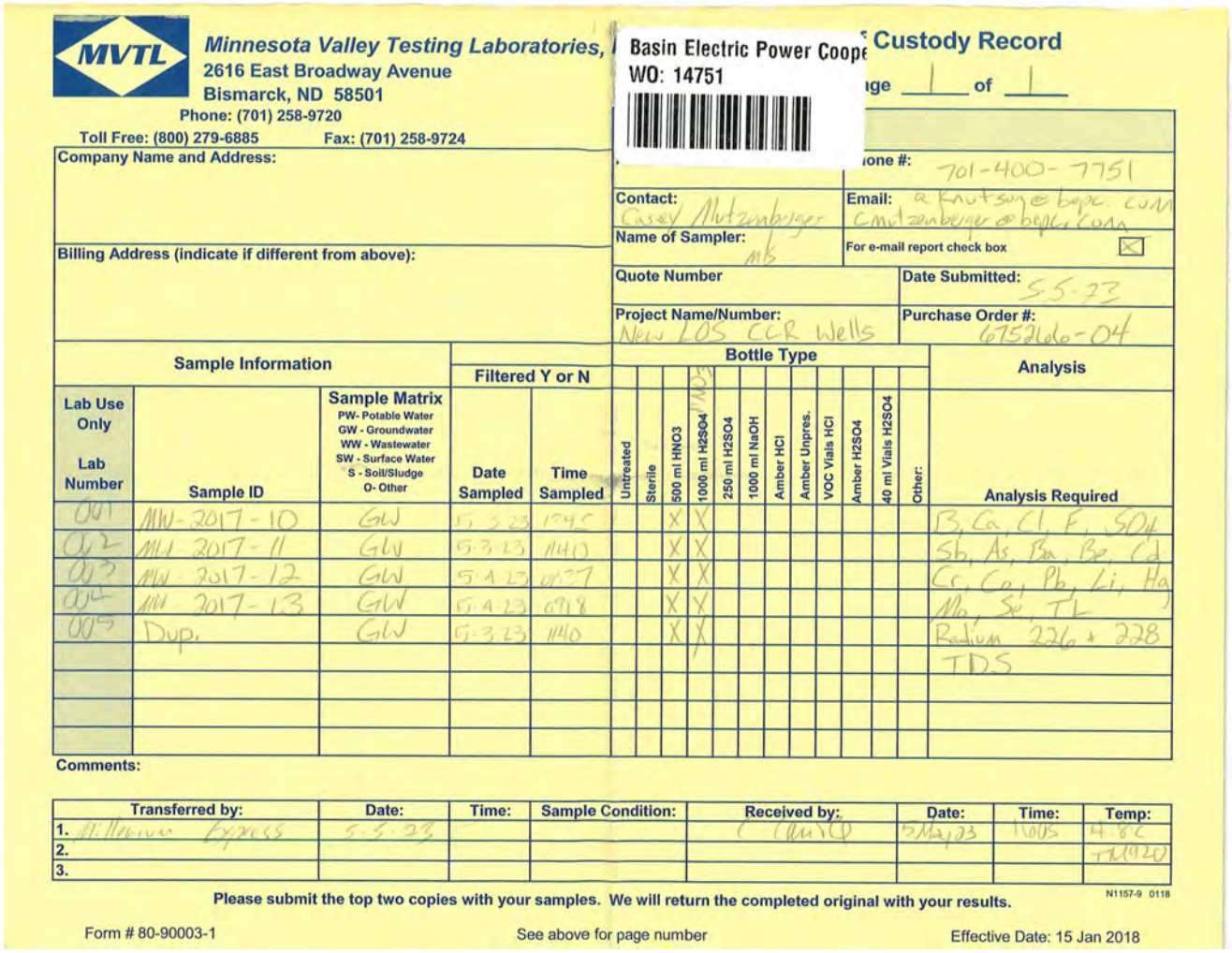
Member ACIL

Account #: 2040 **Client:** Basin Electric Power Cooperative



Minnesota Valley Testing Laboratories,
2616 East Broadway Avenue
Bismarck, ND 58501
Phone: (701) 258-9720
Toll Free: (800) 279-6885 Fax: (701) 258-9724

Basin Electric Power Coope
WO: 14751

Custody Record
Page 1 of 1

Company Name and Address:
Billing Address (indicate if different from above):
Phone #: 701-400-7751
Contact: Cassy Mutzenberger
Email: cmutzenberger@bepc.com
Name of Sampler: MK
For e-mail report check box ☒
Quote Number
Date Submitted: 5.5.23
Project Name/Number: New LOS CCR Wells
Purchase Order #: 6752606-04

Sample Information			Filtered Y or N		Bottle Type												Analysis
Lab Use Only Lab Number	Sample ID	Sample Matrix PW- Potable Water GW - Groundwater WW - Wastewater SW - Surface Water S - Soil/Sludge O- Other	Date Sampled	Time Sampled	Untreated	Sterile	500 ml HNO3	1000 ml H2SO4	250 ml H2SO4	1000 ml NaOH	Amber HCl	Amber Unpres.	VOC Vials HCl	Amber H2SO4	40 ml Vials H2SO4	Other:	Analysis Required
001	MW-2017-10	GW	5.3.23	1245			X	X									B, Ca, Cl, F, SO4
002	MW-2017-11	GW	5.3.23	1140			X	X									Sb, As, Ba, Be, Cd
003	MW-2017-12	GW	5.4.23	0827			X	X									Cr, Co, Pb, Li, Hg
004	MW-2017-13	GW	5.4.23	0918			X	X									Mo, Se, Tl
005	Dup.	GW	5.3.23	1140			X	X									Radium 226 + 228
																	TDS

Comments:

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Time:	Temp:
1. Millenium Express	5.5.23				5/8/23	1005	4.8C
2.							TR1920
3.							

Please submit the top two copies with your samples. We will return the completed original with your results.

N1157-9 0118

Form # 80-90003-1 See above for page number Effective Date: 15 Jan 2018

JUNE 6-7, 2023

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Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: LOS CCR Wells (17868) **PO:** 790708-04 LOS

Mark Dihle
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck, ND 58503

Certificate of Analysis

Approval

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

Analyses performed under Minnesota Department of Health Accreditation conforms to the current TNI standards.

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Workorder Summary

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868001 **Date Collected:** 06/06/2023 14:00 **Matrix:** Groundwater
Sample ID: MW-2017-10 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**265**	mg/L	5	1	06/13/2023 14:52	06/13/2023 14:52	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	06/15/2023 14:30	06/16/2023 09:52	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.95**	mg/L	0.1	1	06/08/2023 17:48	06/12/2023 12:57	MDE	
Calcium	**86.1**	mg/L	1	1	06/08/2023 17:48	06/12/2023 14:09	SLZ	
Lithium	<0.02	mg/L	0.02	1	06/08/2023 17:48	06/22/2023 10:27	SLZ	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	06/08/2023 17:48	06/15/2023 17:13	MDE	
Arsenic	**0.0029**	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:13	MDE	
Barium	**0.0796**	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:13	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:13	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:13	MDE	
Chromium	<0.002	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:13	MDE	
Cobalt	<0.002	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:13	MDE	
Lead	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:13	MDE	
Molybdenum	**0.0079**	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:13	MDE	
Selenium	<0.005	mg/L	0.005	5	06/08/2023 17:48	06/15/2023 17:13	MDE	
Thallium	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:13	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868001 **Date Collected:** 06/06/2023 14:00 **Matrix:** Groundwater
Sample ID: MW-2017-10 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**12.2**	mg/L	2.0	1	06/09/2023 15:32	06/09/2023 15:32	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.80**	mg/L	0.1	1	06/12/2023 13:04	06/12/2023 13:04	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**670**	mg/L	10	1	06/09/2023 09:41	06/09/2023 09:41	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868002 **Date Collected:** 06/06/2023 12:45 **Matrix:** Groundwater
Sample ID: MW-2017-11 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**175**	mg/L	25	5	06/13/2023 14:53	06/13/2023 14:53	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	06/15/2023 14:30	06/16/2023 09:52	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.23**	mg/L	0.1	1	06/08/2023 17:48	06/12/2023 13:02	MDE	
Calcium	**63.1**	mg/L	1	1	06/08/2023 17:48	06/12/2023 14:10	SLZ	
Lithium	**0.0319**	mg/L	0.02	1	06/08/2023 17:48	06/22/2023 10:29	SLZ	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	06/08/2023 17:48	06/15/2023 17:30	MDE	
Arsenic	**0.0088**	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:30	MDE	
Barium	**0.0458**	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:30	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:30	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:30	MDE	
Chromium	<0.002	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:30	MDE	
Cobalt	<0.002	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:30	MDE	
Lead	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:30	MDE	
Molybdenum	**0.0097**	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:30	MDE	
Selenium	<0.005	mg/L	0.005	5	06/08/2023 17:48	06/15/2023 17:30	MDE	
Thallium	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:30	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868002 **Date Collected:** 06/06/2023 12:45 **Matrix:** Groundwater
Sample ID: MW-2017-11 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**12.4**	mg/L	2.0	1	06/09/2023 15:33	06/09/2023 15:33	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.77**	mg/L	0.1	1	06/13/2023 11:50	06/13/2023 11:50	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**504**	mg/L	10	1	06/09/2023 09:41	06/09/2023 09:41	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868003 **Date Collected:** 06/07/2023 10:45 **Matrix:** Groundwater
Sample ID: MW-2016-12 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**35.2**	mg/L	25	5	06/13/2023 14:54	06/13/2023 14:54	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	06/15/2023 14:30	06/16/2023 09:52	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.23**	mg/L	0.1	1	06/08/2023 17:48	06/12/2023 13:04	MDE	
Calcium	**29.0**	mg/L	1	1	06/08/2023 17:48	06/12/2023 14:12	SLZ	
Lithium	<0.02	mg/L	0.02	1	06/08/2023 17:48	06/22/2023 10:29	SLZ	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	06/08/2023 17:48	06/15/2023 17:35	MDE	
Arsenic	<0.002	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:35	MDE	
Barium	**0.0538**	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:35	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:35	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:35	MDE	
Chromium	<0.002	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:35	MDE	
Cobalt	<0.002	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:35	MDE	
Lead	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:35	MDE	
Molybdenum	**0.0122**	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:35	MDE	
Selenium	<0.005	mg/L	0.005	5	06/08/2023 17:48	06/15/2023 17:35	MDE	
Thallium	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:35	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868003 **Date Collected:** 06/07/2023 10:45 **Matrix:** Groundwater
Sample ID: MW-2016-12 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**39.8**	mg/L	2.0	1	06/09/2023 15:34	06/09/2023 15:34	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.60**	mg/L	0.1	1	06/12/2023 13:10	06/12/2023 13:10	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**1380**	mg/L	10	1	06/09/2023 09:41	06/09/2023 09:41	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868004 **Date Collected:** 06/07/2023 10:30 **Matrix:** Groundwater
Sample ID: MW-2016-13 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**42.2**	mg/L	25	5	06/13/2023 15:12	06/13/2023 15:12	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	06/15/2023 14:30	06/16/2023 09:52	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.32**	mg/L	0.1	1	06/08/2023 17:48	06/12/2023 13:06	MDE	
Calcium	**22.2**	mg/L	1	1	06/08/2023 17:48	06/12/2023 14:17	SLZ	
Lithium	<0.02	mg/L	0.02	1	06/08/2023 17:48	06/22/2023 10:30	SLZ	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	06/08/2023 17:48	06/15/2023 17:39	MDE	
Arsenic	<0.002	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:39	MDE	
Barium	**0.0713**	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:39	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:39	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:39	MDE	
Chromium	<0.002	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:39	MDE	
Cobalt	<0.002	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:39	MDE	
Lead	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:39	MDE	
Molybdenum	**0.0490**	mg/L	0.002	5	06/08/2023 17:48	06/15/2023 17:39	MDE	
Selenium	<0.005	mg/L	0.005	5	06/08/2023 17:48	06/15/2023 17:39	MDE	
Thallium	<0.0005	mg/L	0.0005	5	06/08/2023 17:48	06/15/2023 17:39	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868004 **Date Collected:** 06/07/2023 10:30 **Matrix:** Groundwater
Sample ID: MW-2016-13 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**60.4**	mg/L	2.0	1	06/09/2023 15:35	06/09/2023 15:35	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.52**	mg/L	0.1	1	06/12/2023 13:16	06/12/2023 13:16	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**1540**	mg/L	10	1	06/09/2023 09:41	06/09/2023 09:41	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868005 **Date Collected:** 06/07/2023 08:45 **Matrix:** Groundwater
Sample ID: MW-2017-8D **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**489**	mg/L	25	5	06/13/2023 15:14	06/13/2023 15:14	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	06/15/2023 14:30	06/16/2023 09:52	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.65**	mg/L	0.1	1	06/09/2023 16:36	06/12/2023 16:03	MDE	
Calcium	**8.55**	mg/L	1	1	06/09/2023 16:36	06/15/2023 10:24	SLZ	
Lithium	**0.0612**	mg/L	0.02	1	06/09/2023 16:36	06/22/2023 10:32	SLZ	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	06/09/2023 16:36	06/16/2023 11:55	MDE	
Arsenic	<0.002	mg/L	0.002	5	06/09/2023 16:36	06/16/2023 11:55	MDE	
Barium	**0.0459**	mg/L	0.002	5	06/09/2023 16:36	06/16/2023 11:55	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	06/09/2023 16:36	06/20/2023 10:10	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	06/09/2023 16:36	06/16/2023 11:55	MDE	
Chromium	<0.002	mg/L	0.002	5	06/09/2023 16:36	06/16/2023 11:55	MDE	
Cobalt	<0.002	mg/L	0.002	5	06/09/2023 16:36	06/16/2023 11:55	MDE	
Lead	<0.0005	mg/L	0.0005	5	06/09/2023 16:36	06/16/2023 11:55	MDE	
Molybdenum	<0.002	mg/L	0.002	5	06/09/2023 16:36	06/16/2023 11:55	MDE	
Selenium	<0.005	mg/L	0.005	5	06/09/2023 16:36	06/16/2023 11:55	MDE	
Thallium	<0.0005	mg/L	0.0005	5	06/09/2023 16:36	06/16/2023 11:55	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868005 **Date Collected:** 06/07/2023 08:45 **Matrix:** Groundwater
Sample ID: MW-2017-8D **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**18.7**	mg/L	2.0	1	06/09/2023 15:36	06/09/2023 15:36	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.61**	mg/L	0.1	1	06/12/2023 13:22	06/12/2023 13:22	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**1930**	mg/L	10	1	06/09/2023 09:41	06/09/2023 09:41	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868006 **Date Collected:** 06/06/2023 14:00 **Matrix:** Groundwater
Sample ID: Dup MW-2017-10 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**353**	mg/L	25	5	06/13/2023 15:26	06/13/2023 15:26	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	06/15/2023 14:30	06/16/2023 09:52	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.97**	mg/L	0.1	1	06/09/2023 16:36	06/12/2023 16:04	MDE	
Calcium	**88.7**	mg/L	1	1	06/09/2023 16:36	06/15/2023 10:27	SLZ	
Lithium	<0.02	mg/L	0.02	1	06/09/2023 16:36	06/22/2023 10:33	SLZ	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	06/09/2023 16:36	06/16/2023 11:59	MDE	
Arsenic	**0.0031**	mg/L	0.002	5	06/09/2023 16:36	06/16/2023 11:59	MDE	
Barium	**0.0795**	mg/L	0.002	5	06/09/2023 16:36	06/16/2023 11:59	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	06/09/2023 16:36	06/20/2023 10:12	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	06/09/2023 16:36	06/16/2023 11:59	MDE	
Chromium	<0.002	mg/L	0.002	5	06/09/2023 16:36	06/16/2023 11:59	MDE	
Cobalt	<0.002	mg/L	0.002	5	06/09/2023 16:36	06/16/2023 11:59	MDE	
Lead	<0.0005	mg/L	0.0005	5	06/09/2023 16:36	06/16/2023 11:59	MDE	
Molybdenum	**0.0083**	mg/L	0.002	5	06/09/2023 16:36	06/16/2023 11:59	MDE	
Selenium	<0.005	mg/L	0.005	5	06/09/2023 16:36	06/16/2023 11:59	MDE	
Thallium	<0.0005	mg/L	0.0005	5	06/09/2023 16:36	06/16/2023 11:59	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868006 **Date Collected:** 06/06/2023 14:00 **Matrix:** Groundwater
Sample ID: Dup MW-2017-10 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**12.3**	mg/L	2.0	1	06/09/2023 15:38	06/09/2023 15:38	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.79**	mg/L	0.1	1	06/13/2023 12:09	06/13/2023 12:09	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**655**	mg/L	10	1	06/09/2023 09:41	06/09/2023 09:41	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868007 **Date Collected:** 06/07/2023 09:55 **Matrix:** Groundwater
Sample ID: MW-2017-8 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**1900**	mg/L	50	10	06/13/2023 15:27	06/13/2023 15:27	AMC	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.41**	mg/L	0.1	1	06/09/2023 16:36	06/12/2023 16:10	MDE	
Calcium	**132**	mg/L	5	5	06/09/2023 16:36	06/15/2023 10:27	SLZ	

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**27.2**	mg/L	2.0	1	06/09/2023 15:39	06/09/2023 15:39	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.37**	mg/L	0.1	1	06/13/2023 12:15	06/13/2023 12:15	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**3740**	mg/L	10	1	06/09/2023 09:41	06/09/2023 09:41	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868008 **Date Collected:** 06/07/2023 13:10 **Matrix:** Groundwater
Sample ID: MW-2017-7 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**344**	mg/L	25	5	06/13/2023 15:17	06/13/2023 15:17	AMC	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.87**	mg/L	0.1	1	06/09/2023 16:36	06/12/2023 16:12	MDE	
Calcium	**64.8**	mg/L	1	1	06/09/2023 16:36	06/15/2023 10:28	SLZ	

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**13.2**	mg/L	2.0	1	06/09/2023 15:45	06/09/2023 15:45	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**1.51**	mg/L	0.1	1	06/13/2023 12:21	06/13/2023 12:21	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**695**	mg/L	10	1	06/09/2023 09:41	06/09/2023 09:41	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17868009 **Date Collected:** 06/07/2023 14:25 **Matrix:** Groundwater
Sample ID: MW-2017-4 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**364**	mg/L	25	5	06/13/2023 15:37	06/13/2023 15:37	AMC	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.12**	mg/L	0.1	1	06/09/2023 16:36	06/12/2023 16:14	MDE	
Calcium	**134**	mg/L	1	1	06/09/2023 16:36	06/15/2023 10:29	SLZ	

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**13.2**	mg/L	2.0	1	06/09/2023 15:46	06/09/2023 15:46	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.78**	mg/L	0.1	1	06/13/2023 12:29	06/13/2023 12:29	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**774**	mg/L	10	1	06/09/2023 09:41	06/09/2023 09:41	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

QC Results Summary — WO #: 17868

Sulfate — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			100	100.0		85	115		
LFB			100	97.3		85	115		
LFB			100	97.4		85	115		
LFB			100	95.5		85	115		
LFB			100	107.0		85	115		
LFB			100	89.8		85	115		
LFB			100	97.9		85	115		
LFB			100	107.0		85	115		
LFB			100	114.0		85	115		
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MS/MSD	17714005		100	83.3	82.5	85	115	0.9	20
MS/MSD	17846004		100	84.2	85.0	85	115	0.7	20
MS/MSD	17846014		2000	87.4	92.1	85	115	2.4	20
MS/MSD	17846024		1000	87.9	84.7	85	115	1.8	20
MS/MSD	17846034		100	96.2	96.0	85	115	0.0	20
MS/MSD	17868003		500	109.3	110.5	85	115	0.9	20
MS/MSD	17876004		100	111.8	112.4	85	115	0.7	20
MS/MSD	18044001		1000	81.0	81.7	85	115	0.5	20

Chloride — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			80	95.9		90	110		

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Chloride Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			30	95.6		90	110		
LFB			30	96.1		90	110		
LFB			30	95.1		90	110		
LFB			30	95.9		90	110		
LFB			30	90.6		90	110		
LFB			30	95.0		90	110		
LFB			30	95.4		90	110		
LFB			30	95.4		90	110		
LFB			30	95.6		90	110		
LFB			30	95.1		90	110		
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MS/MSD	17448005		30	137.1	138.3	80	120	0.0	20
MS/MSD	17710004		60	134.8	134.5	80	120	0.0	20
MS/MSD	17846019		30	114.4	114.4	80	120	0.0	20
MS/MSD	17846019		30	117.0	116.5	80	120	0.2	20
MS/MSD	17874001		30	134.0	133.4	80	120	0.0	20

Calcium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MI			100	108.0		85	115		
LFB-MI			100	108.6		85	115		

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Calcium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MI			100	112.0		85	115		
LFB-MI			100	105.0		85	115		
MB		<1							
MB		<1							
MB		<1							
MB		<1							
DUP	17714002							6.3	20
DUP	17719001							1.8	20
DUP	17846029							0.9	20
DUP	17852001							1.0	20
DUP	17868002							0.9	20
DUP	17868005							0.0	20
DUP	17878003							2.8	20

Lithium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-OE			0.4	109.0		85	115		
LFB-OE			0.4	108.0		85	115		
MB		<0.04							
MB		<0.04							
MS/MSD	17868001		0.4	99.0	103.0	70	130	3.6	20
MS/MSD	17868006		0.4	102.0	101.0	70	130	1.2	20

Calcium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
PDS/PDSD	17268002		100	103.0	106.0	75	125	2.1	20
PDS/PDSD	17268007		100	103.0	103.0	75	125	0.3	20
PDS/PDSD	17448005		500	97.3	103.0	75	125	3.1	20
PDS/PDSD	17714005		100	98.1	108.0	75	125	5.4	20
PDS/PDSD	17714006		100	107.0	106.0	75	125	0.5	20
PDS/PDSD	17846012		500	105.0	108.0	75	125	1.3	20
PDS/PDSD	17876004		100	108.0	106.0	75	125	1.0	20
PDS/PDSD	17876006		100	97.4	99.7	75	125	1.1	20

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Calcium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
PDS/PDSD	18218007		100	106.0	107.0	75	125	0.9	20
PDS/PDSD	18304005		100	99.5	101.0	75	125	0.8	20
PDS/PDSD	18304016		100	102.0	108.0	75	125	3.8	20
PDS/PDSD	18304023		100	96.3	92.7	75	125	1.7	20

Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	103.0		85	115		
MB		<0.001							
MS/MSD	17717002		0.4	102.0	99.6	70	130	2.2	20
MS/MSD	17908002		0.4	107.0	107.0	70	130	0.5	20

Arsenic Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	97.1		85	115		
MB		<0.005							
MS/MSD	17717002		0.4	101.0	99.2	70	130	1.8	20
MS/MSD	17908002		0.4	101.0	103.0	70	130	1.7	20

Barium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	101.0		85	115		
MB		<0.002							
MS/MSD	17717002		0.4	98.7	96.8	70	130	1.9	20
MS/MSD	17908002		0.4	95.2	95.0	70	130	0.0	20

Beryllium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	94.5		85	115		
MB		<0.0005							
MS/MSD	17717002		0.4	102.0	105.0	70	130	2.7	20
MS/MSD	17908002		0.4	115.0	112.0	70	130	3.6	20

Cadmium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	106.0		85	115		
MB		<0.0005							
MS/MSD	17717002		0.4	97.6	98.3	70	130	0.8	20

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Cadmium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	17908002		0.4	98.3	98.4	70	130	0.0	20

Chromium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	106.0		85	115		
MB		<0.002							
MS/MSD	17717002		0.4	101.0	101.0	70	130	0.0	20
MS/MSD	17908002		0.4	95.5	95.1	70	130	0.0	20

Cobalt Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	105.0		85	115		
MB		<0.002							
MS/MSD	17717002		0.4	98.9	98.4	70	130	0.5	20
MS/MSD	17908002		0.4	105.0	106.0	70	130	0.7	20

Lead Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	101.0		85	115		
MB		<0.0005							
MS/MSD	17717002		0.4	97.9	97.5	70	130	0.5	20
MS/MSD	17908002		0.4	98.3	98.2	70	130	0.3	20

Molybdenum Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	107.0		85	115		
MB		<0.002							
MS/MSD	17717002		0.4	101.0	100.0	70	130	1.0	20
MS/MSD	17908002		0.4	106.0	107.0	70	130	0.6	20

Selenium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	96.3		85	115		
MB		<0.01							
MS/MSD	17717002		0.4	107.0	102.0	70	130	4.1	20
MS/MSD	17908002		0.4	100.0	100.0	70	130	0.3	20

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	95.5		85	115		
MB		<0.0005							
MS/MSD	17717002		0.4	96.3	95.2	70	130	1.0	20
MS/MSD	17908002		0.4	93.4	93.0	70	130	0.5	20

Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	17717007		0.1	104.0		75	125		
SPK/SPKD	17717003		0.8	111.0	105.0	75	125	5.7	20
SPK	17908002		0.1	106.0		75	125		

Arsenic Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	17717002		0.1	101.0		75	125		
SPK/SPKD	17717003		0.8	101.0	100.0	75	125	0.9	20
SPK	17908002		0.1	101.0		75	125		

Barium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	17717002		0.1	97.6		75	125		
SPK/SPKD	17717003		0.8	91.3	92.5	75	125	1.1	20
SPK	17908002		0.1	91.0		75	125		

Beryllium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	17717002		0.1	98.8		75	125		
SPK/SPKD	17717003		0.8	120.0	112.0	75	125	6.7	20
SPK	17908002		0.1	114.0		75	125		

Cadmium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	17717002		0.1	97.8		75	125		
SPK/SPKD	17717003		0.8	96.0	102.0	75	125	6.5	20
SPK	17908002		0.1	84.1		75	125		

Chromium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	17717002		0.1	101.0		75	125		
SPK/SPKD	17717003		0.8	107.0	103.0	75	125	2.2	20

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Chromium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	17908002		0.1	57.1		75	125		

Cobalt Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	17717002		0.1	98.9		75	125		
SPK/SPKD	17717003		0.8	105.0	104.0	75	125	0.6	20
SPK	17908002		0.1	104.0		75	125		

Lead Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	17717002		0.1	96.8		75	125		
SPK/SPKD	17717003		0.8	96.6	103.0	75	125	6.1	20
SPK	17908002		0.1	89.5		75	125		

Molybdenum Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	17717002		0.1	106.0		75	125		
SPK/SPKD	17717003		0.8	101.0	98.6	75	125	2.2	20
SPK	17908003		0.1	102.0		75	125		

Selenium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	17717002		0.1	97.3		75	125		
SPK/SPKD	17717003		0.8	96.1	101.0	75	125	4.9	20
SPK	17908002		0.1	87.3		75	125		

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	17717002		0.1	92.2		75	125		
SPK/SPKD	17717003		0.8	91.4	97.3	75	125	6.7	20
SPK	17908002		0.1	85.1		75	125		

Boron Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-OE			0.4	97.3		85	115		
LFB-OE			0.4	96.3		85	115		
LFB-OE			0.4	98.6		85	115		
LFB-OE			0.4	102.0		85	115		
MB		<0.1							

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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
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Account #: 2040 **Client:** Basin Electric Power Cooperative

Boron Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.1							
MB		<0.1							
MB		<0.1							
MS/MSD	17846001		0.4	87.5	85.8	75	125	0.5	20
MS/MSD	17846005		0.4	96.3	97.4	75	125	0.5	20
MS/MSD	17846028		0.4	89.7	86.5	75	125	2.0	20
MS/MSD	17861001		0.4	109.0	76.0	75	125	4.9	20
MS/MSD	17868001		0.4	95.0	102.0	75	125	2.2	20
MS/MSD	17868006		0.4	99.6	99.6	75	125	0.0	20

Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	99.5		80	120		
LFB-MS			0.1	102.0		80	120		
LFB-MS			0.1	104.0		80	120		
MB		<0.001							
MB		<0.001							
MB		<0.001							
MS/MSD	17714001		0.4	99.4	98.5	75	125	1.0	20
MS/MSD	17846028		0.4	104.0	103.0	75	125	0.5	20
MS/MSD	17861001		0.4	107.0	104.0	75	125	2.4	20
MS/MSD	17868001		0.4	102.0	104.0	75	125	2.2	20
MS/MSD	17868006		0.4	106.0	103.0	75	125	2.4	20

Arsenic Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	100.0		80	120		
LFB-MS			0.1	101.0		80	120		
LFB-MS			0.1	97.2		80	120		
MB		<0.002							
MB		<0.002							
MB		<0.002							
MS/MSD	17714001		0.4	100.0	99.6	75	125	0.7	20

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Arsenic — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	17846026		0.4	97.0	101.0	75	125	4.2	20
MS/MSD	17861001		0.4	103.0	104.0	75	125	0.5	20
MS/MSD	17868001		0.4	98.8	100.0	75	125	1.3	20
MS/MSD	17868006		0.4	97.9	98.7	75	125	0.8	20

Barium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	97.9		80	120		
LFB-MS			0.1	101.0		80	120		
LFB-MS			0.1	99.2		80	120		
MB		<0.002							
MB		<0.002							
MB		<0.002							
MS/MSD	17714001		0.4	97.0	96.2	75	125	0.5	20
MS/MSD	17846023		0.4	97.6	97.3	75	125	0.2	20
MS/MSD	17861001		0.4	101.0	97.2	75	125	3.1	20
MS/MSD	17868001		0.4	97.5	98.4	75	125	0.6	20
MS/MSD	17868006		0.4	95.6	93.1	75	125	2.2	20

Beryllium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	97.7		80	120		
LFB-MS			0.1	105.0		80	120		
LFB-MS			0.1	108.0		80	120		
MB		<0.0005							
MB		<0.0005							
MB		<0.0005							
MS/MSD	17714001		0.4	102.0	97.7	75	125	4.0	20
MS/MSD	17846028		0.4	102.0	103.0	75	125	1.5	20
MS/MSD	17861001		0.4	107.0	104.0	75	125	3.1	20
MS/MSD	17868001		0.4	106.0	108.0	75	125	1.8	20
MS/MSD	17868006		0.4	98.0	99.7	75	125	1.8	20

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Cadmium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	104.0		80	120		
LFB-MS			0.1	98.8		80	120		
LFB-MS			0.1	101.0		80	120		
MB		<0.0005							
MB		<0.0005							
MB		<0.0005							
MS/MSD	17714001		0.4	103.0	96.8	75	125	6.0	20
MS/MSD	17846028		0.4	101.0	102.0	75	125	0.5	20
MS/MSD	17861001		0.4	102.0	98.6	75	125	3.5	20
MS/MSD	17868001		0.4	99.2	97.0	75	125	1.3	20
MS/MSD	17868006		0.4	102.0	102.0	75	125	0.2	20

Chromium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	105.0		80	120		
LFB-MS			0.1	104.0		80	120		
LFB-MS			0.1	102.0		80	120		
MB		<0.002							
MB		<0.002							
MB		<0.002							
MS/MSD	17714001		0.4	103.0	98.3	75	125	5.0	20
MS/MSD	17846028		0.4	103.0	105.0	75	125	2.1	20
MS/MSD	17861001		0.4	106.0	101.0	75	125	5.1	20
MS/MSD	17868001		0.4	101.0	102.0	75	125	0.5	20
MS/MSD	17868006		0.4	103.0	103.0	75	125	0.0	20

Cobalt Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	101.0		80	120		
LFB-MS			0.1	104.0		80	120		
LFB-MS			0.1	105.0		80	120		
MB		<0.002							
MB		<0.002							

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Cobalt — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.002							
MS/MSD	17714001		0.4	101.0	97.2	75	125	3.3	20
MS/MSD	17846028		0.4	100.0	102.0	75	125	2.2	20
MS/MSD	17861001		0.4	103.0	98.6	75	125	4.7	20
MS/MSD	17868001		0.4	98.7	101.0	75	125	2.0	20
MS/MSD	17868006		0.4	103.0	101.0	75	125	1.7	20

Lead — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	95.9		80	120		
LFB-MS			0.1	99.7		80	120		
LFB-MS			0.1	99.8		80	120		
MB		<0.0005							
MB		<0.0005							
MB		<0.0005							
MS/MSD	17714001		0.4	97.1	96.8	75	125	0.3	20
MS/MSD	17846028		0.4	98.2	96.5	75	125	1.8	20
MS/MSD	17861001		0.4	98.8	97.6	75	125	1.1	20
MS/MSD	17868001		0.4	98.7	99.8	75	125	1.0	20
MS/MSD	17868006		0.4	105.0	104.0	75	125	0.7	20

Molybdenum — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	106.0		80	120		
LFB-MS			0.1	109.0		80	120		
LFB-MS			0.1	104.0		80	120		
MB		<0.002							
MB		<0.002							
MB		<0.002							
MS/MSD	17714001		0.4	100.0	97.8	75	125	2.5	20
MS/MSD	17846028		0.4	108.0	108.0	75	125	0.5	20
MS/MSD	17861001		0.4	105.0	104.0	75	125	1.8	20
MS/MSD	17868001		0.4	101.0	102.0	75	125	1.0	20

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Molybdenum Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	17868006		0.4	99.6	98.4	75	125	1.2	20

Selenium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	104.0		80	120		
LFB-MS			0.1	104.0		80	120		
LFB-MS			0.1	97.9		80	120		
MB		<0.005							
MB		<0.005							
MB		<0.005							
MS/MSD	17714001		0.4	105.0	108.0	75	125	3.1	20
MS/MSD	17846028		0.4	89.9	92.3	75	125	2.5	20
MS/MSD	17861001		0.4	108.0	106.0	75	125	2.3	20
MS/MSD	17868001		0.4	106.0	108.0	75	125	2.8	20
MS/MSD	17868006		0.4	108.0	100.0	75	125	6.7	20

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	97.6		80	120		
LFB-MS			0.1	93.0		80	120		
LFB-MS			0.1	97.1		80	120		
MB		<0.0005							
MB		<0.0005							
MB		<0.0005							
MS/MSD	17714001		0.4	95.4	94.9	75	125	0.8	20
MS/MSD	17846028		0.4	96.0	94.4	75	125	1.6	20
MS/MSD	17861001		0.4	96.0	94.4	75	125	1.6	20
MS/MSD	17868001		0.4	96.4	97.7	75	125	1.6	20
MS/MSD	17868006		0.4	100.0	99.3	75	125	0.8	20

Mercury Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			0.002	103.0		85	115		
MB		<0.0002							

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Mercury Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	17868006		0.002	96.0	97.0	70	130	0.0	20

Fluoride Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			3.39	103.0		83.8	111		
CRM-F			3.39	98.8		83.8	111		
LFB-F			0.5	100.0		90	110		
LFB-F			0.5	100.0		90	110		
LFB-F			0.5	104.0		90	110		
LFB-F			0.5	100.0		90	110		
LFB-F			0.5	100.0		90	110		
LFB-F			0.5	102.0		90	110		
MB-F		<0.1							
MB-F		<0.1							
MB-F		<0.1							
MB-F		<0.1							
MB-F		<0.1							
MB-F		<0.1							
MS/MSD-F	17946011		10	94.0	102.0	80	120	1.8	20
MS/MSD-F	17868002		0.5	94.0	98.0	80	120	1.8	20
MS/MSD-F	18057002		2.5	92.0	86.0	80	120	2.0	20

Total Dissolved Solids Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			736	103.0		90.35	110.33		
CRM			736	101.0		90.35	110.33		
MB		<10							
MB		<10							
DUP	17448005							0.1	20
DUP	17894001							0.0	20

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2616 East Broadway Avenue
Bismarck, ND 58501
Phone: (701) 258-9720

Basin Electric Power Coop
WO: 17868

Custody Record

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BASIN ELECTRIC POWER COOP.
Leland Olds Station
3901 HIGHWAY 200A
STANTON, ND 58571

Billing Address (indicate if different from above):

Account #:
Phone #: 745-7238 557-5488
Contact: Aaron Knutson, Mark Dihle
Email: aknutson@bepc.com mdihle@bepc.com
Name of Sampler: MS
For e-mail report check box ☒
Quote Number
Date Submitted: 6-8-23
Project Name/Number: LOS CCR Wells
Purchase Order #: 675266-04

Sample Information					Filtered Y or N	Bottle Type												Analysis
Lab Use Only Lab Number	Sample ID	Sample Matrix PW- Potable Water GW - Groundwater WW - Wastewater SW - Surface Water S - Soil/Sludge O- Other	Date Sampled	Time Sampled		Untreated	Sterile	500 ml HNO3	1000 ml H2SO4	250 ml H2SO4	1000 ml Hach HNO3	Amber HCl	Amber Unpres.	VOC Vials HCl	Amber H2SO4	40 ml Vials H2SO4	Other:	Analysis Required
001	MW-2017-10	GW	6-6-23	1400				X			X							B, Ca, Cl, F, SO4
002	MW-2017-11		6-6-23	1245							X							Sb, As, Ba, Be, Cd
003	MW-2016-12		6-7-23	1045							X							Cr, Co, Pb, Li, Hg
004	MW-2016-13		6-7-23	1030							X							Mo, Se, TL, Radium
005	MW-2017-8D		6-7-23	0845							X							226 + 228
006	Dup.		6-6-23	1400							X							↓
007	MW-2017-8		6-7-23	0955														B, Ca, Cl, F, SO4
008	MW-2017-7		6-7-23	1310														
009	MW-2017-4	↓	6-7-23	1425				↓										↓

TDS

Comments:

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Time:	Temp:
1. Millennium Express	6-8-23				8 Jun 23	1538	TM 305 3.2°C
2.							
3.						8 Jun 23	

Please submit the top two copies with your samples. We will return the completed original with your results.

N1157-9 0118

Form # 80-90003-1 See above for page number Effective Date: 15 Jan 2018

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Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: LOS CCR Wells (17869) **PO:** 790708-04 LOS

Mark Dihle
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck, ND 58503

Certificate of Analysis

Approval

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

Analyses performed under Minnesota Department of Health Accreditation conforms to the current TNI standards.

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016 SD SDWA

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Workorder Summary

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17869001 **Date Collected:** 06/06/2023 14:00 **Matrix:** Groundwater
Sample ID: MW-2017-10 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	07/20/2023 15:55	07/20/2023 15:55	SUBv	
Radium 228	See Attached			1	07/20/2023 15:55	07/20/2023 15:55	SUBv	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17869002 **Date Collected:** 06/06/2023 12:45 **Matrix:** Groundwater
Sample ID: MW-2017-11 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	07/20/2023 15:55	07/20/2023 15:55	SUBv	
Radium 228	See Attached			1	07/20/2023 15:55	07/20/2023 15:55	SUBv	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17869003 **Date Collected:** 06/07/2023 10:45 **Matrix:** Groundwater
Sample ID: MW-2016-12 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	07/20/2023 15:55	07/20/2023 15:55	SUBv	
Radium 228	See Attached			1	07/20/2023 15:55	07/20/2023 15:55	SUBv	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17869004 **Date Collected:** 06/07/2023 10:30 **Matrix:** Groundwater
Sample ID: MW-2016-13 **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	07/20/2023 15:55	07/20/2023 15:55	SUBv	
Radium 228	See Attached			1	07/20/2023 15:55	07/20/2023 15:55	SUBv	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17869005 **Date Collected:** 06/07/2023 08:45 **Matrix:** Groundwater
Sample ID: MW-2017-8D **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	07/20/2023 15:55	07/20/2023 15:55	SUBv	
Radium 228	See Attached			1	07/20/2023 15:55	07/20/2023 15:55	SUBv	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 17869006 **Date Collected:** 06/06/2023 14:00 **Matrix:** Groundwater
Sample ID: Dup **Date Received:** 06/08/2023 15:38 **Collector:** Client

Temp @ Receipt (C): 3.2

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	07/20/2023 15:55	07/20/2023 15:55	SUBv	
Radium 228	See Attached			1	07/20/2023 15:55	07/20/2023 15:55	SUBv	

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ANALYTICAL SUMMARY REPORT

July 19, 2023

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C23060624 Quote ID: C15480
Project Name: 17869

Energy Laboratories, Inc. Casper WY received the following 6 samples for Minnesota Valley Testing Laboratories on 6/15/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23060624-001	17869001; MW-2017-10	06/06/23 14:00	06/15/23	Groundwater	Radium 226, Total Radium 228, Total
C23060624-002	17869002; MW-2017-11	06/06/23 12:45	06/15/23	Groundwater	Same As Above
C23060624-003	17869003; MW-2016-12	06/06/23 10:45	06/15/23	Groundwater	Same As Above
C23060624-004	17869004; MW-2016-13	06/06/23 10:30	06/15/23	Groundwater	Same As Above
C23060624-005	17869005; MW-2017-8D	06/06/23 8:45	06/15/23	Groundwater	Same As Above
C23060624-006	17869006; Dup	06/06/23 14:00	06/15/23	Groundwater	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Page 1 of 11

Account #: 2040 **Client:** Basin Electric Power Cooperative

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 17869
Lab ID: C23060624-001
Client Sample ID: 17869001; MW-2017-10

Report Date: 07/19/23
Collection Date: 06/06/23 14:00
DateReceived: 06/15/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.1	pCi/L	U			E903.0	07/11/23 13:22 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	07/11/23 13:22 / kdk
Radium 226 MDC	0.3	pCi/L				E903.0	07/11/23 13:22 / kdk
Radium 228	0.6	pCi/L	U			RA-05	07/06/23 15:28 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	07/06/23 15:28 / trs
Radium 228 MDC	1.2	pCi/L				RA-05	07/06/23 15:28 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 17869
Lab ID: C23060624-002
Client Sample ID: 17869002; MW-2017-11

Report Date: 07/19/23
Collection Date: 06/06/23 12:45
DateReceived: 06/15/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	-0.1	pCi/L	U			E903.0	07/11/23 13:22 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	07/11/23 13:22 / kdk
Radium 226 MDC	0.3	pCi/L				E903.0	07/11/23 13:22 / kdk
Radium 228	0.3	pCi/L	U			RA-05	07/06/23 15:28 / trs
Radium 228 precision (±)	0.7	pCi/L				RA-05	07/06/23 15:28 / trs
Radium 228 MDC	1.2	pCi/L				RA-05	07/06/23 15:28 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

Account #: 2040 **Client:** Basin Electric Power Cooperative

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 17869
Lab ID: C23060624-003
Client Sample ID: 17869003; MW-2016-12

Report Date: 07/19/23
Collection Date: 06/06/23 10:45
DateReceived: 06/15/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.07	pCi/L	U			E903.0	07/11/23 13:22 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	07/11/23 13:22 / kdk
Radium 226 MDC	0.3	pCi/L				E903.0	07/11/23 13:22 / kdk
Radium 228	-0.6	pCi/L	U			RA-05	07/06/23 15:28 / trs
Radium 228 precision (±)	0.7	pCi/L				RA-05	07/06/23 15:28 / trs
Radium 228 MDC	1.2	pCi/L				RA-05	07/06/23 15:28 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 17869
Lab ID: C23060624-004
Client Sample ID: 17869004; MW-2016-13

Report Date: 07/19/23
Collection Date: 06/06/23 10:30
DateReceived: 06/15/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.03	pCi/L	U			E903.0	07/11/23 13:22 / kdk
Radium 226 precision (±)	0.1	pCi/L				E903.0	07/11/23 13:22 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	07/11/23 13:22 / kdk
Radium 228	0.04	pCi/L	U			RA-05	07/06/23 15:28 / trs
Radium 228 precision (±)	0.7	pCi/L				RA-05	07/06/23 15:28 / trs
Radium 228 MDC	1.1	pCi/L				RA-05	07/06/23 15:28 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 17869
Lab ID: C23060624-005
Client Sample ID: 17869005; MW-2017-8D

Report Date: 07/19/23
Collection Date: 06/06/23 08:45
DateReceived: 06/15/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	07/11/23 15:01 / kdk
Radium 226 precision (±)	0.1	pCi/L				E903.0	07/11/23 15:01 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	07/11/23 15:01 / kdk
Radium 228	0.3	pCi/L	U			RA-05	07/06/23 15:28 / trs
Radium 228 precision (±)	0.7	pCi/L				RA-05	07/06/23 15:28 / trs
Radium 228 MDC	1.1	pCi/L				RA-05	07/06/23 15:28 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 17869
Lab ID: C23060624-006
Client Sample ID: 17869006; Dup

Report Date: 07/19/23
Collection Date: 06/06/23 14:00
DateReceived: 06/15/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	07/11/23 15:01 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	07/11/23 15:01 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	07/11/23 15:01 / kdk
Radium 228	0.9	pCi/L	U			RA-05	07/14/23 17:17 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	07/14/23 17:17 / trs
Radium 228 MDC	1.4	pCi/L				RA-05	07/14/23 17:17 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories **Work Order:** C23060624 **Report Date:** 07/18/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-10942
Lab ID: LCS-RA226-10942	3	Laboratory Control Sample				Run: G542M-2_230621A				07/11/23 11:43
Radium 226		9.9	pCi/L		99	70	130			
Radium 226 precision (±)		1.9	pCi/L							
Radium 226 MDC		0.24	pCi/L							
Lab ID: MB-RA226-10942	3	Method Blank				Run: G542M-2_230621A				07/11/23 11:43
Radium 226		-0.1	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23060533-004EDUP	3	Sample Duplicate				Run: G542M-2_230621A				07/11/23 11:43
Radium 226		1.7	pCi/L					7.9	30	
Radium 226 precision (±)		0.40	pCi/L							
Radium 226 MDC		0.25	pCi/L							

- The RER result is 0.4.

Qualifiers:

RL - Analyte Reporting Limit
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories **Work Order:** C23060624 **Report Date:** 07/18/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-7147
Lab ID: LCS-228-RA226-10962	3	Laboratory Control Sample				Run: TENNELEC-3_230711A				07/14/23 16:47
Radium 228		7.4	pCi/L		108	70	130			
Radium 228 precision (±)		1.6	pCi/L							
Radium 228 MDC		1.2	pCi/L							
Lab ID: MB-RA226-10962	3	Method Blank				Run: TENNELEC-3_230711A				07/14/23 16:47
Radium 228		-0.7	pCi/L							U
Radium 228 precision (±)		0.9	pCi/L							
Radium 228 MDC		2	pCi/L							
Lab ID: C23060522-011DDUP	3	Sample Duplicate				Run: TENNELEC-3_230711A				07/14/23 16:47
Radium 228		1.0	pCi/L					180	30	UR
Radium 228 precision (±)		1.3	pCi/L							
Radium 228 MDC		2.2	pCi/L							
- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.57.										
Lab ID: C23060938-002ADUP	3	Sample Duplicate				Run: TENNELEC-3_230711A				07/14/23 16:47
Radium 228		0.089	pCi/L					1700	30	UR
Radium 228 precision (±)		0.70	pCi/L							
Radium 228 MDC		1.2	pCi/L							
- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.20.										
Method: RA-05										Batch: RA228-7129
Lab ID: LCS-228-RA226-10942	3	Laboratory Control Sample				Run: TENNELEC-4_230621A				07/06/23 13:52
Radium 228		7.3	pCi/L		106	70	130			
Radium 228 precision (±)		1.7	pCi/L							
Radium 228 MDC		0.97	pCi/L							
Lab ID: MB-RA226-10942	3	Method Blank				Run: TENNELEC-4_230621A				07/06/23 13:52
Radium 228		-0.5	pCi/L							U
Radium 228 precision (±)		0.5	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23060533-004EDUP	3	Sample Duplicate				Run: TENNELEC-4_230621A				07/06/23 13:52
Radium 228		7.9	pCi/L					8.2	30	
Radium 228 precision (±)		1.6	pCi/L							
Radium 228 MDC		0.93	pCi/L							
- The RER result is 0.28.										

Qualifiers:

RL - Analyte Reporting Limit
R - Relative Percent Difference (RPD) exceeds advisory limit
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories C23060624

Login completed by: Hannah R. Johnson Date Received: 6/15/2023
Reviewed by: cjohnson Received by: gah
Reviewed Date: 6/19/2023 Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	19.8°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

None

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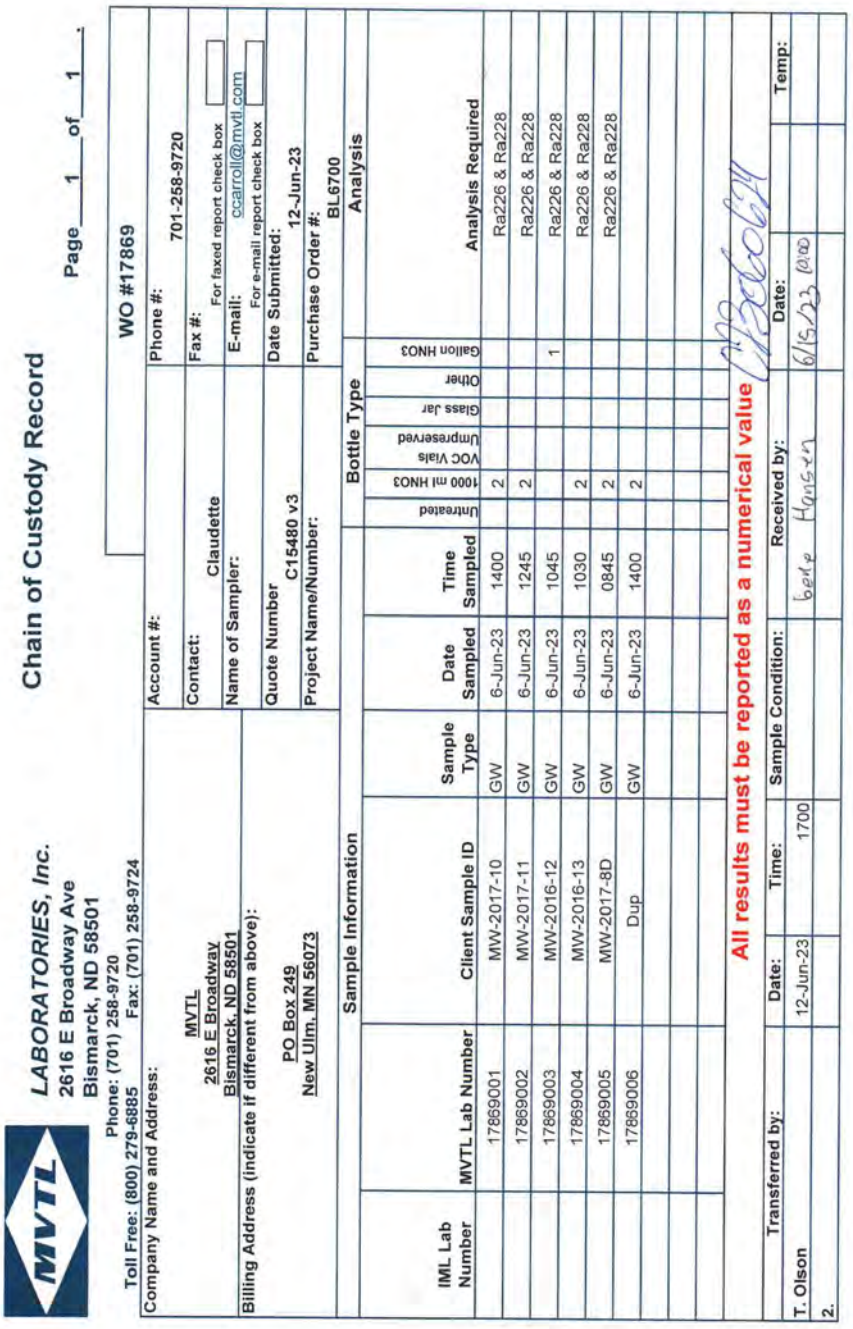
Account #: 2040 **Client:** Basin Electric Power Cooperative



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Chain of Custody Record

WO #17869

Page 1 of 1

Company Name and Address: MVTL, 2616 E Broadway, Bismarck, ND 58501
Account #:
Phone #: 701-258-9720
Contact: Claudette
Fax #: For faxed report check box
Name of Sampler:
E-mail: ccarroll@mvtl.com For e-mail report check box
Billing Address (indicate if different from above): PO Box 249, New Ulm, MN 56073
Quote Number C15480 v3
Date Submitted: 12-Jun-23
Project Name/Number:
Purchase Order #: BL6700

IML Lab Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Bottle Type: Untreated	1000 ml HNO3	VOC Vials Unpreserved	Glass Jar	Other	Gallon HNO3	Analysis: Analysis Required
	17869001	MW-2017-10	GW	6-Jun-23	1400		2					Ra226 & Ra228
	17869002	MW-2017-11	GW	6-Jun-23	1245		2					Ra226 & Ra228
	17869003	MW-2016-12	GW	6-Jun-23	1045						1	Ra226 & Ra228
	17869004	MW-2016-13	GW	6-Jun-23	1030		2					Ra226 & Ra228
	17869005	MW-2017-8D	GW	6-Jun-23	0845		2					Ra226 & Ra228
	17869006	Dup	GW	6-Jun-23	1400		2					

All results must be reported as a numerical value

Transferred by: Date: 12-Jun-23 Time: 1700 Sample Condition:
Received by: Date: 6/15/23 Temp:
1. T. Olson
2.

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Account #: 2040 **Client:** Basin Electric Power Cooperative

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Basin Electric Power Coop
WO: 17869

Custody Record
Page 1 of 1

Company Name and Address:

Billing Address (indicate if different from above):

Account #:
Phone #: 745-7238 557-5488
Contact: Aaron Knutson, Mark Dihle
Email: aknutson@bepc.com mdihle@bepc.com
Name of Sampler: MS
For e-mail report check box ☒
Quote Number
Date Submitted: 6-8-23
Project Name/Number: LOS CCR Wells
Purchase Order #: 675266-04

Sample Information			Filtered Y or N		Bottle Type											Analysis
Lab Use Only Lab Number	Sample ID	Sample Matrix PW- Potable Water GW - Groundwater WW - Wastewater SW - Surface Water S - Soil/Sludge O- Other	Date Sampled	Time Sampled	Untreated	Sterile	500 ml HNO3	1000 ml H2SO4	250 ml H2SO4	1000 ml NaOH HNO3	Amber HCl	Amber Unpres.	VOC Vials HCl	Amber H2SO4	40 ml Vials H2SO4	Other:	Analysis Required
001	MW-2017-10	GW	6-6-23	1400			X			X							B, Ca, Cl, F, SO4
002	MW-2017-11		6-6-23	1245						X							Sb, As, Ba, Be, Cd
003	MW-2016-12		6-7-23	1045						X							Cr, Co, Pb, Li, Hg
004	MW-2016-13		6-7-23	1030						X							Mo, Se, Tl, Radium
005	MW-2017-8D		6-7-23	0845						X							226 + 228
006	DUP.		6-6-23	1400						X							
	MW-2017-8		6-7-23	0955													B, Ca, Cl, F, SO4
	MW-2017-7		6-7-23	1310													
	MW-2017-4		6-7-23	1425													

TDS

Comments:

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Time:	Temp:
1. Millennium Express	6-8-23				8 Jun 23	1538	5.2
2.							
3.							

Please submit the top two copies with your samples. We will return the completed original with your results.

N1157-9 0118

Form # 80-90003-1 See above for page number Effective Date: 15 Jan 2018

JUNE 26-27, 2023

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Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: LOS CCR Wells (19625) **PO:** 790708-04

Mark Dihle
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck, ND 58503

Certificate of Analysis

Approval

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

Analyses performed under Minnesota Department of Health Accreditation conforms to the current TNI standards.

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Workorder Summary

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19625001 **Date Collected:** 06/26/2023 14:06 **Matrix:** Groundwater
Sample ID: LOS POND MW-2017-10 **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**328**	mg/L	25	5	07/07/2023 10:31	07/07/2023 10:31	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	07/07/2023 12:05	07/10/2023 11:20	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.97**	mg/L	0.1	1	06/29/2023 16:48	07/06/2023 10:37	SLZ	
Calcium	**90.8**	mg/L	1	1	06/29/2023 16:48	07/10/2023 12:26	SLZ	
Lithium	<0.02	mg/L	0.02	1	06/29/2023 16:48	07/05/2023 16:18	SLZ	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	06/29/2023 16:48	07/06/2023 16:31	MDE	
Arsenic	**0.0032**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:31	MDE	
Barium	**0.0837**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:31	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/07/2023 10:33	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 16:31	MDE	
Chromium	<0.002	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:31	MDE	
Cobalt	<0.002	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:31	MDE	
Lead	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 16:31	MDE	
Molybdenum	**0.0085**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:31	MDE	
Selenium	<0.005	mg/L	0.005	5	06/29/2023 16:48	07/06/2023 16:31	MDE	
Thallium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 16:31	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19625001 **Date Collected:** 06/26/2023 14:06 **Matrix:** Groundwater
Sample ID: LOS POND MW-2017-10 **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**11.7**	mg/L	2.0	1	07/06/2023 09:53	07/06/2023 09:53	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.77**	mg/L	0.1	1	06/30/2023 18:53	06/30/2023 18:53	AMC	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**682**	mg/L	10	1	07/05/2023 16:55	07/05/2023 16:55	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19625002 **Date Collected:** 06/26/2023 12:11 **Matrix:** Groundwater
Sample ID: LOS POND MW-2017-11 **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**219**	mg/L	25	5	07/07/2023 10:32	07/07/2023 10:32	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	07/07/2023 12:05	07/10/2023 11:20	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.30**	mg/L	0.1	1	06/29/2023 16:48	07/06/2023 10:40	SLZ	
Calcium	**68.3**	mg/L	1	1	06/29/2023 16:48	07/10/2023 12:26	SLZ	
Lithium	**0.0323**	mg/L	0.02	1	06/29/2023 16:48	07/05/2023 16:23	SLZ	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	06/29/2023 16:48	07/06/2023 16:49	MDE	
Arsenic	**0.0100**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:49	MDE	
Barium	**0.0493**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:49	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/07/2023 10:44	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 16:49	MDE	
Chromium	<0.002	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:49	MDE	
Cobalt	<0.002	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:49	MDE	
Lead	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 16:49	MDE	
Molybdenum	**0.0100**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:49	MDE	
Selenium	<0.005	mg/L	0.005	5	06/29/2023 16:48	07/06/2023 16:49	MDE	
Thallium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 16:49	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19625002 **Date Collected:** 06/26/2023 12:11 **Matrix:** Groundwater
Sample ID: LOS POND MW-2017-11 **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**11.7**	mg/L	2.0	1	07/06/2023 09:54	07/06/2023 09:54	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.70**	mg/L	0.1	1	06/30/2023 19:10	06/30/2023 19:10	AMC	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**571**	mg/L	10	1	07/05/2023 16:55	07/05/2023 16:55	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19625003 **Date Collected:** 06/26/2023 12:11 **Matrix:** Groundwater
Sample ID: Dup **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**223**	mg/L	25	5	07/07/2023 10:33	07/07/2023 10:33	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	07/07/2023 12:05	07/10/2023 11:20	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.31**	mg/L	0.1	1	06/29/2023 16:48	07/06/2023 10:40	SLZ	
Calcium	**68.8**	mg/L	1	1	06/29/2023 16:48	07/10/2023 12:27	SLZ	
Lithium	**0.0324**	mg/L	0.02	1	06/29/2023 16:48	07/05/2023 16:24	SLZ	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	06/29/2023 16:48	07/06/2023 16:53	MDE	
Arsenic	**0.0100**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:53	MDE	
Barium	**0.0490**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:53	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/07/2023 10:46	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 16:53	MDE	
Chromium	<0.002	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:53	MDE	
Cobalt	<0.002	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:53	MDE	
Lead	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 16:53	MDE	
Molybdenum	**0.0108**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:53	MDE	
Selenium	<0.005	mg/L	0.005	5	06/29/2023 16:48	07/06/2023 16:53	MDE	
Thallium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 16:53	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19625003 **Date Collected:** 06/26/2023 12:11 **Matrix:** Groundwater
Sample ID: Dup **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**11.9**	mg/L	2.0	1	07/06/2023 09:56	07/06/2023 09:56	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.71**	mg/L	0.1	1	06/30/2023 19:16	06/30/2023 19:16	AMC	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**583**	mg/L	10	1	07/05/2023 16:55	07/05/2023 16:55	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19625004 **Date Collected:** 06/26/2023 08:40 **Matrix:** Groundwater
Sample ID: LOS LANDFILL MW2016-12 **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**41.4**	mg/L	5	1	07/07/2023 10:55	07/07/2023 10:55	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	07/07/2023 12:05	07/10/2023 11:20	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.23**	mg/L	0.1	1	06/29/2023 16:48	07/06/2023 10:41	SLZ	
Calcium	**23.6**	mg/L	1	1	06/29/2023 16:48	07/10/2023 12:28	SLZ	
Lithium	<0.02	mg/L	0.02	1	06/29/2023 16:48	07/05/2023 16:25	SLZ	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	06/29/2023 16:48	07/06/2023 16:58	MDE	
Arsenic	<0.002	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:58	MDE	
Barium	**0.0476**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:58	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/07/2023 10:49	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 16:58	MDE	
Chromium	<0.002	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:58	MDE	
Cobalt	<0.002	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:58	MDE	
Lead	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 16:58	MDE	
Molybdenum	**0.0105**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 16:58	MDE	
Selenium	<0.005	mg/L	0.005	5	06/29/2023 16:48	07/06/2023 16:58	MDE	
Thallium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 16:58	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19625004 **Date Collected:** 06/26/2023 08:40 **Matrix:** Groundwater
Sample ID: LOS LANDFILL MW2016-12 **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**38.9**	mg/L	2.0	1	07/06/2023 10:04	07/06/2023 10:04	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.60**	mg/L	0.1	1	06/30/2023 19:22	06/30/2023 19:22	AMC	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**1360**	mg/L	10	1	07/05/2023 16:55	07/05/2023 16:55	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19625005 **Date Collected:** 06/26/2023 07:50 **Matrix:** Groundwater
Sample ID: LOS LANDFILL MW-2016-13 **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**45.7**	mg/L	5	1	07/07/2023 10:56	07/07/2023 10:56	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	07/07/2023 12:05	07/10/2023 11:20	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.33**	mg/L	0.1	1	06/29/2023 16:48	07/06/2023 10:42	SLZ	
Calcium	**23.6**	mg/L	1	1	06/29/2023 16:48	07/10/2023 12:29	SLZ	
Lithium	<0.02	mg/L	0.02	1	06/29/2023 16:48	07/05/2023 16:27	SLZ	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	06/29/2023 16:48	07/06/2023 17:02	MDE	
Arsenic	**0.0021**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 17:02	MDE	
Barium	**0.0588**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 17:02	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/07/2023 10:52	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 17:02	MDE	
Chromium	<0.002	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 17:02	MDE	
Cobalt	<0.002	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 17:02	MDE	
Lead	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 17:02	MDE	
Molybdenum	**0.0545**	mg/L	0.002	5	06/29/2023 16:48	07/06/2023 17:02	MDE	
Selenium	<0.005	mg/L	0.005	5	06/29/2023 16:48	07/06/2023 17:02	MDE	
Thallium	<0.0005	mg/L	0.0005	5	06/29/2023 16:48	07/06/2023 17:02	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19625005 **Date Collected:** 06/26/2023 07:50 **Matrix:** Groundwater
Sample ID: LOS LANDFILL MW-2016-13 **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**59.6**	mg/L	2.0	1	07/06/2023 10:05	07/06/2023 10:05	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.50**	mg/L	0.1	1	06/30/2023 19:30	06/30/2023 19:30	AMC	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**1500**	mg/L	10	1	07/05/2023 16:55	07/05/2023 16:55	RAA	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

QC Results Summary — WO #: 19625

Sulfate — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			100	101.0		85	115		
LFB			100	105.0		85	115		
LFB			100	107.0		85	115		
LFB			100	101.0		85	115		
LFB			100	94.5		85	115		
LFB			100	98.2		85	115		
LFB			100	94.6		85	115		
LFB			100	100.0		85	115		
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MS/MSD	19619001		1000	88.0	88.3	85	115	0.0	20
MS/MSD	19625002		500	108.2	107.1	85	115	0.7	20
MS/MSD	19772001		500	111.6	110.6	85	115	0.7	20
MS/MSD	19801002		500	62.1	70.4	85	115	5.6	20
MS/MSD	19801012		1000	85.9	88.9	85	115	1.3	20
MS/MSD	19922005		500	84.4	88.0	85	115	2.5	20
MS/MSD	20040001		500	60.5	66.3	85	115	4.2	20

Chloride — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			90	93.8		90	110		
LFB			90	93.3		90	110		
LFB			90	92.7		90	110		
LFB			90	92.7		90	110		

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Chloride				Units: mg/L					
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			30	93.5		90	110		
LFB			30	92.9		90	110		
LFB			30	92.6		90	110		
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MS/MSD	19619001		30	114.4	115.2	80	120	0.3	20
MS/MSD	19772006		30	94.0	94.1	80	120	0.0	20
MS/MSD	19926001		30	118.0	123.3	80	120	0.7	20

Boron				Units: mg/L					
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-OE			0.4	101.0		85	115		
MB		<0.1							
MS/MSD	19625001		0.4	103.0	112.0	70	130	2.9	20

Calcium				Units: mg/L					
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MI			100	110.0		85	115		
MB		<1							
DUP	19628001							1.0	20

Lithium				Units: mg/L					
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-OE			0.4	106.0		85	115		
MB		<0.04							
MS/MSD	19625001		0.4	101.0	101.0	70	130	0.3	20

Boron				Units: mg/L					
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
PDS/PDSD	19111012		0.4	91.6	91.2	75	125	0.2	20

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Calcium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
PDS/PDSD	17146005		100	105.0	105.0	75	125	0.2	20
PDS/PDSD	19772001		100	95.9	97.6	75	125	0.7	20
PDS/PDSD	19807001		100	106.0	105.0	75	125	0.3	20
PDS/PDSD	19922006		100	97.9	97.5	75	125	0.2	20
PDS/PDSD	19922008		100	108.0	108.0	75	125	0.0	20

Antimony — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	19637001		0.4	103.0	107.0	70	130	1.5	20

Arsenic — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	19637001		0.4	103.0	101.0	70	130	1.7	20

Barium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	19637001		0.4	98.8	98.1	70	130	0.7	20

Beryllium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	19637001		0.4	101.0	98.5	70	130	2.3	20

Cadmium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	19637001		0.4	102.0	103.0	70	130	1.2	20

Chromium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	19637001		0.4	103.0	102.0	70	130	0.7	20

Cobalt — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	19637001		0.4	103.0	102.0	70	130	1.0	20

Lead — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	19637001		0.4	97.9	97.1	70	130	1.0	20

Molybdenum — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	19637001		0.4	108.0	110.0	70	130	1.6	20

Selenium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	19637001		0.4	104.0	96.5	70	130	7.1	20

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Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	19637001		0.4	95.3	94.2	70	130	1.1	20

Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	19637001		0.1	107.0		75	125		

Arsenic Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	19637001		0.1	104.0		75	125		

Barium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	19637001		0.1	100.0		75	125		

Beryllium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	19637001		0.1	114.0		75	125		

Cadmium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	19637001		0.1	98.9		75	125		

Chromium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	19637001		0.1	104.0		75	125		

Cobalt Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	19637001		0.1	105.0		75	125		

Lead Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	19637001		0.1	96.1		75	125		

Molybdenum Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	19637001		0.1	112.0		75	125		

Selenium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	19637001		0.1	98.2		75	125		

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	19637001		0.1	93.0		75	125		

Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	103.0		80	120		

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Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.001							
MS/MSD	19625001		0.4	101.0	103.0	75	125	1.7	20

Arsenic Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	101.0		80	120		
MB		<0.002							
MS/MSD	19625001		0.4	104.0	101.0	75	125	3.4	20

Barium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	100.0		80	120		
MB		<0.002							
MS/MSD	19625001		0.4	100.0	99.5	75	125	0.4	20

Beryllium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	99.0		80	120		
MB		<0.0005							
MS/MSD	19625001		0.4	99.8	98.4	75	125	1.3	20

Cadmium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	107.0		80	120		
MB		<0.0005							
MS/MSD	19625001		0.4	102.0	102.0	75	125	0.5	20

Chromium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	108.0		80	120		
MB		<0.002							
MS/MSD	19625001		0.4	103.0	101.0	75	125	1.0	20

Cobalt Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	110.0		80	120		
MB		<0.001							
MS/MSD	19625001		0.4	102.0	101.0	75	125	0.5	20

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Lead Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	104.0		80	120		
MB		<0.0005							
MS/MSD	19825001		0.4	102.0	102.0	75	125	0.5	20

Molybdenum Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	112.0		80	120		
MB		<0.002							
MS/MSD	19825001		0.4	104.0	105.0	75	125	1.1	20

Selenium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	95.7		80	120		
MB		<0.005							
MS/MSD	19825001		0.4	101.0	103.0	75	125	2.5	20

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	99.4		80	120		
MB		<0.0005							
MS/MSD	19825001		0.4	98.1	99.0	75	125	1.0	20

Mercury Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			0.002	87.8		85	115		
MB		<0.0002							
MS/MSD	19227001		0.002	95.6	87.8	70	130	5.4	20
MS/MSD	19825004		0.002	87.2	89.1	70	130	5.7	20
MS/MSD	19922001		0.002	90.8	92.0	70	130	0.0	20
MS/MSD	19922012		0.002	91.0	91.8	70	130	5.4	20
MS/MSD	20030001		0.002	91.6	90.6	70	130	0.0	20

Fluoride Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			1.39	97.3		88.8	111		
LFB-F			0.5	98.0		90	110		
LFB-F			0.5	98.0		90	110		
LFB-F			0.5	96.0		90	110		

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Fluoride Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB-F		<0.1							
MB-F		<0.1							
MB-F		<0.1							
MS/MSD-F	19625001		0.5	102.0	104.0	80	120	0.8	20
MS/MSD-F	19770001		0.5	102.0	104.0	80	120	1.2	20

Total Dissolved Solids Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			736	98.0		90.35	110.33		
MB		<10							
DUP	19224001							0.0	20
DUP	19625005							0.0	20

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Account #: 2040 **Client:** Basin Electric Power Cooperative

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Basin Electric Power Coope
WO: 19625

Chain of Custody

Page 1 of 1

Work Order #
Lab Use Only

Company Name and Address Basin Electric Power Coop. Leland Olds Station 3901 Highway 200A Stanton, ND 58571	Account # 2040	Phone # 701-745-7238 701-557-5488
	Contact Mark Dihle	Emails mdihle@bepc.com aknutson@bepc.com
	Name of Sampler mls	jermey.hurshman@aecom.com jason.lach@aecom.com
Billing Address (indicate if different from above)	Quote Number	Date Submitted 6/28/2023
	Project Name/Number LOS CCR Wells	Purchase Order # 675266-04

Lab Use Only Lab	Sample ID	Sample Matrix GW - Groundwater	Date Sampled	Time Sampled	Bottles	Y/N	Analysis Required
001	LOS POND MW-2017-10	GW	6/26/2023	1406	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
002	LOS POND MW-2017-11	GW	6/26/2023	1211	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
003	Dup	GW	6/26/2023	1211	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
004	LOS LANDFILL MW2016-12	GW	6/27/2023	840	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
005	LOS LANDFILL MW-2016-13	GW	6/27/2023	750	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
MILLENNIUM EXPRESS				28 Jun 23	1624	5.1°C	Y / N	TM920
2.							Y / N	

Please submit the top copy with your samples. We will return the completed original with your results.

Form # 80-910005-1 See above for page number Effective Date: 26 Aug 2022

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Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: LOS CCR Wells (19634) **PO:** 790708-04 LOS

Mark Dihle
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck, ND 58503

Certificate of Analysis

Approval

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

Analyses performed under Minnesota Department of Health Accreditation conforms to the current TNI standards.

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016 SD SDWA

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

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2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
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Account #: 2040 **Client:** Basin Electric Power Cooperative

Workorder Summary

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19634001 **Date Collected:** 06/26/2023 14:06 **Matrix:** Groundwater
Sample ID: LOS Pond MW-2017-10 **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	08/07/2023 08:04	08/07/2023 08:04	SUBv	
Radium 228	See Attached			1	08/07/2023 08:05	08/07/2023 08:05	SUBv	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19634002 **Date Collected:** 06/26/2023 12:11 **Matrix:** Groundwater
Sample ID: LOS Pond MW-2017-11 **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	08/07/2023 08:05	08/07/2023 08:05	SUBv	
Radium 228	See Attached			1	08/07/2023 08:05	08/07/2023 08:05	SUBv	

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www.MVTL.com

Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19634003 **Date Collected:** 06/26/2023 12:11 **Matrix:** Groundwater
Sample ID: Dup **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	08/07/2023 08:05	08/07/2023 08:05	SUBv	
Radium 228	See Attached			1	08/07/2023 08:05	08/07/2023 08:05	SUBv	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19634004 **Date Collected:** 06/27/2023 08:40 **Matrix:** Groundwater
Sample ID: LOS Landfill MW-2016-12 **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	08/07/2023 08:05	08/07/2023 08:05	SUBv	
Radium 228	See Attached			1	08/07/2023 08:05	08/07/2023 08:05	SUBv	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 19634005 **Date Collected:** 06/27/2023 07:50 **Matrix:** Groundwater
Sample ID: LOS Landfill MW-2016-13 **Date Received:** 06/28/2023 16:24 **Collector:** Client

Temp @ Receipt (C): 5.6

Contract Lab

Method: Contracted Result

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Radium 226	See Attached			1	08/07/2023 08:05	08/07/2023 08:05	SUBv	
Radium 228	See Attached			1	08/07/2023 08:05	08/07/2023 08:05	SUBv	

Account #: 2040 **Client:** Basin Electric Power Cooperative

ANALYTICAL SUMMARY REPORT

August 03, 2023

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C23070174 Quote ID: C15480
Project Name: 19634

Energy Laboratories, Inc. Casper WY received the following 5 samples for Minnesota Valley Testing Laboratories on 7/7/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23070174-001	19634001; LOS POND MW-2017-10	06/26/23 14:06	07/07/23	Groundwater	Radium 226, Total Radium 228, Total
C23070174-002	19634002; LOS POND MW-2017-11	06/26/23 12:11	07/07/23	Groundwater	Same As Above
C23070174-003	19634003; Dup	06/26/23 12:11	07/07/23	Groundwater	Same As Above
C23070174-004	19634004; LOS LANDFILL MW2016-12	06/26/23 8:40	07/07/23	Groundwater	Same As Above
C23070174-005	19634005; LOS LANDFILL MW2016-13	06/26/23 7:50	07/07/23	Groundwater	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager

Report Approved By:

Page 1 of 13

Account #: 2040 **Client:** Basin Electric Power Cooperative

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 19634
Lab ID: C23070174-001
Client Sample ID: 19634001; LOS POND MW-2017-10

Report Date: 08/03/23
Collection Date: 06/26/23 14:06
DateReceived: 07/07/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.09	pCi/L	U			E903.0	07/24/23 14:41 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	07/24/23 14:41 / kdk
Radium 226 MDC	0.3	pCi/L				E903.0	07/24/23 14:41 / kdk
Radium 228	-0.1	pCi/L	U			RA-05	07/18/23 14:34 / trs
Radium 228 precision (±)	0.7	pCi/L				RA-05	07/18/23 14:34 / trs
Radium 228 MDC	1.2	pCi/L				RA-05	07/18/23 14:34 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 19634
Lab ID: C23070174-002
Client Sample ID: 19634002; LOS POND MW-2017-11

Report Date: 08/03/23
Collection Date: 06/26/23 12:11
DateReceived: 07/07/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.04	pCi/L	U			E903.0	07/24/23 14:41 / kdk
Radium 226 precision (±)	0.1	pCi/L				E903.0	07/24/23 14:41 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	07/24/23 14:41 / kdk
Radium 228	-0.5	pCi/L	U			RA-05	07/18/23 15:06 / trs
Radium 228 precision (±)	0.7	pCi/L				RA-05	07/18/23 15:06 / trs
Radium 228 MDC	1.2	pCi/L				RA-05	07/18/23 15:06 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 19634
Lab ID: C23070174-003
Client Sample ID: 19634003; Dup

Report Date: 08/03/23
Collection Date: 06/26/23 12:11
DateReceived: 07/07/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	-0.03	pCi/L	U			E903.0	07/24/23 14:41 / kdk
Radium 226 precision (±)	0.1	pCi/L				E903.0	07/24/23 14:41 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	07/24/23 14:41 / kdk
Radium 228	-0.9	pCi/L	U			RA-05	07/18/23 15:06 / trs
Radium 228 precision (±)	0.7	pCi/L				RA-05	07/18/23 15:06 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	07/18/23 15:06 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 19634
Lab ID: C23070174-004
Client Sample ID: 19634004; LOS LANDFILL MW2016-12

Report Date: 08/03/23
Collection Date: 06/26/23 08:40
DateReceived: 07/07/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.1	pCi/L	U			E903.0	07/24/23 14:41 / kdk
Radium 226 precision (±)	0.1	pCi/L				E903.0	07/24/23 14:41 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	07/24/23 14:41 / kdk
Radium 228	-0.3	pCi/L	U			RA-05	07/18/23 15:06 / trs
Radium 228 precision (±)	0.7	pCi/L				RA-05	07/18/23 15:06 / trs
Radium 228 MDC	1.2	pCi/L				RA-05	07/18/23 15:06 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 19634
Lab ID: C23070174-005
Client Sample ID: 19634005; LOS LANDFILL MW2016-13

Report Date: 08/03/23
Collection Date: 06/26/23 07:50
DateReceived: 07/07/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.05	pCi/L	U			E903.0	07/24/23 14:41 / kdk
Radium 226 precision (±)	0.1	pCi/L				E903.0	07/24/23 14:41 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	07/24/23 14:41 / kdk
Radium 228	0.1	pCi/L	U			RA-05	07/18/23 15:06 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	07/18/23 15:06 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	07/18/23 15:06 / trs

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories **Work Order:** C23070174 **Report Date:** 07/25/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-10961
Lab ID: LCS-RA226-10961	3	Laboratory Control Sample				Run: TENNELEC-3_230711D			07/24/23 14:41	
Radium 226		9.6	pCi/L		96	70	130			
Radium 226 precision (±)		1.9	pCi/L							
Radium 226 MDC		0.23	pCi/L							
Lab ID: MB-RA226-10961	3	Method Blank				Run: TENNELEC-3_230711D			07/24/23 14:41	
Radium 226		0.06	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23070174-001ADUP	3	Sample Duplicate				Run: TENNELEC-3_230711D			07/24/23 14:41	
Radium 226		0.092	pCi/L					0.3	30	U
Radium 226 precision (±)		0.15	pCi/L							
Radium 226 MDC		0.24	pCi/L							

- The RER result is 0.0

Qualifiers:

RL - Analyte Reporting Limit
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories **Work Order:** C23070174 **Report Date:** 07/25/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-7146
Lab ID: LCS-228-RA226-10961	3	Laboratory Control Sample				Run: TENNELEC-4_230711A				07/18/23 14:34
Radium 228		6.6	pCi/L		96	70	130			
Radium 228 precision (±)		1.5	pCi/L							
Radium 228 MDC		1.1	pCi/L							
Lab ID: MB-RA226-10961	3	Method Blank				Run: TENNELEC-4_230711A				07/18/23 14:34
Radium 228		-0.7	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23070174-001ADUP	3	Sample Duplicate				Run: TENNELEC-4_230711A				07/18/23 14:34
Radium 228		-0.23	pCi/L					42	30	UR
Radium 228 precision (±)		0.66	pCi/L							
Radium 228 MDC		1.1	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.08

Qualifiers:

RL - Analyte Reporting Limit
R - Relative Percent Difference (RPD) exceeds advisory limit
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories C23070174

Login completed by: Dakota R. Januska
Reviewed by: cjohnson
Reviewed Date: 7/13/2023
Date Received: 7/7/2023
Received by: gah
Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	14.5°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

An additional cooler was received with a temp of 15.6°C

Sample 19634005-1 were received at pH~6, 2mLs of *added per *mL to preserve to pH <2.

BO#'s also included - 174743 and 173529.

Chain of custody lists as receiving 2 bottles per sample set and we only received one. 7/7/23 DR

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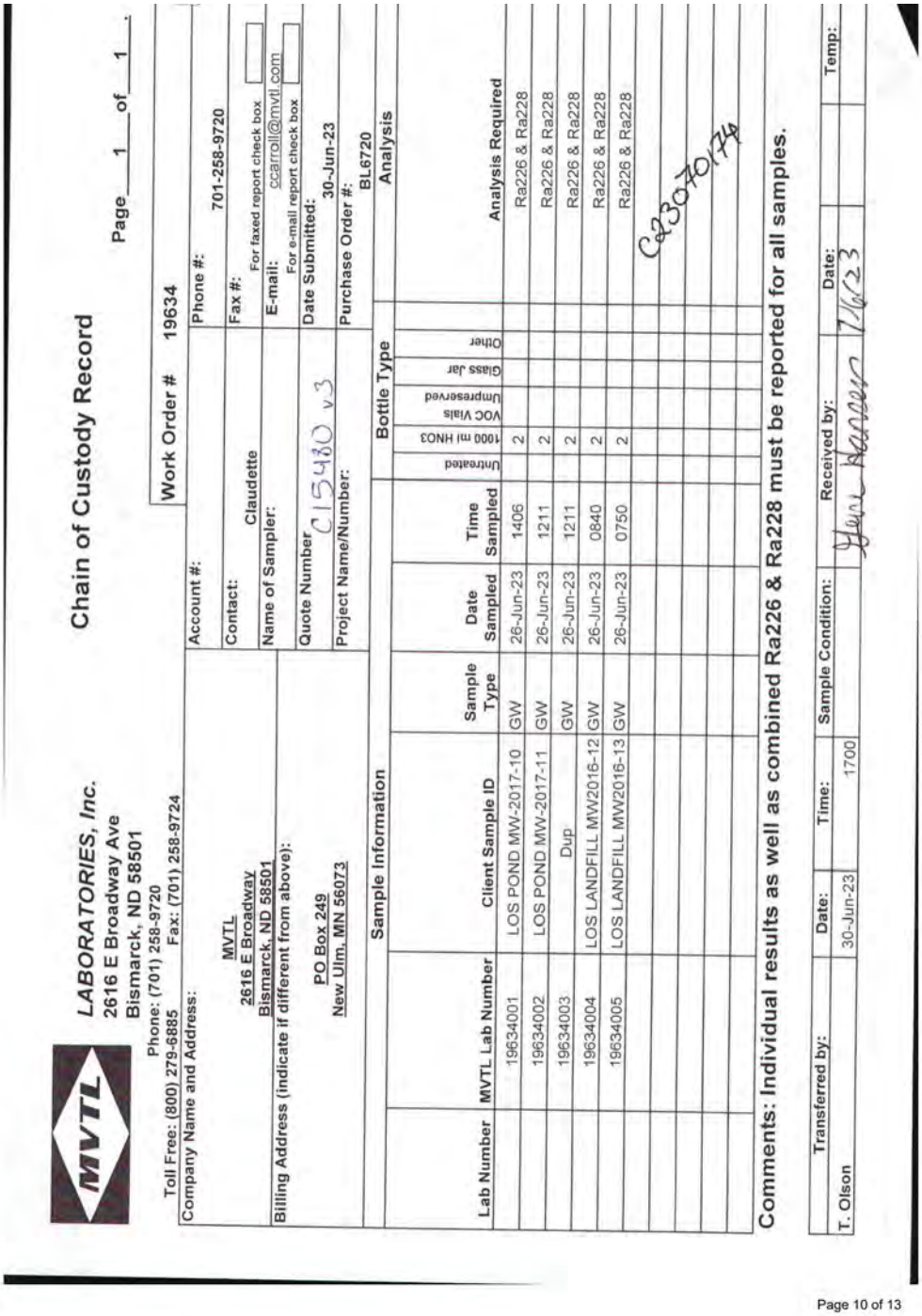
Account #: 2040 **Client:** Basin Electric Power Cooperative



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Bismarck, ND 58501
Phone: (701) 258-9720
Toll Free: (800) 279-6885 Fax: (701) 258-9724

Chain of Custody Record

Page 1 of 1

Work Order # 19634

Company Name and Address: MVTL, 2616 E Broadway, Bismarck, ND 58501
Billing Address (indicate if different from above): PO Box 249, New Ulm, MN 56073

Account #:
Contact: Claudette
Name of Sampler:
Quote Number C15480 v3
Project Name/Number:

Phone #: 701-258-9720
Fax #: For faxed report check box
E-mail: ccarroll@mvtl.com For e-mail report check box
Date Submitted: 30-Jun-23
Purchase Order #: BL6720

Lab Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Bottle Type: Untreated	1000 ml HNO3	VOC Vials Unpreserved	Glass Jar	Other	Analysis Required
	19634001	LOS POND MW-2017-10	GW	26-Jun-23	1406	2					Ra226 & Ra228
	19634002	LOS POND MW-2017-11	GW	26-Jun-23	1211	2					Ra226 & Ra228
	19634003	Dup	GW	26-Jun-23	1211	2					Ra226 & Ra228
	19634004	LOS LANDFILL MW2016-12	GW	26-Jun-23	0840	2					Ra226 & Ra228
	19634005	LOS LANDFILL MW2016-13	GW	26-Jun-23	0750	2					Ra226 & Ra228

C23070174

Comments: Individual results as well as combined Ra226 & Ra228 must be reported for all samples.

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Temp:
T. Olson	30-Jun-23	1700		Yuri Kennon	7/6/23	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

ThermoFisher SCIENTIFIC

SAFETY DATA SHEET

Creation Date 12-Mar-2009 Revision Date 24-Dec-2021 Revision Number 10

1. Identification

Product Name Nitric acid, Trace Metal Grade

Cat No. : A509-212; A509-500; A509P212; A509P500; A509SK212

CAS No 7697-37-2

Synonyms Azotic acid; Engraver's acid; Aqua fortis

Recommended Use Laboratory chemicals.

Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Oxidizing liquids	Category 3
Corrosive to metals	Category 1
Acute Inhalation Toxicity - Vapors	Category 3
Skin Corrosion/Irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1

Label Elements

Signal Word
Danger

Hazard Statements
May intensify fire; oxidizer
May be corrosive to metals
Causes severe skin burns and eye damage

Page 1 / 9

Nitric acid, Trace Metal Grade

Revision Date 24-Dec-2021

Toxic if inhaled
Corrosive to the respiratory tract

Precautionary Statements
Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep/Store away from clothing/ other combustible materials
Take any precaution to avoid mixing with combustibles
Keep only in original container
Wear respiratory protection
Response
Immediately call a POISON CENTER or doctor/physician
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Ingestion
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
Spills
Absorb spillage to prevent material damage
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Store in a dry place
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Corrosive to the respiratory tract

3. Composition/information on Ingredients

Component	CAS No	Weight %
Nitric acid - % (C ≤ 70 %)	7697-37-2	68 - 70
Water	7732-18-5	30 - 32

4. First-aid measures

General Advice Immediate medical attention is required. Show this safety data sheet to the doctor in

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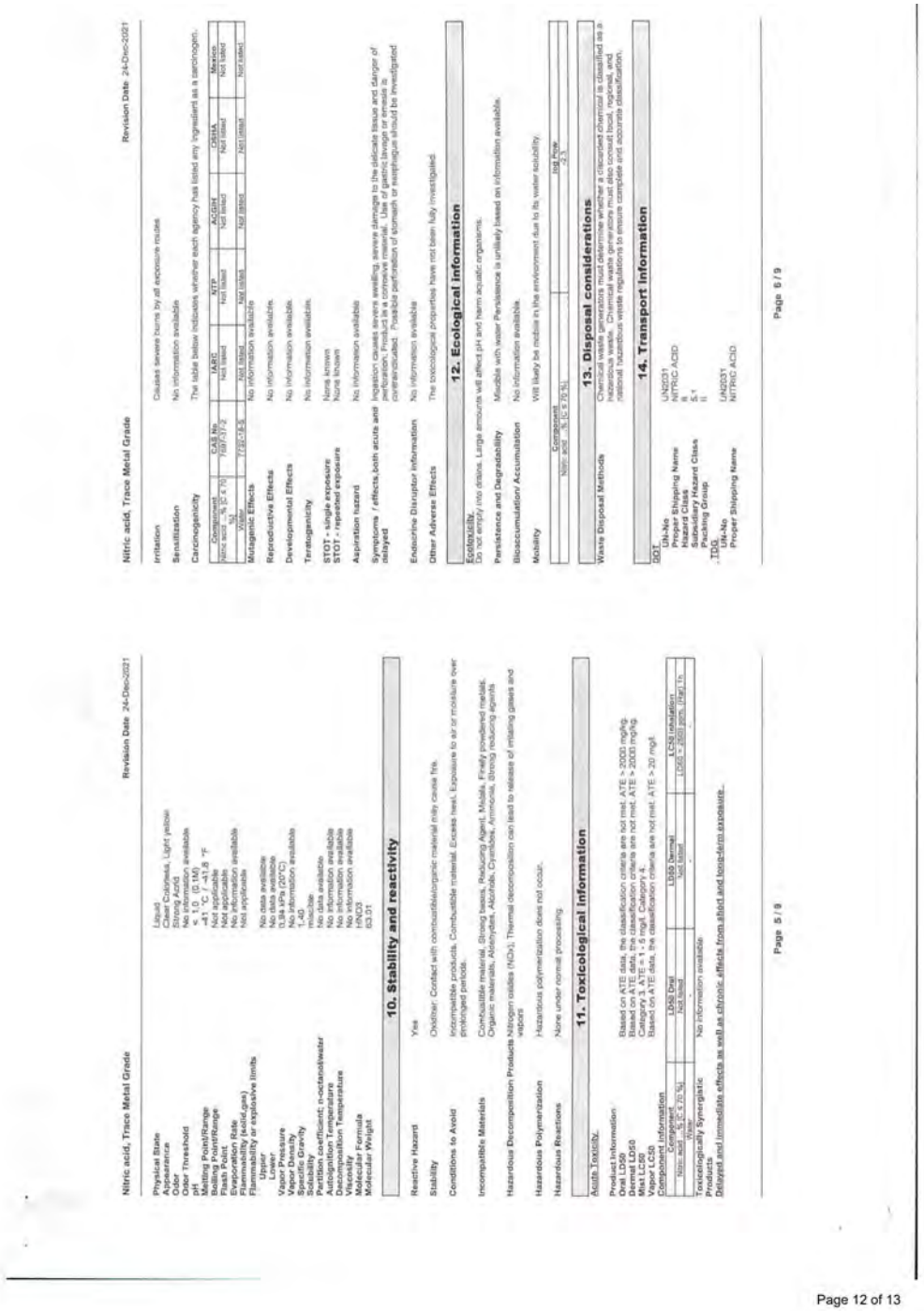
Account #: 2040 **Client:** Basin Electric Power Cooperative



Nitric acid, Trace Metal Grade — Revision Date: 24-Dec-2021

Physical State	Liquid
Appearance	Clear Colorless, Light yellow
Odor	Strong Acid
Odor Threshold	No information available
pH	< 1.0 (@ 1M)
Melting Point/Range	-41 °C / -41.8 °F
Boiling Point/Range	Not applicable
Flash Point	Not applicable
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	0.94 kPa (20°C)
Vapor Density	No information available
Specific Gravity	1.42
Solubility	miscible
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	HNO_3
Molecular Weight	63.01

10. Stability and reactivity

Reactive Hazard	Yes
Stability	Oxidiser. Contact with combustible/organic material may cause fire.
Conditions to Avoid	Incompatible products, Combustible material, Excess heat, Exposure to air or moisture over prolonged periods.
Incompatible Materials	Combustible material, Strong bases, Reducing Agent, Metals, Finely powdered metals, Organic materials, Aldehydes, Alcohols, Cyanides, Ammonia, Strong reducing agents
Hazardous Decomposition Products	Nitrogen oxides (NOx), Thermal decomposition can lead to release of irritating gases and vapors
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing

11. Toxicological information

Acute Toxicity:

Product Information

Based on ATE data, the classification criteria are not met, ATE > 2000 mg/kg
Based on ATE data, the classification criteria are not met, ATE > 2000 mg/kg
Category 3, ATE = 1 - 5 mg/l Dust/Mist
Based on ATE data, the classification criteria are not met, ATE > 20 mg/l

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nitric acid; 55 - 65 %	Not listed	Not listed	LC50 = 2650 ppm (Rat) 1h
Water	-	-	-

Toxicologically Synergistic: No information available.
Products:
Delayed and immediate effects as well as chronic effects from short and long-term exposure.

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Nitric acid, Trace Metal Grade — Revision Date: 24-Dec-2021

Irritation	Causes severe burns by all exposure routes
Sensitization	No information available
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Nitric acid; 55 - 65 %	7697-37-2	Not listed	Not listed	Not listed	Not listed	Not listed
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects	No information available
Reproductive Effects	No information available.
Developmental Effects	No information available.
Teratogenicity	No information available.
STOT - single exposure	None known
STOT - repeated exposure	None known
Aspiration hazard	No information available
Symptoms / effects,both acute and delayed	Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated
Endocrine Disruptor Information	No information available
Other Adverse Effects	The toxicological properties have not been fully investigated

12. Ecological information

Ecotoxicity
Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

Persistence and Degradability	Miscible with water Persistence is unlikely based on information available.
Bioaccumulation/ Accumulation	No information available.
Mobility	Will likely be mobile in the environment due to its water solubility

Component	log Pow
Nitric acid; 55 - 65 %	-2.3

13. Disposal considerations

Waste Disposal Methods	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT
UN-No UN2031
Proper Shipping Name NITRIC ACID
Hazard Class 8
Packing Group II

TDG
UN-No UN2031
Proper Shipping Name NITRIC ACID

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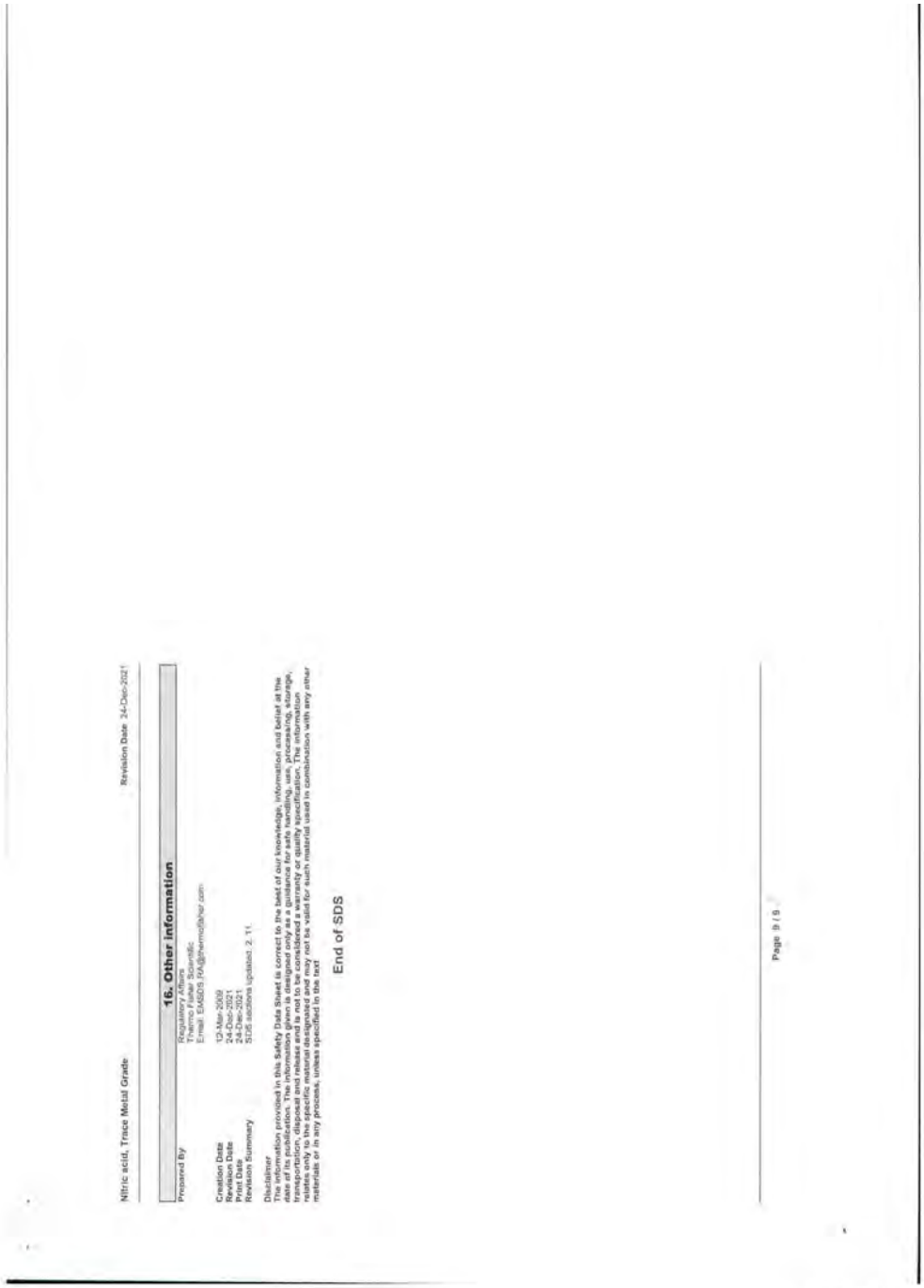

Nitric acid, Trace Metal Grade Revision Date 24-Dec-2021

16. Other Information

Prepared By: Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date: 10-Mar-2009
Revision Date: 24-Dec-2021
Print Date: 24-Dec-2021
Revision Summary: SDS sections updated: 2, 11.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of SDS

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Member ACIL

Account #: 2040 **Client:** Basin Electric Power Cooperative

Minnesota Valley Testing Laboratories, Inc.
2616 East Broadway Avenue
Bismarck, ND 58501
Phone: (701) 258-9720
Toll Free: (800) 279-6885 Fax: (701) 258-9724

Basin Electric Power Coope
WO: 19634

Chain of Custody
Page 1 of 1

Work Order #
Lab Use Only

Company Name and Address Basin Electric Power Coop. Leland Olds Station 3901 Highway 200A Stanton, ND 58571	Account #: 2040 Phone #: 701-745-7238 701-557-5488 Contact: Mark Dihle Emails: mdihle@bepc.com aknutson@bepc.com Name of Sampler: mls jermey.hurshman@aecom.com jason.lach@aecom.com Quote Number: Date Submitted: 6/28/2023 Project Name/Number: LOS CCR Wells Purchase Order #: 675266-04
Billing Address (indicate if different from above)	

Lab Use Only Lab	Sample ID	Sample Matrix GW - Groundwater	Date Sampled	Time Sampled	Bottles	Y/N	Analysis Required
001	LOS POND MW-2017-10	GW	6/26/2023	1406	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
002	LOS POND MW-2017-11	GW	6/26/2023	1211	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
003	Dup	GW	6/26/2023	1211	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
004	LOS LANDFILL MW2016-12	GW	6/27/2023	840	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
005	LOS LANDFILL MW-2016-13	GW	6/27/2023	750	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
MILLENNIUM EXPRESS				28 Jun 23	1624	5.6°C	Y / N	TM920
2.							Y / N	

Please submit the top copy with your samples. We will return the completed original with your results.

Form # 80-910005-1 See above for page number Effective Date: 26 Aug 2022

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Minnesota Valley Testing Laboratories, Inc.
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Basin Electric Power Coope
WO: 19634

Chain of Custody

Page 1 of 1

Work Order #
Lab Use Only

Company Name and Address: Basin Electric Power Coop., Leland Olds Station, 3901 Highway 200A, Stanton, ND 58571	Account # 2040
Billing Address (indicate if different from above)	Phone # 701-745-7238 701-557-5488
	Contact: Mark Dihle
	Emails: mdihle@bepc.com aknutson@bepc.com
	Name of Sampler: mls
	jermey.hurshman@aecom.com jason.lach@aecom.com
	Quote Number
	Date Submitted: 6/28/2023
	Project Name/Number: LOS CCR Wells
	Purchase Order #: 675266-04

Lab Use Only Lab	Sample ID	Sample Matrix GW - Groundwater	Date Sampled	Time Sampled	Bottles	Y/N	Analysis Required
001	LOS POND MW-2017-10	GW	6/26/2023	1406	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
002	LOS POND MW-2017-11	GW	6/26/2023	1211	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
003	Dup	GW	6/26/2023	1211	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
004	LOS LANDFILL MW2016-12	GW	6/27/2023	840	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
005	LOS LANDFILL MW-2016-13	GW	6/27/2023	750	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
MILLENNIUM EXPRESS				28 Jun 23	1624	5.6°C	Y / N	TM920
2.							Y / N	

Please submit the top copy with your samples. We will return the completed original with your results.

Form # 80-910005-1 See above for page number Effective Date: 26 Aug 2022

SEPTEMBER 2023

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Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: LOS Plant Ponds CCR Wells (28070) **PO:** 790708-04

Mark Dihle
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck, ND 58503

Certificate of Analysis

Approval

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

Analyses performed under Minnesota Department of Health Accreditation conforms to the current TNI standards.

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Workorder Summary

Sample Comments

28070001 (MW-2017-10) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070002 (MW-2017-11) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070003 (MW-2017-8D) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070004 (Dup) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070005 (MW-2017-8) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070006 (MW-2017-7) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070007 (MW-2017-6) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070008 (MW-2017-5) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070009 (MW-2017-1) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070010 (MW-2017-2) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070011 (MW-2017-3) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070012 (MW-2017-4) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

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Account #: 2040 **Client:** Basin Electric Power Cooperative

QC Results Summary — WO #: 28070

Sulfate — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			100	93.9		85	115		
LFB			100	96.3		85	115		
LFB			100	87.3		85	115		
LFB			100	91.6		85	115		
LFB			100	93.1		85	115		
LFB			100	96.1		85	115		
LFB			100	100.0		85	115		
LFB			100	100.0		85	115		
LFB			100	99.0		85	115		
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MS/MSD	27999010		4000	87.4	87.9	85	115	0.2	20
MS/MSD	28070003		500	87.7	88.2	85	115	0.4	20
MS/MSD	28072001		500	92.0	93.4	85	115	0.9	20
MS/MSD	28072011		500	88.1	92.6	85	115	1.7	20
MS/MSD	28215002		100	79.3	79.4	85	115	0.1	20
MS/MSD	28216004		1000	84.8	83.9	85	115	0.6	20
MS/MSD	28433002		500	86.3	86.6	85	115	0.4	20
MS/MSD	28433003		500	101.5	101.1	85	115	0.7	20

Chloride — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			80	97.2		90	110		

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Chloride Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			80	97.4		90	110		
LFB			80	96.9		90	110		
LFB			80	96.3		90	110		
LFB			80	96.8		90	110		
LFB			80	95.5		90	110		
LFB			80	96.5		90	110		
LFB			80	96.3		90	110		
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MS/MSD	28070002		80	88.9	88.9	80	120	0.0	20
MS/MSD	28072001		80	93.7	94.3	80	120	0.4	20
MS/MSD	28216004		80	86.8	86.9	80	120	0.3	20
MS/MSD	28354001		80	97.0	96.4	80	120	0.0	20

Calcium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MI			100	112.0		85	115		
LFB-MI			100	112.0		85	115		
MB		<1							
MB		<1							
DUP	28052001							4.2	20
DUP	28070005							1.9	20
DUP	28072012							0.1	20
DUP	28075002							7.4	20

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Boron Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
PDS/PDSD	28580003		2	96.0	95.2	75	125	0.3	20

Calcium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
PDS/PDSD	27649002		100	102.0	102.0	75	125	0.1	20
PDS/PDSD	27884003		100	111.0	110.0	75	125	0.7	20
PDS/PDSD	28070004		100	107.0	110.0	75	125	1.8	20
PDS/PDSD	28072001		100	108.0	111.0	75	125	3.3	20
PDS/PDSD	28072012		100	108.0	112.0	75	125	3.6	20
PDS/PDSD	28215000		100	102.0	104.0	75	125	0.8	20
PDS/PDSD	28216002		100	101.0	98.8	75	125	1.1	20

Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	97.2	99.1	75	125	1.9	20

Arsenic Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	91.2	92.2	75	125	1.0	20

Barium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	80.3	78.2	75	125	1.3	20

Beryllium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	107.0	102.0	75	125	4.0	20

Cadmium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	87.7	87.8	75	125	0.1	20

Chromium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	99.2	97.3	75	125	1.7	20

Cobalt Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	97.1	94.7	75	125	2.4	20

Lead Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	90.0	91.7	75	125	1.8	20

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Molybdenum Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	94.9	96.3	75	125	1.2	20

Selenium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	89.0	86.0	75	125	3.4	20

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	86.7	86.0	75	125	0.8	20

Boron Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-OE			0.4	107.0		85	115		
LFB-OE			0.4	102.0		85	115		
MB		<0.1							
MB		<0.1							
MS/MSD	28070001		0.4	96.1	99.3	75	125	1.8	20
MS/MSD	28072001		0.4	84.4	84.8	75	125	0.0	20
MS/MSD	28072004		0.4	95.7	94.9	75	125	0.2	20
MS/MSD	28072005		0.4	80.3	77.5	75	125	0.5	20
MS/MSD	28072011		0.4	101.0	95.2	75	125	1.9	20

Lithium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-OE			0.4	105.0		85	115		
LFB-OE			0.4	104.0		85	115		
MB		<0.04							
MB		<0.04							
MS/MSD	28070001		0.4	96.0	98.2	75	125	2.2	20
MS/MSD	28072004		0.4	94.4	92.6	75	125	1.7	20
MS/MSD	28072005		0.4	97.0	96.1	75	125	1.1	20
MS/MSD	28072011		0.4	96.8	96.8	75	125	0.0	20

Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	102.0		80	120		
LFB-MS			0.1	104.0		80	120		
MB		<0.001							

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.001							
MS/MSD	28070001		0.4	101.0	102.0	75	125	1.2	20
MS/MSD	28072004		0.4	101.0	100.0	75	125	2.7	20
MS/MSD	28072005		0.4	86.8	87.3	75	125	0.9	20
MS/MSD	28072013		0.4	103.0	102.0	75	125	1.5	20

Arsenic Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	97.2		80	120		
LFB-MS			0.1	97.4		80	120		
MB		<0.002							
MB		<0.002							
MS/MSD	28070001		0.4	95.7	97.8	75	125	1.5	20
MS/MSD	28072004		0.4	99.4	94.5	75	125	3.2	20
MS/MSD	28072005		0.4	96.8	97.6	75	125	0.7	20
MS/MSD	28072013		0.4	101.0	100.0	75	125	1.0	20

Barium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	92.0		80	120		
LFB-MS			0.1	95.3		80	120		
MB		<0.002							
MB		<0.002							
MS/MSD	28070001		0.4	88.1	89.6	75	125	1.4	20
MS/MSD	28072004		0.4	89.2	87.8	75	125	1.5	20
MS/MSD	28072005							1.0	20
MS/MSD	28072013		0.4	91.1	89.4	75	125	1.7	20

Beryllium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	106.0		80	120		
LFB-MS			0.1	104.0		80	120		
MB		<0.0005							
MB		<0.0005							

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Beryllium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	28070001		0.4	101.0	106.0	75	125	5.6	20
MS/MSD	28072004		0.4	108.0	105.0	75	125	2.8	20
MS/MSD	28072005		0.4	105.0	106.0	75	125	0.5	20
MS/MSD	28072013		0.4	111.0	109.0	75	125	2.1	20

Cadmium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	107.0		80	120		
LFB-MS			0.1	100.0		80	120		
MB		<0.0005							
MB		<0.0005							
MS/MSD	28070001		0.4	97.4	97.8	75	125	0.3	20
MS/MSD	28072004		0.4	100.0	97.1	75	125	3.1	20
MS/MSD	28072005		0.4	95.7	95.1	75	125	0.5	20
MS/MSD	28072013		0.4	98.9	97.6	75	125	1.5	20

Chromium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	110.0		80	120		
LFB-MS			0.1	109.0		80	120		
MB		<0.002							
MB		<0.002							
MS/MSD	28070001		0.4	104.0	106.0	75	125	1.7	20
MS/MSD	28072004		0.4	109.0	105.0	75	125	3.8	20
MS/MSD	28072005		0.4	106.0	107.0	75	125	0.4	20
MS/MSD	28072013		0.4	109.0	110.0	75	125	0.7	20

Cobalt — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	109.0		80	120		
LFB-MS			0.1	107.0		80	120		
MB		<0.002							
MB		<0.002							
MS/MSD	28070001		0.4	102.0	105.0	75	125	2.4	20

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Cobalt — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	28072004		0.4	106.0	102.0	75	125	3.6	20
MS/MSD	28072005		0.4	102.0	102.0	75	125	0.0	20
MS/MSD	28072013		0.4	107.0	105.0	75	125	1.4	20

Lead — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	102.0		80	120		
LFB-MS			0.1	103.0		80	120		
MB		<0.0005							
MB		<0.0005							
MS/MSD	28070001		0.4	99.5	102.0	75	125	4.0	20
MS/MSD	28072004		0.4	100.0	95.0	75	125	1.3	20
MS/MSD	28072005		0.4	96.1	96.1	75	125	0.0	20
MS/MSD	28072013		0.4	102.0	101.0	75	125	1.0	20

Molybdenum — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	102.0		80	120		
LFB-MS			0.1	104.0		80	120		
MB		<0.002							
MB		<0.002							
MS/MSD	28070001		0.4	96.3	97.2	75	125	1.0	20
MS/MSD	28072004		0.4	99.8	97.8	75	125	2.2	20
MS/MSD	28072005		0.4	94.1	95.7	75	125	1.4	20
MS/MSD	28072013		0.4	102.0	99.5	75	125	2.8	20

Selenium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	97.6		80	120		
LFB-MS			0.1	94.7		80	120		
MB		<0.005							
MB		<0.005							
MS/MSD	28070001		0.4	95.6	98.4	75	125	1.8	20
MS/MSD	28072004		0.4	101.0	99.1	75	125	0.4	20

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Selenium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	28072005		0.4	94.2	94.7	75	125	0.5	20
MS/MSD	28072013		0.4	98.1	100.9	75	125	2.3	20

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	96.3		80	120		
LFB-MS			0.1	97.2		80	120		
MB		<0.0005							
MB		<0.0005							
MS/MSD	28070001		0.4	94.1	94.3	75	125	0.3	20
MS/MSD	28072004		0.4	94.8	94.3	75	125	0.5	20
MS/MSD	28072005		0.4	91.2	92.1	75	125	0.8	20
MS/MSD	28072013		0.4	96.1	95.4	75	125	0.5	20

Mercury Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			0.002	94.6		85	115		
LFB			0.002	99.6		85	115		
LRB		<0.0002							
LRB		<0.0002							
MS/MSD	27912001		0.002	97.4	101.0	70	130	5.1	20
MS/MSD	27912007		0.002	107.0	104.0	70	130	0.0	20
MS/MSD	28072001		0.002	104.0	88.0	70	130	4.9	20
MS/MSD	28072013		0.002	94.4	107.0	70	130	10.0	20

Fluoride Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			12	97.3		83.8	111		
LFB-F			0.5	100.0		90	110		
LFB-F			0.5	100.0		90	110		
LFB-F			0.5	98.0		90	110		
LFB-F			0.5	100.0		90	110		
MB-F		<0.1							
MB-F		<0.1							

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Fluoride Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB-F		<0.1							
MB-F		<0.1							
MS/MSD-F	28070001		0.5	100.0	102.0	80	120	0.0	20
MS/MSD-F	28070011		0.5	104.0	104.0	80	120	0.0	20
MS/MSD-F	28072001		0.5	106.0	108.0	80	120	1.0	20
MS/MSD-F	28072011		0.5	107.0	98.0	80	120	1.8	20

Total Dissolved Solids Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			736	100.0		90.35	110.33		
CRM			736	100.0		90.35	110.33		
MB		<10							
MB		<10							
DUP	27632001							0.7	20
DUP	28072001							1.1	20

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Member ACIL

Account #: 2040 **Client:** Basin Electric Power Cooperative

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Basin Electric Power Coope
WO: 28070

Chain of Custody

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Work Order # (Lab Use Only)

Company Name and Address: Basin Electric Power Coop., Leland Olds Station, 3901 Highway 200A, Stanton, ND 58571	Account # 2040
	Phone # 701-745-7238 701-557-5488
	Contact: Mark Dihle
	Emails: mdihle@bepc.com aknutson@bepc.com
	Name of Sampler: mls
	jermey.hurshman@aecom.com jason.lach@aecom.com
Billing Address (indicate if different from above)	Quote Number
	Date Submitted: 9/13/2023
	Project Name/Number: LOS PLANT PONDS CCR Wells
	Purchase Order #: 790708-04

Lab Use Only Lab	Sample ID	Sample Matrix GW - Groundwater	Date Sampled	Time Sampled	Bottles	Y/N	Analysis Required
001	MW-2017-10	GW	9/12/2023	1030	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
002	MW-2017-11	GW	9/12/2023	840	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
003	MW2017-8D	GW	9/11/2023	1050	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
004	Dup	GW	9/12/2023	840	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
005	MW2017-8	GW	9/11/2023	915	2	N	TDS, B, Ca, Cl, F, SO_4
006	MW-2017-7	GW	9/11/2023	1211	2	N	TDS, B, Ca, Cl, F, SO_4
007	MW-2017-6	GW	9/11/2023	1400	2	N	TDS, B, Ca, Cl, F, SO_4
008	MW-2017-5	GW	9/12/2023	935	2	N	TDS, B, Ca, Cl, F, SO_4
009	MW-2017-1	GW	9/12/2023	1145	2	N	TDS, B, Ca, Cl, F, SO_4

Comments:

	Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1.	Millennium Express	9-13-23		[illegible]	9/13/23	1044	7.4°C	(Y) / N	TM920
2.								Y / N	

Please submit the top copy with your samples. We will return the completed original with your results.

Form # 80-910005-1 See above for page number Effective Date: 26 Aug 2022

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Member ACIL

Account #: 2040 **Client:** Basin Electric Power Cooperative

Minnesota Valley Testing Laboratories, Inc.
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Bismarck, ND 58501
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Toll Free: (800) 279-6885 Fax: (701) 258-9724

Lab Use Only

Chain of Custody

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Work Order # (Lab Use Only)

Company Name and Address: Basin Electric Power Coop., Leland Olds Station, 3901 Highway 200A, Stanton, ND 58571	Account # 2040	Phone # 701-745-7238 701-557-5488
Billing Address (indicate if different from above)	Contact Mark Dihle	Emails mdihle@bepc.com aknutson@bepc.com
	Name of Sampler mls	jermey.hurshman@aecom.com jason.lach@aecom.com
	Quote Number	Date Submitted 9/13/2023
	Project Name/Number LOS PLANT PONDS CCR Wells	Purchase Order # 790708-04

Lab Use Only Lab	Sample ID	Sample Matrix (GW - Groundwater)	Date Sampled	Time Sampled	# of	Filtered	Analysis Required
010	MW-2017-2	GW	9/12/2023	1240	2	N	TDS, B, Ca, Cl, F, SO_4
011	MW-2017-3	GW	9/12/2023	1415	2	N	TDS, B, Ca, Cl, F, SO_4
012	MW-2017-4	GW	9/12/2023	1530	2	N	TDS, B, Ca, Cl, F, SO_4

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1.			[signature]	13 Sept 23	1644	7.4°C	(Y) / N	TM908
2.							Y / N	

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Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: LOS Plant Ponds CCR Wells (28070) **PO:** 790708-04

Mark Dihle
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck, ND 58503

Certificate of Analysis

Approval

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

Analyses performed under Minnesota Department of Health Accreditation conforms to the current TNI standards.

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Workorder Summary

Sample Comments

28070001 (MW-2017-10) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070002 (MW-2017-11) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070003 (MW-2017-8D) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070004 (Dup) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070005 (MW-2017-8) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070006 (MW-2017-7) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070007 (MW-2017-6) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070008 (MW-2017-5) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070009 (MW-2017-1) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070010 (MW-2017-2) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070011 (MW-2017-3) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

28070012 (MW-2017-4) - Sample
Temperature received outside of the 0 - 6 °C range specified by EPA requirements. Client has authorized MVTL to proceed with analysis through direct communication or authorization letter retained on file with customer service.

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070001 **Date Collected:** 09/12/2023 10:30 **Matrix:** Groundwater
Sample ID: MW-2017-10 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**298**	mg/L	25	5	09/20/2023 09:32	09/20/2023 09:32	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	09/19/2023 10:05	09/20/2023 15:42	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.93**	mg/L	0.1	1	09/14/2023 16:51	09/26/2023 09:39	MDE	
Calcium	**90.3**	mg/L	1	1	09/14/2023 16:51	09/21/2023 12:57	SLZ	
Lithium	<0.02	mg/L	0.02	1	09/14/2023 16:51	09/28/2023 09:39	MDE	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	09/14/2023 16:51	09/19/2023 11:56	MDE	
Arsenic	**0.0032**	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 11:56	MDE	
Barium	**0.0737**	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 11:56	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/20/2023 09:41	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/19/2023 11:56	MDE	
Chromium	<0.002	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 11:56	MDE	
Cobalt	<0.002	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 11:56	MDE	
Lead	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/19/2023 11:56	MDE	
Molybdenum	**0.0080**	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 11:56	MDE	
Selenium	<0.005	mg/L	0.005	5	09/14/2023 16:51	09/19/2023 11:56	MDE	
Thallium	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/20/2023 09:41	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070001 **Date Collected:** 09/12/2023 10:30 **Matrix:** Groundwater
Sample ID: MW-2017-10 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**11.6**	mg/L	2.0	1	09/19/2023 09:22	09/19/2023 09:22	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.81**	mg/L	0.1	1	09/15/2023 18:03	09/15/2023 18:03	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**667**	mg/L	10	1	09/14/2023 10:43	09/14/2023 10:43	CMG	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070002 **Date Collected:** 09/12/2023 08:40 **Matrix:** Groundwater
Sample ID: MW-2017-11 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**199**	mg/L	5	1	09/20/2023 09:22	09/20/2023 09:22	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	09/19/2023 10:05	09/20/2023 15:42	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.17**	mg/L	0.1	1	09/14/2023 16:51	09/26/2023 09:41	MDE	
Calcium	**63.7**	mg/L	1	1	09/14/2023 16:51	09/21/2023 12:58	SLZ	
Lithium	**0.0294**	mg/L	0.02	1	09/14/2023 16:51	09/28/2023 09:41	MDE	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	09/14/2023 16:51	09/19/2023 12:14	MDE	
Arsenic	**0.0084**	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:14	MDE	
Barium	**0.0392**	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:14	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/20/2023 09:52	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/19/2023 12:14	MDE	
Chromium	<0.002	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:14	MDE	
Cobalt	<0.002	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:14	MDE	
Lead	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/19/2023 12:14	MDE	
Molybdenum	**0.0090**	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:14	MDE	
Selenium	<0.005	mg/L	0.005	5	09/14/2023 16:51	09/19/2023 12:14	MDE	
Thallium	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/20/2023 09:52	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070002 **Date Collected:** 09/12/2023 08:40 **Matrix:** Groundwater
Sample ID: MW-2017-11 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**11.7**	mg/L	2.0	1	09/19/2023 09:23	09/19/2023 09:23	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.73**	mg/L	0.1	1	09/15/2023 18:20	09/15/2023 18:20	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**592**	mg/L	10	1	09/14/2023 10:43	09/14/2023 10:43	CMG	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070003 **Date Collected:** 09/11/2023 10:50 **Matrix:** Groundwater
Sample ID: MW-2017-8D **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**365**	mg/L	25	5	09/20/2023 09:33	09/20/2023 09:33	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	09/19/2023 10:05	09/20/2023 15:42	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.69**	mg/L	0.1	1	09/14/2023 16:51	09/26/2023 09:42	MDE	
Calcium	**8.97**	mg/L	1	1	09/14/2023 16:51	09/21/2023 12:59	SLZ	
Lithium	**0.0636**	mg/L	0.02	1	09/14/2023 16:51	09/28/2023 09:41	MDE	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	09/14/2023 16:51	09/19/2023 12:18	MDE	
Arsenic	<0.002	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:18	MDE	
Barium	**0.0449**	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:18	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/20/2023 09:55	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/19/2023 12:18	MDE	
Chromium	<0.002	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:18	MDE	
Cobalt	<0.002	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:18	MDE	
Lead	**0.0005**	mg/L	0.0005	5	09/14/2023 16:51	09/19/2023 12:18	MDE	
Molybdenum	<0.002	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:18	MDE	
Selenium	<0.005	mg/L	0.005	5	09/14/2023 16:51	09/19/2023 12:18	MDE	
Thallium	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/20/2023 09:55	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070003 **Date Collected:** 09/11/2023 10:50 **Matrix:** Groundwater
Sample ID: MW-2017-8D **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**17.6**	mg/L	2.0	1	09/19/2023 09:31	09/19/2023 09:31	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.59**	mg/L	0.1	1	09/15/2023 18:26	09/15/2023 18:26	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**1960**	mg/L	10	1	09/14/2023 10:43	09/14/2023 10:43	CMG	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070004 **Date Collected:** 09/12/2023 08:40 **Matrix:** Groundwater
Sample ID: Dup **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**202**	mg/L	5	1	09/20/2023 09:41	09/20/2023 09:41	AMC	

Method: EPA 245.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Mercury	<0.0002	mg/L	0.0002	1	09/19/2023 10:05	09/20/2023 15:42	MDE	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.20**	mg/L	0.1	1	09/14/2023 16:51	09/26/2023 09:42	MDE	
Calcium	**65.6**	mg/L	1	1	09/14/2023 16:51	09/21/2023 13:00	SLZ	
Lithium	**0.0302**	mg/L	0.02	1	09/14/2023 16:51	09/28/2023 09:42	MDE	

Method: EPA 6020B

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Antimony	<0.001	mg/L	0.001	5	09/14/2023 16:51	09/19/2023 12:23	MDE	
Arsenic	**0.0089**	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:23	MDE	
Barium	**0.0399**	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:23	MDE	
Beryllium	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/20/2023 09:57	MDE	
Cadmium	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/19/2023 12:23	MDE	
Chromium	<0.002	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:23	MDE	
Cobalt	<0.002	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:23	MDE	
Lead	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/19/2023 12:23	MDE	
Molybdenum	**0.0090**	mg/L	0.002	5	09/14/2023 16:51	09/19/2023 12:23	MDE	
Selenium	<0.005	mg/L	0.005	5	09/14/2023 16:51	09/19/2023 12:23	MDE	
Thallium	<0.0005	mg/L	0.0005	5	09/14/2023 16:51	09/20/2023 09:57	MDE	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070004 **Date Collected:** 09/12/2023 08:40 **Matrix:** Groundwater
Sample ID: Dup **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**11.8**	mg/L	2.0	1	09/19/2023 09:32	09/19/2023 09:32	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.72**	mg/L	0.1	1	09/15/2023 14:05	09/15/2023 14:05	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**581**	mg/L	10	1	09/14/2023 10:43	09/14/2023 10:43	CMG	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070005 **Date Collected:** 09/11/2023 09:15 **Matrix:** Groundwater
Sample ID: MW-2017-8 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**1720**	mg/L	50	10	09/20/2023 09:57	09/20/2023 09:57	AMC	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.40**	mg/L	0.1	1	09/14/2023 16:51	09/26/2023 09:43	MDE	
Calcium	**137**	mg/L	5	5	09/14/2023 16:51	09/21/2023 13:03	SLZ	

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**25.7**	mg/L	2.0	1	09/19/2023 09:34	09/19/2023 09:34	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.38**	mg/L	0.1	1	09/15/2023 14:11	09/15/2023 14:11	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**3720**	mg/L	10	1	09/14/2023 10:43	09/14/2023 10:43	CMG	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070006 **Date Collected:** 09/11/2023 12:11 **Matrix:** Groundwater
Sample ID: MW-2017-7 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**240**	mg/L	5	1	09/20/2023 09:43	09/20/2023 09:43	AMC	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**2.07**	mg/L	0.1	1	09/14/2023 16:51	09/26/2023 09:44	MDE	
Calcium	**73.1**	mg/L	1	1	09/14/2023 16:51	09/21/2023 13:05	SLZ	

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**12.4**	mg/L	2.0	1	09/19/2023 09:35	09/19/2023 09:35	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**1.34**	mg/L	0.1	1	09/15/2023 14:17	09/15/2023 14:17	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**693**	mg/L	10	1	09/14/2023 10:43	09/14/2023 10:43	CMG	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070007 **Date Collected:** 09/11/2023 14:00 **Matrix:** Groundwater
Sample ID: MW-2017-6 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**177**	mg/L	5	1	09/20/2023 09:44	09/20/2023 09:44	AMC	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.40**	mg/L	0.1	1	09/14/2023 16:51	09/26/2023 09:45	MDE	
Calcium	**65.6**	mg/L	1	1	09/14/2023 16:51	09/21/2023 13:06	SLZ	

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**11.8**	mg/L	2.0	1	09/19/2023 09:36	09/19/2023 09:36	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.60**	mg/L	0.1	1	09/15/2023 14:23	09/15/2023 14:23	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**589**	mg/L	10	1	09/14/2023 10:43	09/14/2023 10:43	CMG	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070008 **Date Collected:** 09/12/2023 09:35 **Matrix:** Groundwater
Sample ID: MW-2017-5 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**262**	mg/L	5	1	09/20/2023 09:46	09/20/2023 09:46	AMC	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.74**	mg/L	0.1	1	09/14/2023 16:51	09/26/2023 09:46	MDE	
Calcium	**85.6**	mg/L	1	1	09/14/2023 16:51	09/21/2023 13:08	SLZ	

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**12.0**	mg/L	2.0	1	09/19/2023 09:37	09/19/2023 09:37	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.91**	mg/L	0.1	1	09/15/2023 14:29	09/15/2023 14:29	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**641**	mg/L	10	1	09/14/2023 10:43	09/14/2023 10:43	CMG	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070009 **Date Collected:** 09/12/2023 11:45 **Matrix:** Groundwater
Sample ID: MW-2017-1 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**268**	mg/L	5	1	09/20/2023 09:47	09/20/2023 09:47	AMC	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**0.47**	mg/L	0.1	1	09/14/2023 16:51	09/26/2023 09:46	MDE	
Calcium	**208**	mg/L	1	1	09/14/2023 16:51	09/21/2023 13:09	SLZ	

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**13.9**	mg/L	2.0	1	09/19/2023 09:38	09/19/2023 09:38	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.34**	mg/L	0.1	1	09/15/2023 19:44	09/15/2023 19:44	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**1180**	mg/L	10	1	09/14/2023 10:43	09/14/2023 10:43	CMG	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070010 **Date Collected:** 09/12/2023 12:40 **Matrix:** Groundwater
Sample ID: MW-2017-2 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**285**	mg/L	5	1	09/20/2023 09:48	09/20/2023 09:48	AMC	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.01**	mg/L	0.1	1	09/14/2023 16:51	09/26/2023 09:49	MDE	
Calcium	**101**	mg/L	1	1	09/14/2023 16:51	09/21/2023 13:10	SLZ	

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**12.2**	mg/L	2.0	1	09/19/2023 09:39	09/19/2023 09:39	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.38**	mg/L	0.1	1	09/15/2023 19:50	09/15/2023 19:50	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**822**	mg/L	10	1	09/14/2023 10:43	09/14/2023 10:43	CMG	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070011 **Date Collected:** 09/12/2023 14:15 **Matrix:** Groundwater
Sample ID: MW-2017-3 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**140**	mg/L	5	1	09/20/2023 09:49	09/20/2023 09:49	AMC	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.28**	mg/L	0.1	1	09/14/2023 16:51	09/26/2023 09:49	MDE	
Calcium	**113**	mg/L	1	1	09/14/2023 16:51	09/21/2023 13:11	SLZ	

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**12.0**	mg/L	2.0	1	09/19/2023 09:41	09/19/2023 09:41	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.48**	mg/L	0.1	1	09/15/2023 19:56	09/15/2023 19:56	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**952**	mg/L	10	1	09/14/2023 10:43	09/14/2023 10:43	CMG	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28070012 **Date Collected:** 09/12/2023 15:30 **Matrix:** Groundwater
Sample ID: MW-2017-4 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Sulfate	**292**	mg/L	25	5	09/20/2023 09:56	09/20/2023 09:56	AMC	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Boron	**1.10**	mg/L	0.1	1	09/14/2023 16:51	09/26/2023 09:50	MDE	
Calcium	**144**	mg/L	1	1	09/14/2023 16:51	09/21/2023 13:12	SLZ	

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Chloride	**11.8**	mg/L	2.0	1	09/19/2023 09:42	09/19/2023 09:42	AMC	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Fluoride	**0.77**	mg/L	0.1	1	09/15/2023 20:14	09/15/2023 20:14	RAA	

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Qual
Total Dissolved Solids	**874**	mg/L	10	1	09/14/2023 10:43	09/14/2023 10:43	CMG	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

QC Results Summary — WO #: 28070

Sulfate — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			100	93.9		85	115		
LFB			100	96.3		85	115		
LFB			100	87.3		85	115		
LFB			100	91.6		85	115		
LFB			100	93.1		85	115		
LFB			100	96.1		85	115		
LFB			100	100.0		85	115		
LFB			100	100.0		85	115		
LFB			100	99.0		85	115		
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MS/MSD	27999010		4000	87.4	87.9	85	115	0.2	20
MS/MSD	28070003		500	87.7	88.2	85	115	0.4	20
MS/MSD	28072001		500	92.0	93.4	85	115	0.9	20
MS/MSD	28072011		500	88.1	92.6	85	115	1.7	20
MS/MSD	28215002		100	79.3	79.4	85	115	0.1	20
MS/MSD	28216004		1000	84.8	83.9	85	115	0.6	20
MS/MSD	28433002		500	86.3	86.6	85	115	0.4	20
MS/MSD	28433003		500	101.5	101.1	85	115	0.7	20

Chloride — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			80	97.2		90	110		

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Chloride Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			80	97.4		90	110		
LFB			80	96.9		90	110		
LFB			80	96.3		90	110		
LFB			80	96.8		90	110		
LFB			80	95.5		90	110		
LFB			80	96.5		90	110		
LFB			80	96.3		90	110		
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MB		<2.0							
MS/MSD	28070002		80	88.9	88.9	80	120	0.0	20
MS/MSD	28072001		80	93.7	94.3	80	120	0.4	20
MS/MSD	28216004		80	86.8	86.9	80	120	0.3	20
MS/MSD	28354001		80	97.0	96.4	80	120	0.0	20

Calcium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MI			100	112.0		85	115		
LFB-MI			100	112.0		85	115		
MB		<1							
MB		<1							
DUP	28052001							4.2	20
DUP	28070005							1.9	20
DUP	28072012							0.1	20
DUP	28075002							7.4	20

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Boron — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
PDS/PDSD	28580003		2	96.0	95.2	75	125	0.3	20

Calcium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
PDS/PDSD	27649002		100	102.0	102.0	75	125	0.1	20
PDS/PDSD	27884003		100	111.0	110.0	75	125	0.7	20
PDS/PDSD	28070004		100	107.0	110.0	75	125	1.8	20
PDS/PDSD	28072001		100	106.0	111.0	75	125	3.3	20
PDS/PDSD	28072012		100	108.0	112.0	75	125	3.0	20
PDS/PDSD	28215000		100	102.0	104.0	75	125	0.8	20
PDS/PDSD	28216002		100	101.0	98.8	75	125	1.1	20

Antimony — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	97.2	99.1	75	125	1.9	20

Arsenic — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	91.2	92.2	75	125	1.0	20

Barium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	80.3	78.2	75	125	1.3	20

Beryllium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	107.0	102.0	75	125	4.0	20

Cadmium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	87.7	87.8	75	125	0.1	20

Chromium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	99.2	97.3	75	125	1.7	20

Cobalt — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	97.1	94.7	75	125	2.4	20

Lead — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	90.0	91.7	75	125	1.8	20

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Molybdenum Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	94.9	96.3	75	125	1.2	20

Selenium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	89.0	86.0	75	125	3.4	20

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK/SPKD	28072001		0.1	86.7	86.0	75	125	0.8	20

Boron Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-OE			0.4	107.0		85	115		
LFB-OE			0.4	102.0		85	115		
MB		<0.1							
MB		<0.1							
MS/MSD	28070001		0.4	96.1	99.3	75	125	1.8	20
MS/MSD	28072001		0.4	84.4	84.8	75	125	0.0	20
MS/MSD	28072004		0.4	95.7	94.9	75	125	0.2	20
MS/MSD	28072005		0.4	80.3	77.5	75	125	0.5	20
MS/MSD	28072011		0.4	101.0	95.2	75	125	1.9	20

Lithium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-OE			0.4	105.0		85	115		
LFB-OE			0.4	104.0		85	115		
MB		<0.04							
MB		<0.04							
MS/MSD	28070001		0.4	96.0	98.2	75	125	2.2	20
MS/MSD	28072004		0.4	94.4	92.6	75	125	1.7	20
MS/MSD	28072005		0.4	97.0	96.1	75	125	1.1	20
MS/MSD	28072011		0.4	96.8	96.8	75	125	0.0	20

Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	102.0		80	120		
LFB-MS			0.1	104.0		80	120		
MB		<0.001							

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Antimony Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.001							
MS/MSD	28070001		0.4	101.0	102.0	75	125	1.2	20
MS/MSD	28072004		0.4	101.0	100.0	75	125	2.7	20
MS/MSD	28072005		0.4	86.8	87.3	75	125	0.9	20
MS/MSD	28072013		0.4	103.0	102.0	75	125	1.5	20

Arsenic Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	97.2		80	120		
LFB-MS			0.1	97.4		80	120		
MB		<0.002							
MB		<0.002							
MS/MSD	28070001		0.4	95.7	97.8	75	125	1.5	20
MS/MSD	28072004		0.4	99.4	94.5	75	125	3.2	20
MS/MSD	28072005		0.4	96.8	97.6	75	125	0.7	20
MS/MSD	28072013		0.4	101.0	100.0	75	125	1.0	20

Barium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	92.0		80	120		
LFB-MS			0.1	95.3		80	120		
MB		<0.002							
MB		<0.002							
MS/MSD	28070001		0.4	88.1	89.4	75	125	1.4	20
MS/MSD	28072004		0.4	89.2	87.8	75	125	1.5	20
MS/MSD	28072005							1.0	20
MS/MSD	28072013		0.4	91.1	89.4	75	125	1.7	20

Beryllium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	106.0		80	120		
LFB-MS			0.1	104.0		80	120		
MB		<0.0005							
MB		<0.0005							

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Beryllium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	28070001		0.4	101.0	106.0	75	125	5.6	20
MS/MSD	28072004		0.4	108.0	105.0	75	125	2.8	20
MS/MSD	28072005		0.4	105.0	106.0	75	125	0.5	20
MS/MSD	28072013		0.4	111.0	109.0	75	125	2.1	20

Cadmium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	107.0		80	120		
LFB-MS			0.1	100.0		80	120		
MB		<0.0005							
MB		<0.0005							
MS/MSD	28070001		0.4	97.4	97.8	75	125	0.3	20
MS/MSD	28072004		0.4	100.0	97.1	75	125	3.1	20
MS/MSD	28072005		0.4	95.7	95.1	75	125	0.5	20
MS/MSD	28072013		0.4	98.9	97.6	75	125	1.5	20

Chromium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	110.0		80	120		
LFB-MS			0.1	109.0		80	120		
MB		<0.002							
MB		<0.002							
MS/MSD	28070001		0.4	104.0	106.0	75	125	1.7	20
MS/MSD	28072004		0.4	109.0	105.0	75	125	3.8	20
MS/MSD	28072005		0.4	106.0	107.0	75	125	0.4	20
MS/MSD	28072013		0.4	109.0	110.0	75	125	0.7	20

Cobalt — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	109.0		80	120		
LFB-MS			0.1	107.0		80	120		
MB		<0.002							
MB		<0.002							
MS/MSD	28070001		0.4	102.0	105.0	75	125	2.4	20

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Cobalt — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	28072004		0.4	106.0	102.0	75	125	3.6	20
MS/MSD	28072005		0.4	102.0	102.0	75	125	0.0	20
MS/MSD	28072013		0.4	107.0	105.0	75	125	1.4	20

Lead — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	102.0		80	120		
LFB-MS			0.1	103.0		80	120		
MB		<0.0005							
MB		<0.0005							
MS/MSD	28070001		0.4	99.5	102.0	75	125	4.0	20
MS/MSD	28072004		0.4	100.0	95.0	75	125	1.3	20
MS/MSD	28072005		0.4	96.1	96.1	75	125	0.0	20
MS/MSD	28072013		0.4	102.0	101.0	75	125	1.0	20

Molybdenum — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	102.0		80	120		
LFB-MS			0.1	104.0		80	120		
MB		<0.002							
MB		<0.002							
MS/MSD	28070001		0.4	96.3	97.2	75	125	1.0	20
MS/MSD	28072004		0.4	99.8	97.5	75	125	2.2	20
MS/MSD	28072005		0.4	94.1	95.7	75	125	1.4	20
MS/MSD	28072013		0.4	102.0	99.5	75	125	2.8	20

Selenium — Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	97.6		80	120		
LFB-MS			0.1	94.7		80	120		
MB		<0.005							
MB		<0.005							
MS/MSD	28070001		0.4	95.6	98.4	75	125	1.8	20
MS/MSD	28072004		0.4	101.0	99.1	75	125	0.4	20

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Selenium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS/MSD	28072005		0.4	94.2	94.7	75	125	0.5	20
MS/MSD	28072013		0.4	98.1	100.9	75	125	2.3	20

Thallium Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	96.3		80	120		
LFB-MS			0.1	97.2		80	120		
MB		<0.0005							
MB		<0.0005							
MS/MSD	28070001		0.4	94.1	94.3	75	125	0.3	20
MS/MSD	28072004		0.4	94.8	94.3	75	125	0.5	20
MS/MSD	28072005		0.4	91.2	92.1	75	125	0.8	20
MS/MSD	28072013		0.4	96.1	95.4	75	125	0.5	20

Mercury Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB			0.002	94.6		85	115		
LFB			0.002	99.6		85	115		
LRB		<0.0002							
LRB		<0.0002							
MS/MSD	27912001		0.002	97.4	101.0	70	130	5.1	20
MS/MSD	27912007		0.002	107.0	104.0	70	130	0.0	20
MS/MSD	28072001		0.002	104.0	88.0	70	130	4.9	20
MS/MSD	28072013		0.002	94.4	107.0	70	130	10.0	20

Fluoride Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			12	97.3		83.8	111		
LFB-F			0.5	100.0		90	110		
LFB-F			0.5	100.0		90	110		
LFB-F			0.5	98.0		90	110		
LFB-F			0.5	100.0		90	110		
MB-F		<0.1							
MB-F		<0.1							

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Fluoride Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB-F		<0.1							
MB-F		<0.1							
MS/MSD-F	28070001		0.5	100.0	102.0	80	120	0.0	20
MS/MSD-F	28070011		0.5	104.0	104.0	80	120	0.0	20
MS/MSD-F	28072001		0.5	106.0	108.0	80	120	1.0	20
MS/MSD-F	28072011		0.5	107.0	98.0	80	120	1.8	20

Total Dissolved Solids Units: mg/L

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			736	100.0		90.35	110.33		
CRM			736	100.0		90.35	110.33		
MB		<10							
MB		<10							
DUP	27632001							0.7	20
DUP	28072001							1.1	20

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Member ACIL

Account #: 2040 **Client:** Basin Electric Power Cooperative

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Toll Free: (800) 279-6885 Fax: (701) 258-9724

Basin Electric Power Coope
WO: 28070

Chain of Custody

Page 1 of 2

Work Order # (Lab Use Only)

Company Name and Address: Basin Electric Power Coop., Leland Olds Station, 3901 Highway 200A, Stanton, ND 58571	Account # 2040
	Phone # 701-745-7238 701-557-5488
	Contact: Mark Dihle
	Emails: mdihle@bepc.com aknutson@bepc.com
	Name of Sampler: mls
	jermey.hurshman@aecom.com jason.lach@aecom.com
Billing Address (indicate if different from above)	Quote Number
	Date Submitted: 9/13/2023
	Project Name/Number: LOS PLANT PONDS CCR Wells
	Purchase Order #: 790708-04

Lab Use Only Lab	Sample ID	Sample Matrix GW - Groundwater	Date Sampled	Time Sampled	Bottles	Y/N	Analysis Required
001	MW-2017-10	GW	9/12/2023	1030	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
002	MW-2017-11	GW	9/12/2023	840	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
003	MW2017-8D	GW	9/11/2023	1050	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
004	Dup	GW	9/12/2023	840	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
005	MW2017-8	GW	9/11/2023	915	2	N	TDS, B, Ca, Cl, F, SO_4
006	MW-2017-7	GW	9/11/2023	1211	2	N	TDS, B, Ca, Cl, F, SO_4
007	MW-2017-6	GW	9/11/2023	1400	2	N	TDS, B, Ca, Cl, F, SO_4
008	MW-2017-5	GW	9/12/2023	935	2	N	TDS, B, Ca, Cl, F, SO_4
009	MW-2017-1	GW	9/12/2023	1145	2	N	TDS, B, Ca, Cl, F, SO_4

Comments:

	Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1.	Millennium Express	9-13-23			9/13/23	1044	7.4°C	Y / N	TM920
2.								Y / N	

Please submit the top copy with your samples. We will return the completed original with your results.

Form # 80-910005-1 See above for page number Effective Date: 26 Aug 2022

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Member ACIL

Account #: 2040 **Client:** Basin Electric Power Cooperative

Minnesota Valley Testing Laboratories, Inc.
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Bismarck, ND 58501
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Toll Free: (800) 279-6885 Fax: (701) 258-9724

Lab Use Only

Chain of Custody

Page 2 of 2

Work Order # (Lab Use Only)

Company Name and Address: Basin Electric Power Coop., Leland Olds Station, 3901 Highway 200A, Stanton, ND 58571	Account # 2040	Phone # 701-745-7238 701-557-5488
Billing Address (indicate if different from above)	Contact Mark Dihle	Emails mdihle@bepc.com aknutson@bepc.com
	Name of Sampler mls	jermey.hurshman@aecom.com jason.lach@aecom.com
	Quote Number	Date Submitted 9/13/2023
	Project Name/Number LOS PLANT PONDS CCR Wells	Purchase Order # 790708-04

Lab Use Only Lab	Sample ID	Sample Matrix GW - Groundwater	Date Sampled	Time Sampled	# of	Filtered	Analysis Required
010	MW-2017-2	GW	9/12/2023	1240	2	N	TDS, B, Ca, Cl, F, SO_4
011	MW-2017-3	GW	9/12/2023	1415	2	N	TDS, B, Ca, Cl, F, SO_4
012	MW-2017-4	GW	9/12/2023	1530	2	N	TDS, B, Ca, Cl, F, SO_4

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1.				13 Sept 23	1644	7.4°C	(Y) / N	TM908
2.							Y / N	

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Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: LOS Plant Ponds CCR Wells (28071) **PO:** 790708-04 LOS

Mark Dihle
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck, ND 58503

Certificate of Analysis

Approval

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

Analyses performed under Minnesota Department of Health Accreditation conforms to the current TNI standards.

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016 SD SDWA

Subcontracted Analyses

Analyzed By	Company	Address	Phone	Certification
SUBv	Energy Labs Casper	2393 Salt Creek Highway, Casper. WY 82601	307-235-0515	CERT

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID:	28071001	**Date Collected:**	09/12/2023 10:30	**Matrix:**	Groundwater
Sample ID:	MW-2017-10	**Date Received:**	09/13/2023 16:44	**Collector:**	Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: Contracted Result							
Radium 226	See Attached			1	10/30/2023 13:31	10/30/2023 13:31	
Radium 228	See Attached			1	10/30/2023 13:31	10/30/2023 13:31	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28071002 **Date Collected:** 09/12/2023 08:40 **Matrix:** Groundwater
Sample ID: MW-2017-11 **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: Contracted Result							
Radium 226	See Attached			1	10/30/2023 13:31	10/30/2023 13:31	
Radium 228	See Attached			1	10/30/2023 13:31	10/30/2023 13:31	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID:	28071003	**Date Collected:**	09/11/2023 10:50	**Matrix:**	Groundwater
Sample ID:	MW-2017-8D	**Date Received:**	09/13/2023 16:44	**Collector:**	Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: Contracted Result							
Radium 226	See Attached			1	10/30/2023 13:31	10/30/2023 13:31	
Radium 228	See Attached			1	10/30/2023 13:31	10/30/2023 13:31	

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Analytical Results

Lab ID: 28071004 **Date Collected:** 09/12/2023 08:40 **Matrix:** Groundwater
Sample ID: Dup **Date Received:** 09/13/2023 16:44 **Collector:** Client

Temp @ Receipt (C): 7.4 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: Contracted Result							
Radium 226	See Attached			1	10/30/2023 13:31	10/30/2023 13:31	
Radium 228	See Attached			1	10/30/2023 13:31	10/30/2023 13:31	

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ANALYTICAL SUMMARY REPORT

October 27, 2023

Minnesota Valley Testing Laboratories
1126 N Front St
New Ulm, MN 56073-1176

Work Order: C23090637 Quote ID: C15480
Project Name: 28071

Energy Laboratories, Inc. Casper WY received the following 4 samples for Minnesota Valley Testing Laboratories on 9/18/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23090637-001	28071001; MW-2017-10	09/12/23 10:30	09/18/23	Groundwater	Radium 226 + Radium 228, Total Radium 226, Total Radium 228, Total
C23090637-002	28071002; MW-2017-11	09/12/23 8:40	09/18/23	Groundwater	Same As Above
C23090637-003	28071003; MW-2017-8D	09/11/23 10:50	09/18/23	Groundwater	Same As Above
C23090637-004	28071004; Dup	09/12/23 8:40	09/18/23	Groundwater	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Account #: 2040 **Client:** Basin Electric Power Cooperative

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 28071
Lab ID: C23090637-001
Client Sample ID: 28071001; MW-2017-10

Report Date: 10/27/23
Collection Date: 09/12/23 10:30
DateReceived: 09/18/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.1	pCi/L	U			E903.0	10/10/23 10:04 / kdk
Radium 226 precision (±)	0.1	pCi/L				E903.0	10/10/23 10:04 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	10/10/23 10:04 / kdk
Radium 228	-0.02	pCi/L	U			RA-05	10/04/23 14:28 / trs
Radium 228 precision (±)	0.7	pCi/L				RA-05	10/04/23 14:28 / trs
Radium 228 MDC	1.2	pCi/L				RA-05	10/04/23 14:28 / trs
Radium 226 + Radium 228	0.7	pCi/L	U			A7500-RA	10/11/23 10:29 / dmf
Radium 226 + Radium 228 precision (±)	0.7	pCi/L				A7500-RA	10/11/23 10:29 / dmf
Radium 226 + Radium 228 MDC	1.2	pCi/L				A7500-RA	10/11/23 10:29 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

Account #: 2040 **Client:** Basin Electric Power Cooperative

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 28071
Lab ID: C23090637-002
Client Sample ID: 28071002; MW-2017-11

Report Date: 10/27/23
Collection Date: 09/12/23 08:40
DateReceived: 09/18/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	10/10/23 10:04 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	10/10/23 10:04 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	10/10/23 10:04 / kdk
Radium 228	0.4	pCi/L	U			RA-05	10/04/23 14:28 / trs
Radium 228 precision (±)	0.9	pCi/L				RA-05	10/04/23 14:28 / trs
Radium 228 MDC	1.4	pCi/L				RA-05	10/04/23 14:28 / trs
Radium 226 + Radium 228	0.8	pCi/L	U			A7500-RA	10/11/23 10:29 / dmf
Radium 226 + Radium 228 precision (±)	0.9	pCi/L				A7500-RA	10/11/23 10:29 / dmf
Radium 226 + Radium 228 MDC	1.4	pCi/L				A7500-RA	10/11/23 10:29 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 28071
Lab ID: C23090637-003
Client Sample ID: 28071003; MW-2017-8D

Report Date: 10/27/23
Collection Date: 09/11/23 10:50
DateReceived: 09/18/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U			E903.0	10/10/23 14:26 / kdk
Radium 226 precision (±)	0.1	pCi/L				E903.0	10/10/23 14:26 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	10/10/23 14:26 / kdk
Radium 228	0.7	pCi/L	U			RA-05	10/04/23 14:28 / trs
Radium 228 precision (±)	0.7	pCi/L				RA-05	10/04/23 14:28 / trs
Radium 228 MDC	1.1	pCi/L				RA-05	10/04/23 14:28 / trs
Radium 226 + Radium 228	0.7	pCi/L	U			A7500-RA	10/11/23 10:29 / dmf
Radium 226 + Radium 228 precision (±)	0.7	pCi/L				A7500-RA	10/11/23 10:29 / dmf
Radium 226 + Radium 228 MDC	1.1	pCi/L				A7500-RA	10/11/23 10:29 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 28071
Lab ID: C23090637-004
Client Sample ID: 28071004; Dup

Report Date: 10/27/23
Collection Date: 09/12/23 08:40
DateReceived: 09/18/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.07	pCi/L	U			E903.0	10/10/23 14:26 / kdk
Radium 226 precision (±)	0.1	pCi/L				E903.0	10/10/23 14:26 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	10/10/23 14:26 / kdk
Radium 228	0.7	pCi/L	U			RA-05	10/04/23 14:28 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	10/04/23 14:28 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	10/04/23 14:28 / trs
Radium 226 + Radium 228	0.7	pCi/L	U			A7500-RA	10/11/23 10:29 / dmf
Radium 226 + Radium 228 precision (±)	0.8	pCi/L				A7500-RA	10/11/23 10:29 / dmf
Radium 226 + Radium 228 MDC	1.3	pCi/L				A7500-RA	10/11/23 10:29 / dmf

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories **Work Order:** C23090637 **Report Date:** 10/24/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-11063
Lab ID: LCS-RA226-11063	3	Laboratory Control Sample				Run: TENNELEC-3_230926C				10/10/23 10:04
Radium 226		9.9	pCi/L		99	70	130			
Radium 226 precision (±)		1.9	pCi/L							
Radium 226 MDC		0.23	pCi/L							
Lab ID: MB-RA226-11063	3	Method Blank				Run: TENNELEC-3_230926C				10/10/23 10:04
Radium 226		0.06	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23090637-001ADUP	3	Sample Duplicate				Run: TENNELEC-3_230926C				10/10/23 10:04
Radium 226		0.30	pCi/L					70	30	R
Radium 226 precision (±)		0.15	pCi/L							
Radium 226 MDC		0.20	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.60.

Qualifiers:

RL - Analyte Reporting Limit
R - Relative Percent Difference (RPD) exceeds advisory limit
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

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Account #: 2040 **Client:** Basin Electric Power Cooperative

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories **Work Order:** C23090637 **Report Date:** 10/24/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-7217
Lab ID: LCS-228-RA226-11063	3	Laboratory Control Sample				Run: TENNELEC-3_230926A				10/04/23 14:28
Radium 228		6.1	pCi/L		91	70	130			
Radium 228 precision (±)		1.5	pCi/L							
Radium 228 MDC		1.2	pCi/L							
Lab ID: MB-RA226-11063	3	Method Blank				Run: TENNELEC-3_230926A				10/04/23 14:28
Radium 228		0.3	pCi/L							U
Radium 228 precision (±)		0.7	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23090637-001ADUP	3	Sample Duplicate				Run: TENNELEC-3_230926A				10/04/23 14:28
Radium 228		0.51	pCi/L					220	30	UR
Radium 228 precision (±)		0.77	pCi/L							
Radium 228 MDC		1.3	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.51

Qualifiers:

RL - Analyte Reporting Limit
R - Relative Percent Difference (RPD) exceeds advisory limit
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories C23090637

Login completed by: Hannah R. Johnson
Reviewed by: adegnan
Reviewed Date: 9/20/2023

Date Received: 9/18/2023
Received by: slr
Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☐	No ☑	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	19.5°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

For methods that require zero headspace or require preservation check at the time of analysis due to potential interference, the pH is verified at analysis. Nonconforming sample pH is documented as part of the analysis and included in the sample analysis comments.

Contact and Corrective Action Comments:

This was received with C23090597 without a COC, Claudette Carroll emailed me the COC on 9/19/2023. Temperature Blank temperature for Cooler 1 was 19.0°C, Cooler 2 was 19.5°C, Cooler 3 was 18.8°C, Cooler 4 was 19.0°C, and Cooler 5 was 19.0°C. 9/19/2023 HJ

Page 8 of 9

Account #: 2040 **Client:** Basin Electric Power Cooperative

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Bismarck, ND 58501
Phone: (701) 258-9720
Toll Free: (800) 279-6885 Fax: (701) 258-9724

Chain of Custody Record

C2309063[illegible]

Page 1 of 1.

Work Order # 28071

Company Name and Address: MVTL, 2616 E Broadway, Bismarck, ND 58501	**Account #:**	**Phone #:** 701-258-9720
	Contact: Claudette	**Fax #:** For faxed report check box ☐
Billing Address (indicate if different from above): PO Box 249, New Ulm, MN 56073	**Name of Sampler:**	**E-mail:** ccarroll@mvtl.com For e-mail report check box ☐
	Quote Number C15480 v3	**Date Submitted:** 14-Sep-23
	Project Name/Number:	**Purchase Order #:** BL6754

Sample Information						Bottle Type						Analysis
Lab Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Untreated	Gallon HNO3	VOC Vials	Umpreserved	Glass Jar	Other	Analysis Required
	28071001	MW-2017-10	GW	12-Sep-23	1030		1					Ra226 & Ra228
	28071002	MW-2017-11	GW	12-Sep-23	0840		1					Ra226 & Ra228
	28071003	MW-2017-8D	GW	11-Sep-23	1050		1					Ra226 & Ra228
	28071004	Dup	GW	12-Sep-23	0840		1					Ra226 & Ra228

Comments: Individual results as well as combined Ra226 & Ra228 must be reported for all samples.

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Temp:
T. Olson	14-Sep-23	1700		Hannah Johnson	9-14-23 15:50	

This COC was Emailed, Actual Time on WO# 597 9/18/23 8:50 Shiloh [illegible]

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Account #: 2040 **Client:** Basin Electric Power Cooperative

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Toll Free: (800) 279-6885 Fax: (701) 258-9724

Basin Electric Power Coope
WO: 28071

Chain of Custody

Page 1 of 2

Work Order #
Lab Use Only

Company Name and Address Basin Electric Power Coop. Leland Olds Station 3901 Highway 200A Stanton, ND 58571	Account # 2040	Phone # 701-745-7238 701-557-5488
	Contact Mark Dihle	Emails mdihle@bepc.com aknutson@bepc.com
	Name of Sampler mls	jermey.hurshman@aecom.com jason.lach@aecom.com
Billing Address (indicate if different from above)	Quote Number	Date Submitted 9/13/2023
	Project Name/Number LOS PLANT PONDS CCR Wells	Purchase Order # 790708-04

Lab Use Only Lab	Sample ID	Sample Matrix GW - Groundwater	Date Sampled	Time Sampled	Bottles	Y/N	Analysis Required
001	MW-2017-10	GW	9/12/2023	1030	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
002	MW-2017-11	GW	9/12/2023	840	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
003	MW2017-8D	GW	9/11/2023	1050	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
004	Dup	GW	9/12/2023	840	3	N	B, Ca, Cl, F, SO_4, Sb, As, Ba, Be, Cd, Cr, Co,Pb, Li, Hg, Mo, Se, Tl, Ra226, Ra228, TDS
–	MW2017-8	GW	9/11/2023	915	2	N	TDS, B, Ca, Cl, F, SO_4
–	MW-2017-7	GW	9/11/2023	1211	2	N	TDS, B, Ca, Cl, F, SO_4
–	MW-2017-6	GW	9/11/2023	1400	2	N	TDS, B, Ca, Cl, F, SO_4
–	MW-2017-5	GW	9/12/2023	935	2	N	TDS, B, Ca, Cl, F, SO_4
–	MW-2017-1	GW	9/12/2023	1145	2	N	TDS, B, Ca, Cl, F, SO_4

Comments:

	Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1.	Millennium Express	9-13-23					7.4°C	Y / N	
2.								Y / N	

Please submit the top copy with your samples. We will return the completed original with your results.

Form # 80-910005-1 See above for page number Effective Date: 26 Aug 2022

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Account #: 2040 **Client:** Basin Electric Power Cooperative

Minnesota Valley Testing Laboratories, Inc.
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Bismarck, ND 58501
Phone: (701) 258-9720
Toll Free: (800) 279-6885 Fax: (701) 258-9724

Lab Use Only

Chain of Custody

Page 2 of 2

Work Order # (Lab Use Only)

Company Name and Address: Basin Electric Power Coop., Leland Olds Station, 3901 Highway 200A, Stanton, ND 58571	Account # 2040	Phone # 701-745-7238 701-557-5488
	Contact: Mark Dihle	Emails: mdihle@bepc.com aknutson@bepc.com
	Name of Sampler: mls	jermey.hurshman@aecom.com jason.lach@aecom.com
Billing Address (indicate if different from above)	Quote Number	Date Submitted: 9/13/2023
	Project Name/Number: LOS PLANT PONDS CCR Wells	Purchase Order #: 790708-04

Lab Use Only Lab	Sample ID	Sample Matrix (GW - Groundwater)	Date Sampled	Time Sampled	# of	Filtered	Analysis Required
—	MW-2017-2	GW	9/12/2023	1240	2	N	TDS, B, Ca, Cl, F, SO_4
—	MW-2017-3	GW	9/12/2023	1415	2	N	TDS, B, Ca, Cl, F, SO_4
—	MW-2017-4	GW	9/12/2023	1530	2	N	TDS, B, Ca, Cl, F, SO_4

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1.				13 Sep 23	1644	7.4C	(Y)/N	TM#20
2.							Y/N	

Attachment B
Input and Output Data Files for Calculation of Upper and Lower Prediction Limits (2018-2020)

Background Monitoring Wells MW-2017-1 and MW-2017-8
LOS Pond 2 and Pond 3 (Multi-Unit) CCR Monitoring Well Network
Leland Olds Station – Stanton, North Dakota

WellNo	Date	B	D_B	Ca	D_Ca	Cl	D_Cl	F	D_F	pH	D_pH	SO4	D_SO4	TDS	D_TDS
MW-2017-1	03/12/2018	2	1	100	1	8.8	1	0.5	0	6.95	1	210	1	710	1
MW-2017-1	04/17/2018	2.1	1	96	1	9.4	1	0.5	0	6.86	1	200	1	680	1
MW-2017-1	06/14/2018	2.2	1	89	1	8.2	1	0.5	0	7.06	1	220	1	690	1
MW-2017-1	07/25/2018	2.36	1	91	1	8.73	1	0.5	0	7.21	1	218	1	710	1
MW-2017-1	08/27/2018	2.37	1	90	1	8.65	1	0.5	0	7.38	1	219	1	707	1
MW-2017-1	03/12/2019	2.15	1	103	1	8.5	1	0.5	0	7.19	1	217	1	735	1
MW-2017-1	03/27/2019	2.02	1	98	1	8.53	1	0.5	0	7.26	1	212	1	718	1
MW-2017-1	04/09/2019	2.02	1	107	1	8.91	1	0.5	0	7.23	1	221	1	761	1
MW-2017-1	11/12/2019	1.11	1	130	1	9	1	0.43	1	7.73	1	233	1	740	1
MW-2017-1	06/08/2020	1.04	1	150	1	7.74	1	0.5	0	6.86	1	260	1	1050	1
MW-2017-1	10/05/2020	0.96	1	158	1	9.87	1	0.5	0	7.01	1	270	1	960	1
MW-2017-8	03/14/2018	0.48	1	150	1	25	1	1	0	7.03	1	2,000	1	3,800	1
MW-2017-8	04/18/2018	0.46	1	150	1	25	1	1	0	7.38	1	2,100	1	4,000	1
MW-2017-8	06/15/2018	0.46	1	140	1	22	1	1	0	7.19	1	2,100	1	4,000	1
MW-2017-8	07/25/2018	0.47	1	145	1	24.3	1	1	0	7.23	1	2,010	1	3,900	1
MW-2017-8	08/28/2018	0.47	1	140	1	24	1	1	0	7.52	1	2,020	1	3,880	1
MW-2017-8	06/08/2020	0.45	1	133	1	20.8	1	4.68	1	7.29	1	1,860	1	3800	1
MW-2017-8	10/06/2020	0.48	1	137	1	24.6	1	4.57	1	7.16	1	1,960	1	2,960	1

D_(Analyte): 0= non-detect and 1 = detect
pH in Standard Units
All other analytes reported in mg/L

WellNo	Date	B	D_B	Ca	D_Ca	Cl	D_Cl	F	D_F	pH	D_pH	SO4	D_SO4	TDS	D_TDS
MW-2017-1	03/12/2018	2	1	100	1	8.8	1	0.5	0	6.95	1	210	1	710	1
MW-2017-1	04/17/2018	2.1	1	96	1	9.4	1	0.5	0	6.86	1	200	1	680	1
MW-2017-1	06/14/2018	2.2	1	89	1	8.2	1	0.5	0	7.06	1	220	1	690	1
MW-2017-1	07/25/2018	2.36	1	91	1	8.73	1	0.5	0	7.21	1	218	1	710	1
MW-2017-1	08/27/2018	2.37	1	90	1	8.65	1	0.5	0	7.38	1	219	1	707	1
MW-2017-1	03/12/2019	2.15	1	103	1	8.5	1	0.5	0	7.19	1	217	1	735	1
MW-2017-1	03/27/2019	2.02	1	98	1	8.53	1	0.5	0	7.26	1	212	1	718	1
MW-2017-1	04/09/2019	2.02	1	107	1	8.91	1	0.5	0	7.23	1	221	1	761	1
MW-2017-1	11/12/2019	1.11	1	130	1	9	1	0.43	1	7.73	1	233	1	740	1
MW-2017-1	06/08/2020	1.04	1	150	1	7.74	1	0.5	0	6.86	1	260	1	1050	1
MW-2017-1	10/05/2020	0.96	1	158	1	9.87	1	0.5	0	7.01	1	270	1	960	1
MW-2017-8	03/14/2018	0.48	1	150	1	25	1	1	0	7.03	1	2,000	1	3,800	1
MW-2017-8	04/18/2018	0.46	1	150	1	25	1	1	0	7.38	1	2,100	1	4,000	1
MW-2017-8	06/15/2018	0.46	1	140	1	22	1	1	0	7.19	1	2,100	1	4,000	1
MW-2017-8	07/25/2018	0.47	1	145	1	24.3	1	1	0	7.23	1	2,010	1	3,900	1
MW-2017-8	08/28/2018	0.47	1	140	1	24	1	1	0	7.52	1	2,020	1	3,880	1
MW-2017-8	06/08/2020	0.45	1	133	1	20.8	1	4.68	1	7.29	1	1,860	1	3800	1
MW-2017-8	10/06/2020	0.48	1	137	1	24.6	1	4.57	1	7.16	1	1,960	1	2,960	1

Background Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.2 1/19/2024 5:38:36 PM
From File	ProUCL Input LOS Multiunit.xls
Full Precision	OFF
Confidence Coefficient	95%
Coverage	95%
Different or Future K Observations	1
Number of Bootstrap Operations	2000

B

General Statistics

Total Number of Observations	18	Number of Distinct Observations	14
Minimum	0.45	First Quartile	0.473
Second Largest	2.36	Median	1.075
Maximum	2.37	Third Quartile	2.08
Mean	1.311	SD	0.806
Coefficient of Variation	0.615	Skewness	0.112
Mean of logged Data	0.0494	SD of logged Data	0.717

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.453	d2max (for USL)	2.504

Normal GOF Test

Shapiro Wilk Test Statistic	0.797	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.858	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.248	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.235	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

Background Statistics Assuming Normal Distribution

95% UTL with 95% Coverage	3.288	90% Percentile (z)	2.344
95% UPL (t)	2.751	95% Percentile (z)	2.637
95% USL	3.329	99% Percentile (z)	3.186

Gamma GOF Test

A-D Test Statistic	1.623	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.75	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.264	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.206	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.412	k star (bias corrected MLE)	2.047
Theta hat (MLE)	0.544	Theta star (bias corrected MLE)	0.641
nu hat (MLE)	86.82	nu star (bias corrected)	73.68
MLE Mean (bias corrected)	1.311	MLE Sd (bias corrected)	0.916

Background Statistics Assuming Gamma Distribution

95% Wilson Hilferty (WH) Approx. Gamma UPL	3.225	90% Percentile	2.536
95% Hawkins Wixley (HW) Approx. Gamma UPL	3.331	95% Percentile	3.087
95% WH Approx. Gamma UTL with 95% Coverage	4.402	99% Percentile	4.308
95% HW Approx. Gamma UTL with 95% Coverage	4.686		
95% WH USL	4.503	95% HW USL	4.805

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.785	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.914	Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.26	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.185	Data Not Lognormal at 10% Significance Level

Data Not Lognormal at 10% Significance Level

Background Statistics assuming Lognormal Distribution

95% UTL with	95% Coverage	6.1	90% Percentile (z)	2.634
	95% UPL (t)	3.785	95% Percentile (z)	3.417
	95% USL	6.328	99% Percentile (z)	5.571

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, order		18	95% UTL with 95% Coverage	2.37
Approx, f used to compute achieved CC		0.947	Approximate Actual Confidence Coefficient achieved by UTL	0.603
			Approximate Sample Size needed to achieve specified CC	59
95% Percentile Bootstrap UTL with	95% Coverage	2.37	95% BCA Bootstrap UTL with 95% Coverage	2.37
	95% UPL	2.37	90% Percentile	2.248
	90% Chebyshev UPL	3.795	95% Percentile	2.362
	95% Chebyshev UPL	4.92	99% Percentile	2.368
	95% USL	2.37		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Background Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.2 1/19/2024 5:38:36 PM
From File	ProUCL Input LOS Multiunit.xls
Full Precision	OFF
Confidence Coefficient	95%
Coverage	95%
Different or Future K Observations	1
Number of Bootstrap Operations	2000

Ca

General Statistics

Total Number of Observations	18	Number of Distinct Observations	15
Minimum	89	First Quartile	98.5
Second Largest	150	Median	131.5
Maximum	158	Third Quartile	143.8
Mean	122.6	SD	25
Coefficient of Variation	0.204	Skewness	-0.122
Mean of logged Data	4.789	SD of logged Data	0.21

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.453	d2max (for USL)	2.504

Normal GOF Test

Shapiro Wilk Test Statistic	0.87	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.858	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.178	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.235	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Background Statistics Assuming Normal Distribution

95% UTL with	95% Coverage	183.9	90% Percentile (z)	154.6
	95% UPL (t)	167.3	95% Percentile (z)	163.7
	95% USL	185.2	99% Percentile (z)	180.8

Gamma GOF Test

A-D Test Statistic	1.065	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.739	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.196	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.203	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	24.58	k star (bias corrected MLE)	20.52
Theta hat (MLE)	4.988	Theta star (bias corrected MLE)	5.974
nu hat (MLE)	885	nu star (bias corrected)	738.8
MLE Mean (bias corrected)	122.6	MLE Sd (bias corrected)	27.07

Background Statistics Assuming Gamma Distribution

95% Wilson Hilferty (WH) Approx. Gamma UPL	171.9	90% Percentile	158.3
95% Hawkins Wixley (HW) Approx. Gamma UPL	172.6	95% Percentile	170.3
95% WH Approx. Gamma UTL with 95% Coverage	194	99% Percentile	194.2
95% HW Approx. Gamma UTL with 95% Coverage	195.6		
95% WH USL	195.8	95% HW USL	197.5

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.863	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.914	Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.202	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.185	Data Not Lognormal at 10% Significance Level

Data Not Lognormal at 10% Significance Level

Background Statistics assuming Lognormal Distribution

95% UTL with	95% Coverage	201.2	90% Percentile (z)	157.3
	95% UPL (t)	174.9	95% Percentile (z)	169.8
	95% USL	203.4	99% Percentile (z)	195.9

Nonparametric Distribution Free Background Statistics

Data appear Normal at 1% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, order		18	95% UTL with	95% Coverage	158
Approx, f used to compute achieved CC		0.947	Approximate Actual Confidence Coefficient achieved by UTL		0.603
			Approximate Sample Size needed to achieve specified CC		59
95% Percentile Bootstrap UTL with	95% Coverage	158	95% BCA Bootstrap UTL with	95% Coverage	158
	95% UPL	158		90% Percentile	150
	90% Chebyshev UPL	199.7		95% Percentile	151.2
	95% Chebyshev UPL	234.6		99% Percentile	156.6
	95% USL	158			

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Background Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.2 1/19/2024 5:38:36 PM
From File	ProUCL Input LOS Multiunit.xls
Full Precision	OFF
Confidence Coefficient	95%
Coverage	95%
Different or Future K Observations	1
Number of Bootstrap Operations	2000

Cl

General Statistics

Total Number of Observations	18	Number of Distinct Observations	17
Minimum	7.74	First Quartile	8.67
Second Largest	25	Median	9.2
Maximum	25	Third Quartile	23.5
Mean	14.56	SD	7.556
Coefficient of Variation	0.519	Skewness	0.539
Mean of logged Data	2.555	SD of logged Data	0.503

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.453	d2max (for USL)	2.504

Normal GOF Test

Shapiro Wilk Test Statistic	0.712	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.858	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.344	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.235	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

Background Statistics Assuming Normal Distribution

95% UTL with	95% Coverage	33.09	90% Percentile (z)	24.24
	95% UPL (t)	28.06	95% Percentile (z)	26.99
	95% USL	33.48	99% Percentile (z)	32.14

Gamma GOF Test

A-D Test Statistic	2.437	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.743	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.33	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.204	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	4.209	k star (bias corrected MLE)	3.544
Theta hat (MLE)	3.459	Theta star (bias corrected MLE)	4.107
nu hat (MLE)	151.5	nu star (bias corrected)	127.6
MLE Mean (bias corrected)	14.56	MLE Sd (bias corrected)	7.732

Background Statistics Assuming Gamma Distribution

95% Wilson Hilferty (WH) Approx. Gamma UPL		30	90% Percentile	24.93
95% Hawkins Wixley (HW) Approx. Gamma UPL		30.34	95% Percentile	29.15
95% WH Approx. Gamma UTL with	95% Coverage	38.6	99% Percentile	38.24
95% HW Approx. Gamma UTL with	95% Coverage	39.72		
	95% WH USL	39.32	95% HW USL	40.51

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.728	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.914	Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.312	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.185	Data Not Lognormal at 10% Significance Level

Data Not Lognormal at 10% Significance Level

Background Statistics assuming Lognormal Distribution

95% UTL with	95% Coverage	44.18	90% Percentile (z)	24.51
	95% UPL (t)	31.61	95% Percentile (z)	29.43
	95% USL	45.33	99% Percentile (z)	41.45

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, order		18	95% UTL with	95% Coverage	25
Approx, f used to compute achieved CC		0.947	Approximate Actual Confidence Coefficient achieved by UTL		0.603
			Approximate Sample Size needed to achieve specified CC		59
95% Percentile Bootstrap UTL with	95% Coverage	25	95% BCA Bootstrap UTL with	95% Coverage	25
	95% UPL	25		90% Percentile	24.72
	90% Chebyshev UPL	37.85		95% Percentile	25
	95% Chebyshev UPL	48.4		99% Percentile	25
	95% USL	25			

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Background Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.2 1/19/2024 5:38:36 PM
From File	ProUCL Input LOS Multiunit.xls
Full Precision	OFF
Confidence Coefficient	95%
Coverage	95%
Different or Future K Observations	1
Number of Bootstrap Operations	2000

F

General Statistics

Total Number of Observations	18	Number of Missing Observations	0
Number of Distinct Observations	5		
Number of Detects	3	Number of Non-Detects	15
Number of Distinct Detects	3	Number of Distinct Non-Detects	2
Minimum Detect	0.43	Minimum Non-Detect	0.5
Maximum Detect	4.68	Maximum Non-Detect	1
Variance Detected	5.869	Percent Non-Detects	83.33%
Mean Detected	3.227	SD Detected	2.423
Mean of Detected Logged Data	0.74	SD of Detected Logged Data	1.371

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.453	d2max (for USL)	2.504

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.769	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.753	Detected Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.377	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.429	Detected Data appear Normal at 1% Significance Level

Detected Data appear Normal at 1% Significance Level

Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.896	KM SD	1.318
95% UTL95% Coverage	4.13	95% KM UPL (t)	3.253
90% KM Percentile (z)	2.586	95% KM Percentile (z)	3.065
99% KM Percentile (z)	3.963	95% KM USL	4.198

DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.816	SD	1.391
95% UTL95% Coverage	4.227	95% UPL (t)	3.301
90% Percentile (z)	2.598	95% Percentile (z)	3.103
99% Percentile (z)	4.051	95% USL	4.298

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.611	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.64	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.427	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.439	Detected data appear Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.299	k star (bias corrected MLE)	N/A
Theta hat (MLE)	2.484	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	7.795	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A		
MLE Sd (bias corrected)	N/A	95% Percentile of Chisquare (2kstar)	N/A

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	1.192
Maximum	4.68	Median	0.642
SD	1.447	CV	1.213
k hat (MLE)	0.513	k star (bias corrected MLE)	0.464
Theta hat (MLE)	2.326	Theta star (bias corrected MLE)	2.568
nu hat (MLE)	18.46	nu star (bias corrected)	16.71
MLE Mean (bias corrected)	1.192	MLE Sd (bias corrected)	1.75
95% Percentile of Chisquare (2kstar)	3.662	90% Percentile	3.275
95% Percentile	4.703	99% Percentile	8.239

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	8.286	10.54	95% Approx. Gamma UPL	4.981	5.739
95% Gamma USL	8.586	11.01			

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.896	SD (KM)	1.318
Variance (KM)	1.738	SE of Mean (KM)	0.381
k hat (KM)	0.462	k star (KM)	0.422
nu hat (KM)	16.63	nu star (KM)	15.19
theta hat (KM)	1.94	theta star (KM)	2.124
80% gamma percentile (KM)	1.455	90% gamma percentile (KM)	2.507
95% gamma percentile (KM)	3.655	99% gamma percentile (KM)	6.526

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	3.786	3.722	95% Approx. Gamma UPL	2.56	2.454
95% KM Gamma Percentile	2.337	2.231	95% Gamma USL	3.894	3.836

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.757	**Shapiro Wilk GOF Test**
10% Shapiro Wilk Critical Value	0.789	Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.382	**Lilliefors GOF Test**
10% Lilliefors Critical Value	0.389	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Approximate Lognormal at 10% Significance Level

Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	1.034	Mean in Log Scale	-0.586
SD in Original Scale	1.377	SD in Log Scale	1.116
95% UTL95% Coverage	8.6	95% BCA UTL95% Coverage	4.68
95% Bootstrap (%) UTL95% Coverage	4.68	95% UPL (t)	4.091
90% Percentile (z)	2.326	95% Percentile (z)	3.489
99% Percentile (z)	7.467	95% USL	9.104

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-0.58	95% KM UTL (Lognormal)95% Coverage	3.494
KM SD of Logged Data	0.747	95% KM UPL (Lognormal)	2.126
95% KM Percentile Lognormal (z)	1.911	95% KM USL (Lognormal)	3.63

Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.816	Mean in Log Scale	-0.839
SD in Original Scale	1.391	SD in Log Scale	0.918
95% UTL95% Coverage	4.11	95% UPL (t)	2.23
90% Percentile (z)	1.402	95% Percentile (z)	1.957
99% Percentile (z)	3.659	95% USL	4.307

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution

Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	18	95% UTL with95% Coverage	4.68
Approx, f used to compute achieved CC	0.947	Approximate Actual Confidence Coefficient achieved by UTL	0.603
Approximate Sample Size needed to achieve specified CC	59	95% UPL	4.68
95% USL	4.68	95% KM Chebyshev UPL	6.801

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Background Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.2 1/19/2024 5:38:36 PM
From File	ProUCL Input LOS Multiunit.xls
Full Precision	OFF
Confidence Coefficient	95%
Coverage	95%
Different or Future K Observations	1
Number of Bootstrap Operations	2000

pH

General Statistics

Total Number of Observations	18	Number of Distinct Observations	14
Minimum	6.86	First Quartile	7.038
Second Largest	7.52	Median	7.2
Maximum	7.73	Third Quartile	7.283
Mean	7.197	SD	0.222
Coefficient of Variation	0.0309	Skewness	0.564
Mean of logged Data	1.973	SD of logged Data	0.0307

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.453	d2max (for USL)	2.504

Normal GOF Test

Shapiro Wilk Test Statistic	0.958	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.858	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.115	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.235	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Background Statistics Assuming Normal Distribution

95% UTL with	95% Coverage	7.742	90% Percentile (z)	7.482
	95% UPL (t)	7.594	95% Percentile (z)	7.563
	95% USL	7.754	99% Percentile (z)	7.714

Gamma GOF Test

A-D Test Statistic	0.277	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.737	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.107	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.203	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1118	k star (bias corrected MLE)	931.6
Theta hat (MLE)	0.00644	Theta star (bias corrected MLE)	0.00773
nu hat (MLE)	40243	nu star (bias corrected)	33538
MLE Mean (bias corrected)	7.197	MLE Sd (bias corrected)	0.236

Background Statistics Assuming Gamma Distribution

95% Wilson Hilferty (WH) Approx. Gamma UPL		7.598	90% Percentile	7.5
95% Hawkins Wixley (HW) Approx. Gamma UPL		7.598	95% Percentile	7.589
95% WH Approx. Gamma UTL with	95% Coverage	7.752	99% Percentile	7.757
95% HW Approx. Gamma UTL with	95% Coverage	7.753		
	95% WH USL	7.763	95% HW USL	7.765

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.962	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.914	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.11	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.185	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level

Background Statistics assuming Lognormal Distribution

95% UTL with	95% Coverage	7.756	90% Percentile (z)	7.482
	95% UPL (t)	7.599	95% Percentile (z)	7.566
	95% USL	7.768	99% Percentile (z)	7.726

Nonparametric Distribution Free Background Statistics

Data appear Normal at 1% Significance Level

Nonparametric Upper Limits for Background Threshold Values

	Order of Statistic, order	18	95% UTL with 95% Coverage	7.73
	Approx, f used to compute achieved CC	0.947	Approximate Actual Confidence Coefficient achieved by UTL	0.603
			Approximate Sample Size needed to achieve specified CC	59
95% Percentile Bootstrap UTL with	95% Coverage	7.73	95% BCA Bootstrap UTL with 95% Coverage	7.73
	95% UPL	7.73	90% Percentile	7.422
	90% Chebyshev UPL	7.882	95% Percentile	7.552
	95% Chebyshev UPL	8.193	99% Percentile	7.694
	95% USL	7.73		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

LPL Calculations

pH	Rank
6.86	1
6.86	2
6.95	3
7.01	4
7.03	5
7.06	6
7.16	7
7.19	8
7.19	9
7.21	10
7.23	11
7.23	12
7.26	13
7.29	14
7.38	15
7.38	16
7.52	17
7.73	18

pH LPL

n	18
n-1	17
alpha LPL	0.05
alpha UPL	0.95
t(alpha,n-1)	-1.73961
t(alpha,n-1)	1.739607
mean	7.196667
st.dev.s	0.222499
sqrt(1+1/n)	1.027402
LPL	6.798999
UPL	7.594334

Background Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.2 1/19/2024 5:38:36 PM
From File	ProUCL Input LOS Multiunit.xls
Full Precision	OFF
Confidence Coefficient	95%
Coverage	95%
Different or Future K Observations	1
Number of Bootstrap Operations	2000

SO4

General Statistics

Total Number of Observations	18	Number of Distinct Observations	17
Minimum	200	First Quartile	218.3
Second Largest	2100	Median	246.5
Maximum	2100	Third Quartile	1990
Mean	918.3	SD	895.3
Coefficient of Variation	0.975	Skewness	0.507
Mean of logged Data	6.266	SD of logged Data	1.101

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.453	d2max (for USL)	2.504

Normal GOF Test

Shapiro Wilk Test Statistic	0.66	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.858	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.377	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.235	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

Background Statistics Assuming Normal Distribution

95% UTL with	95% Coverage	3114	90% Percentile (z)	2066
	95% UPL (t)	2518	95% Percentile (z)	2391
	95% USL	3160	99% Percentile (z)	3001

Gamma GOF Test

A-D Test Statistic	2.945	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.766	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.363	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.209	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.033	k star (bias corrected MLE)	0.898
Theta hat (MLE)	889.2	Theta star (bias corrected MLE)	1023
nu hat (MLE)	37.18	nu star (bias corrected)	32.32
MLE Mean (bias corrected)	918.3	MLE Sd (bias corrected)	969.3

Background Statistics Assuming Gamma Distribution

95% Wilson Hilferty (WH) Approx. Gamma UPL		3039	90% Percentile 2171
95% Hawkins Wixley (HW) Approx. Gamma UPL		3166	95% Percentile 2859
95% WH Approx. Gamma UTL with	95% Coverage	4632	99% Percentile 4467
95% HW Approx. Gamma UTL with	95% Coverage	5086	
	95% WH USL	4772	95% HW USL 5262

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.675	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.914	Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.339	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.185	Data Not Lognormal at 10% Significance Level

Data Not Lognormal at 10% Significance Level

Background Statistics assuming Lognormal Distribution

95% UTL with	95% Coverage	7831	90% Percentile (z)	2157
	95% UPL (t)	3763	95% Percentile (z)	3217
	95% USL	8283	99% Percentile (z)	6812

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, order		18	95% UTL with	95% Coverage	2100
Approx, f used to compute achieved CC		0.947	Approximate Actual Confidence Coefficient achieved by UTL		0.603
			Approximate Sample Size needed to achieve specified CC		59
95% Percentile Bootstrap UTL with	95% Coverage	2100	95% BCA Bootstrap UTL with	95% Coverage	2100
	95% UPL	2100		90% Percentile	2044
	90% Chebyshev UPL	3678		95% Percentile	2100
	95% Chebyshev UPL	4928		99% Percentile	2100
	95% USL	2100			

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

Background Statistics for Data Sets with Non-Detects

User Selected Options

Date/Time of Computation	ProUCL 5.2 1/19/2024 5:38:36 PM
From File	ProUCL Input LOS Multiunit.xls
Full Precision	OFF
Confidence Coefficient	95%
Coverage	95%
Different or Future K Observations	1
Number of Bootstrap Operations	2000

TDS

General Statistics

Total Number of Observations	18	Number of Distinct Observations	15
Minimum	680	First Quartile	712
Second Largest	4000	Median	860.5
Maximum	4000	Third Quartile	3800
Mean	1933	SD	1520
Coefficient of Variation	0.786	Skewness	0.544
Mean of logged Data	7.255	SD of logged Data	0.809

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.453	d2max (for USL)	2.504

Normal GOF Test

Shapiro Wilk Test Statistic	0.694	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.858	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.331	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.235	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

Background Statistics Assuming Normal Distribution

95% UTL with 95% Coverage	5662	90% Percentile (z)	3881
95% UPL (t)	4650	95% Percentile (z)	4434
95% USL	5739	99% Percentile (z)	5469

Gamma GOF Test

A-D Test Statistic	2.486	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.754	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.291	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.207	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.751	k star (bias corrected MLE)	1.496
Theta hat (MLE)	1104	Theta star (bias corrected MLE)	1292
nu hat (MLE)	63.02	nu star (bias corrected)	53.85
MLE Mean (bias corrected)	1933	MLE Sd (bias corrected)	1581

Background Statistics Assuming Gamma Distribution

95% Wilson Hilferty (WH) Approx. Gamma UPL	5290	90% Percentile	4031
95% Hawkins Wixley (HW) Approx. Gamma UPL	5429	95% Percentile	5041
95% WH Approx. Gamma UTL with 95% Coverage	7510	99% Percentile	7321
95% HW Approx. Gamma UTL with 95% Coverage	7978		
95% WH USL	7702	95% HW USL	8204

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.716	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.914	Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.278	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.185	Data Not Lognormal at 10% Significance Level

Data Not Lognormal at 10% Significance Level

Background Statistics assuming Lognormal Distribution

95% UTL with	95% Coverage	10291	90% Percentile (z)	3990
	95% UPL (t)	6006	95% Percentile (z)	5353
	95% USL	10724	99% Percentile (z)	9289

Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, order		18	95% UTL with	95% Coverage	4000
Approx, f used to compute achieved CC		0.947	Approximate Actual Confidence Coefficient achieved by UTL		0.603
			Approximate Sample Size needed to achieve specified CC		59
95% Percentile Bootstrap UTL with	95% Coverage	4000	95% BCA Bootstrap UTL with	95% Coverage	4000
	95% UPL	4000		90% Percentile	3930
	90% Chebyshev UPL	6618		95% Percentile	4000
	95% Chebyshev UPL	8740		99% Percentile	4000
	95% USL	4000			

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.