2025 Annual Groundwater Monitoring and Corrective Action Report

LOS CCR Landfill
Leland Olds Station
Stanton, North Dakota

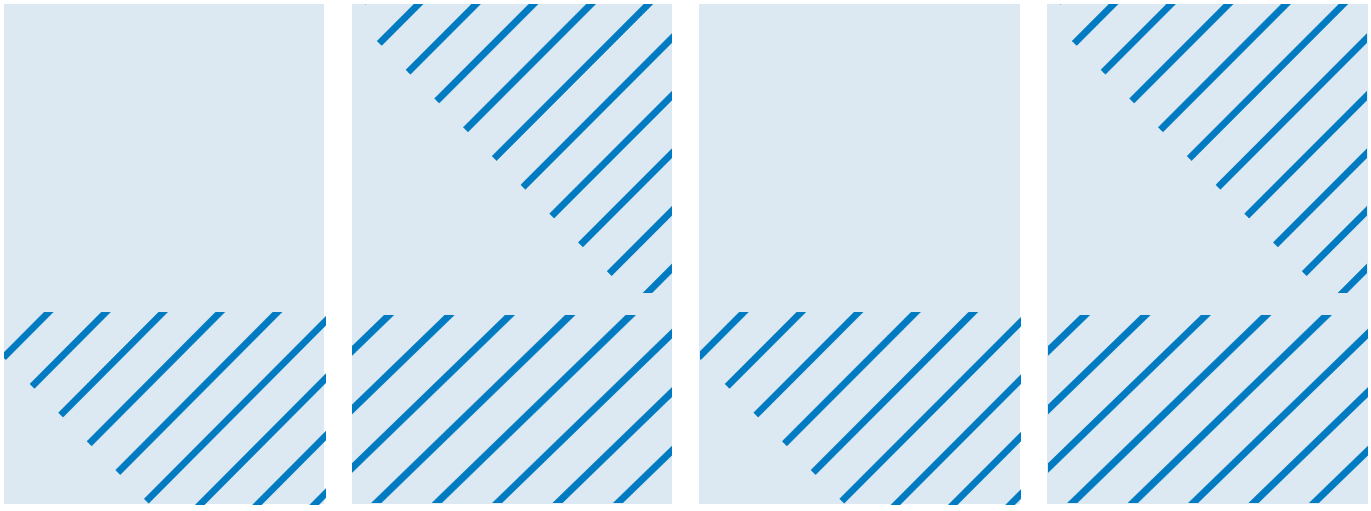
Prepared for
Basin Electric Power Cooperative

Prepared by
Barr Engineering Co.

January 2026

4585 Coleman Street, Suite 210
Bismarck, ND 58503
701.255.5460

barr.com



2025 Annual Groundwater Monitoring and Corrective Action Report

January 2026

Contents

Tables

Figures

Attached Tables

Appendices

Abbreviations

asml	above mean sea level
ASD	Alternative Source Demonstration
bgs	below ground surface
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
cm	centimeter
EPA	Environmental Protection Agency
FGD	Flue gas desulfurization
ft	feet
LOS	Leland Olds Station
NDAC	North Dakota Administrative Code
NDDEQ	North Dakota Department of Environmental Quality
sec	second
SSI	Statistically Significant Increase
TDS	Total Dissolved Solids

1 Executive Summary

This 2025 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) describes the monitoring program and results for the Coal Combustion Residuals (CCR) landfill (CCR Unit) at Basin Electric Power Cooperative's (Basin Electric) Leland Olds Station (LOS; Site). The content of this report is intended to satisfy the requirements of the federal CCR Rule.

At the beginning, end, and throughout 2025, the CCR Unit was operating under a detection monitoring program as described in 40 CFR § 257.94 and NDAC 33.1-20-08-06-04. This program includes semi-annual detection monitoring events conducted in the early summer and fall.

Pursuant to § 257.94 and NDAC 33.1-20-08-06-04, statistically significant increases (SSIs) were determined for:

- June 2025: chloride at MW-2016-12 and MW-2016-13
- August 2025: chloride at MW-2016-12 and MW-2016-13

Subsequent determinations and actions (if any) will be addressed in the 2026 Annual Report. A successful alternative source demonstration (ASD) was completed for the fall 2024 and spring 2025 SSIs. The ASD documentation is included in this report under Appendix B. An ASD for the fall 2025 detection monitoring results is in progress, and the results of the ASD are anticipated in 2026. Therefore, no assessment monitoring program (§ 257.95 and NDAC 33.1-20-08-06-04) or related corrective or remedial measures (§§ 257.96, 257.97, and 257.98; NDAC 33.1-20-08-06-06, -07, and -08) were necessary.

2 Introduction

Basin Electric Power Cooperative (Basin Electric) owns Leland Olds Station (LOS), a coal-fired generating station comprising two power-generating units, located southeast of Stanton, Mercer County, North Dakota (Figure 1). Unit 1 coal-based operations began in 1966, and Unit 2 operations began in 1975. One coal combustion residual (CCR) Unit (Glenharold Landfill 0143; Site), as defined by 40 CFR § 257.53 and North Dakota Administrative Code (NDAC) 33.1-20-08-01, is located approximately three miles southwest of the generating units and office complex. The landfill was permitted and began accepting CCR in 1992. The most recent Permit 0143 issued by the North Dakota Department of Environmental Quality (NDDEQ) will expire on June 28, 2027, and the most recent cell (with CCR Rule-compliant liner and leachate collection system) was constructed in 2023.

The CCR Unit is a landfill containing coal combustion by-products, including fly ash, bottom ash, and flue gas desulfurization (FGD) waste. The CCRs are managed at the Site along with other minor wastes accepted as per the NDDEQ permit. The CCR Unit is required to comply with the provisions of the US Environmental Protection Agency (EPA) CCR Rule (40 CFR Parts 257 and 261, Disposal of Coal Combustion Residuals from Electric Utilities) and the NDDEQ CCR Rule (NDAC Title 33.1, Article 20, Chapter 8).

This Annual Report describes the monitoring program and results for the CCR landfill at the Site. No corrective actions were required or conducted in 2025.

Basin Electric utilizes a consulting firm, Barr Engineering Co. (Barr), to assist in groundwater reporting and analysis. Barr is familiar with the site, has reviewed the historical groundwater data and CCR information for the site, and is knowledgeable about facility design and operation.

Additional Site monitoring information, including CCR reports and certifications, can be found on Basin Electric's CCR website: Glenharold Mine CCR Landfill - LOS - Basin Electric Power Cooperative.

2.1 Physical Setting

The geology underlying the site includes mine spoils underlain by the Sentinel Butte Formation. This formation is comprised of continental deposits in excess of 1,000-feet thick, consisting of dense clay, weakly cemented sandstone, mudstone, and lignite beds.

The base of the LOS CCR Landfill is underlain by approximately 50 feet of clay-rich mine spoils that overlies the Lower Sentinel Butte Formation. At the site, the Sentinel Butte is comprised primarily of dense clay with a trace of very fine sand and sparse beds of lignite typically ranging from 6- to 9-feet thick.

The uppermost aquifer in which the CCR network wells are screened is found within a 6- to 9-foot unmined lignite bed within the bedrock, located at depths ranging from roughly 86 to 125 feet below ground surface (ft bgs). The elevation of the lignite bed varies across the site by approximately 32 feet, ranging from 1,811 feet above mean sea level (ft amsl) at MW-2016-4 to 1,843 ft amsl at MW-2016-1. The groundwater surface within the water-bearing zone generally slopes from the south to the north across the Landfill footprint. Aquifer testing completed at monitoring wells MW-2016-4, MW-2016-8, and MW-2016-10 in 2016 indicates an average hydraulic conductivity of 1.21×10^{-5} centimeters per second for the saturated materials.

Additional Site information can be found on Basin Electric's CCR website in the CCR Groundwater Monitoring System Report (AECOM, October 2017).

2.2 Purpose

As stated in § 257.90(e) and NDAC 33.1-20-08-06-01(e), the Annual Report must:

- Document the status of groundwater monitoring and any corrective action programs for the CCR Unit,
- Summarize key actions completed,
- Describe any problems encountered,
- Discuss actions to resolve the problems, and
- Project key activities for the upcoming year.

2.3 CCR Rule Requirements

Additional requirements for the Annual Report, as outlined in § 257.90(e) and NDAC 33.1-20-08-06-01(e), and this Site's compliance with the CCR Rules, are summarized in Table 1.

Table 1 CCR Rule Requirements and Compliance

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in Report	Location
§ 257.90(e)(1)	§ 33.1-20-08-06-01(e)(1)	**Monitoring System Figure:** A map, aerial image, or diagram showing the CCR Unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR Unit.	Section 3.1 Groundwater Monitoring System; see Figure 1
§ 257.90(e)(2)	§ 33.1-20-08-06-01(e)(2)	**Monitoring System Adjustments**: Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken.	Section 3.1.1 Changes to Groundwater Monitoring System
§ 257.90(e)(3)	§ 33.1-20-08-06-01(e)(3)	**Data and Collection Summary**: In addition to all the monitoring data obtained under § 257.90 through § 257.98 and § 33.1-20-08-06, a summary including the number of groundwater samples that were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs.	Section 3.3 Data and Collection Summary; monitoring data included in Attached Table 1, Attached Table 2, Attached Table 3, Appendix A, and Appendix C
§ 257.90(e)(4)	§ 33.1-20-08-06-01(e)(4)	**Monitoring Program**: A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels).	Not applicable – No transition between monitoring programs was necessary

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in Report	Location
§ 257.90(e)(5)	§ 33.1-20-08-06-01(e)(5)	**Other Information**: Other information required, if applicable, to be included in the annual report as specified in § 257.90 through § 257.98 and § 33.1-20-08-06.	Section 3.2 Actions Completed/Problems Encountered; Appendix B
§ 257.90(e)(6)	n/a	**Executive Summary:** A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR Unit.	Executive Summary

3 Groundwater Monitoring Program

This section documents the status of the groundwater monitoring and corrective action program for the CCR Unit in 2025. A description of the groundwater monitoring system is included in Section 2.1, key actions completed and problems encountered are described in Section 2.2, the monitoring and analytical results are described in Section 2.3, and key activities planned for 2025 are described in Section 3.4.

3.1 Groundwater Monitoring System

The certified groundwater monitoring well network around the CCR Unit consists of two background wells and seven downgradient wells, sampled for groundwater analysis on a semi-annual basis as described in Table 2 below:

Table 2 Groundwater Monitoring Network

CCR Unit	Background Wells	Downgradient Wells
Active Landfill	MW-2016-6 and MW-2016-8	MW-2016-2, MW-2016-3, MW-2016-9, MW-2016-10, and MW-2016-11
Landfill Expansion Area		MW-2016-12 and MW-2016-13

The wells monitor the uppermost aquifer underlying the CCR Unit in the lignite beds of the Sentinel Butte Formation, approximately 85 to 140 ft bgs. Well locations are shown in Figure 2. Monitoring wells MW-2016-12 and MW-2016-13, installed in October 2022, were placed in advance of westward landfill expansion to be used as downgradient monitoring wells.

Prior to the landfill expansion, monitoring wells MW-2016-3, MW-2016-4, and MW-2016-5 were evaluated as background wells. Background wells monitor background water quality that is not potentially influenced by the presence of the CCR unit. Baseline monitoring was initiated in August 2016 for wells in the Active Landfill portion of the monitoring network and included sampling groundwater over eight baseline monitoring events. The results of baseline monitoring are discussed in previous Annual Reports.

Detection monitoring events prior to and including 2025 were performed in general accordance with procedures established in the site-specific Sampling and Analysis Plan (SAP) (AECOM, June 2022), which is included in the facility's Operating Record. The CCR Landfill was placed under Detection monitoring in October 2017, with the first Detection monitoring groundwater sampling event completed in April 2018. Detection monitoring events have been completed semi-annually since April 2018. The results of prior Detection monitoring events were presented and discussed in the previously published Annual Reports, which can be found on Basin Electric's CCR website.

3.1.1 Changes to Groundwater Monitoring System

Monitoring locations MW-2016-12 and MW-2016-13 were added to the monitoring network in late 2022 in anticipation of waste placement in the landfill expansion area. Baseline monitoring began in May 2023 at both MW-2016-12 and MW-2016-13. Nine baseline monitoring events were conducted at MW-2016-12 and four at MW-2016-13 in 2023. In both 2024 and 2025, two baseline monitoring events were conducted at MW-2016-13. Baseline monitoring for MW-2016-12 and MW-2016-13 is now complete, i.e., eight or more samples have been collected from each well. Baseline sampling results for MW-2016-12 and MW-

2016-13 are included in Appendix D. MW-2016-12 and MW-2016-3 were included in the detection monitoring program for the first time in May 2024. The system described in Section 2.1 and shown in Figure 2 supplanted the groundwater monitoring system described in the Groundwater Monitoring System Certification (AECOM, October 2017).

3.2 Actions Completed/Problems Encountered

The following actions were completed in 2025:

- **Baseline Sampling:** The final two baseline groundwater samples were collected at MW-2016-13 in June and August 2025. (Appendix D).
- **Detection Monitoring Sampling:** Groundwater samples were collected from each well in the groundwater monitoring system on June 3-4, 2025, and August 12-13, 2025. Groundwater samples were analyzed for Appendix III constituents, per the detection monitoring program of the CCR Rules (§ 257.94 and NDAC 33.1-20-08-06-04) (Attached Table 1).
- **SSI Evaluation:** SSI evaluations were conducted in accordance with the Groundwater Statistical Method Selection Certification (AECOM, 2017) for the June 2025 and August 2025 detection monitoring events. Both detection monitoring events resulted in verified SSIs (Attached Table 2).
- **Fall 2024 SSIs and Subsequent ASD:** Sampling for the fall 2024 monitoring event was conducted on September 10-11, 2024. Results indicated two SSIs for the fall 2024 event: chloride at wells MW-2016-12 and MW-2016-13. This information was included in the 2024 Annual Report (Barr Engineering Co. (Barr), January 2025).

  An Alternative Source Demonstration (ASD) report regarding the fall 2024 SSIs was completed on March 27, 2025. The results of the ASD concluded that the SSIs were attributable to a source other than the CCR Unit. The ASD is provided in Appendix B.
- **Spring 2025 SSIs and Subsequent ASD:** Sampling for the spring 2025 monitoring event was conducted on June 3-4, 2025. Results indicated two SSIs for the spring 2025 event: chloride at wells MW-2016-12 and MW-2016-13.

  An Alternative Source Demonstration (ASD) report regarding the spring 2025 SSIs was completed on November 7, 2025. The results of the ASD concluded that the SSIs were attributable to a source other than the CCR Unit. The ASD is provided in Appendix B.
- **Fall 2025 SSIs and Subsequent ASD:** Sampling for the fall 2025 monitoring event was conducted on August 12-13, 2025. Results indicated two SSIs for the fall 2025 event: chloride at wells MW-2016-12 and MW-2016-13.

  An ASD for the August 2025 detection monitoring event is in progress and will be completed within 90 days of the SSI determination. Subsequent determinations and actions (if any) will be addressed in the 2026 Annual Report.

The following issues were encountered in 2025:

- The water elevations measured at MW-2016-11 and MW-2016-13 were lower than expected based on the piezometric surface interpreted from the other monitoring locations. This may be attributed to slow well recovery.

3.3 Data and Collection Summary

3.3.1 June 2025 Detection Monitoring Event

Groundwater samples were collected from the nine groundwater monitoring network wells at the Site on June 3-4, 2025. Two SSIs for chloride at MW-2016-12 and MW-2016-13 were identified. No verification resampling was performed. A summary of results is included in Attached Table 3. Field data sheets and analytical laboratory reports for detection monitoring sampling are included in Appendix A. Water level contours are shown on Figure 3, and flow calculations are included in Appendix C.

An ASD was conducted on the verified SSIs and was able to successfully demonstrate that "a source other than the CCR unit" and/or statistical methods resulted in the SSIs, as allowed by § 257.94(e)(2) and NDAC 33.1-20-08-06-04(e)(2). The Alternative Source Demonstration: June 2025 Event Report is included in Appendix B.

3.3.2 August 2025 Detection Monitoring Event

Groundwater samples were collected from the nine groundwater monitoring network wells at the Site on August 12-13, 2025. Two SSIs for chloride at MW-2016-12 and MW-2016-13 were identified. No verification resampling was performed. A summary of results is included in Attached Table 3. Field data sheets and analytical laboratory reports for detection, monitoring, and sampling are included in Appendix A. Water level contours are shown in Figure 3, and flow calculations are included in Appendix C.

An ASD was ongoing at the end of 2025. If the ASD is not successful, appropriate actions will be initiated per the CCR Rule as applicable.

3.4 Activities for Upcoming Year

The following key activities for analytical results and statistical evaluations are planned for 2025:

- Complete the ASD or assessment monitoring determination for the August 2025 detection monitoring event in accordance with the Statistical Certification.
- Evaluate analytical results from 2026 semi-annual detection monitoring events for SSIs according to the Statistical Certification.
- Further monitor water elevations at MW-2016-13. Review the conceptual site model and consider recommendations for improvements to the monitoring well network if needed.

4 References

AECOM. (June 2022). *Sampling and Analysis Plan, Revision 1, CCR Monitoring Program, Leland Olds Station, Prepared for Basin Electric Power Cooperative.*

AECOM. (October 2017). *Groundwater Monitoring System Report, Leland Olds Station. Prepared for Basin Electric Power Cooperative. .*

Barr Engineering Co. (Barr). (January 2025). *2024 Annual Groundwater Monitoring and Corrective Action Report: LOS CCR Landfill.*

Attached Tables

Attached Table 1
Sampling Event Summary
2025 Annual Monitoring Report
LOS Landfill CCR Groundwater Compliance

Event Classification and Number	Monitoring Well	Up or Down Gradient	Event date	No. Samples
Detection Monitoring Event #1	MW-2016-2	Down	6/4/2025	1
Detection Monitoring Event #1	MW-2016-3	Down	6/4/2025	1
Detection Monitoring Event #1	MW-2016-6	Up	6/4/2025	1
Detection Monitoring Event #1	MW-2016-8	Up	6/4/2025	2
Detection Monitoring Event #1	MW-2016-9	Down	6/3/2025	1
Detection Monitoring Event #1	MW-2016-10	Down	6/4/2025	1
Detection Monitoring Event #1	MW-2016-11	Down	6/4/2025	1
Detection Monitoring Event #1	MW-2016-12	Down	6/3/2025	1
Detection Monitoring Event #1	MW-2016-13	Down	6/3/2025	1
Detection Monitoring Event #2	MW-2016-2	Down	8/12/2025	1
Detection Monitoring Event #2	MW-2016-3	Down	8/13/2025	1
Detection Monitoring Event #2	MW-2016-6	Up	8/13/2025	1
Detection Monitoring Event #2	MW-2016-8	Up	8/13/2025	2
Detection Monitoring Event #2	MW-2016-9	Down	8/13/2025	1
Detection Monitoring Event #2	MW-2016-10	Down	8/13/2025	1
Detection Monitoring Event #2	MW-2016-11	Down	8/12/2025	1
Detection Monitoring Event #2	MW-2016-12	Down	8/12/2025	1
Detection Monitoring Event #2	MW-2016-13	Down	8/12/2025	1

Attached Table 2
Statistical Evaluation Summary
2025 Annual Monitoring Report
LOS Landfill CCR Groundwater Compliance

Spring 2025

	Appendix III Constituents						
Well	**Boron (T)**	**Calcium (T)**	**Chloride**	**Fluoride**	**pH**	**Sulfate**	**TDS**
MW-2016-2	0.25	7.85	14.6	0.48	7.7	228	1,730
MW-2016-3	0.23	5.03	36.4	0.65	8.1	30.6	1,510
MW-2016-9	0.24	6.94	19.3	0.51	7.9	193	1,710
MW-2016-10	0.21	5.5	15.2	0.54	8.1	294	1,700
MW-2016-11	0.28	6.35	24.5	0.53	8.0	201	1,650
MW-2016-12	0.24	10.7	48.7	0.64	7.9	16.6	1,580
MW-2016-13	0.28	11.7	60.3	0.55	7.3	9.28	1,660

Fall 2025

	Appendix III Constituents						
Well	**Boron (T)**	**Calcium (T)**	**Chloride**	**Fluoride**	**pH**	**Sulfate**	**TDS**
MW-2016-2	0.25	9.62	14.4	0.55	8.0	240	1,740
MW-2016-3	0.22	4.74	34.8	0.72	8.1	41.6	1,510
MW-2016-9	0.23	6.33	18.6	0.58	7.9	208	1,730
MW-2016-10	0.21	5.35	15.1	0.56	8.1	287	1,730
MW-2016-11	0.26	6.23	20	0.59	8.0	233	1,630
MW-2016-12	0.23	9.51	45.4	0.7	7.9	22.5	1,570
MW-2016-13	0.27	10.9	57.1	0.61	7.5	15.9	1,650

Sample had a value higher than the prediction limit determined from background data and is a verified SSI

Sample did not have a value higher than the prediction limit determined from background data

pH: two-sided prediction limit; color indicates sample higher and/or lower than prediction limits

Attached Table 3
Water Quality Analytical Data Summary
2025 Annual Monitoring Report
LOS Landfill CCR Groundwater Compliance

		Location	MW-2016-2	MW-2016-2	MW-2016-3	MW-2016-3	MW-2016-6	MW-2016-6	MW-2016-8		MW-2016-8		MW-2016-9	MW-2016-9
		Date	6/04/2025	8/12/2025	6/04/2025	8/13/2025	6/04/2025	8/13/2025	6/04/2025		8/13/2025		6/03/2025	8/13/2025
		Sample Type	N	N	N	N	N	N	N	FD	N	FD	N	N
Parameter	Analysis Location	Units												
Appendix III														
Boron, total	Lab	mg/l	**0.25**	**0.25**	**0.23**	**0.22**	**0.25**	**0.24**	**0.24**	**0.24**	**0.23**	**0.24**	**0.24**	**0.23**
Calcium, total	Lab	mg/l	**7.85**	**9.62**	**5.03**	**4.74**	**8.96**	**8.04**	**13.9**	**13.6**	**13.1**	**13.4**	**6.94**	**6.33**
Chloride	Lab	mg/l	**14.6**	**14.4**	**36.4**	**34.8**	**8.2**	**8.4**	**9.6**	**9.6**	**9.8**	**9.7**	**19.3**	**18.6**
Fluoride	Lab	mg/l	**0.48**	**0.55**	**0.65**	**0.72**	**0.43**	**0.45**	**0.31**	**0.31**	**0.32**	**0.35**	**0.51**	**0.58**
pH	Field	pH units	**7.96**	**8.01**	**8.05**	**8.05**	**7.92**	**7.89**	**7.87**	--	**7.86**	--	**7.92**	**7.90**
Solids, total dissolved	Lab	mg/l	**1730**	**1740**	**1510**	**1510**	**2100**	**2100**	**2370**	**2380**	**2340**	**2310**	**1710**	**1730**
Sulfate, as SO4	Lab	mg/l	**228**	**240**	**30.6**	**41.6**	**559**	**585**	**651**	**658**	**674**	**678**	**193**	**208**

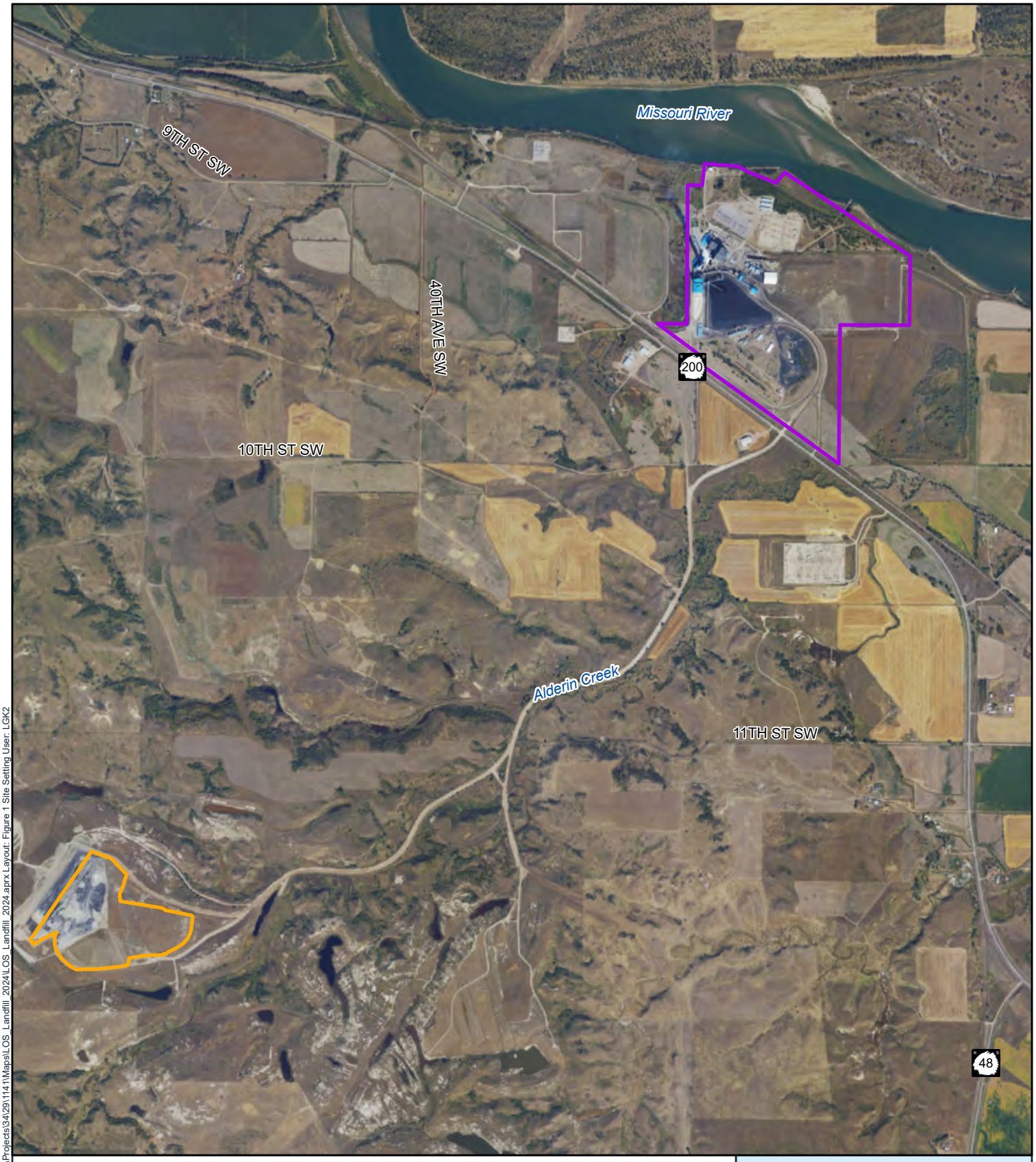
-- Not analyzed/Not available.
N Sample Type: Normal
FB Sample Type: Field Blank
FD: Sample Type: Field Duplicate
U: The analyte was analyzed for, but was not detected.

Attached Table 3
Water Quality Analytical Data Summary
2025 Annual Monitoring Report
LOS Landfill CCR Groundwater Compliance

		Location	MW-2016-10	MW-2016-10	MW-2016-11	MW-2016-11	MW-2016-12	MW-2016-12	MW-2016-13	MW-2016-13
		Date	6/04/2025	8/13/2025	6/04/2025	8/12/2025	6/03/2025	8/12/2025	6/03/2025	8/12/2025
		Sample Type	N	N	N	N	N	N	N	N
Parameter	Analysis Location	Units								
Appendix III										
Boron, total	Lab	mg/l	**0.21**	**0.21**	**0.28**	**0.26**	**0.24**	**0.23**	**0.28**	**0.27**
Calcium, total	Lab	mg/l	**5.50**	**5.35**	**6.35**	**6.23**	**10.7**	**9.51**	**11.7**	**10.9**
Chloride	Lab	mg/l	**15.2**	**15.1**	**24.5**	**20.0**	**48.7**	**45.4**	**60.3**	**57.1**
Fluoride	Lab	mg/l	**0.54**	**0.56**	**0.53**	**0.59**	**0.64**	**0.70**	**0.55**	**0.61**
pH	Field	pH units	**8.12**	**8.09**	**7.96**	**7.97**	**7.92**	**7.92**	**7.33**	**7.50**
Solids, total dissolved	Lab	mg/l	**1700**	**1730**	**1650**	**1630**	**1580**	**1570**	**1660**	**1650**
Sulfate, as SO4	Lab	mg/l	**294**	**287**	**201**	**233**	**16.6**	**22.5**	**9.28**	**15.9**

-- Not analyzed/Not available.
N Sample Type: Normal
FB Sample Type: Field Blank
FD: Sample Type: Field Duplicate
U: The analyte was analyzed for, but was not detected.

Figures



Leland Olds Power Plant

LOS Landfill

0 1,500 3,000

Feet

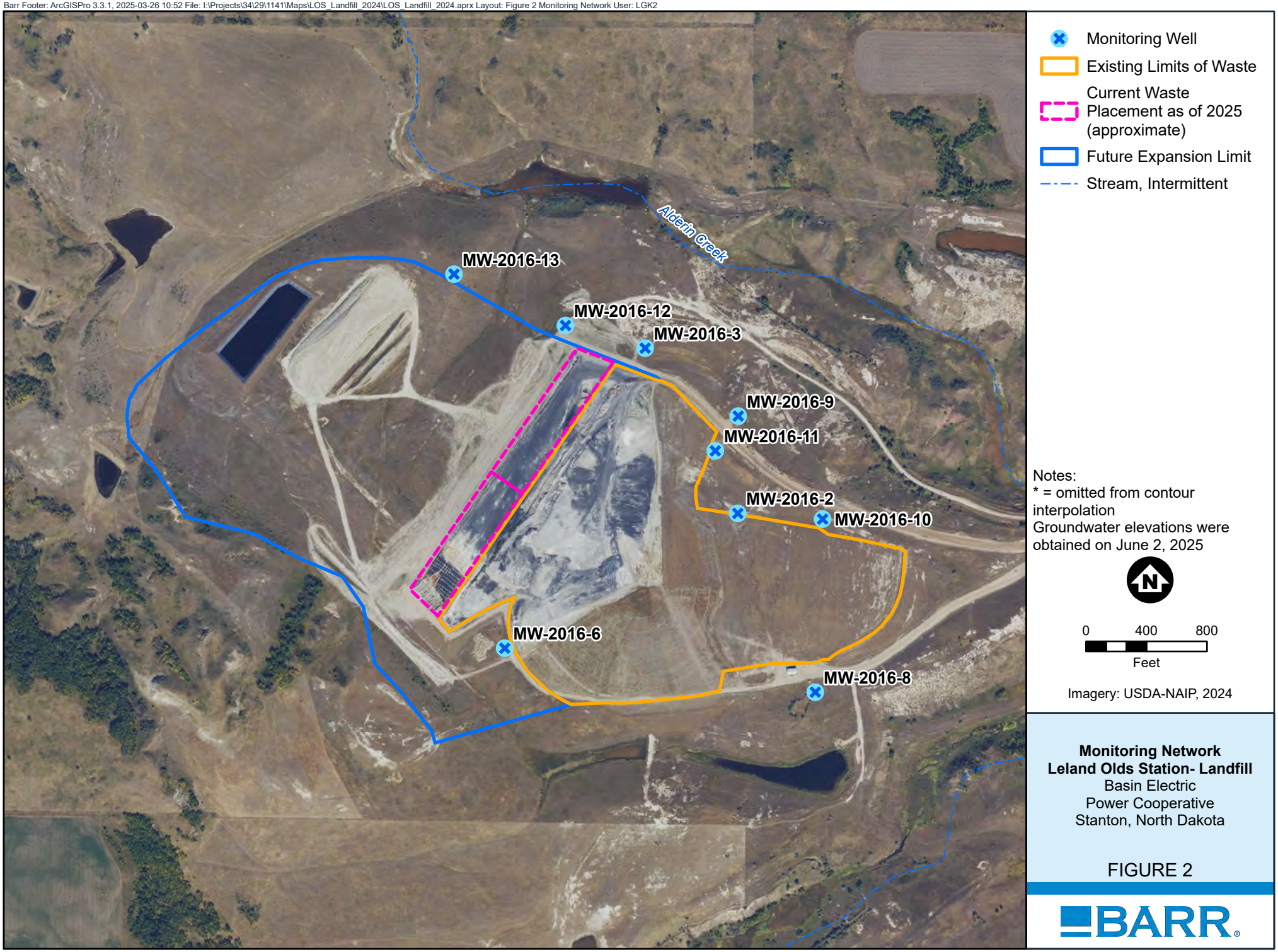
Imagery: USDA-NAIP, 2024

SITE SETTING
Leland Olds Station- Landfill
Basin Electric Power Cooperative
Stanton, North Dakota

FIGURE 1

BARR

Barr Footer: ArcGISPro 3.3.1, 2025-03-26 10:52 File: I:\Projects\34\29\1141\Maps\LOS_Landfill_2024\LOS_Landfill_2024.aprx Layout: Figure 2 Monitoring Network User: LGK2



Monitoring Well
Existing Limits of Waste
Current Waste Placement as of 2025 (approximate)
Future Expansion Limit
Stream, Intermittent

Notes:
* = omitted from contour interpolation
Groundwater elevations were obtained on June 2, 2025

N

0 400 800
Feet

Imagery: USDA-NAIP, 2024

Monitoring Network
Leland Olds Station- Landfill
Basin Electric
Power Cooperative
Stanton, North Dakota

FIGURE 2

BARR

Barr Footer: ArcGISPro 3.5.3, 2025-11-04 11:36 File: I:\Projects\34\29\1141\Maps\LOS_Landfill_2025\LOS_Landfill_2025.aprx Layout: Figure 3 Spring 2025 Potentiometric Surface User: LGK2

- Monitoring Well
- Flow Direction
- Groundwater Contour
- Stream, Intermittent
- Existing Limits of Waste
- Current Waste Placement as of 2025 (approximate)
- Future Expansion Limit

Notes:
* = omitted from contour interpolation
Groundwater elevations were obtained on June 2, 2025

N

0 300 600
Feet

Imagery: USDA-NAIP, 2024

Spring 2025
Potentiometric Surface
Leland Olds Station- Landfill
Basin Electric Power Cooperative
Stanton, North Dakota

FIGURE 3

BARR

- Monitoring Well
- Flow Direction
- Groundwater Contour
- Stream, Intermittent
- Existing Limits of Waste
- Current Waste Placement as of 2025 (approximate)
- Future Expansion Limit

Notes:
* = omitted from contour interpolation
Groundwater elevations were obtained on August 11, 2025

N

0 300 600
Feet

Imagery: USDA-NAIP, 2024

Fall 2025
Potentiometric Surface
Leland Olds Station- Landfill
Basin Electric Power Cooperative
Stanton, North Dakota

FIGURE 4

BARR

Appendices

Appendix A

Lab and Field Reports

Basin Electric North Dakota

Site Name: LOS Landfill
Event Date: 6.2.25
Weather Conditions: rainy, cool
Field Technician: MK

River Elevation (if applicable)
1058.93

Well ID	Time	Depth to Water*	Well Condition	Comments
MW-2016-13	1045	116.36	fine	
MW-2016-12		72.1		
MW-2016-3		99.57		
MW-2016-9		107.07		
MW-2016-11		116.53		
MW-2016-2		114.95		
MW-2016-10		111.75		
MW-2016-8		92.90		
MW-2016-6		94.47		

* Depth to water as measured from the top of PVC casing.

Well/Piezo ID: MW-2016-13

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: AVS Los Landfill
Weather Conds: Sunny, Breezy
Date: 6-3-25
Time:
Finish 0939
Collector(s) MK

WATER LEVEL DATA: (measured from Top of Casing) Well ☒

a. Total Well Length _____ c. Casing Material PVC Pump Settings 23/7 @ 125 psi

b. Water Table Depth 116.36 d. Casing Diameter _____

WELL PURGING DATA

a. Purge Method Dedicated Bladder Pump

b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU)	Color	DTW
Stabilization		+/- 0.2	+/- 10%	+/- 3%	+/- 0.1	+/- 10%	+/- 10%		0.33 ft
			<0.5				<5		
0850	INITIAL 13.5	10.4	.45	2249	7.38	390	3.47	Yellow	121.9
0854	14 L	10.4	.43	2215	7.37	394	3.54		122.0
0858	14.5 L	10.6	.42	2530	7.35	41.2	3.61		122.16
0901	15 L	10.7	.38	2526	7.35	43	3.58		122.30
0905	15.5 L	10.7	.53	2525	7.35	493	4.00		122.47
0909	16 L	10.8	.38	2525	7.33	41.7	4.74		122.7
0913	16.5 L	10.9	.36	2513	7.33	45.4	2.68		122.85
0917	17 L	10.8	.36	2525	7.33	48.6	3.73	↓	122.96
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	0918
	500mL	1	HNO3	Metals	↓
	1gal	1	HNO3	Radium	

Comments _____

Signature _____ Date 10-4-25

Well/Piezo ID: MW-2016-12

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LOS Landfill
Weather Conds: Sunny Breezy
Date: 10.3.25
Time: 1000
Finish 1053
Collector(s) MK

WATER LEVEL DATA: (measured from Top of Casing) Well ☑

a. Total Well Length _____
b. Water Table Depth 72.1
c. Casing Material PVC
d. Casing Diameter _____
Pump Settings 24/16 @ 75PSI

WELL PURGING DATA

a. Purge Method Dedicated Bladder Pump
b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time / Stabilization	Volume Removed (gal)	T° (C) +/- 0.2	DO ✓mg/L +/- 10% (<0.5)	Spec. Cond (µs/cm) +/- 3%	pH +/- 0.1	ORP +/- 10%	Turbidity ✓(NTU) +/- 10% (<5)	Color	DTW 0.33 ft
1035	INITIAL 9L	10.3	0.15	2402	7.92	160.6	4.85	Brown/	75.55
1039	9.5 L	10.9	0.20	2411	7.92	160.2	4.91	clear	75.70
1041	10 L	11	0.19	2411	7.93	159.9	4.26	↓	75.80
1045	10.5 L	11	0.18	2411	7.92	160.4	4.33	↓	76.00
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	1046
	500mL	1	HNO3	Metals	↓

Comments _____

Signature _____ Date 10/3/25

Well/Piezo ID: MW-2016-3

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LOS Landfill
Weather Conds: sunny, Breezy
Date: 6.3.25
Time: 1102
Finish 0904 6/4/25
Collector(s) MC

WATER LEVEL DATA: (measured from Top of Casing) Well ☑

a. Total Well Length 125.89
b. Water Table Depth 99.57
c. Casing Material PVC
d. Casing Diameter
Pump Settings 22/8 @125PSI 23/7

WELL PURGING DATA

a. Purge Method Dedicated Bladder Pump
b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time / Stabilization	Volume Removed (gal)	T° (C) +/- 0.2	DO mg/L +/- 10% (<0.5)	Spec. Cond (µs/cm) +/- 3%	pH +/- 0.1	ORP +/- 10%	Turbidity (NTU) +/- 10% (<5)	Color	DTW 0.33 ft
1141	INITIAL (6.6L)	10.0	0.25	2324	8.02	55.7	12.0	clear/	110.90
1145	7 L	10.1	0.38	2317	7.98	56.8	5.58	Brown	112.0
1149	8 L	10.3	0.50	2320	8.05	57.2	5.57	↓	112.90
1152	8.5 L	10.5	0.68	2323	7.92	57.6	5.69		113.50
1155	9 L	10.4	0.88	2320	8.04	58.2	6.16	↓	114.2
1200	9.5 L	pumped to 115' + stopped							
	L								
6/4 0853	L	9.7	4.82	2350	8.05	-385.4	7.44	clear/ Brown w/ sed.	112.57
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☐	☑	☐

If no or N/A - Explain below.
DTW

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	0858
	500mL	1	HNO3	Metals	↓

Comments

Signature [signature]
Date 6/4/25

Well/Piezo ID: MW-2016-6

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LOS Landfill
Weather Conds: Sunny, Breezy
Collector(s): MK
Date: 6-3-25
Time: 1258
Finish: 0926 6/4/25

WATER LEVEL DATA: (measured from Top of Casing) Well ☒

a. Total Well Length: 114.00
b. Water Table Depth: 94.47
c. Casing Material: PVC
d. Casing Diameter:
Pump Settings: 23/7 @ 125psi

WELL PURGING DATA

a. Purge Method: Dedicated Bladder Pump
b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L (<0.5)	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU) (<5)	Color	DTW
Stabilization		+/- 0.2	+/- 10%	+/- 3%	+/- 0.1	+/- 10%	+/- 10%		0.33 ft
1316	INITIAL 3.5	10.0	0.16	3072	8.02	52.5	6.55	yellow	101.11
1320	4.5 L	10.3	0.61	3070	7.83	56.6	7.11	↓	102.6
1324	5.25 L	10.4	1.05	3058	7.98	58.6	7.52		103.96
1328	L	pumped down to 104ft + stopped							
	L								
0919	L	9.8	17.0	3109	7.92	-399.3	6.01	yellow	104.11
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☐	☐	☒

If no or N/A - Explain below.
DTW

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	0920
	500mL	1	HNO3	Metals	↓

Comments

Signature: [signature]
Date: 6-4-25

Well/Piezo ID: MW-20IV-9

Ground Water Sample Collection Record

Client: BEPC Date: 10-3-25
Project No: Time: 1339
Site Location: AVS LAS Landfill Finish
Weather Conds: Sunny, Breezy Collector(s) MK

WATER LEVEL DATA: (measured from Top of Casing) Well ☐

a. Total Well Length ____ c. Casing Material PVC Pump Settings ____

b. Water Table Depth 107.07 d. Casing Diameter Big 2L

WELL PURGING DATA

a. Purge Method ~~Dedicated Bladder Pump~~ Hydrosleeve

b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU)	Color	DTW
Stabilization		+/- 0.2	+/- 10%	+/- 3%	+/- 0.1	+/- 10%	+/- 10%		0.33 ft
			<0.5				<5		
1350	INITIAL	10.7	1.14	2573	7.92	-39.3		clear	107.07
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	1350
	500mL	1	HNO3	Metals	↓

Comments ____

Signature [signature] Date 10-3-25

Well/Piezo ID: MW-2016-11

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LDS Landfill
Weather Conds: cloudy, cool
Collector(s): MC
Date: 10.4.25
Time: 0749
Finish:

WATER LEVEL DATA: (measured from Top of Casing) Well ☐

a. Total Well Length
b. Water Table Depth 116.53
c. Casing Material PVC
d. Casing Diameter
Pump Settings

WELL PURGING DATA

a. Purge Method ~~Dedicated Bladder Pump~~ Hydrosleeve

b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU)	Color	DTW
Stabilization		+/- 0.2	+/- 10%	+/- 3%	+/- 0.1	+/- 10%	+/- 10%		0.33 ft
0804	INITIAL	10.2	1.44	75491	7.916	-388.6	7.43	yellow	116.53
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								

<0.5 <5

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	0800
	500mL	1	HNO3	Metals	↓

Comments

Signature

Date 10/4/25

Well/Piezo ID: MW-2016-2

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LDS Land Fill
Weather Conds: cool cloudy
Collector(s) MK
Date: 10-4-25
Time: 0814
Finish 0839

WATER LEVEL DATA: (measured from Top of Casing) Well ☐

a. Total Well Length _____ c. Casing Material PVC Pump Settings _____

b. Water Table Depth 114.95 d. Casing Diameter _____

WELL PURGING DATA

a. Purge Method ~~Dedicated Bladder Pump~~ Hydrosleeve

b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU)	Color	DTW
Stabilization		+/- 0.2	+/- 10%	+/- 3%	+/- 0.1	+/- 10%	+/- 10%		0.33 ft
0829	INITIAL	10.2	1.79	2000	7.96	-397	58.7	clear/ sed	114.95
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								

<0.5 <5

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	0830
	500mL	1	HNO3	Metals	↓

Comments _____

Signature _____ Date 10-4-25

Well/Piezo ID: MW-2016-8

Ground Water Sample Collection Record

Client: BEPC Date: 6/4/25
Project No: Time: 0933
Site Location: ~~AVS~~ LOS Landfill Finish
Weather Conds: Sunny, warm Collector(s) MK

WATER LEVEL DATA: (measured from Top of Casing) Well ☑

a. Total Well Length ____ c. Casing Material PVC Pump Settings 25/5 @ 90PSI

b. Water Table Depth 92.90 d. Casing Diameter ____

WELL PURGING DATA

a. Purge Method Dedicated Bladder Pump

b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time / Stabilization	Volume Removed (gal)	T° (C) +/- 0.2	DO mg/L +/- 10% (<0.5)	Spec. Cond (µs/cm) +/- 3%	pH +/- 0.1	ORP +/- 10%	Turbidity (NTU) +/- 10% (<5)	Color	DTW 0.33 ft
1009	INITIAL 6.5L	10.7	0.26	3488	7.88	58.6	3.02	clear	100.11
1013	7 L	10.8	0.26	3497	7.86	58.8	2.84		100.35
1017	7.5 L	10.7	0.28	3492	7.85	59.1	3.86		100.56
1021	8 L	10.8	0.29	3467	7.89	59.2	3.88		100.70
1024	8.5 L	10.8	0.36	3463	7.86	58.6	4.04		100.83
1028	9 L	10.7	0.43	3505	7.87	58.5	4.75		100.96
	L							↓	
	L								
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	1030
	500mL	1	HNO3	Metals	↓

Comments DUP

Signature [signature] Date 6/4/25

Well/Piezo ID: MW-2016-10

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LOS Landfill
Weather Conds: sunny, warm
Date: 10.4.25
Time: 1110
Finish
Collector(s) MK

WATER LEVEL DATA: (measured from Top of Casing) Well ☑

a. Total Well Length
b. Water Table Depth 111.75
c. Casing Material PVC
d. Casing Diameter
Pump Settings 23/7 @ 120psi

WELL PURGING DATA

a. Purge Method Dedicated Bladder Pump
b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L (<0.5)	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU) (<5)	Color	DTW
Stabilization		+/- 0.2	+/- 10%	+/- 3%	+/- 0.1	+/- 10%	+/- 10%		0.33 ft
1129	INITIAL 4L	10.1	0.21	2630	8.13	-401.3	1.45		112.5
1132	4.5 L	10.0	0.20	2620	8.11	-401.9	1.43		112.6
1136	5 L	10.1	0.17	2624	8.12	-401.8	2.68		112.63
1140	5.5 L	10.2	0.15	2617	8.12	-402.0	2.88		112.66
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	1141
	500mL	1	HNO3	Metals	↓

Comments

Signature
Date 10.4.25

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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 Coop Chain of Custody
WO: 88732
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
Billing Address (indicate if different from above): Attn: Liabilities	Name of Sampler: Mariah Knutson
	Quote Number:
	Date Submitted: 6/5/2025
	Project Name/Number: LOS CCR Wells
	Purchase Order #: 790708-04

Lab Use Only Lab	Sample ID	Sample Matrix (GW - Groundwater)	Date Sampled	Time Sampled	# of	Filtered	Analysis Required
001	MW-2016-13	GW	6/3/2025	918	3	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH, Sb,As, Ba, Be,Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl, Radium (226&228)
—	MW-2016-12	GW	6/3/2025	1046	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-3	GW	6/4/2025	858	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-6	GW	6/4/2025	920	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-9	GW	6/3/2025	1350	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-11	GW	6/4/2025	800	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-2	GW	6/4/2025	830	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-8	GW	6/4/2025	1030	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	DUP	GW	6/4/2025	1030	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENIUM EXPRESS	6/5/2025	NOON		5Jun25	1435	2.1°C	Y / N	TM958
2.							Y / N	

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

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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 Mariah Knutson	
Billing Address (indicate if different from above) Attn: Liabilities	Quote Number	Date Submitted 6/5/2025
	Project Name/Number LOS 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-2016-10	GW	6/4/2025	1141	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENNIUM EXPRESS	6/5/2025	NOON					Y / N	
2.							Y / N	

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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 Coop
WO: 88743

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
Billing Address (indicate if different from above) Attn: Liabilities		Name of Sampler Mariah Knutson	
		Quote Number	Date Submitted 6/5/2025
		Project Name/Number LOS 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-2016-13	GW	6/3/2025	918	3	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH, Sb,As, Ba, Be,Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl, Radium (226&228)
001	MW-2016-12	GW	6/3/2025	1046	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
002	MW-2016-3	GW	6/4/2025	858	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
003	MW-2016-6	GW	6/4/2025	920	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
004	MW-2016-9	GW	6/3/2025	1350	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
005	MW-2016-11	GW	6/4/2025	800	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
006	MW-2016-2	GW	6/4/2025	830	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
007	MW-2016-8	GW	6/4/2025	1030	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
008	DUP	GW	6/4/2025	1030	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENIUM EXPRESS	6/5/2025	NOON	Lyndsey Spilley	5 Jun 25	1435	2.1°C	Y / N	TM959
2.							Y / N	

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

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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 Mariah Knutson	
Billing Address (indicate if different from above): Attn: Liabilities	Quote Number	Date Submitted 6/5/2025
	Project Name/Number LOS CCR Wells	Purchase Order # 790708-04

Lab Use Only Lab	Sample ID	Sample Matrix (GW - Groundwater)	Date Sampled	Time Sampled	# of	Filtered	Analysis Required
009	MW-2016-10	GW	6/4/2025	1141	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENNIUM EXPRESS	6/5/2025	NOON					Y / N	
2.							Y / N	

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: LOS CCR Wells (88732) REV1 **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.

Amended report to correct sample identification. CC 20 Jun25

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 88732001 **Date Collected:** 06/03/2025 09:18 **Matrix:** Groundwater
Sample ID: MW-2016-13 **Date Received:** 06/05/2025 14:35 **Collector:** Client

Temp @ Receipt (C): 2.1 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**9.28**	mg/L	5	1		06/11/2025 10:24	
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	06/16/2025 08:50	06/17/2025 07:51	
Method: EPA 6010D							
Boron	**0.28**	mg/L	0.1	1	06/05/2025 16:42	06/11/2025 10:16	
Calcium	**11.7**	mg/L	1	1	06/05/2025 16:42	06/10/2025 12:55	
Lithium	<0.02	mg/L	0.02	1	06/05/2025 16:42	06/11/2025 08:38	
Magnesium	**3.61**	mg/L	1	1	06/05/2025 16:42	06/10/2025 12:55	
Potassium	**3.40**	mg/L	1	1	06/05/2025 16:42	06/10/2025 12:55	
Sodium	**644**	mg/L	1	1	06/05/2025 16:42	06/10/2025 12:55	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	06/05/2025 16:42	06/16/2025 14:22	
Arsenic	**0.0021**	mg/L	0.002	5	06/05/2025 16:42	06/16/2025 14:22	
Barium	**0.0462**	mg/L	0.002	5	06/05/2025 16:42	06/16/2025 14:22	
Beryllium	<0.0005	mg/L	0.0005	5	06/05/2025 16:42	06/16/2025 14:22	
Cadmium	<0.0005	mg/L	0.0005	5	06/05/2025 16:42	06/16/2025 14:22	
Chromium	<0.002	mg/L	0.002	5	06/05/2025 16:42	06/16/2025 14:22	
Cobalt	<0.002	mg/L	0.002	5	06/05/2025 16:42	06/16/2025 14:22	
Lead	<0.0005	mg/L	0.0005	5	06/05/2025 16:42	06/16/2025 14:22	
Molybdenum	**0.0381**	mg/L	0.002	5	06/05/2025 16:42	06/16/2025 14:22	
Selenium	<0.005	mg/L	0.005	5	06/05/2025 16:42	06/16/2025 14:22	
Thallium	<0.0005	mg/L	0.0005	5	06/05/2025 16:42	06/16/2025 14:22	
Method: SM2320 B-2021							
Alkalinity, Total	**1234**	mg/L as CaCO3	20.5	1		06/09/2025 14:10	
Bicarbonate	**1234**	mg/L as CaCO3	20.5	1		06/09/2025 14:10	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		06/09/2025 14:10	
Method: SM4500 H+ B-2021							
pH	**7.8**	units	0.1	1		06/09/2025 14:10	*

Report Date: Friday, June 20, 2025 4:16:13 PM

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 88732001 **Date Collected:** 06/03/2025 09:18 **Matrix:** Groundwater
Sample ID: MW-2016-13 **Date Received:** 06/05/2025 14:35 **Collector:** Client

Temp @ Receipt (C): 2.1 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: SM4500-Cl-E 2021							
Chloride	**60.3**	mg/L	2.0	1		06/10/2025 10:41	
Method: SM4500-F-C-2021							
Fluoride	**0.55**	mg/L	0.1	1		06/06/2025 16:31	
Method: USGS I-1750-85							
Total Dissolved Solids	**1660**	mg/L	10	1		06/06/2025 14:18	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

QC Results Summary — WO #: 88732

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	102.0		85	115		
LFB			100	99.2		85	115		
LFB			100	98.2		85	115		
LFB			100	93.7		85	115		
LFB			100	97.6		85	115		
LFB			100	94.8		85	115		
LFB			100	95.8		85	115		
LFB			100	99.5		85	115		
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MS/MSD	88396005		1000	95.6	96.3	85	115	0.7	20
MS/MSD	88404001		100	97.0	97.8	85	115	0.8	20
MS/MSD	88629004		4000	80.4	81.3	85	115	0.5	20
MS/MSD	88748005		100	90.0	90.2	85	115	0.3	20
MS/MSD	88889004		2000	98.4	101.2	85	115	1.1	20
MS/MSD	88899014		1000	76.8	75.1	85	115	1.0	20
MS/MSD	88935001		1000	92.7	92.6	85	115	0.0	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	97.5		90	110		
LFB			80	97.0		90	110		
LFB			80	97.9		90	110		
LFB			80	97.6		90	110		

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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	98.4		90	110		
LFB			30	99.0		90	110		
LFB			30	99.2		90	110		
LFB			30	98.7		90	110		
LFB			30	98.9		90	110		
LFB			30	98.4		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							
MS/MSD	88274001		30	103.4	102.1	80	120	0.6	20
MS/MSD	88447001		30	104.5	103.4	80	120	0.5	20
MS/MSD	88743006		30	100.3	99.9	80	120	0.2	20
MS/MSD	88886015		30	99.8	101.2	80	120	0.6	20
MS/MSD	88935001		30	107.2	106.9	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	100.0		85	115		
MB		<0.1							
MS/MSD	88732001		0.4	91.6	98.0	70	130	2.7	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							
PDS/POSD	88393006		100	97.4	97.7	75	125	0.2	20

Report Date: Friday, June 20, 2025 4:16:13 PM

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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	88396009		500	104.0	104.0	75	125	0.0	20
PDS/PDSD	88628004		100	104.0	104.0	75	125	0.1	20
DUP	88713001							0.0	20
PDS/PDSD	88713001		100	104.0	104.0	75	125	0.1	20
PDS/PDSD	88743004		100	100.0	99.6	75	125	0.3	20
PDS/PDSD	88743004		500	105.0	104.0	75	125	0.8	20
PDS/PDSD	88889002		100	83.7	85.0	75	125	0.1	20
PDS/PDSD	88889015		500	98.4	98.8	75	125	0.2	20
PDS/PDSD	88889021		100	103.0	103.0	75	125	0.3	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-DE			0.4	106.0		85	115		
MB		<0.04							
MS/MSD	88732001		0.4	97.5	98.1	70	130	0.6	20

Magnesium — 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-MF			100	110.0		85	115		
MB		<1							
PDS/PDSD	88393006		100	103.0	102.0	75	125	0.1	20
PDS/PDSD	88396009		500	105.0	105.0	75	125	0.1	20
PDS/PDSD	88628004		100	104.0	104.0	75	125	0.0	20
DUP	88713001							0.0	20
PDS/PDSD	88713001		100	104.0	104.0	75	125	0.0	20
PDS/PDSD	88743004		100	99.8	99.6	75	125	0.1	20
PDS/PDSD	88743004		500	104.0	104.0	75	125	0.7	20
PDS/PDSD	88859007		100	88.5	90.5	75	125	0.7	20
PDS/PDSD	88889015		500	101.0	102.0	75	125	0.3	20
PDS/PDSD	88889021		100	103.0	103.0	75	125	0.5	20

Potassium — 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-MF			100	108.0		85	115		

Report Date: Friday, June 20, 2025 4:16:13 PM

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Potassium — 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		<1							
PDS/PDSD	88393006		100	83.4	85.4	75	125	0.6	20
PDS/PDSD	88396009		500	101.0	101.0	75	125	0.4	20
PDS/PDSD	88628004		100	104.0	102.0	75	125	2.4	20
DUP	88713001							0.0	20
PDS/PDSD	88713001		100	102.0	102.0	75	125	0.7	20
PDS/PDSD	88743004		100	99.3	99.8	75	125	0.5	20
PDS/PDSD	88748004		500	99.9	99.5	75	125	0.4	20
PDS/PDSD	88899002		100	102.0	104.0	75	125	1.8	20
PDS/PDSD	88899015		500	102.0	102.0	75	125	0.1	20
PDS/PDSD	88899021		100	100.0	101.0	75	125	0.7	20

Sodium — 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							
PDS/PDSD	88393006		100	101.0	101.0	75	125	0.2	20
PDS/PDSD	88396009		500	87.4	84.8	75	125	3.1	20
PDS/PDSD	88628004		100	103.0	104.0	75	125	1.7	20
DUP	88713001							0.0	20
PDS/PDSD	88713001		100	102.0	101.0	75	125	0.9	20
PDS/PDSD	88743004		500	95.9	94.1	75	125	0.8	20
PDS/PDSD	88899002		100	87.8	87.7	75	125	0.1	20
PDS/PDSD	88899015		500	87.2	87.2	75	125	0.0	20
PDS/PDSD	88899021		100	101.0	102.0	75	125	1.3	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	100.0		80	120		
MB		<0.001							
MS/MSD	88732001		0.4	111.0	110.0	75	125	0.5	20

Report Date: Friday, June 20, 2025 4:16:13 PM

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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 (%)
LFB-MS			0.1	102.0		80	120		
MB		<0.002							
MS/MSD	88732001		0.4	111.0	109.0	75	125	2.0	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	100.0		80	120		
MB		<0.002							
MS/MSD	88732001		0.4	109.0	107.0	75	125	1.8	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	97.4		80	120		
MB		<0.0005							
MS/MSD	88732001		0.4	102.0	101.0	75	125	0.7	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	101.0		80	120		
MB		<0.0005							
MS/MSD	88732001		0.4	110.0	110.0	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		
MB		<0.002							
MS/MSD	88732001		0.4	111.0	111.0	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	105.0		80	120		
MB		<0.002							
MS/MSD	88732001		0.4	111.0	109.0	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	106.0		80	120		
MB		<0.0005							
MS/MSD	88732001		0.4	107.0	109.0	75	125	1.9	20

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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 (%)
LFB-MS			0.1	106.0		80	120		
MB		<0.002							
MS/MSD	88732001		0.4	110.0	111.0	75	125	1.3	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	100.0		80	120		
MB		<0.005							
MS/MSD	88732001		0.4	109.0	106.0	75	125	3.0	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	106.0		80	120		
MB		<0.0005							
MS/MSD	88732001		0.4	105.0	106.0	75	125	1.4	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	106.0		85	115		
LFB			0.002	108.0		85	115		
LFB			0.002	106.0		85	115		
LRB		<0.0002							
MB		<0.0002							
MB		<0.0002							
MS/MSD	88899004		0.002	79.1	79.2	70	130	0.0	20
MS/MSD	89002001		0.002	78.6	80.2	70	130	0.0	20
MS/MSD	89364006		0.002	83.4	85.7	70	130	0.0	20
MS/MSD	89364016		0.002	88.6	88.8	70	130	0.0	20
MS/MSD	89364024		0.002	87.6	88.4	70	130	5.7	20
MS/MSD	89364025		0.002	86.3	90.5	70	130	5.7	20

Alkalinity, Total 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			501	89.4		80	120		
LFB			410	95.7		90	110		
LFB			410	95.6		90	110		

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Alkalinity, Total 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			410	94.2		90	110		
LFB			410	93.7		90	110		
MB		<20.5							
MB		<20.5							
MB		<20.5							
MB		<20.5							
MS/MSD	88889004		410	84.2	85.5	80	120	0.8	20
MS/MSD	88889018		410	84.1	85.4	80	120	0.9	20
MS/MSD	88889020		410	85.4	85.7	80	120	0.9	20

pH Units: units

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-PH			6	100.3					
CRM-PH			6	99.8					
CRM-PH			6	99.7					
CRM-PH			6	99.7					
DUP	88732001							0.5	20
DUP	88889012							0.4	20
DUP	88889017							1.5	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			0.6	99.2		88.99	111.11		
LFB-F			0.5	92.0		90	110		
LFB-F			0.5	96.0		90	110		
LFB-F			0.5	94.0		90	110		
MB-F		<0.1							
MB-F		<0.1							
MB-F		<0.1							
MS/MSD-F	88732001		0.5	98.0	98.0	80	120	0.0	20
MS/MSD-F	88743008		0.5	108.0	100.0	80	120	8.0	20

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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	99.0		90.35	110.33		
MB		<10							
DUP	88732001							2.4	20
DUP	88738001							1.0	20

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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 Coop Chain of Custody
WO: 88732
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
Billing Address (indicate if different from above): Attn: Liabilities	Name of Sampler: Mariah Knutson
	Quote Number
	Date Submitted: 6/5/2025
	Project Name/Number: LOS CCR Wells
	Purchase Order #: 790708-04

Lab Use Only Lab	Sample ID	Sample Matrix (GW - Groundwater)	Date Sampled	Time Sampled	# of	Filtered	Analysis Required
001	MW-2016-13	GW	6/3/2025	918	3	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH, Sb,As, Ba, Be,Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl, Radium (226&228)
—	MW-2016-12	GW	6/3/2025	1046	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-3	GW	6/4/2025	858	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-6	GW	6/4/2025	920	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-9	GW	6/3/2025	1350	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-11	GW	6/4/2025	800	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-2	GW	6/4/2025	830	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-8	GW	6/4/2025	1030	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	DUP	GW	6/4/2025	1030	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENIUM EXPRESS	6/5/2025	NOON		5Jun25	1435	2.1°C	Y / N	TM958
2.							Y / N	

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

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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 Mariah Knutson	
Billing Address (indicate if different from above): Attn: Liabilities	Quote Number	Date Submitted 6/5/2025
	Project Name/Number LOS 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-2016-10	GW	6/4/2025	1141	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENNIUM EXPRESS	6/5/2025	NOON					Y / N	
2.							Y / N	

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

Member ACIL

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

Sample Condition Checklist

Date: 5 JUN 25 Time: 1535 Analyst: PW

Work Order #: 88732

Containers Supplied by MVTL: ☒ Yes ☐ No (Designate customer supplied containers as "Other" in container size column)

Comments:

Number of Bottles	Container Size (mL) F-(500) = Filtered	Container Type CG = Clear Glass, P = Plastic, AG = Amber Glass	Preservation	pH	Sample IDs Preservation reagent added Date/Time Analyst	Unique ID of preservation reagent added	Sample pH after preservation	Required for HNO_3 samples only (24 hours later) Sample ID pH Recheck Result Date/Time/Analyst
1	(125) (250) (500) F-(500) **(1000)** Other	(CG) **(P)** (AG) Other	**NONE** HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
1	(125) (250) **(500)** F-(500) (1000) Other	(CG) **(P)** (AG) Other	NONE **HNO_3** H_2SO_4 NaOH NaOH/ZnAcet HCl	**<2** >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	Oil and grease	(CG) (P) (AG) Other	HCl	n/a				
	TOC Vials	(G) (AG)	H_3PO_4	n/a				
	DOC Vials	(G) (AG)	None H_3PO_4	n/a				

*All samples requiring analyses performed outside of the Bismarck laboratory (New Ulm and Sub-Contract) are not documented on this form.
*All samples requiring microbiological tests are not documented on this form.

Form #80-910025-2 M:\Documents\FORMS\Approved Templates\Bismarck\Waters\80-910025-2 Sample Condition Checklist Page 1 of 1 Effective Date: 1 July 2024

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

Member ACIL

Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: LOS CCR Wells (88743) **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.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 88743001 **Date Collected:** 06/03/2025 10:46 **Matrix:** Groundwater
Sample ID: MW-2016-12 **Date Received:** 06/05/2025 14:35 **Collector:** Client

Temp @ Receipt (C): 2.1 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**16.6**	mg/L	5	1		06/11/2025 10:15	
Method: EPA 6010D							
Boron	**0.24**	mg/L	0.1	1	06/05/2025 16:42	06/11/2025 10:19	
Calcium	**10.7**	mg/L	1	1	06/05/2025 16:42	06/10/2025 12:56	
Magnesium	**3.30**	mg/L	1	1	06/05/2025 16:42	06/10/2025 12:56	
Potassium	**3.24**	mg/L	1	1	06/05/2025 16:42	06/10/2025 12:56	
Sodium	**632**	mg/L	1	1	06/05/2025 16:42	06/10/2025 12:56	
Method: SM2320 B-2021							
Alkalinity, Total	**1175**	mg/L as CaCO3	20.5	1		06/06/2025 12:35	
Bicarbonate	**1175**	mg/L as CaCO3	20.5	1		06/06/2025 12:35	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		06/06/2025 12:35	
Method: SM4500 H+ B-2021							
pH	**8.0**	units	0.1	1		06/06/2025 12:35	*
Method: SM4500-Cl-E 2021							
Chloride	**48.7**	mg/L	2.0	1		06/10/2025 10:42	
Method: SM4500-F-C-2021							
Fluoride	**0.64**	mg/L	0.1	1		06/06/2025 12:35	
Method: USGS I-1750-85							
Total Dissolved Solids	**1580**	mg/L	10	1		06/06/2025 14:18	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 88743002 **Date Collected:** 06/04/2025 08:58 **Matrix:** Groundwater
Sample ID: MW-2016-3 **Date Received:** 06/05/2025 14:35 **Collector:** Client

Temp @ Receipt (C): 2.1 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**30.6**	mg/L	5	1		06/11/2025 10:16	
Method: EPA 6010D							
Boron	**0.23**	mg/L	0.1	1	06/05/2025 16:42	06/11/2025 10:19	
Calcium	**5.03**	mg/L	1	1	06/05/2025 16:42	06/10/2025 12:58	
Magnesium	**2.04**	mg/L	1	1	06/05/2025 16:42	06/10/2025 12:58	
Potassium	**3.18**	mg/L	1	1	06/05/2025 16:42	06/10/2025 12:58	
Sodium	**625**	mg/L	1	1	06/05/2025 16:42	06/10/2025 12:58	
Method: SM2320 B-2021							
Alkalinity, Total	**1134**	mg/L as CaCO3	20.5	1		06/06/2025 12:46	
Bicarbonate	**1134**	mg/L as CaCO3	20.5	1		06/06/2025 12:46	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		06/06/2025 12:46	
Method: SM4500 H+ B-2021							
pH	**8.1**	units	0.1	1		06/06/2025 12:46	*
Method: SM4500-Cl-E 2021							
Chloride	**36.4**	mg/L	2.0	1		06/10/2025 10:43	
Method: SM4500-F-C-2021							
Fluoride	**0.65**	mg/L	0.1	1		06/06/2025 12:46	
Method: USGS I-1750-85							
Total Dissolved Solids	**1510**	mg/L	10	1		06/06/2025 14:18	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 88743003 **Date Collected:** 06/04/2025 09:20 **Matrix:** Groundwater
Sample ID: MW-2016-6 **Date Received:** 06/05/2025 14:35 **Collector:** Client

Temp @ Receipt (C): 2.1 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**559**	mg/L	25	5		06/11/2025 10:17	
Method: EPA 6010D							
Boron	**0.25**	mg/L	0.1	1	06/05/2025 16:42	06/11/2025 10:20	
Calcium	**8.96**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:00	
Magnesium	**3.50**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:00	
Potassium	**4.51**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:00	
Sodium	**807**	mg/L	5	5	06/05/2025 16:42	06/10/2025 14:45	
Method: SM2320 B-2021							
Alkalinity, Total	**940**	mg/L as CaCO3	20.5	1		06/06/2025 12:57	
Bicarbonate	**940**	mg/L as CaCO3	20.5	1		06/06/2025 12:57	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		06/06/2025 12:57	
Method: SM4500 H+ B-2021							
pH	**8.0**	units	0.1	1		06/06/2025 12:57	*
Method: SM4500-Cl-E 2021							
Chloride	**8.2**	mg/L	2.0	1		06/10/2025 10:44	
Method: SM4500-F-C-2021							
Fluoride	**0.43**	mg/L	0.1	1		06/06/2025 12:57	
Method: USGS I-1750-85							
Total Dissolved Solids	**2100**	mg/L	10	1		06/06/2025 14:18	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 88743004 **Date Collected:** 06/03/2025 13:50 **Matrix:** Groundwater
Sample ID: MW-2016-9 **Date Received:** 06/05/2025 14:35 **Collector:** Client

Temp @ Receipt (C): 2.1 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**193**	mg/L	5	1		06/11/2025 10:18	
Method: EPA 6010D							
Boron	**0.24**	mg/L	0.1	1	06/05/2025 16:42	06/11/2025 10:21	
Calcium	**6.94**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:05	
Magnesium	**2.65**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:05	
Potassium	**3.54**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:05	
Sodium	**710**	mg/L	5	5	06/05/2025 16:42	06/10/2025 14:46	
Method: SM2320 B-2021							
Alkalinity, Total	**1099**	mg/L as CaCO3	20.5	1		06/06/2025 13:08	
Bicarbonate	**1099**	mg/L as CaCO3	20.5	1		06/06/2025 13:08	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		06/06/2025 13:08	
Method: SM4500 H+ B-2021							
pH	**8.0**	units	0.1	1		06/06/2025 13:08	*
Method: SM4500-Cl-E 2021							
Chloride	**19.3**	mg/L	2.0	1		06/10/2025 10:45	
Method: SM4500-F-C-2021							
Fluoride	**0.51**	mg/L	0.1	1		06/06/2025 13:08	
Method: USGS I-1750-85							
Total Dissolved Solids	**1710**	mg/L	10	1		06/06/2025 14:18	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 88743005 **Date Collected:** 06/04/2025 08:00 **Matrix:** Groundwater
Sample ID: MW-2016-11 **Date Received:** 06/05/2025 14:35 **Collector:** Client

Temp @ Receipt (C): 2.1 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**201**	mg/L	5	1		06/11/2025 10:25	
Method: EPA 6010D							
Boron	**0.28**	mg/L	0.1	1	06/05/2025 16:42	06/11/2025 10:21	
Calcium	**6.35**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:11	
Magnesium	**2.40**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:11	
Potassium	**3.55**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:11	
Sodium	**642**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:11	
Method: SM2320 B-2021							
Alkalinity, Total	**1031**	mg/L as CaCO3	20.5	1		06/06/2025 13:20	
Bicarbonate	**1031**	mg/L as CaCO3	20.5	1		06/06/2025 13:20	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		06/06/2025 13:20	
Method: SM4500 H+ B-2021							
pH	**8.1**	units	0.1	1		06/06/2025 13:20	*
Method: SM4500-Cl-E 2021							
Chloride	**24.5**	mg/L	2.0	1		06/10/2025 10:47	
Method: SM4500-F-C-2021							
Fluoride	**0.53**	mg/L	0.1	1		06/06/2025 13:20	
Method: USGS I-1750-85							
Total Dissolved Solids	**1650**	mg/L	10	1		06/06/2025 14:18	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 88743006 **Date Collected:** 06/04/2025 08:30 **Matrix:** Groundwater
Sample ID: MW-2016-2 **Date Received:** 06/05/2025 14:35 **Collector:** Client

Temp @ Receipt (C): 2.1 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**228**	mg/L	5	1		06/11/2025 10:33	
Method: EPA 6010D							
Boron	**0.25**	mg/L	0.1	1	06/05/2025 16:42	06/11/2025 10:22	
Calcium	**7.85**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:13	
Magnesium	**3.03**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:13	
Potassium	**4.14**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:13	
Sodium	**680**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:13	
Method: SM2320 B-2021							
Alkalinity, Total	**1081**	mg/L as CaCO3	20.5	1		06/06/2025 13:31	
Bicarbonate	**1081**	mg/L as CaCO3	20.5	1		06/06/2025 13:31	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		06/06/2025 13:31	
Method: SM4500 H+ B-2021							
pH	**8.2**	units	0.1	1		06/06/2025 13:31	*
Method: SM4500-Cl-E 2021							
Chloride	**14.6**	mg/L	2.0	1		06/10/2025 10:48	
Method: SM4500-F-C-2021							
Fluoride	**0.48**	mg/L	0.1	1		06/06/2025 13:31	
Method: USGS I-1750-85							
Total Dissolved Solids	**1730**	mg/L	10	1		06/06/2025 14:18	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 88743007 **Date Collected:** 06/04/2025 10:30 **Matrix:** Groundwater
Sample ID: MW-2016-8 **Date Received:** 06/05/2025 14:35 **Collector:** Client

Temp @ Receipt (C): 2.1 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**651**	mg/L	25	5		06/11/2025 10:35	
Method: EPA 6010D							
Boron	**0.24**	mg/L	0.1	1	06/05/2025 16:42	06/11/2025 10:24	
Calcium	**13.9**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:15	
Magnesium	**5.69**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:15	
Potassium	**6.66**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:15	
Sodium	**888**	mg/L	5	5	06/05/2025 16:42	06/10/2025 14:49	
Method: SM2320 B-2021							
Alkalinity, Total	**1056**	mg/L as CaCO3	20.5	1		06/06/2025 13:43	
Bicarbonate	**1056**	mg/L as CaCO3	20.5	1		06/06/2025 13:43	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		06/06/2025 13:43	
Method: SM4500 H+ B-2021							
pH	**8.0**	units	0.1	1		06/06/2025 13:43	*
Method: SM4500-Cl-E 2021							
Chloride	**9.6**	mg/L	2.0	1		06/10/2025 10:56	
Method: SM4500-F-C-2021							
Fluoride	**0.31**	mg/L	0.1	1		06/06/2025 13:43	
Method: USGS I-1750-85							
Total Dissolved Solids	**2370**	mg/L	10	1		06/06/2025 14:18	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 88743008 **Date Collected:** 06/04/2025 10:30 **Matrix:** Groundwater
Sample ID: DUP **Date Received:** 06/05/2025 14:35 **Collector:** Client

Temp @ Receipt (C): 2.1 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**658**	mg/L	25	5		06/11/2025 10:36	
Method: EPA 6010D							
Boron	**0.24**	mg/L	0.1	1	06/05/2025 16:42	06/11/2025 10:25	
Calcium	**13.6**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:17	
Magnesium	**5.58**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:17	
Potassium	**7.08**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:17	
Sodium	**910**	mg/L	5	5	06/05/2025 16:42	06/10/2025 14:50	
Method: SM2320 B-2021							
Alkalinity, Total	**1056**	mg/L as CaCO3	20.5	1		06/06/2025 13:54	
Bicarbonate	**1056**	mg/L as CaCO3	20.5	1		06/06/2025 13:54	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		06/06/2025 13:54	
Method: SM4500 H+ B-2021							
pH	**8.0**	units	0.1	1		06/06/2025 13:54	*
Method: SM4500-Cl-E 2021							
Chloride	**9.6**	mg/L	2.0	1		06/10/2025 10:57	
Method: SM4500-F-C-2021							
Fluoride	**0.31**	mg/L	0.1	1		06/06/2025 13:54	
Method: USGS I-1750-85							
Total Dissolved Solids	**2380**	mg/L	10	1		06/06/2025 14:18	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 88743009 **Date Collected:** 06/04/2025 11:41 **Matrix:** Groundwater
Sample ID: MW-2016-10 **Date Received:** 06/05/2025 14:35 **Collector:** Client

Temp @ Receipt (C): 2.1 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**294**	mg/L	25	5		06/11/2025 10:37	
Method: EPA 6010D							
Boron	**0.21**	mg/L	0.1	1	06/05/2025 16:42	06/11/2025 10:26	
Calcium	**5.50**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:20	
Magnesium	**2.26**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:20	
Potassium	**3.10**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:20	
Sodium	**641**	mg/L	1	1	06/05/2025 16:42	06/10/2025 13:20	
Method: SM2320 B-2021							
Alkalinity, Total	**977**	mg/L as CaCO3	20.5	1		06/06/2025 14:06	
Bicarbonate	**977**	mg/L as CaCO3	20.5	1		06/06/2025 14:06	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		06/06/2025 14:06	
Method: SM4500 H+ B-2021							
pH	**8.2**	units	0.1	1		06/06/2025 14:06	*
Method: SM4500-Cl-E 2021							
Chloride	**15.2**	mg/L	2.0	1		06/10/2025 10:58	
Method: SM4500-F-C-2021							
Fluoride	**0.54**	mg/L	0.1	1		06/06/2025 14:06	
Method: USGS I-1750-85							
Total Dissolved Solids	**1700**	mg/L	10	1		06/06/2025 14:18	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

QC Results Summary — WO #: 88743

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	102.0		85	115		
LFB			100	99.2		85	115		
LFB			100	98.2		85	115		
LFB			100	93.7		85	115		
LFB			100	97.6		85	115		
LFB			100	94.8		85	115		
LFB			100	95.8		85	115		
LFB			100	99.5		85	115		
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MS/MSD	88396005		1000	95.6	96.3	85	115	0.7	20
MS/MSD	88404001		100	97.0	97.8	85	115	0.8	20
MS/MSD	88629004		4000	80.4	81.3	85	115	0.5	20
MS/MSD	88748005		100	90.0	90.2	85	115	0.3	20
MS/MSD	88889004		2000	98.4	101.2	85	115	1.1	20
MS/MSD	88899014		1000	76.9	75.1	85	115	1.0	20
MS/MSD	88935001		1000	92.7	92.6	85	115	0.0	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	97.5		90	110		
LFB			30	97.0		90	110		
LFB			30	97.9		90	110		
LFB			30	97.6		90	110		

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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	98.4		90	110		
LFB			30	99.0		90	110		
LFB			30	99.2		90	110		
LFB			30	98.7		90	110		
LFB			30	98.9		90	110		
LFB			30	98.4		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							
MS/MSD	88274001		30	103.4	102.1	80	120	0.6	20
MS/MSD	88447001		30	104.5	103.4	80	120	0.5	20
MS/MSD	88743006		30	100.3	99.9	80	120	0.2	20
MS/MSD	88889015		30	99.8	101.2	80	120	0.6	20
MS/MSD	88935001		30	107.2	100.8	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	100.0		85	115		
MB		<0.1							
MS/MSD	88732001		0.4	91.6	98.0	70	130	2.7	20
MS/MSD	88743009		0.4	92.7	94.9	70	130	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	110.0		85	115		
MB		<1							

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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	88393006		100	97.4	97.7	75	125	0.2	20
PDS/PDSD	88398009		500	104.0	104.0	75	125	0.0	20
PDS/PDSD	88628004		100	104.0	104.0	75	125	0.1	20
DUP	88713001							0.0	20
PDS/PDSD	88713001		100	104.0	104.0	75	125	0.1	20
PDS/PDSD	88743004		100	100.0	99.8	75	125	0.3	20
PDS/PDSD	88743004		500	105.0	104.0	75	125	0.8	20
DUP	88748009							3.7	20
PDS/PDSD	88899002		100	83.7	83.0	75	125	0.1	20
PDS/PDSD	88899015		500	98.4	98.8	75	125	0.2	20
PDS/PDSD	88899021		100	103.0	103.0	75	125	0.3	20

Magnesium — 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							
PDS/PDSD	88393006		100	102.0	102.0	75	125	0.1	20
PDS/PDSD	88398009		500	105.0	105.0	75	125	0.1	20
PDS/PDSD	88628004		100	104.0	104.0	75	125	0.0	20
DUP	88713001							0.0	20
PDS/PDSD	88713001		100	104.0	104.0	75	125	0.0	20
PDS/PDSD	88743004		100	99.8	99.6	75	125	0.1	20
PDS/PDSD	88743004		500	104.0	104.0	75	125	0.7	20
DUP	88748009							1.8	20
PDS/PDSD	88899002		100	88.5	90.5	75	125	0.7	20
PDS/PDSD	88899015		500	101.0	102.0	75	125	0.3	20
PDS/PDSD	88899021		100	101.0	103.0	75	125	0.5	20

Potassium — 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		
MB		<1							
PDS/PDSD	88393006		100	83.4	85.4	75	125	0.6	20

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Potassium 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	88396009		500	101.0	101.0	75	125	0.4	20
PDS/PDSD	88628004		100	104.0	102.0	75	125	2.4	20
DUP	88713001							0.0	20
PDS/PDSD	88713001		100	102.0	102.0	75	125	0.7	20
PDS/PDSD	88743004		100	99.3	99.8	75	125	0.5	20
PDS/PDSD	88743004		500	99.9	99.5	75	125	0.4	20
DUP	88743009							2.6	20
PDS/PDSD	88899003		100	103.0	104.0	75	125	1.8	20
PDS/PDSD	88899015		500	102.0	102.0	75	125	0.1	20
PDS/PDSD	88899021		100	100.0	101.0	75	125	0.7	20

Sodium 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							
PDS/PDSD	88393006		100	101.0	101.0	75	125	0.2	20
PDS/PDSD	88396009		500	82.4	84.8	75	125	0.7	20
PDS/PDSD	88628004		100	102.0	104.0	75	125	1.7	20
DUP	88713001							0.0	20
PDS/PDSD	88713001		100	102.0	101.0	75	125	0.9	20
PDS/PDSD	88743004		500	95.9	94.1	75	125	0.8	20
DUP	88743009							4.0	20
PDS/PDSD	88899003		100	87.3	87.7	75	125	0.1	20
PDS/PDSD	88899015		500	87.2	87.2	75	125	0.0	20
PDS/PDSD	88899021		100	101.0	102.0	75	125	1.3	20

Alkalinity, Total 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			501	89.3		80	120		
LFB			410	82.5		90	110		
LFB			410	93.1		90	110		
MB		<20.5							
MB		<20.5							

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Alkalinity, Total 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	88743004		410	88.8	87.6	80	120	0.0	20

pH Units: units

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-PH			6	100.3					
CRM-PH			6	99.8					
DUP	88788001							9.9	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			0.6	99.2		83.99	111.11		
LFB-F			0.5	92.0		90	110		
LFB-F			0.5	96.0		90	110		
LFB-F			0.5	94.0		90	110		
MB-F		<0.1							
MB-F		<0.1							
MB-F		<0.1							
MS/MSD-F	88732001		0.5	98.0	98.0	80	120	0.0	20
MS/MSD-F	88743003		0.5	108.0	100.0	80	120	4.8	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	99.0		90.35	110.33		
MB		<10							
DUP	88732001							2.4	20
DUP	88788001							1.0	20

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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 Coop
WO: 88743

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
Billing Address (indicate if different from above) Attn: Liabilities		Name of Sampler Mariah Knutson	
		Quote Number	Date Submitted 6/5/2025
		Project Name/Number LOS 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-2016-13	GW	6/3/2025	918	3	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH, Sb,As, Ba, Be,Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl, Radium (226&228)
001	MW-2016-12	GW	6/3/2025	1046	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
002	MW-2016-3	GW	6/4/2025	858	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
003	MW-2016-6	GW	6/4/2025	920	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
004	MW-2016-9	GW	6/3/2025	1350	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
005	MW-2016-11	GW	6/4/2025	800	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
006	MW-2016-2	GW	6/4/2025	830	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
007	MW-2016-8	GW	6/4/2025	1030	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
008	DUP	GW	6/4/2025	1030	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENIUM EXPRESS	6/5/2025	NOON	Lyndsey Spilley	5 Jun 25	1435	2.1°C	Y / N	TM959
2.							Y / N	

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

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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 Mariah Knutson	
Billing Address (indicate if different from above): Attn: Liabilities	Quote Number	Date Submitted 6/5/2025
	Project Name/Number LOS CCR Wells	Purchase Order # 790708-04

Lab Use Only Lab	Sample ID	Sample Matrix (GW - Groundwater)	Date Sampled	Time Sampled	# of	Filtered	Analysis Required
009	MW-2016-10	GW	6/4/2025	1141	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENNIUM EXPRESS	6/5/2025	NOON					Y / N	
2.							Y / N	

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

Member ACIL

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

Sample Condition Checklist

Date: 5 JUN 25 Time: 1537 Analyst: PW

Work Order #: 88743

Containers Supplied by MVTL: ☒ Yes ☐ No (Designate customer supplied containers as "Other" in container size column)

Comments:

Number of Bottles	Container Size (mL) F-(500) = Filtered	Container Type CG = Clear Glass, P = Plastic, AG = Amber Glass	Preservation	pH	Sample IDs Preservation reagent added Date/Time Analyst	Unique ID of preservation reagent added	Sample pH after preservation	Required for HNO_3 samples only (24 hours later) Sample ID pH Recheck Result Date/Time/Analyst
9	(125) (250) (500) F-(500) **(1000)** Other	(CG) **(P)** (AG) Other	**NONE** HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
9	(125) (250) **(500)** F-(500) (1000) Other	(CG) **(P)** (AG) Other	NONE **HNO_3** H_2SO_4 NaOH NaOH/ZnAcet HCl	**<2** >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	Oil and grease	(CG) (P) (AG) Other	HCl	n/a				
	TOC Vials	(G) (AG)	H_3PO_4	n/a				
	DOC Vials	(G) (AG)	None H_3PO_4	n/a				

*All samples requiring analyses performed outside of the Bismarck laboratory (New Ulm and Sub-Contract) are not documented on this form.
*All samples requiring microbiological tests are not documented on this form.

Form #80-910025-2 M:\Documents\FORMS\Approved Templates\Bismarck\Waters\80-910025-2 Sample Condition Checklist Page 1 of 1 Effective Date : 1 July 2024

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: LOS CCR Wells (88784) **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.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 88784001 **Date Collected:** 06/03/2025 09:18 **Matrix:** Groundwater
Sample ID: MW-2016-13 **Date Received:** 06/05/2025 14:35 **Collector:** Client

Temp @ Receipt (C): 2.1 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: Contracted Result							
Radium 226	See Attached			1		07/07/2025 09:10	
Radium 228	See Attached			1		07/07/2025 09:10	

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

ENERGY LABORATORIES — Trust our People. Trust our Data.
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

ANALYTICAL SUMMARY REPORT

July 03, 2025

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

Work Order: C25060338 Quote ID: C15480
Project Name: 88784

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 6/10/2025 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C25060338-001	88784001, MW-2016-13	06/03/25 9:18	06/10/25	Groundwater	pH Check for Nitric Radiochem FIRST Radium 226 + Radium 228, Total Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy, Casper, WY 82601-9601, 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.

Energy Laboratories, Inc. verifies the reported results for the analysis has been technically reviewed and approved for release.

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

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

ENERGY LABORATORIES Trust our People. Trust our Data. www.energylab.com
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 88784
Lab ID: C25060338-001
Client Sample ID: 88784001, MW-2016-13

Report Date: 07/03/25
Collection Date: 06/03/25 09:18
DateReceived: 06/10/25
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L				E903.0	06/23/25 12:09 / apt
Radium 226 precision (±)	0.1	pCi/L				E903.0	06/23/25 12:09 / apt
Radium 226 MDC	0.2	pCi/L				E903.0	06/23/25 12:09 / apt
Radium 228	1.1	pCi/L	U			RA-05	06/16/25 14:28 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	06/16/25 14:28 / trs
Radium 228 MDC	1.2	pCi/L				RA-05	06/16/25 14:28 / trs
Radium 226 + Radium 228	0.8	pCi/L	U			A7500-RA	06/24/25 12:03 / dmf
Radium 226 + Radium 228 precision (±)	0.8	pCi/L				A7500-RA	06/24/25 12:03 / dmf
Radium 226 + Radium 228 MDC	1.2	pCi/L				A7500-RA	06/24/25 12:03 / dmf

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

Page 2 of 8

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

ENERGY LABORATORIES — Trust our People. Trust our Data. www.energylab.com
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

QA/QC Summary Report

Prepared by Casper, WY Branch

Work Order: C25060338 **Report Date:** 06/27/25

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-11703
Lab ID: LCS-RA226-11703	3	Laboratory Control Sample				Run: TENNELEC-4_250611D				06/23/25 10:22
Radium 226		11	pCi/L		109	70	130			
Radium 226 precision (±)		1.8	pCi/L							
Radium 226 MDC		0.17	pCi/L							
Lab ID: MB-RA226-11703	3	Method Blank				Run: TENNELEC-4_250611D				06/23/25 10:22
Radium 226		-0.01	pCi/L							U
Radium 226 precision (±)		0.09	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C25050755-005DDUP	3	Sample Duplicate				Run: TENNELEC-4_250611D				06/23/25 10:22
Radium 226		3.0	pCi/L					12	30	
Radium 226 precision (±)		0.54	pCi/L							
Radium 226 MDC		0.15	pCi/L							

- The RER result is 0.49.

Qualifiers:

RL - Analyte Reporting Limit
ND - Not detected at the Reporting Limit (RL)
U - Not detected

Page 3 of 8

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

ENERGY LABORATORIES Trust our People. Trust our Data. www.energylab.com
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

QA/QC Summary Report

Prepared by Casper, WY Branch

Work Order: C25060338 **Report Date:** 06/27/25

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05									Batch: RA228-7669	
Lab ID: LCS-228-RA226-11703	3	Laboratory Control Sample				Run: TENNELEC-4_250611B			06/16/25 13:57	
Radium 228		9.7	pCi/L		104	70	130			
Radium 228 precision (±)		2.6	pCi/L							
Radium 228 MDC		1.2	pCi/L							
Lab ID: MB-RA226-11703	3	Method Blank				Run: TENNELEC-4_250611B			06/16/25 13:57	
Radium 228		1	pCi/L							
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C25050755-005DDUP	3	Sample Duplicate				Run: TENNELEC-4_250611B			06/16/25 13:57	
Radium 226		2.9	pCi/L					7.7	30	
Radium 228 precision (±)		1.1	pCi/L							
Radium 228 MDC		1.1	pCi/L							

- The RER result is 0.14.

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

Page 4 of 8

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

ENERGY LABORATORIES — Trust our People. Trust our Data. www.energylab.com
Billings, MT 406.252.6325 • Casper, WY 307.235.0515 • Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

Work Order Receipt Checklist

Minnesota Valley Testing Laboratories C25060338

Login completed by: Dakota R. Sawyer
Reviewed by: srichins
Reviewed Date: 6/18/2025

Date Received: 6/10/2025
Received by: DRS
Carrier name: UPS Ground

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:	20.9°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.

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.

Trip Blanks and/or Blind Duplicate samples are assigned the earliest collection time for the associated requested analysis in order to evaluate the holding time unless specifically indicated.

Contact and Corrective Action Comments:

The temperature of the sample(s) in shipping container 1 was 20.3°C and shipping container 2 was 20.9°C.

Page 5 of 8

Work Order Receipt Checklist - Continued

Minnesota Valley Testing Laboratories C25060338

The sample for radionuclides analysis was received at pH >2. Nitric acid (15 mL) was added to preserve to pH <2. In accordance with the method, these samples must held for 16 hours prior to analysis. DRS 06/10/25

ENERGY LABORATORIES — Trust our People. Trust our Data. www.energylab.com
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

Laboratory Certifications and Accreditations

Current certificates are available at www.energylab.com website:

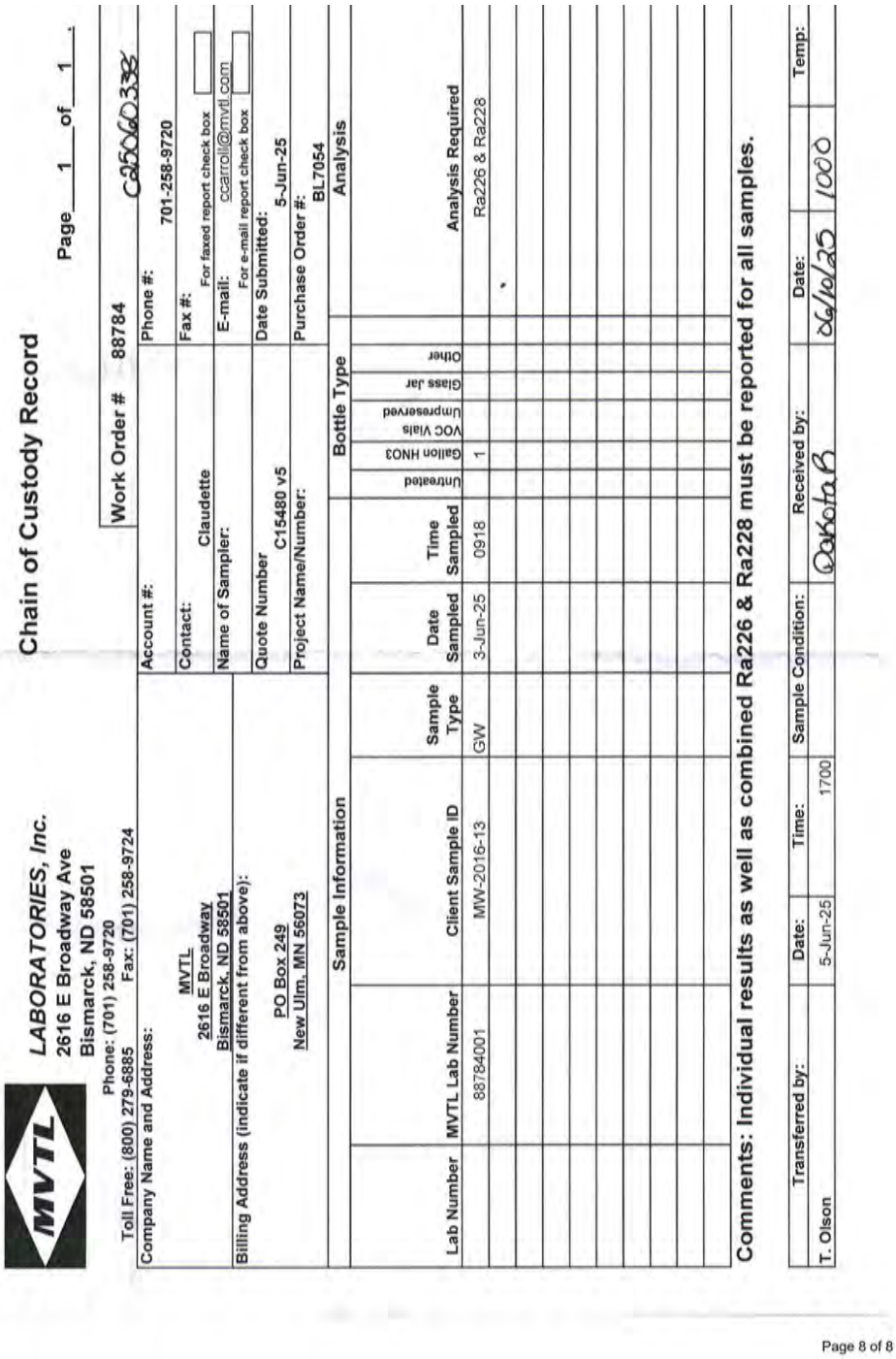
	Agency	Number
Billings, MT	Alaska	17-023
	California	3087
	Colorado	MT00005
	Department of Defense (DoD)/ISO17025	ADE-2588
	Florida (Primary NELAP)	E87668
	Idaho	MT00005
	Louisiana	05079
	Montana	CERT0044
	Nebraska	NE-OS-13-04
	Nevada	NV-C24-00250
	North Dakota	R-007
	National Radon Proficiency	109383-RMP
	Oregon	4184
	South Dakota	ARSD 74:04:07
	Texas	TX-C24-00302
	US EPA Region VIII	Reciprocal
	USDA Soil Permit	P330-20-00170
	Washington	C1039
Casper, WY	Alaska	20-006
	California	3021
	Colorado	WY00002
	Florida (Primary NELAP)	E87641
	Idaho	WY00002
	Louisiana	05083
	Montana	CERT0002
	Nebraska	NE-OS-08-04
	Nevada	NV-C24-00245
	North Dakota	R-125
	Oregon	WY200001
	South Dakota	WY00002
	Texas	T104704181-23-21
	US EPA Region VIII	WY00002
	USNRC License	49-26846-01
	Washington	C1012
Gillette, WY	US EPA Region VIII	WY00006
Helena, MT	Colorado	MT00945
	Montana	CERT0079
	Nevada	NV-C24-00119
	US EPA Region VIII	Reciprocal
	USDA Soil Permit	P330-20-00090

Page 7 of 8

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

Member ACIL

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



MVTL 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

Work Order # 88784 C250603332

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 v5
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: 5-Jun-25
Purchase Order #: BL7054

Lab Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Bottle Type: Unpreserved	Gallon HNO3	VOC Vials	Unpreserved	Glass Jar	Other	Analysis Required
	88784001	MW-2016-13	GW	3-Jun-25	0918		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	5-Jun-25	1700		Dakota B	06/10/25 1000	

Page 8 of 8

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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 Coop **Chain of Custody**
WO: 88784
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
Billing Address (indicate if different from above): Attn: Liabilities	Name of Sampler: Mariah Knutson
	Quote Number:
	Date Submitted: 6/5/2025
	Project Name/Number: LOS CCR Wells
	Purchase Order #: 790708-04

Lab Use Only Lab	Sample ID	Sample Matrix GW - Groundwater	Date Sampled	Time Sampled	# of	Filtered	Analysis Required
001	MW-2016-13	GW	6/3/2025	918	3	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH, Sb,As, Ba, Be,Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl, Radium (226&228)
	MW-2016-12	GW	6/3/2025	1046	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
	MW-2016-3	GW	6/4/2025	858	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
	MW-2016-6	GW	6/4/2025	920	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
	MW-2016-9	GW	6/3/2025	1350	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
	MW-2016-11	GW	6/4/2025	800	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
	MW-2016-2	GW	6/4/2025	830	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
	MW-2016-8	GW	6/4/2025	1030	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
	DUP	GW	6/4/2025	1030	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENIUM EXPRESS	6/5/2025	NOON	[signature]	6Jun25	1435	2.1°C	Y/N	TM98
2.							Y/N	

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

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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
Billing Address (indicate if different from above): Attn: Liabilities	Name of Sampler: Mariah Knutson	
	Quote Number	Date Submitted: 6/5/2025
	Project Name/Number: LOS 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-2016-10	GW	6/4/2025	1141	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENNIUM EXPRESS	6/5/2025	NOON					Y / N	
2.							Y / N	

Basin Electric North Dakota

Site Name: LOS Landfill
Event Date: 8-11-25
Weather Conditions: Humid, calm
Field Technician: MK

River Elevation (if applicable)
1057.76

Well ID	Time	Depth to Water*	Well Condition	Comments
MW-2016-13	1030	120.88		
MW-2016-12		73.10		
MW-2016-3		99.55		
MW-2016-9		107.29		
MW-2016-11		116.35		
MW-2016-2		116.46		
MW-2016-10		111.76		
MW-2016-4		96.39		
MW-2016-8		93.0		

* Depth to water as measured from the top of PVC casing.

Well/Piezo ID: MW-2016-13

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LOS Landfill
Weather Conds: Cool, sunny → warm
Collector(s): MK
Date: 8-12-25
Time: 0745
Finish 0953

WATER LEVEL DATA: (measured from Top of Casing) Well ☑

a. Total Well Length _____
b. Water Table Depth 120.88
c. Casing Material PVC
d. Casing Diameter _____
Pump Settings 23/7 @ 125psi

WELL PURGING DATA

a. Purge Method Dedicated Bladder Pump
b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L (<0.5)	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU) (<5)	Color	DTW
Stabilization		+/- 0.2	+/- 10%	+/- 3%	+/- 0.1	+/- 10%	+/- 10%		0.33 ft
0848	INITIAL 10.5	11.9	0.23	2581	7.00	-104.7	4.59	yellow	125.10
0852	11 L	12.1	0.23	2569	7.05	-101.3	4.27		125.3
0856	11.5 L	12.0	0.23	2576	7.05	-96.1	4.00		125.52
0900	12 L	11.8	0.20	2574	7.09	-89.1	3.85		125.70
0904	12.5 L	11.9	0.21	2562	7.57	-80.7	3.04		125.94
0908	13 L	11.9	0.25	2562	7.51	-64.3	3.07		126.27
0912	13.5 L	11.9	0.25	2554	7.47	-54.5	2.01		126.54
0916	14 L	12.0	0.26	2547	7.44	-42.6	1.96		126.67
0920	14.5 L	12.1	0.26	2540	7.44	-40.1	1.78		126.87
0924	15 L	12.1	0.28	2549	7.47	-47.7	1.70		127.10
0928	15.5 L	12.1	0.24	2550	7.49	-52.3	3.27		127.29
0932	16 L	12.2	0.23	2552	7.50	-52.4	2.36	↓	127.41
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	0933
	500mL	1	HNO3	Metals	↓
	1gal	1	HNO3	Radium	

Comments

Signature [signature] Date 8-12-25

Well/Piezo ID: MW-2016-12

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LOS Landfill
Weather Conds: Hot, sunny
Date: 8-12-25
Time: 1003
Finish 1113
Collector(s) MK

WATER LEVEL DATA: (measured from Top of Casing) Well ☒

a. Total Well Length _____ c. Casing Material PVC Pump Settings 24/6 @ 75psi 23/7

b. Water Table Depth 73.10 d. Casing Diameter _____

WELL PURGING DATA

a. Purge Method Dedicated Bladder Pump

b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time / Stabilization	Volume Removed (gal)	T° (C) +/- 0.2	DO ✓mg/L +/- 10% (<0.5)	Spec. Cond (µs/cm) +/- 3%	pH +/- 0.1	ORP +/- 10%	✓Turbidity (NTU) +/- 10% (<5)	Color	DTW 0.33 ft
1041	INITIAL 7L	11.9	0.21	2416	7.92	79.1	yellow ↔ 2.56		76.0
1045	7.5 L	11.8	0.27	2410	7.92	80.8	1.97	yellow	76.25
1049	8 L	11.7	0.34	2403	7.92	84.0	4.06		76.52
1053	8.5 L	11.8	0.49	2424	7.93	94	3.47		76.75
1057	9 L	11.7	0.19	2423	7.92	94.1	4.54		77.0
1101	9.5 L	11.7	0.26	2413	7.91	91.5	2.03		77.4
1105	10 L	11.8	0.28	2389	7.91	94.3	2.22		77.58
1109	10.5 L	11.8	0.34	2420	7.92	88.3	2.51	↓	77.71
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	1110
	500mL	1	HNO3	Metals	↓

Comments _____

Signature MK Date 8-12-25

Well/Piezo ID: MW-2016-3

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LOS Landfill
Weather Conds: Hot, Sunny
Date: 8-12-25
Time: 1123
Finish 0813 8-13-25
Collector(s) MK

WATER LEVEL DATA: (measured from Top of Casing) Well ☒

a. Total Well Length _____ c. Casing Material PVC Pump Settings 18/12 @ 125psi

b. Water Table Depth 99.55 d. Casing Diameter _____

WELL PURGING DATA

a. Purge Method Dedicated Bladder Pump

b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU)	Color	DTW
Stabilization		+/- 0.2	+/- 10%	+/- 3%	+/- 0.1	+/- 10%	+/- 10%		0.33 ft
			<0.5				<5		
1203	INITIAL 7L	10.4	0.12	2329	8.04	54.5	3.87	clear/	111.25
1207	7.75 L	10.6	0.14	23466	8.01	60.5	2.32	Brown	112.67
1211	8.5 L	10.6	0.18	2315	8.02	62.8	2.99	↓	113.90
1215	9.25 L	10.7	0.20	2326	8.02	66.2	2.30	↓	115.15
	L		Stopped @ 115	ft.				↓	
	L								
0800	L	9.9	2.63	2398	8.05	-254.1	9.78	clear/	112.77
	L							Brown	
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☐	☒	☐

If no or N/A - Explain below.

DTW

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	0800
	500mL	1	HNO3	Metals	↓

Comments

Signature [signature] Date 8-13-25

Well/Piezo ID: MW-2016-6

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LOS Landfill
Weather Conds: sunny, Hot Breezy
Collector(s): MK
Date: 8-12-25
Time: 1303
Finish: 1338
0833 → 8/13/25

WATER LEVEL DATA: (measured from Top of Casing) Well ☒

a. Total Well Length _____
b. Water Table Depth 96.39
c. Casing Material PVC
d. Casing Diameter _____
Pump Settings 21/9 @ 125psi 20/10

WELL PURGING DATA

a. Purge Method Dedicated Bladder Pump
b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time / Stabilization	Volume Removed (gal)	T° (C) +/- 0.2	DO mg/L (<0.5) +/- 10%	Spec. Cond (µs/cm) +/- 3%	pH +/- 0.1	ORP +/- 10%	Turbidity (NTU) (<5) +/- 10%	Color	DTW 0.33 ft
1325	INITIAL 2.5L	11.6	0.18	3086	7.84	-108.5	3.89	yellow	100.51
1329	3.25 L	10.9	0.14	3077	7.90	41.6	3.02		101.34
1333	4.5 L	11.1	0.15	3080	7.89	49	2.95		102.87
1337	5 L	10.9	0.18	3068	7.89	50.2	2.60		103.40
	L	pumped down to 104 ft + stopped						↓	
	L								
0818	L	10.7	4.47	3123	7.89	-284.7	13.0	yellow/ sed.	103.71
	L								
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☐	☒	☐

If no or N/A - Explain below.
DTW

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	0818
	500mL	1	HNO3	Metals	↓

Comments

Signature [signature] Date 8-13-25

Well/Piezo ID: MW-2016-2

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LCS Landfill
Weather Conds: Cool, sunny
Date: 8-12-25
Time: 1350
Finish 1413
Collector(s) MK

WATER LEVEL DATA: (measured from Top of Casing) Well ☐

a. Total Well Length _____
b. Water Table Depth 116.46
c. Casing Material PVC
d. Casing Diameter _____
Pump Settings _____

WELL PURGING DATA

a. Purge Method ~~Dedicated Bladder Pump~~ Hydrasleeve
b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU)	Color	DTW
Stabilization		+/- 0.2	+/- 10%	+/- 3%	+/- 0.1	+/- 10%	+/- 10%		0.33 ft
			<0.5				<5		
1350	INITIAL	12.7	3.35	2026	8.01	14.3	50.5	clear/ sed	116.46
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	1357
	500mL	1	HNO3	Metals	↓

Comments _____

Signature _____ Date 8-12-25

Well/Piezo ID: MW-2016-11

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: AVS LOS Landfill
Weather Conds: Sunny Hot Breezy
Date: 8-12-25
Time: 1417
Finish 1431
Collector(s) MK

WATER LEVEL DATA: (measured from Top of Casing) Well ☐

a. Total Well Length _____
b. Water Table Depth 116.35
c. Casing Material PVC
d. Casing Diameter _____
Pump Settings Brown 2L

WELL PURGING DATA

a. Purge Method ~~Dedicated Bladder Pump~~ Hydrasleeve
b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L (<0.5)	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU) (<5)	Color	DTW
Stabilization		+/- 0.2	+/- 10%	+/- 3%	+/- 0.1	+/- 10%	+/- 10%		0.33 ft
1422	INITIAL	12.2	1.02	2486	7.97	64.7	15.4	clear/ sed.	116.35
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	1423
	500mL	1	HNO3	Metals	↓

Comments _____

Signature _____ Date 8-12-25

Well/Piezo ID: MW-2016-9

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LOS Landfill
Weather Conds: sunny, cool
Date: 8-13-25
Time: 0735
Finish 0749
Collector(s) MK

WATER LEVEL DATA: (measured from Top of Casing) Well ☐

a. Total Well Length _____
b. Water Table Depth 107.29
c. Casing Material PVC
d. Casing Diameter _____ Brown 2L
Pump Settings _____

WELL PURGING DATA

a. Purge Method ~~Dedicated Bladder Pump~~ Hydrosleeve
b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU)	Color	DTW
Stabilization		+/- 0.2	+/- 10%	+/- 3%	+/- 0.1	+/- 10%	+/- 10%		0.33 ft
0742	INITIAL	9.7	1.79	26226	7.90	-203.4	10.4	Clear	107.29
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								

<0.5 <5

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	0743
	500mL	1	HNO3	Metals	↓

Comments _____

Signature _____ Date 8-13-25

Well/Piezo ID: MW-2016-8

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LOS Land fill
Weather Conds: sunny cool → warm
Collector(s): MK
Date: 8-13-25
Time: 0839
Finish 0948

WATER LEVEL DATA: (measured from Top of Casing) Well ☑

a. Total Well Length _____
b. Water Table Depth 93.0
c. Casing Material PVC
d. Casing Diameter _____
Pump Settings 23/7 @ 90 psi

WELL PURGING DATA

a. Purge Method Dedicated Bladder Pump
b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU)	Color	DTW
Stabilization		+/- 0.2	<0.5 +/- 10%	+/- 3%	+/- 0.1	+/- 10%	<5 +/- 10%		0.33 ft
0918	INITIAL 7L	11.4	0.34	3481	7.87	102.7	4.65	clear	100.44
0922	7.5 L	11.4	0.33	3488	7.85	77.2	4.47	↓	100.70
0926	8 L	11.4	0.32	3495	7.85	84.7	5.30	↓	100.95
0930	8.5 L	11.5	0.31	3501	7.86	92.9	5.18	↓	101.14
0933	9 L	11.5	0.32	3474	7.86	93.1	5.36	↓	101.25
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	0934
	500mL	1	HNO3	Metals	↓

Comments DUP

Signature _____ Date 8-13-25

Well/Piezo ID: MW-2016-10

Ground Water Sample Collection Record

Client: BEPC
Project No:
Site Location: ~~AVS~~ LOS Landfill
Weather Conds: sunny warm
Collector(s): MK
Date: 8-13-25
Time: 0956
Finish 1044

WATER LEVEL DATA: (measured from Top of Casing) Well ☑

a. Total Well Length _____
b. Water Table Depth 111.76
c. Casing Material PVC
d. Casing Diameter _____
Pump Settings 20/10 @ 120psi

WELL PURGING DATA

a. Purge Method Dedicated Bladder Pump
b. Field Testing Equipment Used:

Make	Model	Serial Number
YSI		5320084101
HACH		20030C084551

c. Field Testing Equipment Calibration Documentation Found in Field Notebook # 1 Page # 1

Time	Volume Removed (gal)	T° (C)	DO mg/L (<0.5)	Spec. Cond (µs/cm)	pH	ORP	Turbidity (NTU) (<5) ✓	Color	DTW
Stabilization		+/- 0.2	+/- 10%	+/- 3%	+/- 0.1	+/- 10%	+/- 10%		0.33 ft
1024	INITIAL 4L	11.0	0.34	2632	8.10	-301.6	1.28	yellow	112.62
1028	4.5 L	10.9	0.27	2631	8.10	-301.6	1.26	↓	112.68
1032	5 L	11.0	0.20	2625	8.09	-303.8	1.22		112.77
1036	5.5 L	11.0	0.19	2637	8.09	-305.9	1.24	↓	112.80
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Bladder Pump

Sample ID	Container Typ	No. of Containers	Preservation	Analysis	Time
	1L	1		TDS/Anions	1037
	500mL	1	HNO3	Metals	↓

Comments _____

Signature _____ Date 8-13-25

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

Member ACIL

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

Basin Electric Power Coop

WO: 96082

Chain of Custody

Page __1__ of __2__

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

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 Mariah Knutson	
Billing Address (indicate if different from above): Attn: Liabilities	Quote Number	Date Submitted 8/14/2025
	Project Name/Number LOS 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-2016-13	GW	8/12/2025	933	3	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH, Sb,As, Ba, Be,Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl, Radium (226&228)
002	MW-2016-12	GW	8/12/2025	1110	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
003	MW-2016-3	GW	8/13/2025	800	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
004	MW-2016-6	GW	8/13/2025	818	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
005	MW-2016-9	GW	8/13/2025	743	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
006	MW-2016-11	GW	8/12/2025	1423	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
007	MW-2016-2	GW	8/12/2025	1357	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
008	MW-2016-8	GW	8/13/2025	934	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
009	DUP	GW	8/13/2025	934	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENIUM EXPRESS	8/14/2025	NOON		8/14/25	1449	3.2°C	(Y) / N	TM959
2.							Y / N	

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

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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: Mariah Knutson	
Billing Address (indicate if different from above): Attn: Liabilities	Quote Number	Date Submitted: 8/14/2025
	Project Name/Number: LOS 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
010	MW-2016-10	GW	8/13/2025	1037	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENNIUM EXPRESS	8/14/2025	NOON	[signature]	14 Aug 25	1449	3.2°C	Y / N	TM459
2.							Y / N	

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: LOS CCR Wells (96082) **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.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 96082001 **Date Collected:** 08/12/2025 09:33 **Matrix:** Groundwater
Sample ID: MW-2016-13 **Date Received:** 08/14/2025 14:49 **Collector:** Client

Temp @ Receipt (C): 3.2 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**15.9**	mg/L	5	1		08/20/2025 09:34	
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	08/19/2025 08:10	08/19/2025 11:10	
Method: EPA 6010D							
Boron	**0.27**	mg/L	0.1	1	08/14/2025 16:34	08/21/2025 15:10	
Calcium	**10.9**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:00	
Lithium	<0.02	mg/L	0.02	1	08/14/2025 16:34	08/21/2025 11:37	
Magnesium	**3.37**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:00	
Potassium	**3.56**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:00	
Sodium	**652**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:00	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	08/14/2025 16:34	08/20/2025 12:12	
Arsenic	**0.0023**	mg/L	0.002	5	08/14/2025 16:34	08/20/2025 12:12	
Barium	**0.0488**	mg/L	0.002	5	08/14/2025 16:34	08/20/2025 12:12	
Beryllium	<0.0005	mg/L	0.0005	5	08/14/2025 16:34	08/20/2025 12:12	
Cadmium	<0.0005	mg/L	0.0005	5	08/14/2025 16:34	08/20/2025 12:12	
Chromium	<0.002	mg/L	0.002	5	08/14/2025 16:34	08/20/2025 12:12	
Cobalt	<0.002	mg/L	0.002	5	08/14/2025 16:34	08/20/2025 12:12	
Lead	<0.0005	mg/L	0.0005	5	08/14/2025 16:34	08/20/2025 12:12	
Molybdenum	**0.0391**	mg/L	0.002	5	08/14/2025 16:34	08/20/2025 12:12	
Selenium	<0.005	mg/L	0.005	5	08/14/2025 16:34	08/20/2025 12:12	
Thallium	<0.0005	mg/L	0.0005	5	08/14/2025 16:34	08/20/2025 12:12	
Method: SM2320 B-2021							
Alkalinity, Total	**1279**	mg/L as CaCO3	20.5	1		08/14/2025 18:16	
Bicarbonate	**1279**	mg/L as CaCO3	20.5	1		08/14/2025 18:16	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		08/14/2025 18:16	
Method: SM4500 H+ B-2021							
pH	**7.7**	units	0.1	1		08/14/2025 18:16	*

Report Date: Tuesday, August 26, 2025 1:00:15 PM

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 96082001 **Date Collected:** 08/12/2025 09:33 **Matrix:** Groundwater
Sample ID: MW-2016-13 **Date Received:** 08/14/2025 14:49 **Collector:** Client

Temp @ Receipt (C): 3.2 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: SM4500-Cl-E 2021							
Chloride	**57.1**	mg/L	2.0	1		08/19/2025 10:27	
Method: SM4500-F-C-2021							
Fluoride	**0.61**	mg/L	0.1	1		08/14/2025 18:16	
Method: USGS I-1750-85							
Total Dissolved Solids	**1650**	mg/L	10	1		08/15/2025 14:02	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 96082002 **Date Collected:** 08/12/2025 11:10 **Matrix:** Groundwater
Sample ID: MW-2016-12 **Date Received:** 08/14/2025 14:49 **Collector:** Client

Temp @ Receipt (C): 3.2 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**22.5**	mg/L	5	1		08/20/2025 09:35	
Method: EPA 6010D							
Boron	**0.23**	mg/L	0.1	1	08/14/2025 16:34	08/21/2025 15:12	
Calcium	**9.51**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:01	
Magnesium	**2.92**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:01	
Potassium	**3.10**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:01	
Sodium	**621**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:01	
Method: SM2320 B-2021							
Alkalinity, Total	**1213**	mg/L as CaCO3	20.5	1		08/14/2025 18:27	
Bicarbonate	**1213**	mg/L as CaCO3	20.5	1		08/14/2025 18:27	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		08/14/2025 18:27	
Method: SM4500 H+ B-2021							
pH	**8.1**	units	0.1	1		08/14/2025 18:27	*
Method: SM4500-Cl-E 2021							
Chloride	**45.4**	mg/L	2.0	1		08/19/2025 10:29	
Method: SM4500-F-C-2021							
Fluoride	**0.70**	mg/L	0.1	1		08/14/2025 18:27	
Method: USGS I-1750-85							
Total Dissolved Solids	**1570**	mg/L	10	1		08/15/2025 14:02	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 96082003 **Date Collected:** 08/13/2025 08:00 **Matrix:** Groundwater
Sample ID: MW-2016-3 **Date Received:** 08/14/2025 14:49 **Collector:** Client

Temp @ Receipt (C): 3.2 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**41.6**	mg/L	5	1		08/20/2025 09:46	
Method: EPA 6010D							
Boron	**0.22**	mg/L	0.1	1	08/14/2025 16:34	08/21/2025 15:15	
Calcium	**4.74**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:05	
Magnesium	**1.97**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:05	
Potassium	**3.04**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:05	
Sodium	**617**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:05	
Method: SM2320 B-2021							
Alkalinity, Total	**1124**	mg/L as CaCO3	20.5	1		08/14/2025 18:39	
Bicarbonate	**1124**	mg/L as CaCO3	20.5	1		08/14/2025 18:39	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		08/14/2025 18:39	
Method: SM4500 H+ B-2021							
pH	**8.2**	units	0.1	1		08/14/2025 18:39	*
Method: SM4500-Cl-E 2021							
Chloride	**34.8**	mg/L	2.0	1		08/19/2025 10:30	
Method: SM4500-F-C-2021							
Fluoride	**0.72**	mg/L	0.1	1		08/14/2025 18:39	
Method: USGS I-1750-85							
Total Dissolved Solids	**1510**	mg/L	10	1		08/15/2025 14:02	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

Report Date: Tuesday, August 26, 2025 1:00:15 PM

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 96082004 **Date Collected:** 08/13/2025 08:18 **Matrix:** Groundwater
Sample ID: MW-2016-6 **Date Received:** 08/14/2025 14:49 **Collector:** Client

Temp @ Receipt (C): 3.2 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**585**	mg/L	25	5		08/20/2025 09:59	
Method: EPA 6010D							
Boron	**0.24**	mg/L	0.1	1	08/14/2025 16:34	08/21/2025 15:15	
Calcium	**8.04**	mg/L	5	5	08/14/2025 16:34	08/19/2025 14:07	
Magnesium	<5	mg/L	5	5	08/14/2025 16:34	08/19/2025 14:07	
Potassium	<5	mg/L	5	5	08/14/2025 16:34	08/19/2025 14:07	
Sodium	**789**	mg/L	5	5	08/14/2025 16:34	08/19/2025 14:07	
Method: SM2320 B-2021							
Alkalinity, Total	**979**	mg/L as CaCO3	20.5	1		08/14/2025 18:51	
Bicarbonate	**979**	mg/L as CaCO3	20.5	1		08/14/2025 18:51	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		08/14/2025 18:51	
Method: SM4500 H+ B-2021							
pH	**8.1**	units	0.1	1		08/14/2025 18:51	*
Method: SM4500-Cl-E 2021							
Chloride	**8.4**	mg/L	2.0	1		08/19/2025 10:31	
Method: SM4500-F-C-2021							
Fluoride	**0.45**	mg/L	0.1	1		08/14/2025 18:51	
Method: USGS I-1750-85							
Total Dissolved Solids	**2100**	mg/L	10	1		08/15/2025 14:02	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 96082005 **Date Collected:** 08/13/2025 07:43 **Matrix:** Groundwater
Sample ID: MW-2016-9 **Date Received:** 08/14/2025 14:49 **Collector:** Client

Temp @ Receipt (C): 3.2 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**208**	mg/L	5	1		08/20/2025 10:01	
Method: EPA 6010D							
Boron	**0.23**	mg/L	0.1	1	08/14/2025 16:34	08/21/2025 15:18	
Calcium	**6.33**	mg/L	5	5	08/14/2025 16:34	08/19/2025 14:08	
Magnesium	<5	mg/L	5	5	08/14/2025 16:34	08/19/2025 14:08	
Potassium	<5	mg/L	5	5	08/14/2025 16:34	08/19/2025 14:08	
Sodium	**694**	mg/L	5	5	08/14/2025 16:34	08/19/2025 14:08	
Method: SM2320 B-2021							
Alkalinity, Total	**1071**	mg/L as CaCO3	20.5	1		08/14/2025 19:02	
Bicarbonate	**1071**	mg/L as CaCO3	20.5	1		08/14/2025 19:02	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		08/14/2025 19:02	
Method: SM4500 H+ B-2021							
pH	**8.1**	units	0.1	1		08/14/2025 19:02	*
Method: SM4500-Cl-E 2021							
Chloride	**18.6**	mg/L	2.0	1		08/19/2025 10:32	
Method: SM4500-F-C-2021							
Fluoride	**0.58**	mg/L	0.1	1		08/14/2025 19:02	
Method: USGS I-1750-85							
Total Dissolved Solids	**1730**	mg/L	10	1		08/15/2025 14:02	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

Report Date: Tuesday, August 26, 2025 1:00:15 PM

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 96082006 **Date Collected:** 08/12/2025 14:23 **Matrix:** Groundwater
Sample ID: MW-2016-11 **Date Received:** 08/14/2025 14:49 **Collector:** Client

Temp @ Receipt (C): 3.2 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**233**	mg/L	5	1		08/20/2025 09:50	
Method: EPA 6010D							
Boron	**0.26**	mg/L	0.1	1	08/14/2025 16:34	08/21/2025 15:18	
Calcium	**6.23**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:09	
Magnesium	**2.42**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:09	
Potassium	**3.21**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:09	
Sodium	**638**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:09	
Method: SM2320 B-2021							
Alkalinity, Total	**1037**	mg/L as CaCO3	20.5	1		08/14/2025 19:13	
Bicarbonate	**1037**	mg/L as CaCO3	20.5	1		08/14/2025 19:13	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		08/14/2025 19:13	
Method: SM4500 H+ B-2021							
pH	**8.2**	units	0.1	1		08/14/2025 19:13	*
Method: SM4500-Cl-E 2021							
Chloride	**20.0**	mg/L	2.0	1		08/19/2025 10:33	
Method: SM4500-F-C-2021							
Fluoride	**0.59**	mg/L	0.1	1		08/14/2025 19:13	
Method: USGS I-1750-85							
Total Dissolved Solids	**1630**	mg/L	10	1		08/15/2025 14:02	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 96082007 **Date Collected:** 08/12/2025 13:57 **Matrix:** Groundwater
Sample ID: MW-2016-2 **Date Received:** 08/14/2025 14:49 **Collector:** Client

Temp @ Receipt (C): 3.2 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**240**	mg/L	5	1		08/20/2025 09:51	
Method: EPA 6010D							
Boron	**0.25**	mg/L	0.1	1	08/14/2025 16:34	08/21/2025 15:19	
Calcium	**9.62**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:11	
Magnesium	**3.58**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:11	
Potassium	**3.84**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:11	
Sodium	**671**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:11	
Method: SM2320 B-2021							
Alkalinity, Total	**1128**	mg/L as CaCO3	20.5	1		08/14/2025 19:25	
Bicarbonate	**1128**	mg/L as CaCO3	20.5	1		08/14/2025 19:25	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		08/14/2025 19:25	
Method: SM4500 H+ B-2021							
pH	**8.1**	units	0.1	1		08/14/2025 19:25	*
Method: SM4500-Cl-E 2021							
Chloride	**14.4**	mg/L	2.0	1		08/19/2025 10:35	
Method: SM4500-F-C-2021							
Fluoride	**0.55**	mg/L	0.1	1		08/14/2025 19:25	
Method: USGS I-1750-85							
Total Dissolved Solids	**1740**	mg/L	10	1		08/15/2025 14:02	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 96082008 **Date Collected:** 08/13/2025 09:34 **Matrix:** Groundwater
Sample ID: MW-2016-8 **Date Received:** 08/14/2025 14:49 **Collector:** Client

Temp @ Receipt (C): 3.2 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**674**	mg/L	25	5		08/20/2025 10:02	
Method: EPA 6010D							
Boron	**0.23**	mg/L	0.1	1	08/14/2025 16:34	08/21/2025 15:20	
Calcium	**13.1**	mg/L	5	5	08/14/2025 16:34	08/19/2025 14:12	
Magnesium	**5.53**	mg/L	5	5	08/14/2025 16:34	08/19/2025 14:12	
Potassium	**6.68**	mg/L	5	5	08/14/2025 16:34	08/19/2025 14:12	
Sodium	**863**	mg/L	5	5	08/14/2025 16:34	08/19/2025 14:12	
Method: SM2320 B-2021							
Alkalinity, Total	**1091**	mg/L as CaCO3	20.5	1		08/14/2025 19:36	
Bicarbonate	**1091**	mg/L as CaCO3	20.5	1		08/14/2025 19:36	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		08/14/2025 19:36	
Method: SM4500 H+ B-2021							
pH	**8.1**	units	0.1	1		08/14/2025 19:36	*
Method: SM4500-Cl-E 2021							
Chloride	**9.8**	mg/L	2.0	1		08/19/2025 10:36	
Method: SM4500-F-C-2021							
Fluoride	**0.32**	mg/L	0.1	1		08/14/2025 19:36	
Method: USGS I-1750-85							
Total Dissolved Solids	**2340**	mg/L	10	1		08/15/2025 14:02	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 96082009 **Date Collected:** 08/13/2025 09:34 **Matrix:** Groundwater
Sample ID: DUP **Date Received:** 08/14/2025 14:49 **Collector:** Client

Temp @ Receipt (C): 3.2 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**678**	mg/L	25	5		08/20/2025 10:03	
Method: EPA 6010D							
Boron	**0.24**	mg/L	0.1	1	08/14/2025 16:34	08/21/2025 15:20	
Calcium	**13.4**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:15	
Magnesium	**5.45**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:15	
Potassium	**7.41**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:15	
Sodium	**888**	mg/L	5	5	08/14/2025 16:34	08/19/2025 15:18	
Method: SM2320 B-2021							
Alkalinity, Total	**1093**	mg/L as CaCO3	20.5	1		08/14/2025 19:48	
Bicarbonate	**1093**	mg/L as CaCO3	20.5	1		08/14/2025 19:48	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		08/14/2025 19:48	
Method: SM4500 H+ B-2021							
pH	**8.0**	units	0.1	1		08/14/2025 19:48	*
Method: SM4500-Cl-E 2021							
Chloride	**9.7**	mg/L	2.0	1		08/19/2025 10:37	
Method: SM4500-F-C-2021							
Fluoride	**0.35**	mg/L	0.1	1		08/14/2025 19:48	
Method: USGS I-1750-85							
Total Dissolved Solids	**2310**	mg/L	10	1		08/15/2025 14:02	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 96082010 **Date Collected:** 08/13/2025 10:37 **Matrix:** Groundwater
Sample ID: MW-2016-10 **Date Received:** 08/14/2025 14:49 **Collector:** Client

Temp @ Receipt (C): 3.2 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	**287**	mg/L	25	5		08/20/2025 10:04	
Method: EPA 6010D							
Boron	**0.21**	mg/L	0.1	1	08/14/2025 16:34	08/21/2025 15:21	
Calcium	**5.35**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:18	
Magnesium	**2.19**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:18	
Potassium	**3.05**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:18	
Sodium	**653**	mg/L	1	1	08/14/2025 16:34	08/19/2025 14:18	
Method: SM2320 B-2021							
Alkalinity, Total	**965**	mg/L as CaCO3	20.5	1		08/14/2025 19:59	
Bicarbonate	**965**	mg/L as CaCO3	20.5	1		08/14/2025 19:59	
Carbonate	<20.5	mg/L as CaCO3	20.5	1		08/14/2025 19:59	
Method: SM4500 H+ B-2021							
pH	**8.2**	units	0.1	1		08/14/2025 19:59	*
Method: SM4500-Cl-E 2021							
Chloride	**15.1**	mg/L	2.0	1		08/19/2025 10:45	
Method: SM4500-F-C-2021							
Fluoride	**0.56**	mg/L	0.1	1		08/14/2025 19:59	
Method: USGS I-1750-85							
Total Dissolved Solids	**1730**	mg/L	10	1		08/15/2025 14:02	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

QC Results Summary — WO #: 96082

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	103.0		85	115		
LFB			100	99.4		85	115		
LFB			100	100.0		85	115		
LFB			100	95.6		85	115		
LFB			100	98.6		85	115		
LFB			100	100.0		85	115		
LFB			100	104.0		85	115		
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MB		<5							
MS/MSD	95939004		100	105.5	101.5	85	115	2.8	20
MS/MSD	96082002		100	96.7	98.7	85	115	1.7	20
MS/MSD	96101002		5000	88.3	89.2	85	115	0.8	20
MS/MSD	96105003		500	86.5	83.3	85	115	1.7	20
MS/MSD	96105013		1000	95.5	96.8	85	115	0.5	20
MS/MSD	96105023		2000	86.8	85.3	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			30	94.9		90	110		
LFB			30	95.1		90	110		
LFB			30	94.0		90	110		
LFB			30	93.3		90	110		
LFB			30	91.2		90	110		
LFB			30	92.4		90	110		
LFB			30	92.0		90	110		

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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	90.8		90	110		
LFB			30	90.9		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	95930002		30	93.6	93.1	80	120	0.2	20
MS/MSD	96082008		30	89.5	89.3	80	120	0.3	20
MS/MSD	96105009		30	90.0	90.6	80	120	0.2	20
MS/MSD	96105023		30	87.6	88.3	80	120	0.4	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-DF			0.4	98.8		85	115		
LFB-DF			0.4	99.8		85	115		
MB		<0.1							
MB		<0.1							
MS/MSD	96082001		0.4	93.6	96.8	75	125	2.0	20
MS/MSD	96082004		0.4	93.2	94.1	70	130	0.6	20
PDS/PDSD	96101002		2	106.0	109.0	75	125	2.7	20
PDS/PDSD	96962001		4	86.2	86.9	75	125	0.6	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-MT			100	108.0		85	115		
LFB-MT			100	109.0		85	115		
MB		<1							
MB		<1							

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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	95261004		100	104.0	104.0	75	125	0.4	20
PDS/PDSD	95939004		100	107.0	107.0	75	125	0.2	20
DUP	95939006							0.9	20
PDS/PDSD	96050001		100	105.0	104.0	75	125	0.6	20
DUP	96082009							0.1	20
PDS/PDSD	96101008		500	103.0	105.0	75	125	0.9	20
PDS/PDSD	96105007		100	103.0	101.0	75	125	0.7	20
PDS/PDSD	96105016		100	95.2	95.7	75	125	0.2	20
PDS/PDSD	96105023		500	103.0	101.0	75	125	0.8	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	104.0		85	115		
MB		<0.04							
PDS/PDSD	96082901		0.4	90.6	90.4	75	125	0.2	20

Magnesium 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-MF			100	107.0		85	115		
LFB-MF			100	108.0		85	115		
MB		<1							
MB		<1							
PDS/PDSD	95261004		100	103.0	103.0	75	125	0.4	20
PDS/PDSD	95939004		100	107.0	107.0	75	125	0.4	20
DUP	95939006							1.3	20
PDS/PDSD	96050001		100	107.0	108.0	75	125	0.6	20
DUP	96082009							1.3	20
PDS/PDSD	96101008		500	101.0	103.0	75	125	0.8	20
PDS/PDSD	96105007		100	106.0	105.0	75	125	0.6	20
PDS/PDSD	96105016		100	104.0	105.0	75	125	0.6	20
PDS/PDSD	96105023		500	99.5	98.1	75	125	0.7	20

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Potassium 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	103.0		85	115		
LFB-MI			100	105.0		85	115		
MB		<1							
MB		<1							
PDS/PDSD	95261004		100	105.0	105.0	75	125	0.3	20
PDS/PDSD	95939004		100	107.0	105.0	75	125	1.4	20
DUP	95938006							0.0	20
PDS/PDSD	96065001		100	107.0	105.0	75	125	1.6	20
DUP	96082009							3.5	20
PDS/PDSD	96101008		500	106.0	107.0	75	125	1.1	20
PDS/PDSD	96105007		100	108.0	109.0	75	125	0.3	20
PDS/PDSD	96105016		100	106.0	108.0	75	125	1.3	20
PDS/PDSD	96105023		500	106.0	105.0	75	125	0.8	20

Sodium 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	104.0		85	115		
LFB-MI			100	107.0		85	115		
MB		<1							
MB		<1							
PDS/PDSD	95261004		100	109.0	110.0	75	125	0.7	20
PDS/PDSD	95939004		100	94.6	93.4	75	125	0.4	20
DUP	95939006							0.5	20
PDS/PDSD	96055001		100	102.0	103.0	75	125	0.4	20
DUP	96082009							0.2	20
PDS/PDSD	96101008		500	97.3	96.9	75	125	0.2	20
PDS/PDSD	96105007		100	108.0	105.0	75	125	1.4	20
PDS/PDSD	96105016		100	105.0	103.0	75	125	1.9	20
PDS/PDSD	96105023		500	106.0	104.0	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 (%)
LFB-MS			0.1	93.6		85	115		

Report Date: Tuesday, August 26, 2025 1:00:15 PM

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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							
SPK	96067001		0.1	108.0		75	125		
MS/MSD	96082001		0.4	101.0	110.0	75	125	8.8	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	102.0		85	115		
MB		<0.005							
SPK	96067001		0.1	103.0		75	125		
MS/MSD	96082001		0.4	98.0	103.0	75	125	4.7	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	105.0		85	115		
MB		<0.002							
SPK	96067001		0.1	116.0		75	125		
MS/MSD	96082001		0.4	106.0	115.0	75	125	7.2	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	99.5		85	115		
MB		<0.0005							
SPK	96067001		0.1	97.1		75	125		
MS/MSD	96082001		0.4	96.7	100.0	75	125	3.4	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	93.0		85	115		
MB		<0.0005							
SPK	96067001		0.1	103.0		75	125		
MS/MSD	96082001		0.4	104.0	110.0	75	125	5.4	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 (%)
LFB-MS			0.1	111.0		85	115		
MB		<0.002							
SPK	96067001		0.1	100.0		75	125		
MS/MSD	96082001		0.4	98.0	103.0	75	125	5.5	20

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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 (%)
LFB-MS			0.1	111.0		85	115		
MB		<0.002							
SPK	96067001		0.1	101.0		75	125		
MS/MSD	96082001		0.4	98.4	106.0	75	125	7.3	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	107.0		85	115		
MB		<0.0005							
SPK	96067001		0.1	91.0		75	125		
MS/MSD	96082001		0.4	101.0	110.0	75	125	8.1	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	98.3		85	115		
MB		<0.002							
SPK	96067001		0.1	105.0		75	125		
MS/MSD	96082001		0.4	96.2	103.0	75	125	6.0	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	101.0		85	115		
MB		<0.01							
SPK	96067001		0.1	87.9		75	125		
MS/MSD	96082001		0.4	94.0	101.0	75	125	6.9	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	103.0		85	115		
MB		<0.0005							
SPK	96067001		0.1	89.7		75	125		
MS/MSD	96082001		0.4	99.0	106.0	75	125	7.1	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	112.0		85	115		
MB		<0.0002							
MS/MSD	96082001		0.002	97.8	99.2	70	130	0.0	20

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Alkalinity, Total 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			501	93.4		80	120		
LFB			410	95.8		90	110		
LFB			410	96.0		90	110		
LFB			410	94.1		90	110		
LFB			410	91.5		90	110		
MB		<20.5							
MB		<20.5							
MB		<20.5							
MB		<20.5							
MS/MSD	95911004		410	88.3	87.4	80	120	0.2	20
MS/MSD	95939006		410	88.0	90.5	80	120	1.0	20
MS/MSD	96082005		410	106.2	89.2	80	120	4.7	20

pH Units: units

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
DUP	95939002							0.9	20
DUP	96082009							1.0	20

pH Units: units

QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-PH			6	99.8					
CRM-PH			6	99.7					
CRM-PH			6	99.3					

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			3.34	105.0		88.83	111.07		
LFB-F			0.5	98.0		90	110		
LFB-F			0.5	100.0		90	110		
MB-F		<0.1							
MB-F		<0.1							
MS/MSD	96082007		0.5	102.0	90.0	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	99.0		90.35	110.33		

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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 (%)
MB		<10							
DUP	96082010							0.6	20
[illegible]	[illegible]							[illegible]	[illegible]

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

Member ACIL

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

Basin Electric Power Coop

WO: 96082

Chain of Custody

Page __1__ of __2__

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

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 Mariah Knutson	
Billing Address (indicate if different from above): Attn: Liabilities	Quote Number	Date Submitted 8/14/2025
	Project Name/Number LOS 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-2016-13	GW	8/12/2025	933	3	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH, Sb,As, Ba, Be,Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl, Radium (226&228)
002	MW-2016-12	GW	8/12/2025	1110	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
003	MW-2016-3	GW	8/13/2025	800	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
004	MW-2016-6	GW	8/13/2025	818	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
005	MW-2016-9	GW	8/13/2025	743	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
006	MW-2016-11	GW	8/12/2025	1423	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
007	MW-2016-2	GW	8/12/2025	1357	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
008	MW-2016-8	GW	8/13/2025	934	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
009	DUP	GW	8/13/2025	934	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENIUM EXPRESS	8/14/2025	NOON		8/14/25	1449	3.2°C	(Y) / N	TM959
2.							Y / N	

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

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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: Mariah Knutson	
Billing Address (indicate if different from above): Attn: Liabilities	Quote Number	Date Submitted: 8/14/2025
	Project Name/Number: LOS 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
010	MW-2016-10	GW	8/13/2025	1037	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENNIUM EXPRESS	8/14/2025	NOON	[signature]	14 Aug 25	1449	3.2°C	Y / N	TM459
2.							Y / N	

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

Member ACIL

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

Sample Condition Checklist

Date: 14 Aug 25 Time: 1928 Analyst: PW

Work Order #: 96082

Containers Supplied by MVTL: ☒ Yes ☐ No (Designate customer supplied containers as "Other" in container size column)

Comments:

Number of Bottles	Container Size (mL) F-(500) = Filtered	Container Type CG = Clear Glass, P = Plastic, AG = Amber Glass	Preservation	pH	Sample IDs Preservation reagent added Date/Time Analyst	Unique ID of preservation reagent added	Sample pH after preservation	Required for HNO_3 samples only (24 hours later) Sample ID pH Recheck Result Date/Time/Analyst
10	(125) (250) (500) F-(500) **(1000)** Other	(CG) **(P)** (AG) Other	**NONE** HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
10	(125) (250) **(500)** F-(500) (1000) Other	(CG) **(P)** (AG) Other	NONE **HNO_3** H_2SO_4 NaOH NaOH/ZnAcet HCl	**<2** >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	(125) (250) (500) F-(500) (1000) Other	(CG) (P) (AG) Other	NONE HNO_3 H_2SO_4 NaOH NaOH/ZnAcet HCl	<2 >12				
	Oil and grease	(CG) (P) (AG) Other	HCl	n/a				
	TOC Vials	(G) (AG)	H_3PO_4	n/a				
	DOC Vials	(G) (AG)	None H_3PO_4	n/a				

*All samples requiring analyses performed outside of the Bismarck laboratory (New Ulm and Sub-Contract) are not documented on this form.
*All samples requiring microbiological tests are not documented on this form.

Form #80-910025-2 M:\Documents\FORMS\Approved Templates\Bismarck\Waters\80-910025-2 Sample Condition Checklist Page 1 of 1 Effective Date : 1 July 2024

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

Account #: 2040 **Client:** Basin Electric Power Cooperative
Workorder: LOS CCR Wells (96084) **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.

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

Analytical Results

Lab ID: 96084001 **Date Collected:** 08/12/2025 09:33 **Matrix:** Groundwater
Sample ID: MW-2016-13 **Date Received:** 08/14/2025 14:49 **Collector:** Client

Temp @ Receipt (C): 3.2 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: Contracted Result							
Radium 226	See Attached			1		09/29/2025 12:53	
Radium 228	See Attached			1		09/29/2025 12:53	

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

ENERGY LABORATORIES
Trust our People. Trust our Data.
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

ANALYTICAL SUMMARY REPORT

September 23, 2025

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

Work Order: C25080661 Quote ID: C15480
Project Name: 96084

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 8/18/2025 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C25080661-001	96084001, MW-2016-13	08/12/25 9:33	08/18/25	Aqueous	pH Check for Nitric Radiochem FIRST Radium 226 + Radium 228, Total Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy, Casper, WY 82601-9601, 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.

Energy Laboratories, Inc. verifies the reported results for the analysis has been technically reviewed and approved for release.

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

Page 1 of 8

ENERGY LABORATORIES
Trust our People. Trust our Data.
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

Work Order Sample Summary

CLIENT: Minnesota Valley Testing Laboratories
Project: 96084
Work Order: C25080661 **Report Date:** 09/23/25

Lab ID	Client Sample ID	Collection Date	Date Received
C25080661-001	96084001, MW-2016-13	8/12/2025 9:33:00 AM	8/18/2025

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

ENERGY LABORATORIES — Trust our People. Trust our Data. — Billings, MT 406.252.6325 • Casper, WY 307.235.0515 • Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 96084
Lab ID: C25080661-001
Client Sample ID: 96084001, MW-2016-13

Report Date: 09/23/25
Collection Date: 08/12/25 09:33
DateReceived: 08/18/25
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.1	pCi/L	U			E903.0	09/10/25 15:02 / dmr
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/10/25 15:02 / dmr
Radium 226 MDC	0.2	pCi/L				E903.0	09/10/25 15:02 / dmr
Radium 228	0.7	pCi/L	U			RA-05	09/18/25 13:29 / trs
Radium 228 precision (±)	0.8	pCi/L				RA-05	09/18/25 13:29 / trs
Radium 228 MDC	1.3	pCi/L				RA-05	09/18/25 13:29 / trs
Radium 226 + Radium 228	0.8	pCi/L	U			A7500-RA	09/23/25 13:24 / dmf
Radium 226 + Radium 228 precision (±)	0.8	pCi/L				A7500-RA	09/23/25 13:24 / dmf
Radium 226 + Radium 228 MDC	1.3	pCi/L				A7500-RA	09/23/25 13:24 / dmf

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

Page 3 of 8

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

ENERGY LABORATORIES — Trust our People. Trust our Data. www.energylab.com
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

QA/QC Summary Report

Prepared by Casper, WY Branch

Work Order: C25080661 **Report Date:** 09/23/25

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0									Batch: RA226-11807R	
Lab ID: LCS-RA226-11807	3	Laboratory Control Sample				Run: TENNELEC-3_250827A			09/10/25 15:02	
Radium 226		10	pCi/L		100	70	130			
Radium 226 precision (±)		1.6	pCi/L							
Radium 226 MDC		0.27	pCi/L							
Lab ID: MB-RA226-11807	3	Method Blank				Run: TENNELEC-3_250827A			09/10/25 15:02	
Radium 226		-0.1	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C25080807-001FDUP	3	Sample Duplicate				Run: TENNELEC-3_250827A			09/11/25 13:19	
Radium 226		3.2	pCi/L					18	30	
Radium 226 precision (±)		0.60	pCi/L							
Radium 226 MDC		0.21	pCi/L							

- The RER result is 0.69.

Qualifiers:

RL - Analyte Reporting Limit
ND - Not detected at the Reporting Limit (RL)
U - Not detected

Page 4 of 8

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

ENERGY LABORATORIES Trust our People. Trust our Data. www.energylab.com
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

QA/QC Summary Report

Prepared by Casper, WY Branch

Work Order: C25080661 **Report Date:** 09/23/25

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05									Batch: RA228-7774	
Lab ID: LCS-228-RA228-7774	3	Laboratory Control Sample				Run: TENNELEC-4_250916C			09/18/25 13:29	
Radium 228		8.2	pCi/L		91	70	130			
Radium 228 precision (±)		2.2	pCi/L							
Radium 228 MDC		0.91	pCi/L							
Lab ID: MB-228-RA228-7774	3	Method Blank				Run: TENNELEC-4_250916C			09/18/25 13:29	
Radium 228		-0.05	pCi/L							U
Radium 228 precision (±)		0.5	pCi/L							
Radium 228 MDC		0.9	pCi/L							
Lab ID: C25080749-002FDUP	3	Sample Duplicate				Run: TENNELEC-4_250916C			09/18/25 13:29	
Radium 228		2.1	pCi/L					19	30	
Radium 228 precision (±)		0.97	pCi/L							
Radium 228 MDC		1.1	pCi/L							

- The RER result is 0.29.

Qualifiers:

RL - Analyte Reporting Limit
ND - Not detected at the Reporting Limit (RL)
U - Not detected

Page 5 of 8

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

ENERGY LABORATORIES — Trust our People. Trust our Data. www.energylab.com
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

Work Order Receipt Checklist

Minnesota Valley Testing Laboratories C25080661

Login completed by: Shelby L. Richins
Reviewed by: dsawyer
Reviewed Date: 8/25/2025
Date Received: 8/18/2025
Received by: SLR
Carrier name: UPS Ground

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:	25.9°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.

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.

Trip Blanks and/or Blind Duplicate samples are assigned the earliest collection time for the associated requested analysis in order to evaluate the holding time unless specifically indicated.

Contact and Corrective Action Comments:

The sample for radionuclides analysis was received at pH >2. Nitric acid (15 mL) was added to preserve to pH <2. In accordance with the method, these samples must held for 16 hours prior to analysis. SLR 08/18/25

Page 6 of 8

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

ENERGY LABORATORIES Trust our People. Trust our Data. www.energylab.com
Billings, MT 406.252.6325 • Casper, WY 307.235.0515
Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

Laboratory Certifications and Accreditations

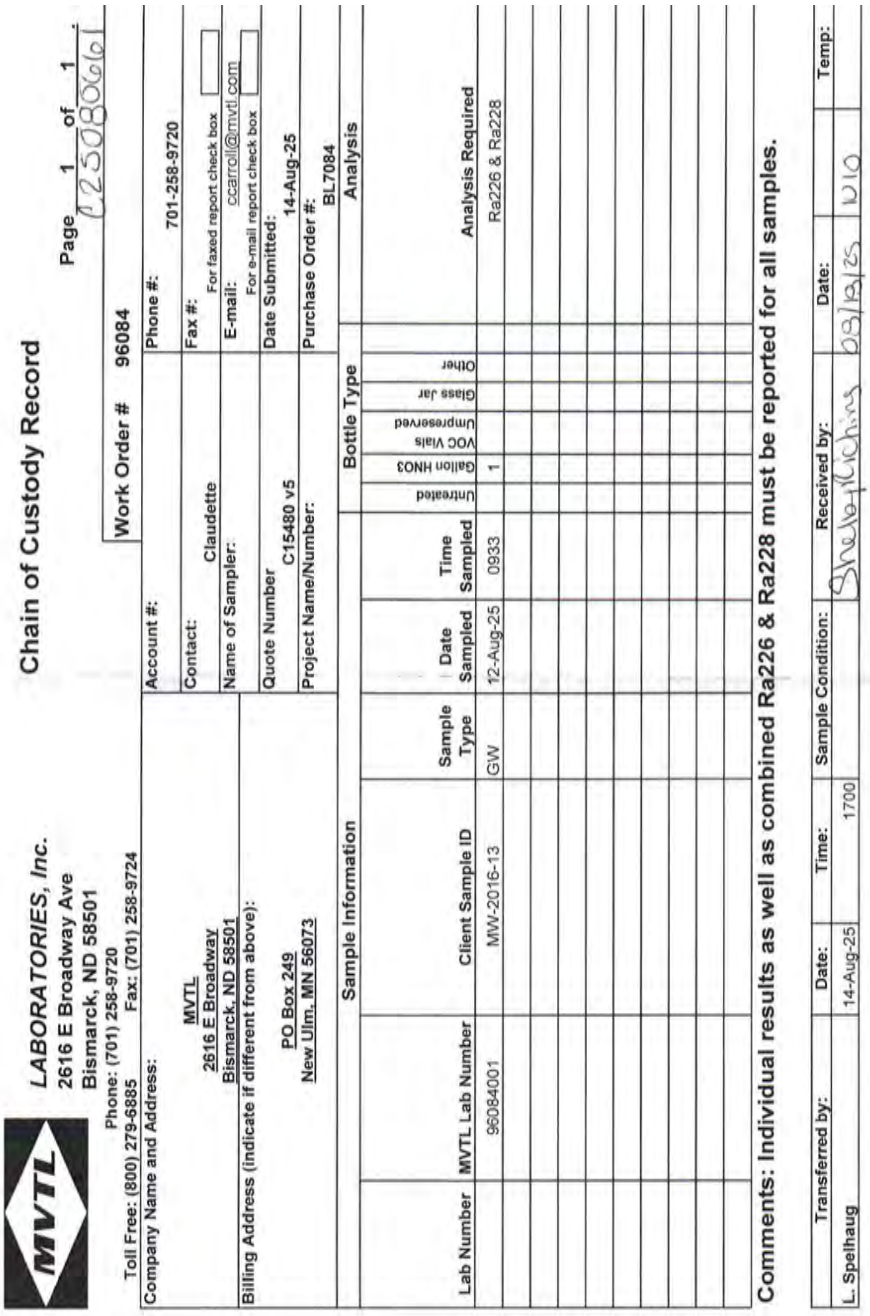
Current certificates are available at www.energylab.com website:

	Agency	Number
Billings, MT	Alaska	17-023
	California	3087
	Colorado	MT00005
	Department of Defense (DoD)/ISO17025	ADE-2588
	Florida (Primary NELAP)	E87668
	Idaho	MT00005
	Louisiana	05079
	Montana	CERT0044
	Nebraska	NE-OS-13-04
	Nevada	NV-C24-00250
	North Dakota	R-007
	National Radon Proficiency	109383-RMP
	Oregon	4184
	South Dakota	ARSD 74:04:07
	Texas	TX-C24-00302
	US EPA Region VIII	Reciprocal
	USDA Soil Permit	P330-20-00170
	Washington	C1039
Casper, WY	Alaska	20-006
	California	3021
	Colorado	WY00002
	Florida (Primary NELAP)	E87641
	Idaho	WY00002
	Louisiana	05083
	Montana	CERT0002
	Nebraska	NE-OS-08-04
	Nevada	NV-C24-00245
	North Dakota	R-125
	Oregon	WY200001
	South Dakota	WY00002
	Texas	T104704181-23-21
	US EPA Region VIII	WY00002
	USNRC License	49-26846-01
	Washington	C1012
Gillette, WY	US EPA Region VIII	WY00006
Helena, MT	Colorado	MT00945
	Montana	CERT0079
	Nevada	NV-C24-00119
	US EPA Region VIII	Reciprocal
	USDA Soil Permit	P330-20-00090

Page 7 of 8

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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



Chain of Custody Record

Page 1 of 1

12508061

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

Work Order # 96084

Company Name and Address: MVTL, 2616 E Broadway, Bismarck, ND 58501
Account #:
Contact: Claudette
Name of Sampler:
Phone #: 701-258-9720
Fax #: For faxed report check box
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 v5
Project Name/Number:
Date Submitted: 14-Aug-25
Purchase Order #: BL7084

Lab Number	Sample Information: MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Bottle Type: Unpreserved	Gallon HNO3	VOC Vials	Unpreserved	Glass Jar	Other	Analysis Required
	96084001	MW-2016-13	GW	12-Aug-25	0933		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:
L. Spelhaug	14-Aug-25	1700		Shelby Richins	08/18/25	1010

Page 8 of 8

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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 Coopi
WO: 96084

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
Billing Address (indicate if different from above): Attn: Liabilities	Phone # 701-745-7238 701-557-5488
	Contact: Mark Dihle
	Emails: mdihle@bepc.com aknutson@bepc.com
	Name of Sampler: Mariah Knutson
	Quote Number
	Date Submitted: 8/14/2025
	Project Name/Number: LOS 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-2016-13	GW	8/12/2025	933	3	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH, Sb,As, Ba, Be,Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl, Radium (226&228)
—	MW-2016-12	GW	8/12/2025	1110	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-3	GW	8/13/2025	800	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-6	GW	8/13/2025	818	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-9	GW	8/13/2025	743	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-11	GW	8/12/2025	1423	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-2	GW	8/12/2025	1357	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	MW-2016-8	GW	8/13/2025	934	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH
—	DUP	GW	8/13/2025	934	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENIUM EXPRESS	8/14/2025	NOON		14Aug25	1449	3.2°C	Y/N	TM959
2.							Y / N	

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

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 515-382-5486 ~ Fax 515-382-3885
www.MVTL.com

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

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
Billing Address (indicate if different from above): Attn: Liabilities	Name of Sampler: Mariah Knutson	
	Quote Number	Date Submitted: 8/14/2025
	Project Name/Number: LOS 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
—	MW-2016-10	GW	8/13/2025	1037	2	N	B, Ca, Cl, F, SO4, TDS, Mg, Na, K, Total Alkalinity, (Carbonate, Bicarbonate), pH

Comments:

Transferred by	Date	Time	Received by	Date	Time	Temp	ROI	Therm. #
1. MILLENNIUM EXPRESS	8/14/2025	NOON	[signature]	14 Aug 25	1449	3.2°C	Y / N	TM959
2.							Y / N	

Appendix B

Alternative Source Demonstrations

Technical Memorandum

To: Mark Dihle, Basin Electric Power Cooperative
From: Barr Engineering Co.
Subject: Alternative Source Demonstration (ASD), Leland Olds Station CCR Landfill (Spring 2025)
Date: November 7, 2025
Project: 34291141.00

1 Introduction

Basin Electric Power Cooperative (Basin Electric) owns and operates Leland Olds Station (LOS), comprised of a coal-fired generating station consisting of two power generating units, located southeast of Stanton, Mercer County, North Dakota (Figure 1). Unit 1 coal-based operations began in 1966, and Unit 2 operations began in 1975. Coal combustion residuals (CCRs) produced at LOS are managed within part of the Glenharold Mine Landfill (Landfill or Site), located approximately three miles southwest of the generating units and office complex. The landfill was permitted by the North Dakota Department of Environmental Quality (NDDEQ) and began accepting CCR in 1992. The most recent Permit 0143 issued by NDDEQ will expire on June 28, 2027, and the most recent cell (with CCR compliant liner) was constructed in 2023.

The CCRs including fly ash, bottom ash, and flue gas desulfurization (FGD) waste are managed at the Site along with other minor wastes accepted as per the NDDEQ permit. The CCR unit is required to comply with the provisions of the US Environmental Protection Agency (EPA) CCR Rule (40 CFR Parts 257 and 261, Disposal of Coal Combustion Residuals from Electric Utilities) and the NDDEQ CCR Rule (NDAC Title 33.1, Article 20, Chapter 8).

Basin Electric has implemented a Detection Monitoring Program in accordance with the U.S. Environmental Protection Agency (EPA) CCR Rule (40 CFR Parts 257 and 261) for the Site. As part of the Detection Monitoring Program, statistically significant increases (SSIs) in monitored groundwater quality parameters over background were identified at the Site for the following monitoring wells during semi-annual detection monitoring completed in spring 2025 on June 3-4, 2025:

- MW-2016-12 – Chloride
- MW-2016-13 – Chloride

The CCR Rule (US EPA, 2015) § 257.94(e)(2) allows for an alternative source demonstration (ASD) in the event of an identified statistically significant increase (SSI) in a water quality parameter in a downgradient monitoring well over background levels:

> *The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels to include obtaining a certification from a qualified professional engineer verifying the accuracy of the information in the report.*

The purpose of this work is to evaluate the data collected as part of the June 2025 monitoring event, along with historical data, to demonstrate if the SSIs are the results of a "source other than the CCR unit" or due to natural variation in groundwater quality or an error in sampling, analysis, or statistical evaluation. Nothing in the foregoing citation of the rule requires that the owner/operator disprove any and all potential counterarguments that EPA or others may offer to refute this demonstration. Such arguments if valid, would need to follow requirements of the rule to show a basis in fact that includes rule requirements that are based on site-specific information, and must be certified by a North Dakota licensed professional engineer. This memorandum provides a science-based reason for the data results that indicate a source other than the CCR unit.

This memorandum provides written documentation of an Alternative Source Demonstration (ASD) and certification of accuracy as described in the CCR Rule (§ 257.94(e)(2)).

1.1 Background Information

Figure 1 shows the site location and Figure 2 provides well locations. A groundwater contour map showing groundwater elevations in the lignite, which represent the uppermost aquifer in the vicinity of the CCR landfill, is presented on Figure 3, using measurements from June 2025. Groundwater generally flows from south to north.

In 2022, two new landfill expansion wells, MW-2016-12 and MW-2016-13, were installed at the Site. Baseline sampling was initiated in 2023. Eight samples were collected at MW-2016-12 and four samples were collected at MW-2016-13 prior to the May 2024 sampling event. May 2024 was the first detection monitoring event when MW-2016-12 and MW-2016-13 were evaluated for SSIs. Chloride at MW-2016-12 and MW-2016-13 were SSIs during the May 2024 detection monitoring event and a successful ASD was documented (Barr, 2025). Seven baseline samples have been collected at MW-2016-13 as of the June 2025 sampling event.

A comparison of the detection monitoring groundwater results with the prediction limits calculated using the 2016-2023 background assessment data from upgradient wells MW-2016-3, MW-2016-4, MW-2016-5, MW-2016-6, and MW-2016-8 are included in Table 1. Concentrations for Appendix III parameters observed in June 2025 are shown on time series graphs in Attachment A. Chloride concentrations at MW-2016-12 and MW-2016-13 are consistent with those observed during baseline monitoring events.

Table 1 SSIs Compared to Prediction Limits

Event	Well	Parameter (units)	Measured	Interwell Prediction Limit
Detection Monitoring – 2025 #1 (Spring 2025)	MW-2016-12	Chloride (mg/L)	48.7	41
	MW-2016-13	Chloride (mg/L)	60.3	41

1.2 Rule Requirements

The requirements for written documentation and certification of accuracy for an ASD are included in § 257.95(g) (3):

> *Within 90 days of finding that any of the constituents listed in appendix IV to this part have been detected at a statistically significant level exceeding the groundwater protection standards the owner or operator must… Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in Appendix III and Appendix IV of this part are at or below background as specified in paragraph (e) of this section. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by §257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or the approval from EPA where EPA is the permitting authority.*

In accordance with the above requirement, this memorandum is being issued within 90 days of the SSI determination (September 18, 2025) following the review and analysis of the results provided in the final laboratory report which was received on June 20, 2025.

2 Potential Alternative Sources Review

The CCR Rule provides five potential alternative source categories:

1. A source other than the CCR unit
2. Sampling (or sampling equipment) methods
3. Laboratory methods
4. Statistical methods
5. Natural variation in groundwater quality

Site data were evaluated to identify potential causes for chloride concentrations exceeding interwell prediction limits in monitoring wells MW-2016-12 and MW-2016-13. Chloride is naturally occurring and may not necessarily be the result of a release from a CCR unit; therefore, natural variation in groundwater quality was further investigated as part of the ASD.

2.1 Lack of Waste to Serve as Source of Release

Monitoring location MW-2016-13 was added to the monitoring network in anticipation of expanding the landfill; however, no CCRs have yet been placed upgradient of this location. There is no pathway that would allow a release to migrate to this well location as shown on the potentiometric surface map (Figure 3); therefore, the elevated chloride cannot be from the CCR unit. However, because effects from a release might be expected at other downgradient wells closer to the portion of the CCR unit than at MW-2016-13, additional analysis has been conducted based on the potentiometric surface map (Figure 3).

MW-2016-12 is located about 600 feet downgradient from a portion of the CCR unit along the shortest flow path based on the potentiometric surface map. The average seepage velocity in the spring calculated for the Landfill in the 2024 Annual Groundwater Monitoring and Corrective Action Report (Barr, 2025) is 0.2 ft/year. At 0.2 ft/year, it would take more than 3,000 years for a release to reach

MW-2016-12. Accounting for the time elapsed since CCR placement in the Landfill beginning in 1992 and allowing for an order of magnitude increase in velocity to address potential preferential pathways, a release would not be expected to reach the well for over 300 years at the earliest. Therefore, the elevated chloride at MW-2016-12 cannot be from the CCR unit.

If a release were to occur, the leachate would first have to migrate through the liner. Vertical migration of leachate would be controlled by the presence of a driving head on the landfill liner and then migration through the unsaturated zone.

Considering the properties of the CCR materials in landfill, that the design was to eliminate head on the liner, and the facility pumping operations have been normal, there is no evidence of any leachate accumulation on the liner. However, landfill leachate depth is limited to 1 foot on the liner by rule in North Dakota. Even if the 60-mil thick synthetic liner were breached (again there is no evidence that this has ever occurred), the underlying 2-foot-thick clay liner was tested and verified to exhibit a vertical permeability of 1×10^{-7} cm/s (2.8×10^{-4} feet/day) or less. Assuming a 1-foot driving head over a 2-foot-thick liner yields a vertical hydraulic gradient of 0.5 ft/ft.

The vertical advective velocity (average linear velocity or seepage velocity) of vertical saturated groundwater flow is calculated using the following equation:

$$v = \left(\frac{Kv}{n_e}\right)\left(\frac{dHv}{dLv}\right)$$

Or, stated in a more compact form:

$v = \frac{Ki}{n_e}$, where K = hydraulic conductivity, *i* = gradient, and n_e = effective porosity.

Using an effective porosity for clay of 0.40, the above equation yields an advective velocity 3.5×10^{-4} ft/day. Dividing the distance by the velocity yields a travel time of 15.7 years to transit the liner.

The lack of ash in the landfill expansion and the long travel time supports the hypothesis that the CCR unit is not the source of the chloride observed at MW-2016-12 and MW-2016-13.

2.2 CCR Unit Release Scenario

To accept the hypothesis that a release of leachate from the CCR unit is the source of the SSI, it would be assumed that groundwater chemistry at one or more potentially impacted wells (MW-2016-12 and/or MW-2016-13) would be geochemically similar to impacted water from the CCR unit represented by leach testing results. However, if these liquids are geochemically dissimilar, this indicates that a source “other than the CCR unit” may be responsible for the SSI. Therefore, major ion chemistry from the CCR groundwater monitoring locations (upgradient and downgradient) was compared to CCR Synthetic Precipitation Leaching Procedure (SPLP; EPA Method 1312 modified to a 4:1 solution to solids ratio) data collected in November and December 2009 (Attachment B). Two ash samples were collected from the LOS Units 1 and 2 at the point of ash production (one sample for each unit). Because the source of the coal and the boiler conditions have been similar to past operations, the ash samples are representative of the material disposed in the Landfill. Although chlorides are highly soluble, the samples were collected from unexposed ash, which has not been exposed to precipitation. It is, therefore, not plausible that the chlorides would have previously leached out of the samples prior to collection.

The SPLP results indicate that chloride is a relatively minor component of the ash leachate, accounting for less than 1% of total dissolved solids (TDS) by mass. In contrast, the chloride concentration in the groundwater sample from MW-2016-12 and MW-2016-13 accounted for over 3% of TDS and was measured at a level higher than those in the ash SPLP leachates. This finding is opposite what one would expect if impacted water from the CCR unit were being released and impacting groundwater because dilution and dispersion would tend to reduce the release concentrations between the CCR unit and the downgradient wells.

Site specific chloride values are variable at the site and range from 7.5 to 36.4 mg/L at downgradient wells other than MW-2016-12 and MW-2016-13 (MW-2016-2, MW-2016-3[1], MW-2016-9, MW-2016-10, and MW-2016-11) from 2016 to 2025. Chloride at upgradient[1] wells (MW-2016-3, MW-2016-4, MW-2016-5, MW-2016-6, and MW-2016-8) ranged from 4.7 to 41 mg/L as shown on time series graphs in Attachment A.

Further evaluation of sulfate concentrations, which are often viewed as a principal indicator of a CCR unit release to groundwater, demonstrate that MW-2016-12 and MW-2016-13 are not impacted by a release from the CCR landfill. Sulfate concentrations during the June 2025 sampling event at these locations were 16.6 mg/L and 9.28 mg/L at MW-2016-12 and MW-2016-13, respectively. The sulfate concentrations at the upgradient[1] Landfill monitoring locations (MW-2016-3, MW-2016-4, MW-2016-5, MW-2016-6, and MW-2016-8) ranged from 30.6 to 910 mg/L between 2016 and 2025. Sulfate at MW-2016-12 and MW-2016-13 is lower than upgradient monitoring locations.

Likewise, total dissolved solids (TDS) concentrations during the June 2025 sampling event were 1580 and 1660 mg/L at MW-2016-12 and MW-2016-13, respectively. TDS at the upgradient[1] monitoring locations (MW-2016-3, MW-2016-4, MW-2016-5, MW-2016-6, and MW-2016-8) ranged from 1400 to 2370 mg/L between 2016 and 2025. TDS concentrations are variable at upgradient wells, and the TDS concentrations at MW-2016-12 and MW-2016-13 fall at the low end of the observed range in upgradient wells, suggesting there are no impacts from the CCR Unit at MW-2016-12 and MW-2016-13.

To further test the hypothesis of a source other than the CCR unit, a Piper diagram (Figure 4) was used to visually compare the CCR SPLP results (Attachment B) and the measured groundwater quality at the Site. Piper diagrams are plots of major ion chemistry of water samples (calcium, magnesium, potassium, sodium, chloride, sulfate, and [bi]carbonate) that are used to differentiate between water types and to identify potential mixing of water types. The Piper diagram provides a means to identify or “fingerprint” water samples by their common characteristics (major ions) to assess which types of water are similar or dissimilar to potential source water types (Helsel et al., 2020). On the Piper diagram depicted in Figure 4, downgradient well compositions are shown as red symbols, CCR SPLP compositions as blue symbols, and the upgradient well compositions as purple symbols.

The Piper diagram show the upgradient and downgradient wells as sodium bicarbonate type water using the spring 2025 sample results. The upgradient wells have a higher proportion of sulfate compared to

[1] MW-2016-3 was an upgradient background well through 2023, but it is now considered a downgradient well due to the anticipated landfill expansion. Only data through 2023 was considered for the upgradient constituent ranges for this location. MW-2016-4 and MW-2016-5 were abandoned in Fall 2022, but background data from these locations were used to establish interwell prediction limits and are used to interpret upgradient constituent ranges.

downgradient wells. Wells MW-2016-12, MW-2016-13, and MW-2016-3 have the lowest proportion of sulfate and slightly more chloride than other wells. In contrast, SPLP data display greater variability, ranging from calcium-bicarbonate to sodium-sulfate water types. These differences underscore the natural variability within the groundwater system and reveal distinct chemical signatures between the groundwater and the simulated leachate. These results indicate that the water chemistry at the downgradient locations is more like upgradient groundwater than would be expected from a potential release from the CCR unit.

Although MW-2016-12 and MW-2016-13 have elevated chloride concentrations compared to upgradient wells, sulfate and TDS concentrations are lower or on the low end of the range of concentrations compared to the rest of the monitoring locations. The relatively low sulfate and TDS concentrations at MW-2016-12 and MW-2016-13 suggest that the chloride is unlikely to come from a CCR unit release because groundwater impacted by a release should have elevated concentrations of multiple Appendix III parameters. **Therefore, because there is more mass of chloride in the aquifer than in the ash itself and other indicators of the CCR unit are absent, we reject the hypothesis that the CCR unit is the source of the chloride observed at MW-2016-12 and MW-2016-13.**

3 Conclusion

An alternative source demonstration for chloride at this site is supported by the following lines of evidence:

- No CCRs have been placed in the landfill expansion area. Based on groundwater flow and seepage velocities, the elevated chloride concentrations could not have come from the CCR unit.
- The ash SPLP data has low chloride and high sulfate and TDS content. The opposite is true at MW-2016-12 and MW-2016-13; while there are somewhat elevated concentrations of chloride, there are low sulfate and TDS concentrations. Only this single detection monitoring parameter indicated an SSI for two of the seven downgradient monitoring wells. There is a relative absence of sulfate, a primary indicator of a release, in the groundwater as compared to the presence of sulfate in the water within the upgradient monitoring wells.

As this report demonstrates, the SSI analysis presented in Table 1 for monitoring wells MW-2016-12 and MW-2016-13 is attributed to a source other than the CCR Unit for chloride in the groundwater.

4 References

Barr, 2025. 2024 Annual Groundwater Monitoring and Corrective Action Report, LOS CCR Landfill. January 2025.

Helsel, D.R., Hirsch, R.M., Ryberg, K.R., Archfield, S.A., and Gilroy, E.J., 2020, Statistical methods in water resources: U.S. Geological Survey Techniques and Methods, book 4, chapter A3, 458 p.

United States Environmental Protection Agency (USEPA), 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance. March 2009

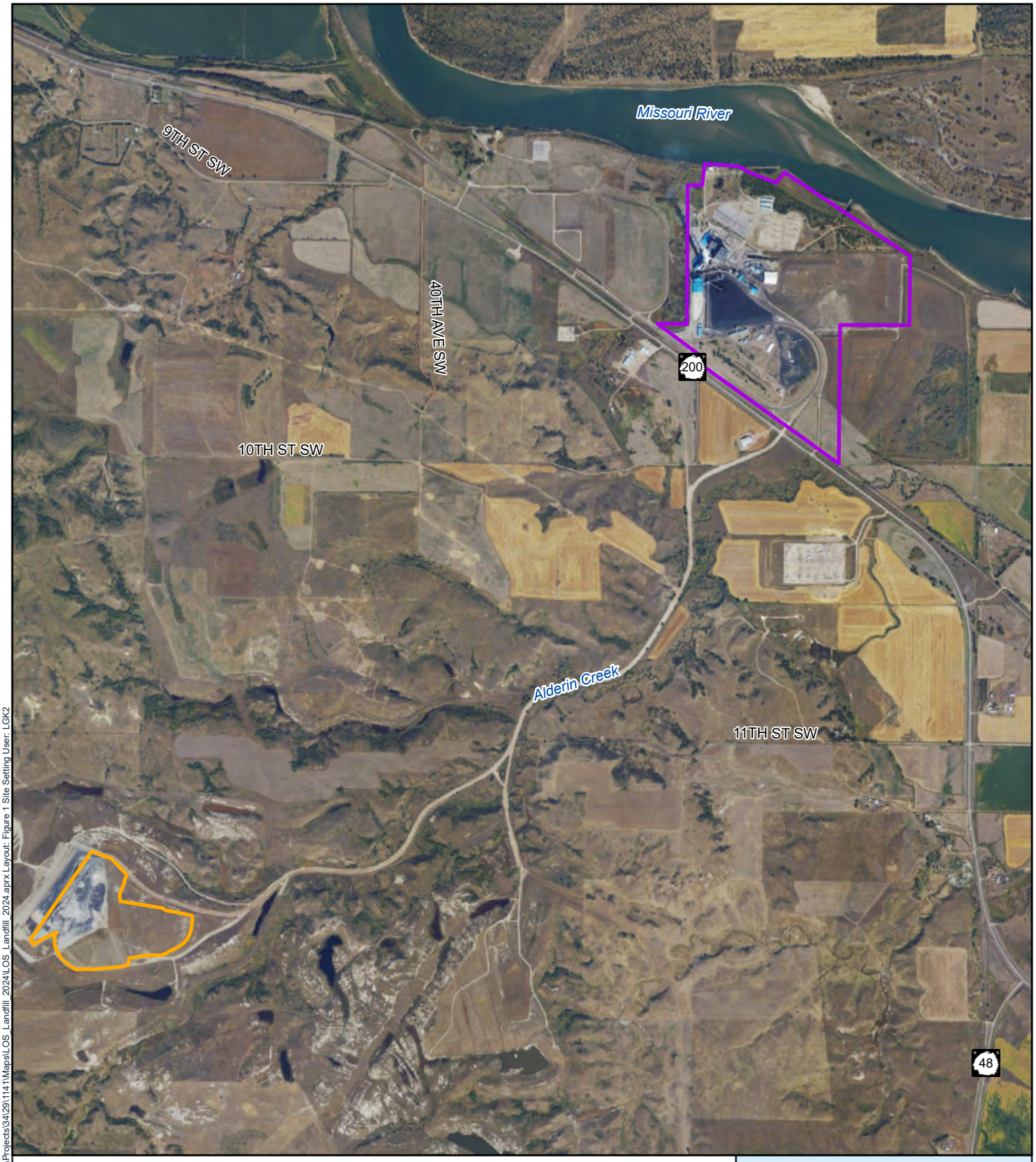
5 Certification

I certify that the written demonstration provided (above) for chloride in monitoring wells MW-2016-12 and MW-2016-13 is supported by the data, accurate, and consistent with our review of the groundwater data collected to date and as required under the CCR Rule ((§ 257.94(e)(2)). I further certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of North Dakota.

Kevin Solie, P.E.
ND P.E. License No. 9488
Barr Engineering Company

Dated this 7th day of November 2025

Figures



Leland Olds Power Plant

LOS Landfill

N

0 1,500 3,000

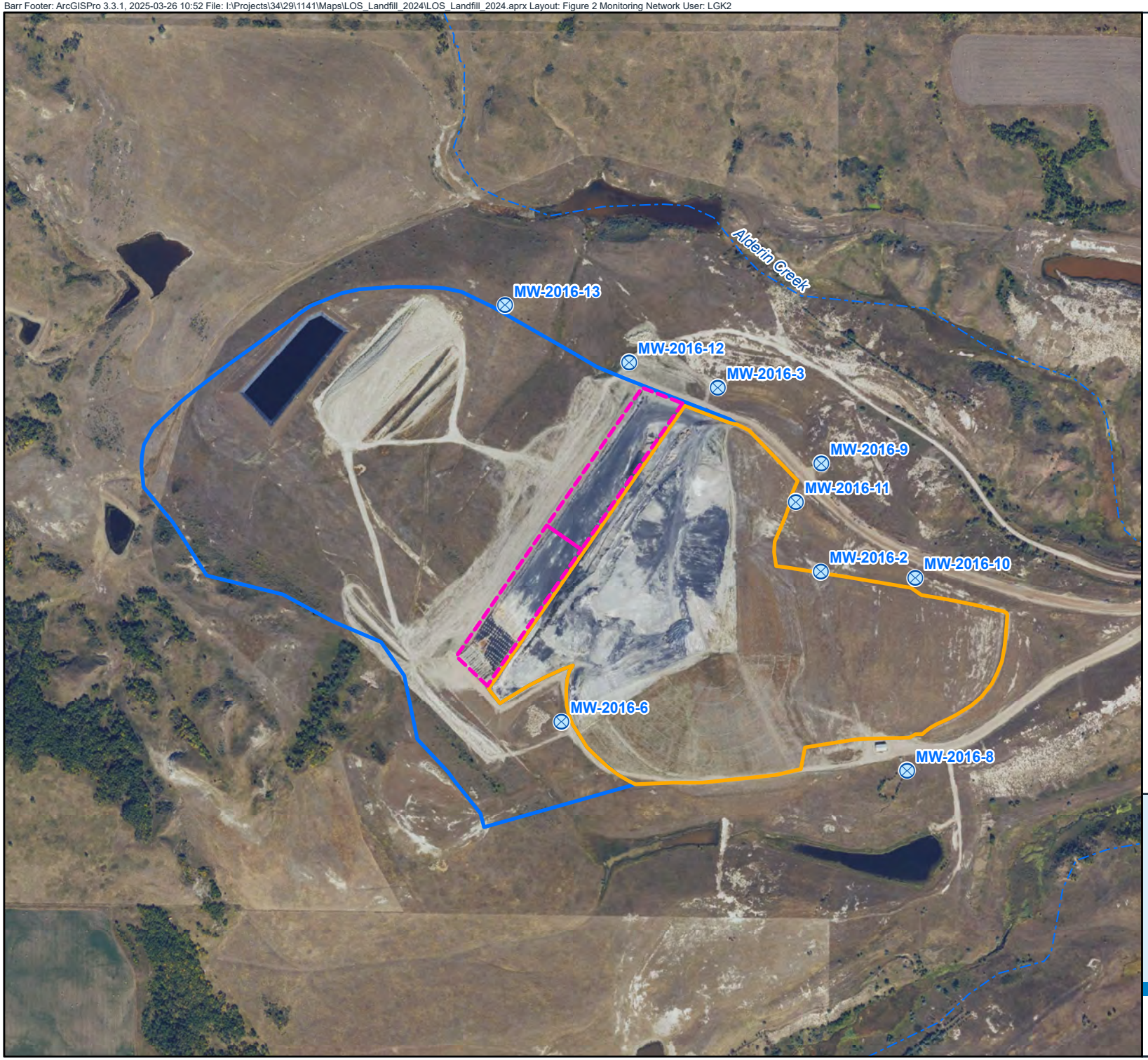
Feet

Imagery: USDA-NAIP, 2024

SITE SETTING
Leland Olds Station- Landfill
Basin Electric Power Cooperative

FIGURE 1

BARR



Monitoring Well
Existing Limits of Waste
Current Waste Placement as of 2025 (approximate)
Future Expansion Limit
Stream, Intermittent

N

0 400 800
Feet

Imagery: USDA-NAIP, 2024

Monitoring Network
Leland Olds Station- Landfill
Basin Electric
Power Cooperative
Stanton, North Dakota

FIGURE 2

BARR

Barr Footer: ArcGISPro 3.5.3, 2025-11-04 11:36 File: I:\Projects\34\29\1141\Maps\LOS_Landfill_2025\LOS_Landfill_2025.aprx Layout: Figure 3 Spring 2025 Potentiometric Surface User: LGK2

- Monitoring Well
- Flow Direction
- Groundwater Contour
- Stream, Intermittent
- Existing Limits of Waste
- Current Waste Placement as of 2025 (approximate)
- Future Expansion Limit

Notes:
* = omitted from contour interpolation
Groundwater elevations were obtained on June 2, 2025

N

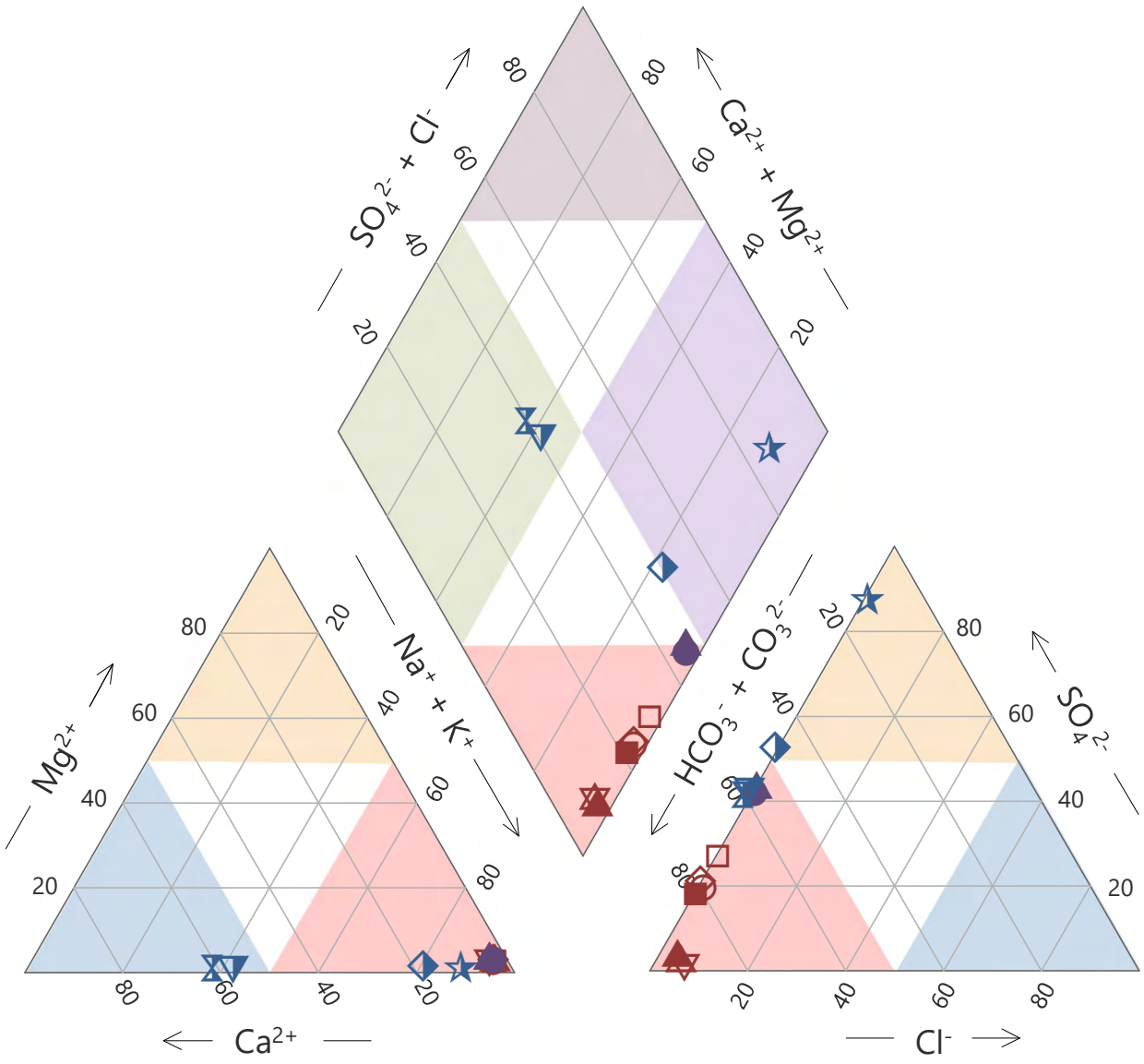
0 300 600
Feet

Imagery: USDA-NAIP, 2024

Spring 2025
Potentiometric Surface
Leland Olds Station- Landfill
Basin Electric Power Cooperative
Stanton, North Dakota

FIGURE 3

BARR



Upgradient Wells

- MW-2016-6
- MW-2016-8

Downgradient Wells

- MW-2016-2
- MW-2016-3
- MW-2016-9
- MW-2016-10
- MW-2016-11
- MW-2016-12
- MW-2016-13

SPLP Data

- 1 (12/18/2009)
- 2 (12/18/2009)
- 1 (11/06/2009)
- 2 (11/06/2009)

Piper Diagram
LOS Landfill
SPRING 2025
FIGURE 4

BARR

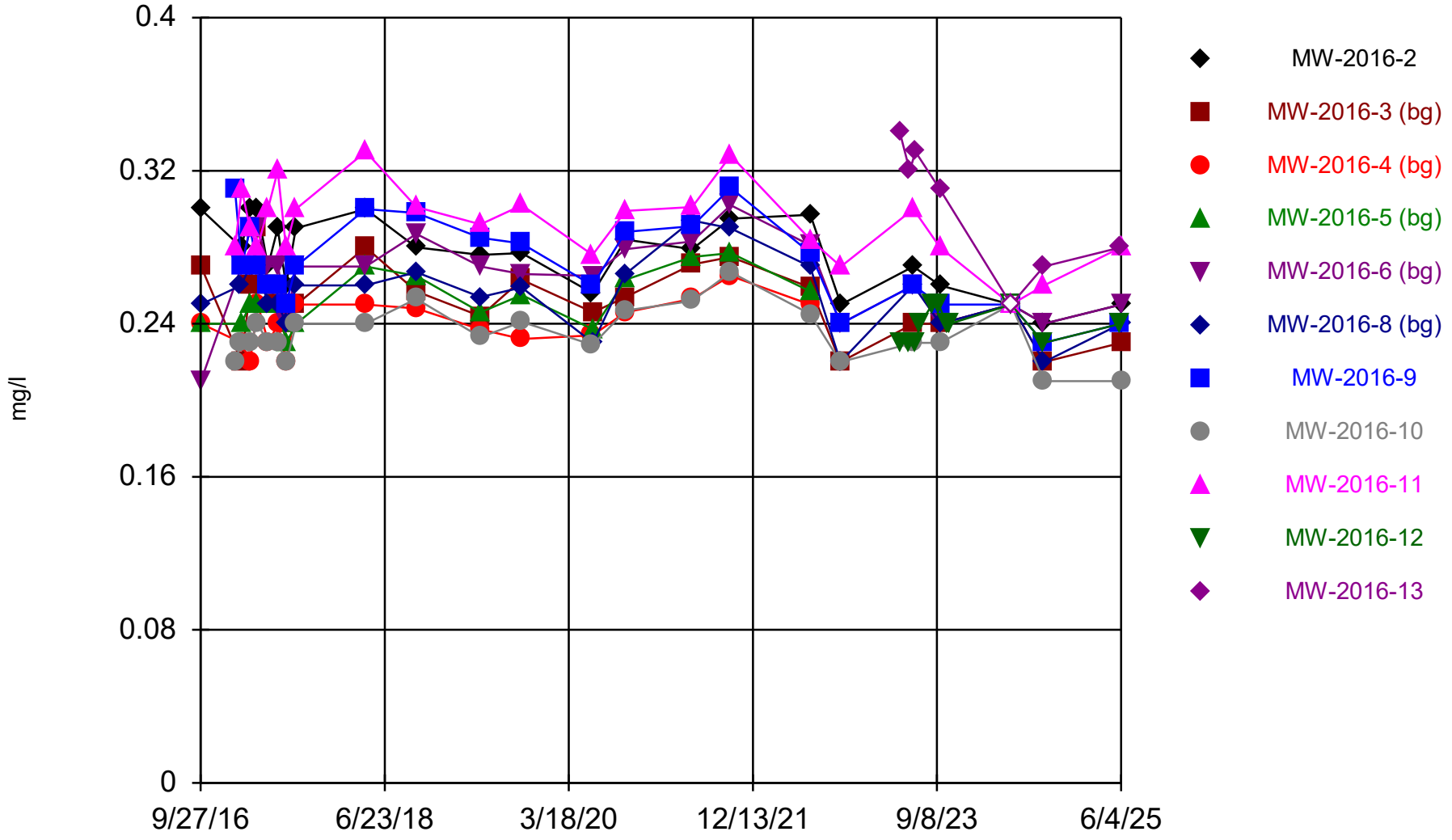
Attachments

Attachment A

Time Series Graphs

Hollow symbols indicate censored values.

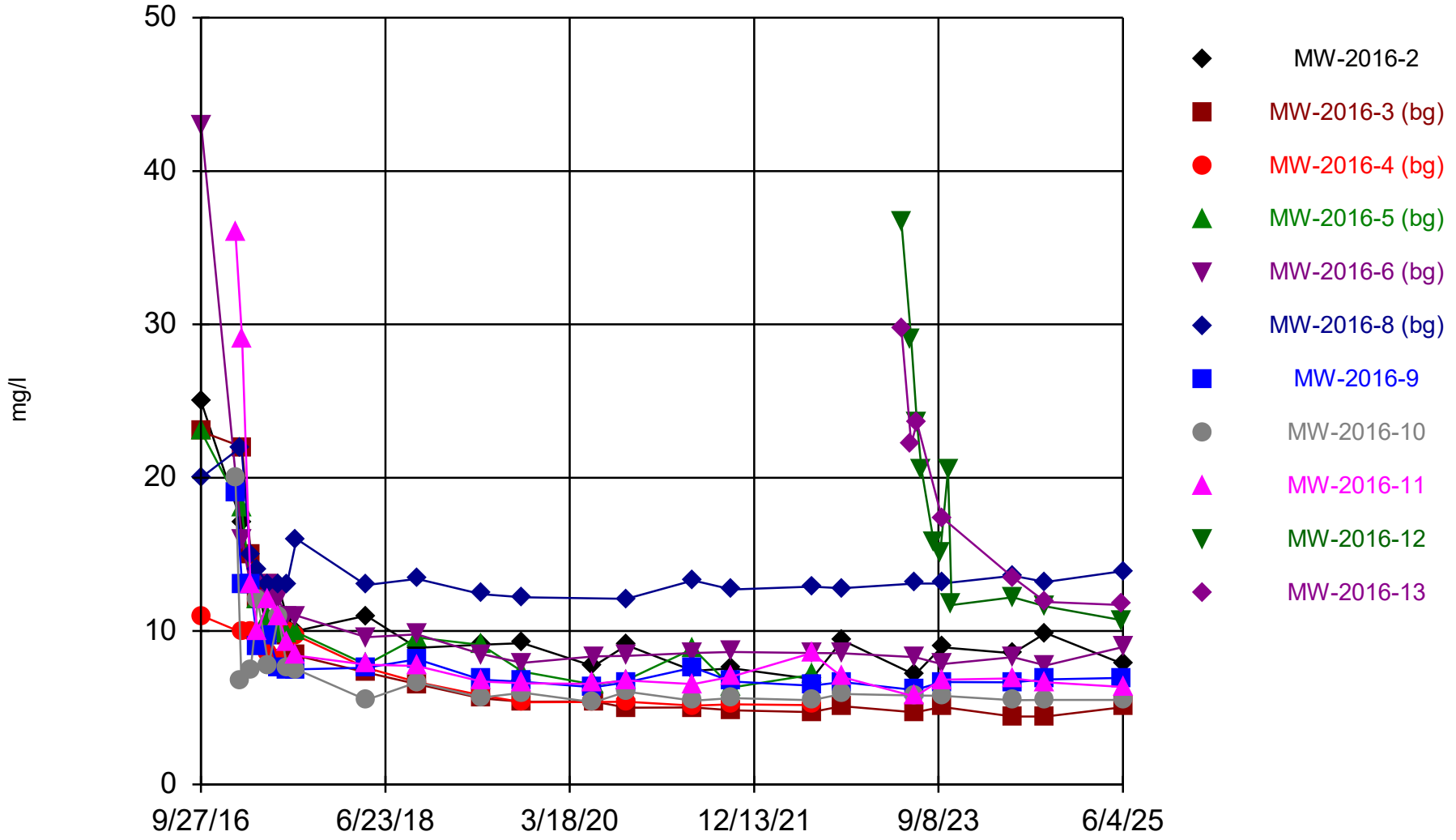
Boron, total



Time Series Analysis Run 8/1/2025 12:00 PM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill

Calcium, total

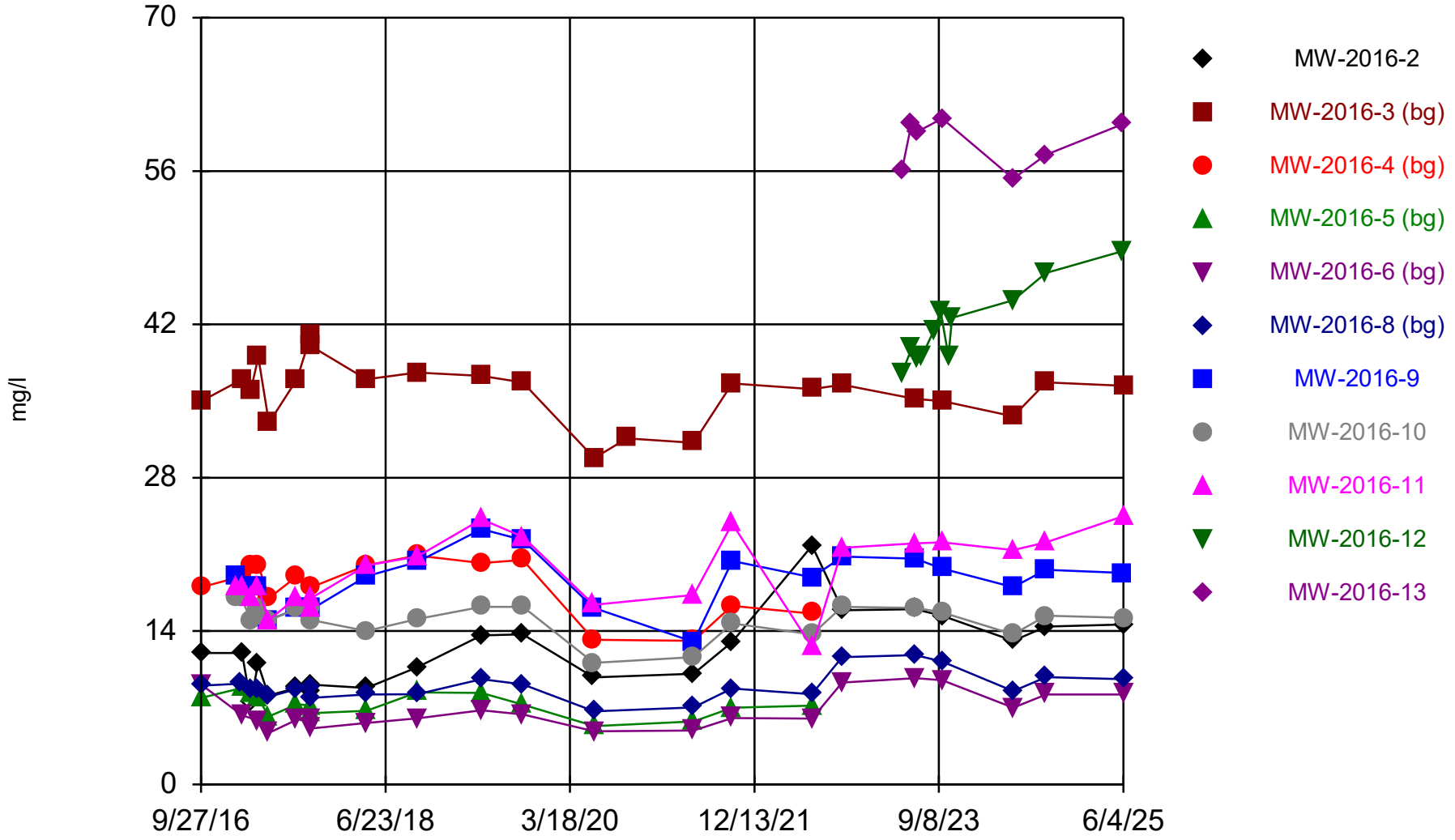


Time Series Analysis Run 8/1/2025 12:00 PM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill

Hollow symbols indicate censored values.

Chloride

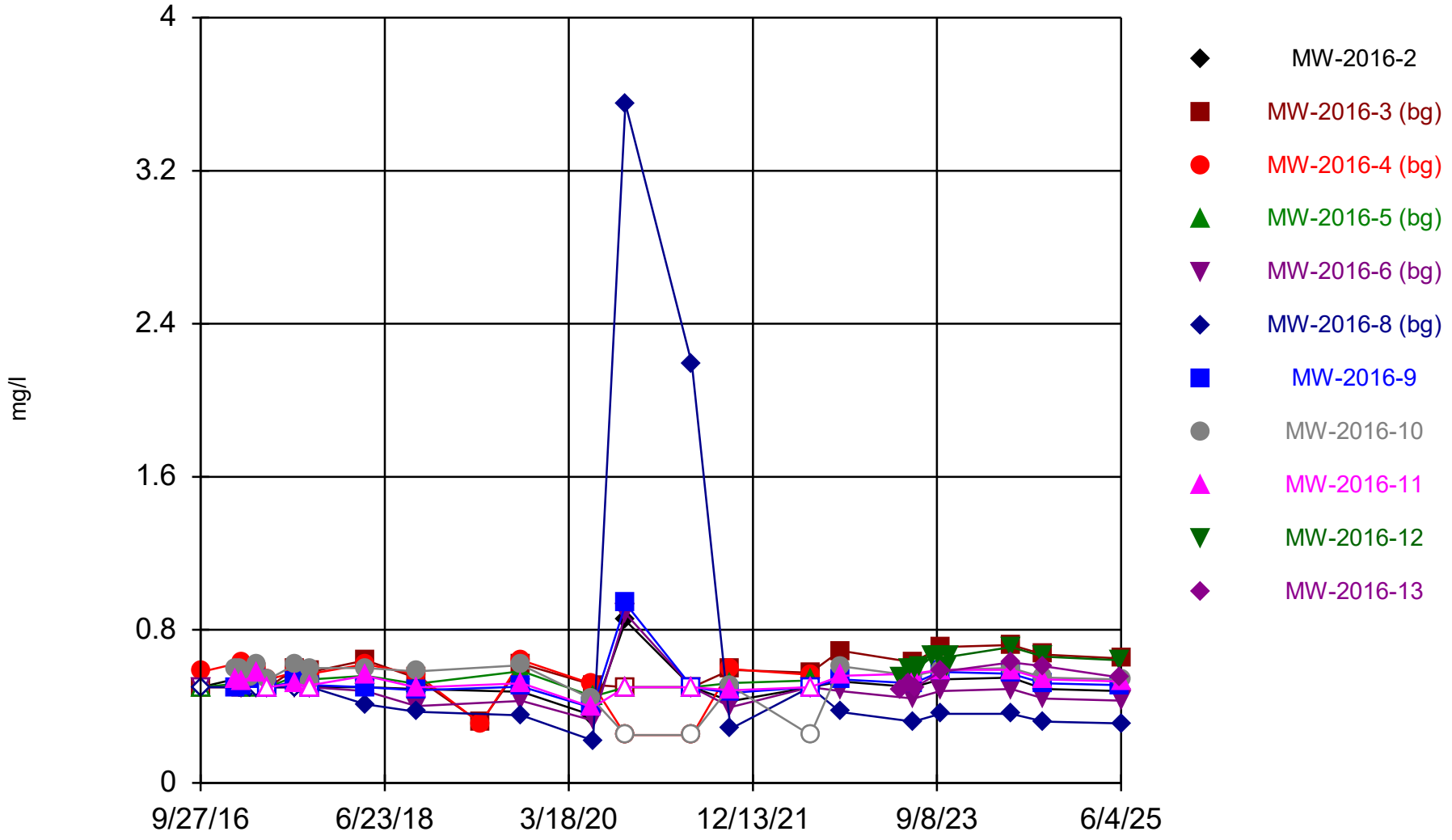


Time Series Analysis Run 8/1/2025 12:00 PM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill

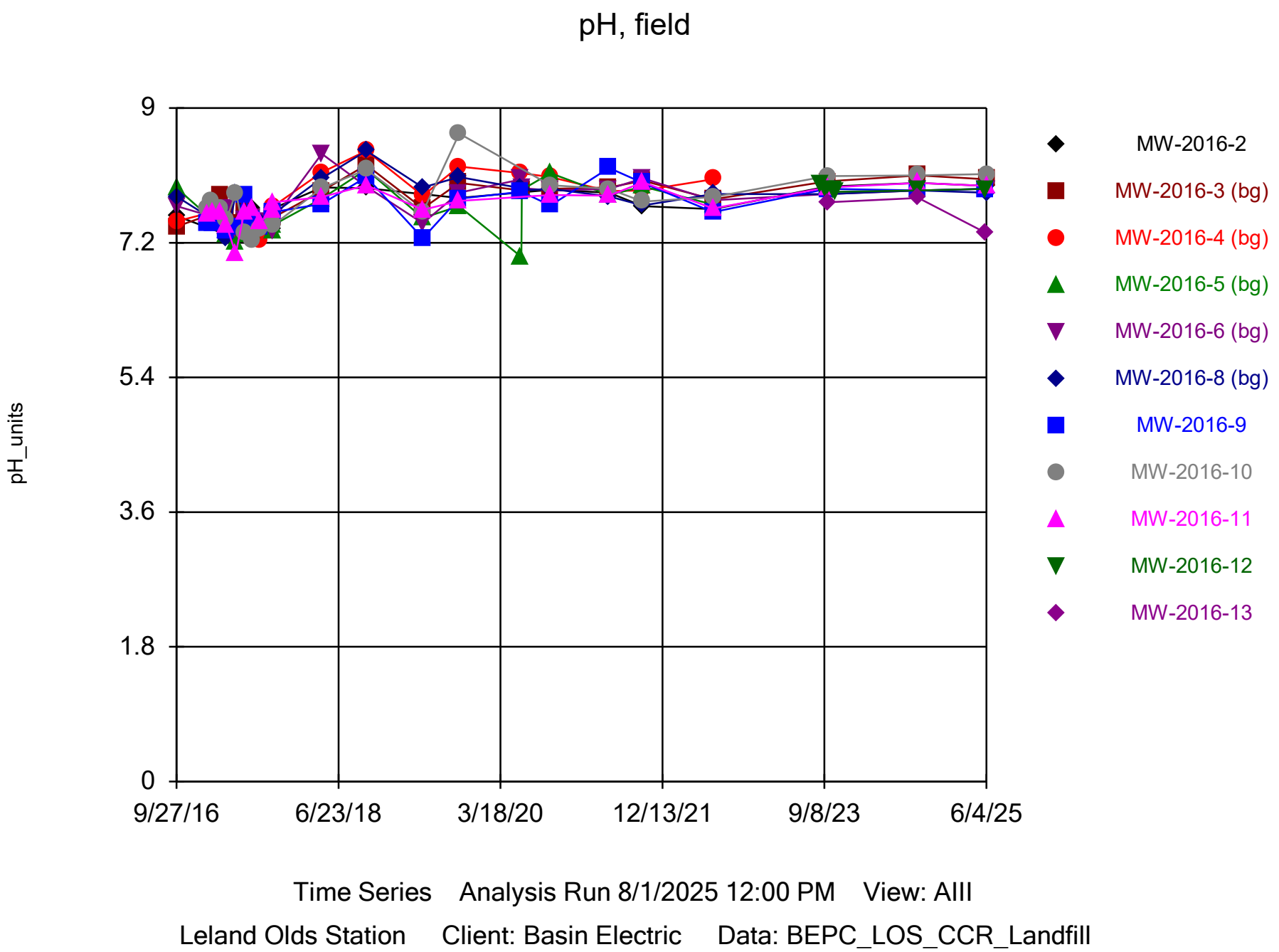
Hollow symbols indicate censored values.

Fluoride

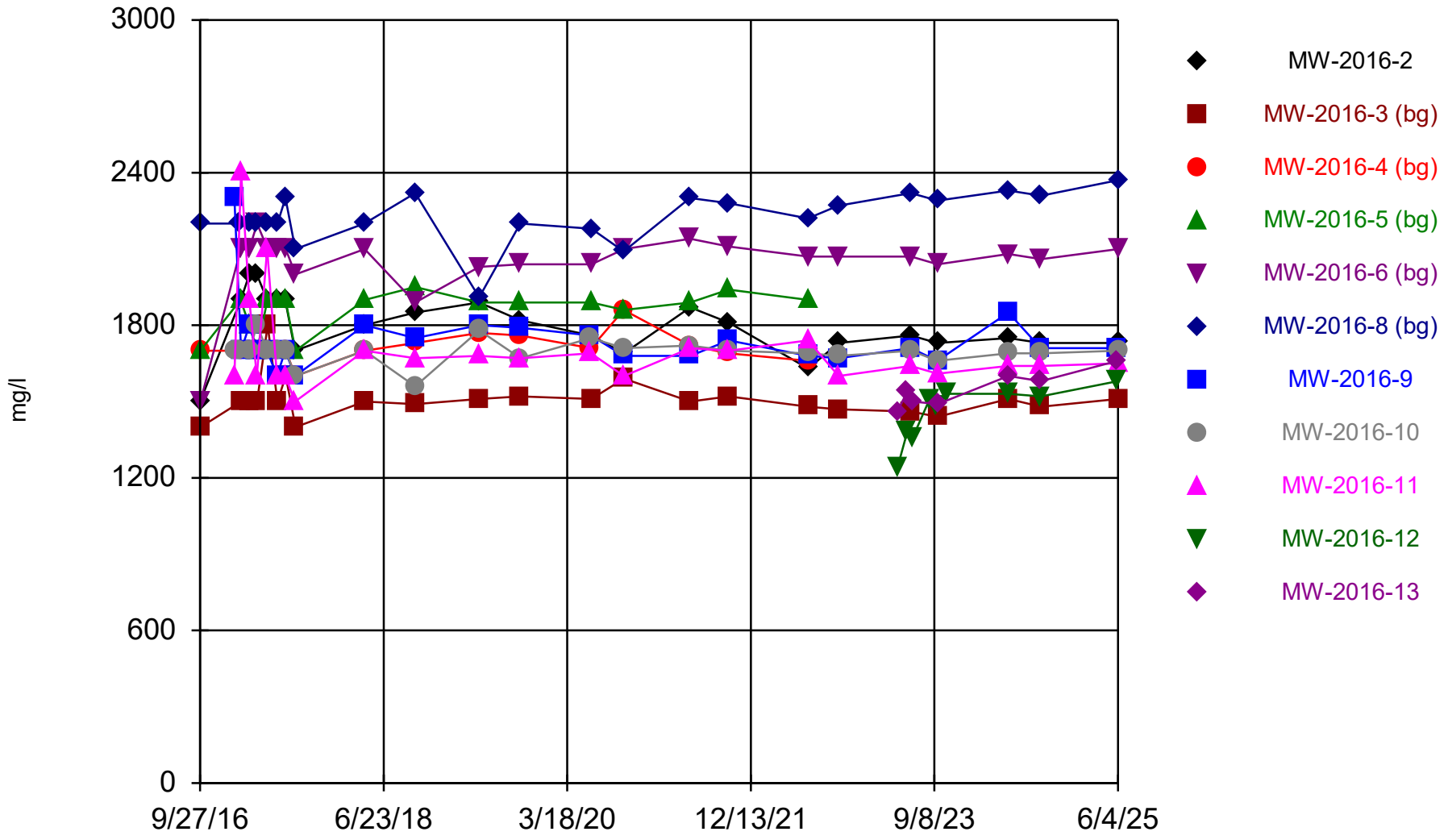


Time Series Analysis Run 8/1/2025 12:00 PM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill



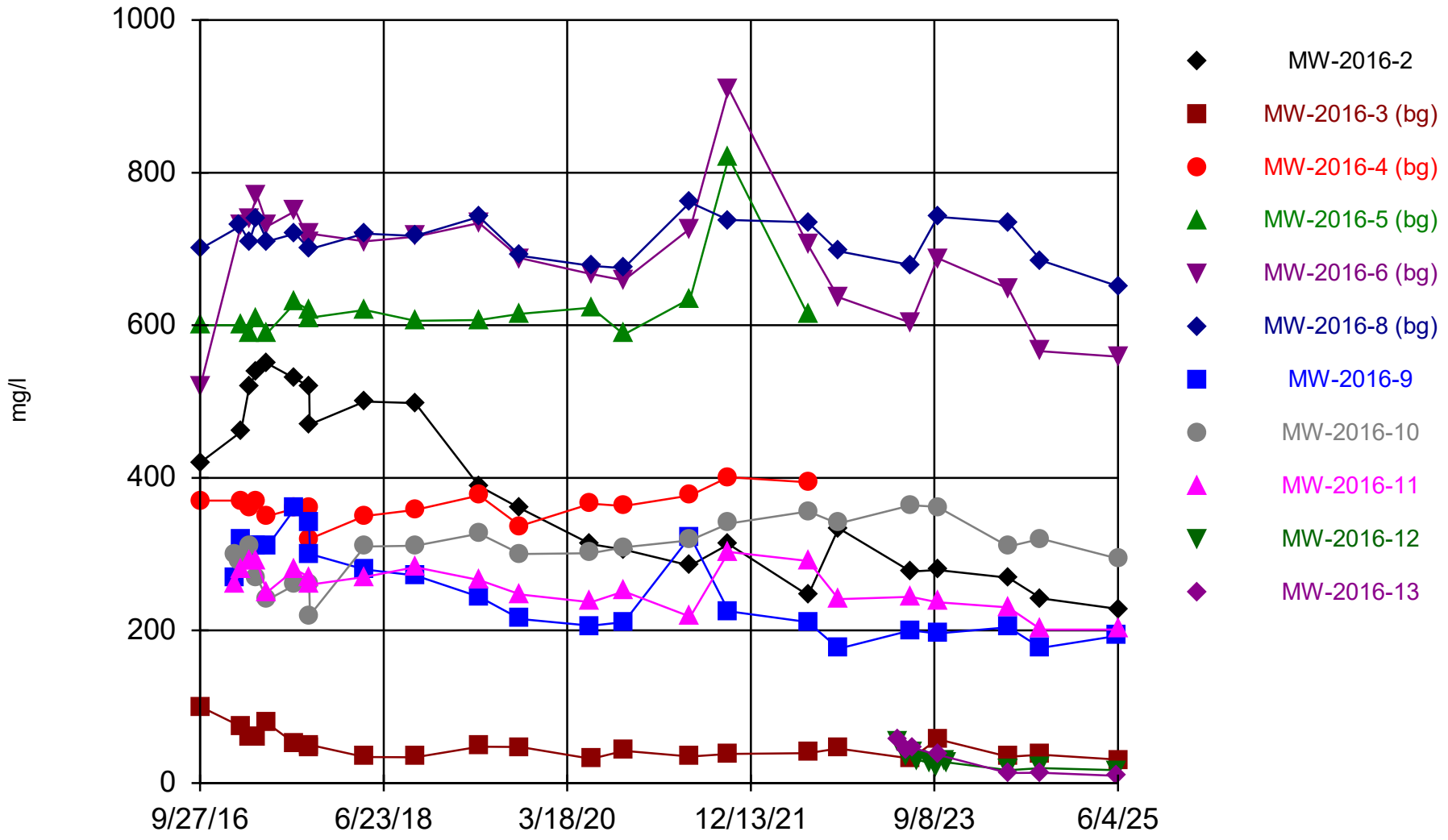
Solids, total dissolved



Time Series Analysis Run 8/1/2025 12:00 PM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill

Sulfate, as SO4



Time Series Analysis Run 8/1/2025 12:00 PM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill

Attachment B

SPLP Data

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

Report Date: 15 Jan 10
Lab Number: 09-M4377
Work Order #:81-1634
Account #: 002040
Date Sampled: 18 Dec 09
Date Received: 21 Dec 09 10:00
PO #: 529077

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 1 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
SPLP Extraction				1312	29 Dec 09	SC
pH	12.6	units	N/A	SM4500 H+ B	30 Dec 09 17:00	JRS
Specific Conductance	15110	umhos/cm	N/A	SM2510-B	30 Dec 09 17:00	JRS
Total Suspended Solids	4	mg/l	1	SM2540-D	30 Dec 09 15:30	JRS
Total Alkalinity	2880	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Phenolphthalein Alk	2860	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Bicarbonate	< 4	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Carbonate	40	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Hydroxide	2840	mg/l CaCO3	0	SM2320-B	30 Dec 09 17:00	JRS
Tot Dis Solids(Summation)	5820	mg/l	NA	SM1030-F	15 Jan 10 13:45	Calculated
Total Hardness as CaCO3	3050	mg/l	NA	SM2340-B	6 Jan 10 9:00	Calculated
Hardness in grains/gallon	178	gr/gal	NA	SM2340-B	6 Jan 10 9:00	Calculated
Cation Summation	104	meq/L	NA	SM1030-F	6 Jan 10 9:00	Calculated
Anion Summation	95.6	meq/L	NA	SM1030-F	15 Jan 10 13:45	Calculated
Percent Error	4.32	%	NA	SM1030-F	15 Jan 10 13:45	Calculated
Sodium Adsorption Ratio	7.30		NA	USDA 20b	6 Jan 10 9:00	Calculated
Fluoride	2.75	mg/l	0.10	SM4500-F-C	30 Dec 09 17:00	JRS
Sulfate	1810	mg/l	5.00	ASTM D516-02	15 Jan 10 13:45	Morgan
Chloride	12.4	mg/l	1.0	SM4500-Cl-E	14 Jan 10 11:20	Morgan
Nitrate-Nitrite as N	< 0.1	mg/l	0.10	EPA 353.2	13 Jan 10 13:30	Morgan
Ammonia-Nitrogen as N	0.14	mg/l	0.10	EPA 350.1	4 Jan 10 12:20	Morgan
Phosphorus as P - Total	< 0.1	mg/l	0.10	EPA 365.1	12 Jan 10 13:00	Morgan
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	30 Dec 09 8:30	Eric
Calcium - Total	1220	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Magnesium - Total	< 5	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Sodium - Total	929	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Potassium - Total	116	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Aluminum - Total	< 0.1	mg/l	0.10	6010	5 Jan 10 8:55	Stacy
Barium - Total	0.36	mg/l	0.10	6010	5 Jan 10 8:55	Stacy
Iron - Total	< 0.1	mg/l	0.10	6010	5 Jan 10 8:55	Stacy
Boron - Total	< 1	mg/l	0.10	6010	7 Jan 10 10:00	Stacy
Antimony - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Arsenic - Total	0.0050	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Beryllium - Total	< 0.001	mg/l	0.0010	6020	4 Jan 10 9:34	Claudette
Cadmium - Total	0.00103	mg/l	0.00100	6020	4 Jan 10 9:34	Claudette
Chromium - Total	0.1642	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Cobalt - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Copper - Total	0.0224	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Lead - Total	0.0214	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
! = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 15 Jan 10
Lab Number: 09-M4377
Work Order #:81-1634
Account #: 002040
Date Sampled: 18 Dec 09
Date Received: 21 Dec 09 10:00
PO #: 529077

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 1 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Manganese - Total	< 0.001	mg/l	0.0010	6020	4 Jan 10 9:34	Claudette
Nickel - Total	0.0159	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Selenium - Total	0.0336	mg/l	0.0020	6020	4 Jan 10 15:28	Claudette
Silver - Total	< 0.001	mg/l	0.0010	6020	4 Jan 10 9:34	Claudette
Thallium - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Vanadium - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Zinc - Total	< 0.01	mg/l	0.0100	6020	4 Jan 10 9:34	Claudette

All analysese were performed on the extract from an ASTM D3987 extraction with a modified solution to solids ratio of 4:1.

Approved by: C Cantell

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
: = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 15 Jan 10
Lab Number: 09-M4378
Work Order #:81-1634
Account #: 002040
Date Sampled: 18 Dec 09
Date Received: 21 Dec 09 10:00
PO #: 529077

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 2 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
SPLP Extraction				1312	29 Dec 09	SC
pH	12.4	units	N/A	SM4500 H+ B	30 Dec 09 17:00	JRS
Specific Conductance	9842	umhos/cm	N/A	SM2510-B	30 Dec 09 17:00	JRS
Total Suspended Solids	1	mg/l	1	SM2540-D	30 Dec 09 15:30	JRS
Total Alkalinity	1520	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Phenolphthalein Alk	1500	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Bicarbonate	< 4	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Carbonate	40	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Hydroxide	1480	mg/l CaCO3	0	SM2320-B	30 Dec 09 17:00	JRS
Tot Dis Solids(Summation)	3830	mg/l	NA	SM1030-F	15 Jan 10 13:45	Calculated
Total Hardness as CaCO3	542	mg/l	NA	SM2340-B	6 Jan 10 9:00	Calculated
Hardness in grains/gallon	31.7	gr/gal	NA	SM2340-B	6 Jan 10 9:00	Calculated
Cation Summation	61.3	meq/L	NA	SM1030-F	6 Jan 10 9:00	Calculated
Anion Summation	60.4	meq/L	NA	SM1030-F	15 Jan 10 13:45	Calculated
Percent Error	0.72	%	NA	SM1030-F	15 Jan 10 13:45	Calculated
Sodium Adsorption Ratio	18.5		NA	USDA 20b	6 Jan 10 9:00	Calculated
Fluoride	2.56	mg/l	0.10	SM4500-F-C	30 Dec 09 17:00	JRS
Sulfate	1420	mg/l	5.00	ASTM D516-02	15 Jan 10 13:45	Morgan
Chloride	14.8	mg/l	1.0	SM4500-Cl-E	14 Jan 10 11:20	Morgan
Nitrate-Nitrite as N	0.29	mg/l	0.10	EPA 353.2	13 Jan 10 13:30	Morgan
Ammonia-Nitrogen as N	< 0.1	mg/l	0.10	EPA 350.1	4 Jan 10 12:20	Morgan
Phosphorus as P - Total	< 0.1	mg/l	0.10	EPA 365.1	12 Jan 10 13:00	Morgan
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	30 Dec 09 8:30	Eric
Calcium - Total	217	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Magnesium - Total	< 5	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Sodium - Total	1010	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Potassium - Total	255	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Aluminum - Total	0.14	mg/l	0.10	6010	5 Jan 10 8:55	Stacy
Barium - Total	0.40	mg/l	0.10	6010	5 Jan 10 8:55	Stacy
Iron - Total	< 0.1	mg/l	0.10	6010	5 Jan 10 8:55	Stacy
Boron - Total	< 1	mg/l	0.10	6010	7 Jan 10 10:00	Stacy
Antimony - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Arsenic - Total	0.0068	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Beryllium - Total	< 0.001	mg/l	0.0010	6020	4 Jan 10 9:34	Claudette
Cadmium - Total	0.00216	mg/l	0.00100	6020	4 Jan 10 9:34	Claudette
Chromium - Total	0.2055	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Cobalt - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Copper - Total	0.0225	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Lead - Total	0.0067	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
: = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

Report Date: 15 Jan 10
Lab Number: 09-M4378
Work Order #:81-1634
Account #: 002040
Date Sampled: 18 Dec 09
Date Received: 21 Dec 09 10:00
PO #: 529077

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 2 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Manganese - Total	< 0.001	mg/l	0.0010	6020	4 Jan 10 9:34	Claudette
Nickel - Total	0.0030	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Selenium - Total	0.0491	mg/l	0.0020	6020	4 Jan 10 15:28	Claudette
Silver - Total	< 0.001	mg/l	0.0010	6020	4 Jan 10 9:34	Claudette
Thallium - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Vanadium - Total	0.0212	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Zinc - Total	< 0.01	mg/l	0.0100	6020	4 Jan 10 9:34	Claudette

All analysese were performed on the extract from an ASTM D3987 extraction with a modified solution to solids ratio of 4:1.

Approved by: _____

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
! = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com
MEMBER ACIL

Sample Number: 09-M3826

Report Date: 1/15/10

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Work Order #: 81-1488

Date Collected: 11/ 6/09

Date Received: 11/11/09

Sample Description: Unit 1 Fly Ash

* PROXIMATE *			* ULTIMATE *		
ANALYTE	AS RECEIVED	DRY BASIS	ANALYTE	AS RECEIVED	DRY BASIS

* SULFUR FORMS *			* ASH FUSION *		
ANALYTE	AS RECEIVED	DRY BASIS	ANALYTE	REDUCING	OXIDIZING

* MINERAL ANALYSIS OF ASH *			* MISCELLANEOUS *		
ANALYTE	DRY BASIS		ANALYTE	AS RECEIVED	DRY BASIS
Silicon Dioxide in Ash	37.48	wt. %			
Aluminum Oxide in Ash	13.41	wt. %			
Titanium Dioxide in Ash	0.56	wt. %			
Iron Oxide in Ash	7.11	wt. %			
Calcium Oxide in Ash	21.41	wt. %			
Magnesium Oxide in Ash	8.53	wt. %			
Potassium Oxide in Ash	1.07	wt. %			
Sodium Oxide in Ash	4.05	wt. %			
SO3 in Ash	2.38	wt. %			
P2O5 in Ash	0.46	wt. %			
Strontium Oxide in Ash	0.63	wt. %			
Barium Oxide in Ash	1.00	wt. %			
Manganese Dioxide in Ash	0.12	wt. %			

Approved By: D. Zarda

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Sample Number: 09-M3828

Report Date: 1/15/10

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Work Order #: 81-1488

Date Collected: 11/ 6/09

Date Received: 11/11/09

Sample Description: Unit 2 Fly Ash

*** PROXIMATE ***

ANALYTE	AS RECEIVED	DRY BASIS

*** ULTIMATE ***

ANALYTE	AS RECEIVED	DRY BASIS

*** SULFUR FORMS ***

ANALYTE	AS RECEIVED	DRY BASIS

*** ASH FUSION ***

ANALYTE	REDUCING	OXIDIZING

*** MINERAL ANALYSIS OF ASH ***

ANALYTE	DRY BASIS	
Silicon Dioxide in Ash	29.98	wt. %
Aluminum Oxide in Ash	12.12	wt. %
Titanium Dioxide in Ash	0.46	wt. %
Iron Oxide in Ash	5.11	wt. %
Calcium Oxide in Ash	20.93	wt. %
Magnesium Oxide in Ash	7.86	wt. %
Potassium Oxide in Ash	1.62	wt. %
Sodium Oxide in Ash	6.32	wt. %
SO3 in Ash	11.38	wt. %
P2O5 in Ash	0.42	wt. %
Strontium Oxide in Ash	0.65	wt. %
Barium Oxide in Ash	1.25	wt. %
Manganese Dioxide in Ash	0.10	wt. %

*** MISCELLANEOUS ***

ANALYTE	AS RECEIVED	DRY BASIS

Approved By: D. Zardus

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

Report Date: 15 Jan 10
Lab Number: 09-M3830
Work Order #:81-1488
Account #: 002040
Date Sampled: 6 Nov 09
Date Received: 11 Nov 09 10:00

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 1 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
pH	12.6	units	N/A	SM4500 H+ B	18 Nov 09 17:00	JRS
Specific Conductance	14430	umhos/cm	N/A	SM2510-B	18 Nov 09 17:00	JRS
Total Suspended Solids	2	mg/l	1	SM2540-D	18 Nov 09 15:50	JRS
Total Alkalinity	2820	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Phenolphthalein Alk	2810	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Bicarbonate	< 4	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Carbonate	20	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Hydroxide	2800	mg/l CaCO3	0	SM2320-B	18 Nov 09 17:00	JRS
Tot Dis Solids(Summation)	5520	mg/l	NA	SM1030-F	20 Nov 09 14:00	Calculated
Total Hardness as CaCO3	3170	mg/l	NA	SM2340-B	20 Nov 09 8:55	Calculated
Hardness in grains/gallon	185	gr/gal	NA	SM2340-B	20 Nov 09 8:55	Calculated
Cation Summation	100	meq/L	NA	SM1030-F	23 Nov 09 12:00	Calculated
Anion Summation	91.1	meq/L	NA	SM1030-F	20 Nov 09 14:00	Calculated
Percent Error	4.84	%	NA	SM1030-F	23 Nov 09 12:00	Calculated
Sodium Adsorption Ratio	6.08		NA	USDA 20b	20 Nov 09 8:55	Calculated
Gross Alpha Radiation	Attached	pCi/l			21 Dec 09 5:22	
Radium 226	Attached	pCi/l			15 Dec 09 13:38	
Radium 228	Attached	pCi/l			9 Dec 09 15:28	
Fluoride	3.45	mg/l	0.10	SM4500-F-C	19 Nov 09 14:00	Morgan
Sulfate	1650	mg/l	5.00	ASTM D516-02	20 Nov 09 14:00	Morgan
Chloride	11.8	mg/l	1.0	SM4500-Cl-E	20 Nov 09 10:00	Morgan
Nitrate-Nitrite as N	0.11	mg/l	0.10	EPA 353.2	18 Nov 09 10:30	Morgan
Ammonia-Nitrogen as N	< 0.1	mg/l	0.10	EPA 350.1	23 Nov 09 12:00	Morgan
Phosphorus as P - Total	0.18	mg/l	0.10	EPA 365.1	1 Dec 09 12:30	Morgan
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	20 Nov 09 8:30	Eric
Calcium - Total	1270	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Magnesium - Total	< 5	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Sodium - Total	790	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Potassium - Total	103	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Aluminum - Total	< 0.5	mg/l	0.10	6010	23 Nov 09 8:57	Stacy
Iron - Total	< 0.5	mg/l	0.10	6010	23 Nov 09 8:57	Stacy
Boron - Total	0.20	mg/l	0.10	6010	2 Dec 09 9:23	Stacy
Antimony - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Arsenic - Total	0.0068	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Barium - Total	0.4655	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Beryllium - Total	< 0.001	mg/l	0.0010	6020	25 Nov 09 14:25	Claudette
Cadmium - Total	< 0.002	mg/l	0.00100	6020	24 Nov 09 9:18	Claudette
Chromium - Total	0.1451	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Cobalt - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Copper - Total	0.0063	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
: = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

Report Date: 15 Jan 10
Lab Number: 09-M3830
Work Order #:81-1488
Account #: 002040
Date Sampled: 6 Nov 09
Date Received: 11 Nov 09 10:00

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 1 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Lead - Total	0.0058	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Manganese - Total	0.0031	mg/l	0.0010	6020	24 Nov 09 9:18	Claudette
Nickel - Total	0.0301	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Selenium - Total	0.0302	mg/l	0.0020	6020	24 Nov 09 14:10	Claudette
Silver - Total	< 0.01**	mg/l	0.0010	6020	24 Nov 09 9:18	Claudette
Thallium - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Vanadium - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Zinc - Total	< 0.02	mg/l	0.0100	6020	24 Nov 09 9:18	Claudette
Uranium	< 0.002	mg/l	0.002	6020	24 Nov 09 9:18	Claudette

All analyses were performed on the extract from an ASTM D3987 extraction with a modified solution to solids ratio of 4:1.

** Silver was reported at ICP Reporting Limits for historical purposes.

Approved by: C Canuel

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
: = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 15 Jan 10
Lab Number: 09-M3832
Work Order #:81-1488
Account #: 002040
Date Sampled: 6 Nov 09
Date Received: 11 Nov 09 10:00

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 2 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
pH	12.4	units	N/A	SM4500 H+ B	18 Nov 09 17:00	JRS
Specific Conductance	28610	umhos/cm	N/A	SM2510-B	18 Nov 09 17:00	JRS
Total Suspended Solids	34	mg/l	1	SM2540-D	18 Nov 09 15:50	JRS
Total Alkalinity	2260	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Phenolphthalein Alk	2200	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Bicarbonate	< 4	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Carbonate	120	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Hydroxide	2140	mg/l CaCO3	0	SM2320-B	18 Nov 09 17:00	JRS
Tot Dis Solids(Summation)	21100	mg/l	NA	SM1030-F	25 Nov 09 9:00	Calculated
Total Hardness as CaCO3	1410	mg/l	NA	SM2340-B	20 Nov 09 8:55	Calculated
Hardness in grains/gallon	82.2	gr/gal	NA	SM2340-B	20 Nov 09 8:55	Calculated
Cation Summation	294	meq/L	NA	SM1030-F	23 Nov 09 12:00	Calculated
Anion Summation	316	meq/L	NA	SM1030-F	25 Nov 09 9:00	Calculated
Percent Error	-3.64	%	NA	SM1030-F	25 Nov 09 9:00	Calculated
Sodium Adsorption Ratio	69.6		NA	USDA 20b	20 Nov 09 8:55	Calculated
Gross Alpha Radiation	Attached	pCi/l			11 Jan 10 23:14	
Radium 226	Attached	pCi/l			21 Dec 09 15:36	
Radium 228	Attached	pCi/l			16 Dec 09 16:15	
Fluoride	4.05	mg/l	0.10	SM4500-F-C	19 Nov 09 14:00	Morgan
Sulfate	13000	mg/l	5.00	ASTM D516-02	24 Nov 09 13:00	Morgan
Chloride	7.6	mg/l	1.0	SM4500-Cl-E	24 Nov 09 8:00	Morgan
Nitrate-Nitrite as N	2.21	mg/l	0.10	EPA 353.2	25 Nov 09 9:00	Morgan
Ammonia-Nitrogen as N	1.05	mg/l	0.10	EPA 350.1	23 Nov 09 12:00	Morgan
Phosphorus as P - Total	< 0.1	mg/l	0.10	EPA 365.1	1 Dec 09 12:30	Morgan
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	20 Nov 09 8:30	Eric
Calcium - Total	563	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Magnesium - Total	< 5	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Sodium - Total	6040	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Potassium - Total	123	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Aluminum - Total	< 1	mg/l	0.10	6010	23 Nov 09 8:57	Stacy
Iron - Total	< 1	mg/l	0.10	6010	23 Nov 09 8:57	Stacy
Boron - Total	21.4	mg/l	0.10	6010	2 Dec 09 9:23	Stacy
Antimony - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Arsenic - Total	0.0702	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Barium - Total	0.1602	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Beryllium - Total	< 0.001	mg/l	0.0010	6020	25 Nov 09 14:25	Claudette
Cadmium - Total	0.00430	mg/l	0.00100	6020	24 Nov 09 9:18	Claudette
Chromium - Total	0.6732	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Cobalt - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Copper - Total	0.1163	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
: = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com
MEMBER ACIL

Report Date: 15 Jan 10
Lab Number: 09-M3832
Work Order #:81-1488
Account #: 002040
Date Sampled: 6 Nov 09
Date Received: 11 Nov 09 10:00

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 2 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Lead - Total	0.0090	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Manganese - Total	0.0043	mg/l	0.0010	6020	24 Nov 09 9:18	Claudette
Nickel - Total	0.0124	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Selenium - Total	0.0693	mg/l	0.0020	6020	24 Nov 09 14:10	Claudette
Silver - Total	< 0.01**	mg/l	0.0010	6020	24 Nov 09 9:18	Claudette
Thallium - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Vanadium - Total	0.0978	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Zinc - Total	0.1528	mg/l	0.0100	6020	24 Nov 09 9:18	Claudette
Uranium	< 0.002	mg/l	0.002	6020	24 Nov 09 9:18	Claudette

All analyses were performed on the extract from an ASTM D3987 extraction with a modified solution to solids ratio of 4:1.

** Silver was reported at ICP Reporting Limits for historical purposes.

Approved by: C Cantrell

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
: = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

Technical Memorandum

To: Mark Dihle, Basin Electric Power Cooperative
From: Barr Engineering Co.
Subject: Alternative Source Demonstration (ASD), Leland Olds Station CCR Landfill (Fall 2024)
Date: March 27, 2025
Project: 34291141.00

1 Introduction

Basin Electric Power Cooperative (Basin Electric) owns and operates Leland Olds Station (LOS), comprised of a coal-fired generating station consisting of two power generating units, located southeast of Stanton, Mercer County, North Dakota (Figure 1). Unit 1 coal-based operations began in 1966, and Unit 2 operations began in 1975. Coal combustion residuals (CCRs) produced at LOS are managed within part of the Glenharold Mine Landfill (Landfill or Site), located approximately three miles southwest of the generating units and office complex. The landfill was permitted by the North Dakota Department of Environmental Quality (NDDEQ) and began accepting CCR in 1992. The most recent Permit 0143 issued by NDDEQ will expire on June 28, 2027, and the most recent cell (with CCR compliant liner) was constructed in 2023.

The CCRs including fly ash, bottom ash, and flue gas desulfurization (FGD) waste are managed at the Site along with other minor wastes accepted as per the NDDEQ permit. The CCR unit is required to comply with the provisions of the US Environmental Protection Agency (EPA) CCR Rule (40 CFR Parts 257 and 261, Disposal of Coal Combustion Residuals from Electric Utilities) and the NDDEQ CCR Rule (NDAC Title 33.1, Article 20, Chapter 8).

Basin Electric has implemented a Detection Monitoring Program in accordance with the U.S. Environmental Protection Agency (EPA) CCR Rule (40 CFR Parts 257 and 261) for the Site. As part of the Detection Monitoring Program, statistically significant increases (SSIs) in monitored groundwater quality parameters over background were identified at the Site for the following monitoring wells during semi-annual detection monitoring completed in the fall of 2024 on September 10-11, 2024:

- MW-2016-12 – Chloride
- MW-2016-13 – Chloride

The CCR Rule (US EPA, 2015) § 257.94(e)(2) allows for an alternative source demonstration (ASD) in the event of an identified statistically significant increase (SSI) in a water quality parameter in a downgradient monitoring well over background levels:

> *The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels to include obtaining a certification from a qualified professional engineer verifying the accuracy of the information in the report.*

The purpose of this work is to evaluate the data collected as part of the September 2024 monitoring event, along with historical data, to demonstrate if the SSIs are the results of a "source other than the CCR unit" or due to natural variation in groundwater quality or an error in sampling, analysis, or statistical evaluation. Nothing in the foregoing citation of the rule requires that the owner/operator disprove any and all potential counterarguments that EPA or others may offer to refute this demonstration. Such arguments if valid, would need to follow requirements of the rule to show a basis in fact that includes rule requirements that are based on site-specific information, and must be certified by a North Dakota licensed professional engineer. This memorandum provides a science-based reason for the data results that indicate a source other than the CCR unit.

This memorandum provides written documentation of an Alternative Source Demonstration (ASD) and certification of accuracy as described in the CCR Rule (§ 257.94(e)(2)).

1.1 Background Information

Figure 1 shows the site location and Figure 2 provides well locations. A groundwater contour map showing groundwater elevations in the lignite, which represent the uppermost aquifer in the vicinity of the CCR landfill, is presented on Figure 3, using measurements from September 2024. Groundwater generally flows from south to north.

In 2022, two new landfill expansion wells, MW-2016-12 and MW-2016-13, were installed at the Site. Baseline sampling was initiated in 2023. Eight samples were collected at MW-2016-12 and four samples were collected at MW-2016-13 prior to the May 2024 sampling event. May 2024 was the first detection monitoring event when MW-2016-12 and MW-2016-13 were evaluated for SSIs. Chloride at MW-2016-12 and MW-2016-13 were SSIs during the May 2024 detection monitoring event and a successful ASD was documented (Barr, 2025).

A comparison of the detection monitoring groundwater results with the prediction limits calculated using the 2016-2023 background assessment data from upgradient wells MW-2016-3, MW-2016-4, MW-2016-5, MW-2016-6, and MW-2016-8 are included in Table 1. Concentrations for Appendix III parameters observed in September 2024 are shown on time series graphs in Attachment A. Chloride concentrations at MW-2016-12 and MW-2016-13 are consistent with those observed during baseline monitoring events.

Table 1 SSIs Compared to Prediction Limits

Event	Well	Parameter (units)	Measured	Interwell Prediction Limit
Detection Monitoring – 2024 #2 (Fall 2024)	MW-2016-12	Chloride (mg/L)	46.7	41
	MW-2016-13	Chloride (mg/L)	57.5	41

1.2 Rule Requirements

The requirements for written documentation and certification of accuracy for an ASD are included in § 257.95(g) (3):

> *Within 90 days of finding that any of the constituents listed in appendix IV to this part have been detected at a statistically significant level exceeding the groundwater protection standards the owner or operator must… Demonstrate that a source other than the CCR unit caused the*

> *contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in Appendix III and Appendix IV of this part are at or below background as specified in paragraph (e) of this section. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by §257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or the approval from EPA where EPA is the permitting authority.*

In accordance with the above requirement, this memorandum is being issued within 90 days of the SSI determination (January 3, 2025) following the review and analysis of the results provided in the final laboratory report which was received on October 8, 2024.

2 Potential Alternative Sources Review

The CCR Rule provides five potential alternative source categories:

1. A source other than the CCR unit
2. Sampling (or sampling equipment) methods
3. Laboratory methods
4. Statistical methods
5. Natural variation in groundwater quality

Site data were evaluated to identify potential causes for chloride concentrations exceeding interwell prediction limits in monitoring wells MW-2016-12 and MW-2016-13. Chloride is naturally occurring and may not necessarily be the result of a release from a CCR unit; therefore, natural variation in groundwater quality was further investigated as part of the ASD.

2.1 Lack of Waste to Serve as Source of Release

Monitoring location MW-2016-13 was added to the monitoring network in anticipation of expanding the landfill; however, no CCRs have yet been placed upgradient of this location. There is no pathway that would allow a release to migrate to this well location as shown on the potentiometric surface map (Figure 3); therefore, the elevated chloride cannot be from the CCR unit. However, because effects from a release might be expected at other downgradient wells closer to the portion of the CCR unit than at MW-2016-13, additional analysis has been conducted based on the potentiometric surface map (Figure 3).

MW-2016-12 is located about 600 feet downgradient from a portion of the CCR unit along the shortest flow path based on the potentiometric surface map. The average seepage velocity in the fall calculated for the Landfill in the 2024 Annual Groundwater Monitoring and Corrective Action Report (Barr, 2025) is 0.13 ft/year. At 0.13 ft/year, it would take more than 4,500 years for a release to reach MW-2016-12. Accounting for the time elapsed since CCR placement in the Landfill beginning in 1992 and allowing for an order of magnitude increase in velocity to address potential preferential pathways, a release would not

be expected to reach the well for over 450 years at the earliest. Therefore, the elevated chloride at MW-2016-12 cannot be from the CCR unit.

If a release were to occur, the leachate would first have to migrate through the liner. Vertical migration of leachate would be controlled by the presence of a driving head on the landfill liner and then migration through the unsaturated zone.

Considering the properties of the CCR materials in landfill, that the design was to eliminate head on the liner, and the facility pumping operations have been normal, there is no evidence of any leachate accumulation on the liner. However, landfill leachate depth is limited to 1 foot on the liner by rule in North Dakota. Even if the 60-mil thick synthetic liner were breached (again there is no evidence that this has ever occurred), the underlying 2-foot-thick clay liner was tested and verified to exhibit a vertical permeability of 1 x 10^{-7} cm/s (2.8 x 10^{-4} feet/day) or less. Assuming a 1-foot driving head over a 2-foot-thick liner yields a vertical hydraulic gradient of 0.5 ft/ft.

The vertical advective velocity (average linear velocity or seepage velocity) of vertical saturated groundwater flow is calculated using the following equation:

$$v = \left(\frac{Kv}{n_e}\right)\left(\frac{dHv}{dLv}\right)$$

Or, stated in a more compact form:

$v = \frac{Ki}{n_e}$, where K = hydraulic conductivity, *i* = gradient, and n_e = effective porosity.

Using an effective porosity for clay of 0.40, the above equation yields an advective velocity 3.5 x 10^{-4} ft/day. Dividing the distance by the velocity yields a travel time of 15.7 years to transit the liner.

The lack of ash in the landfill expansion and the long travel time supports the hypothesis that the CCR unit is not the source of the chloride observed at MW-2016-12 and MW-2016-13.

2.2 CCR Unit Release Scenario

To accept the hypothesis that a release of leachate from the CCR unit is the source of the SSI, it would be assumed that groundwater chemistry at one or more potentially impacted wells (MW-2016-12 and/or MW-2016-13) would be geochemically similar to impacted water from the CCR unit represented by leach testing results. However, if these liquids are geochemically dissimilar, this indicates that a source "other than the CCR unit" may be responsible for the SSI. Therefore, major ion chemistry from the CCR groundwater monitoring locations (upgradient and downgradient) was compared to CCR Synthetic Precipitation Leaching Procedure (SPLP; EPA Method 1312 modified to a 4:1 solution to solids ratio) data collected in December 2009 and January 2010 (Attachment B). Two ash samples were collected from the LOS Units 1 and 2 at the point of ash production (one sample for each unit). Because the source of the coal and the boiler conditions have been similar to past operations, the ash samples are representative of the material disposed in the Landfill. Although chlorides are highly soluble, the samples were collected from unexposed ash, which has not been exposed to precipitation. It is, therefore, not plausible that the chlorides would have previously leached out of the samples prior to collection.

The SPLP results indicate that chloride is a relatively minor component of the ash leachate, accounting for less than 1% of total dissolved solids (TDS) by mass. In contrast, the chloride concentration in the

groundwater sample from MW-2016-12 and MW-2016-13 accounted for over 3% of TDS and was measured at a level higher than those in the ash SPLP leachates. This finding is opposite what one would expect if impacted water from the CCR unit were being released and impacting groundwater because dilution and dispersion would tend to reduce the release concentrations between the CCR unit and the downgradient wells.

Site specific chloride values are variable at the site and range from 7.5 to 24.2 mg/L at downgradient wells other than MW-2016-12 and MW-2016-13 (MW-2016-2, MW-2016-9, MW-2016-10, and MW-2016-11) from 2016 to 2024. Chloride at upgradient[1] wells (MW-2016-3, MW-2016-4, MW-2016-5, MW-2016-6, and MW-2016-8) ranged from 4.7 to 41 mg/L as shown on time series graphs in Attachment A.

Further evaluation of sulfate concentrations, which are often viewed as a principal indicator of a CCR unit release to groundwater, demonstrate that MW-2016-12 and MW-2016-13 are not impacted by a release from the CCR landfill. Sulfate concentrations during the September 2024 sampling event at these locations were 19.5 mg/L and 13.3 mg/L at MW-2016-12 and MW-2016-13, respectively. The sulfate concentrations at the upgradient Landfill monitoring locations (MW-2016-3, MW-2016-4, MW-2016-5, MW-2016-6, and MW-2016-8) ranged from 31.6 to 910 mg/L between 2016 and 2024. Sulfate at MW-2016-12 and MW-2016-13 is lower than upgradient monitoring locations.

Likewise, total dissolved solids (TDS) concentrations during the September 2024 sampling event were 1520 and 1580 mg/L at MW-2016-12 and MW-2016-13, respectively. TDS at the upgradient[1] monitoring locations (MW-2016-3, MW-2016-4, MW-2016-5, MW-2016-6, and MW-2016-8) ranged from 1400 to 2330 mg/L between 2016 and 2024. TDS concentrations are variable at upgradient wells, and the TDS concentrations at MW-2016-12 and MW-2016-13 fall at the low end of the observed range in upgradient wells, suggesting there are no impacts from the CCR Unit at MW-2016-12 and MW-2016-13.

Although MW-2016-12 and MW-2016-13 have elevated chloride concentrations compared to upgradient wells, sulfate and TDS concentrations are lower or on the low end of the range of concentrations compared to the rest of the monitoring locations. The relatively low sulfate and TDS concentrations at MW-2016-12 and MW-2016-13 suggest that the chloride is unlikely to come from a CCR unit release because groundwater impacted by a release should have elevated concentrations of multiple Appendix III parameters. **Therefore, because there is more mass of chloride in the aquifer than in the ash itself and other indicators of the CCR unit are absent, we reject the hypothesis that the CCR unit is the source of the chloride observed at MW-2016-12 and MW-2016-13.**

3 Conclusion

An alternative source demonstration for chloride at this site is supported by the following lines of evidence:

[1] MW-2016-3 was an upgradient background well through 2023, but it is now considered a downgradient well due to the anticipated landfill expansion. Only data through 2023 was considered for the upgradient constituent ranges for this location. MW-2016-4 and MW-2016-5 were abandoned in Fall 2022, but background data from these locations were used to establish interwell prediction limits and are used to interpret upgradient constituent ranges.

- No CCRs have been placed in the landfill expansion area. Based on groundwater flow and seepage velocities, the elevated chloride concentrations could not have come from the CCR unit.

- The ash SPLP data has low chloride and high sulfate and TDS content. The opposite is true at MW-2016-12 and MW-2016-13; while there are somewhat elevated concentrations of chloride, there are low sulfate and TDS concentrations. Only this single detection monitoring parameter indicated an SSI for two of the seven downgradient monitoring wells. There is a relative absence of sulfate, a primary indicator of a release, in the groundwater as compared to the presence of sulfate in the water within the upgradient monitoring wells.

As this report demonstrates, the SSI analysis presented in Table 1 for monitoring wells MW-2016-12 and MW-2016-13 is attributed to a source other than the CCR Unit for chloride in the groundwater.

4 References

Barr, 2025. 2024 Annual Groundwater Monitoring and Corrective Action Report, LOS CCR Landfill. January 2025.

United States Environmental Protection Agency (USEPA), 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance. March 2009

5 Certification

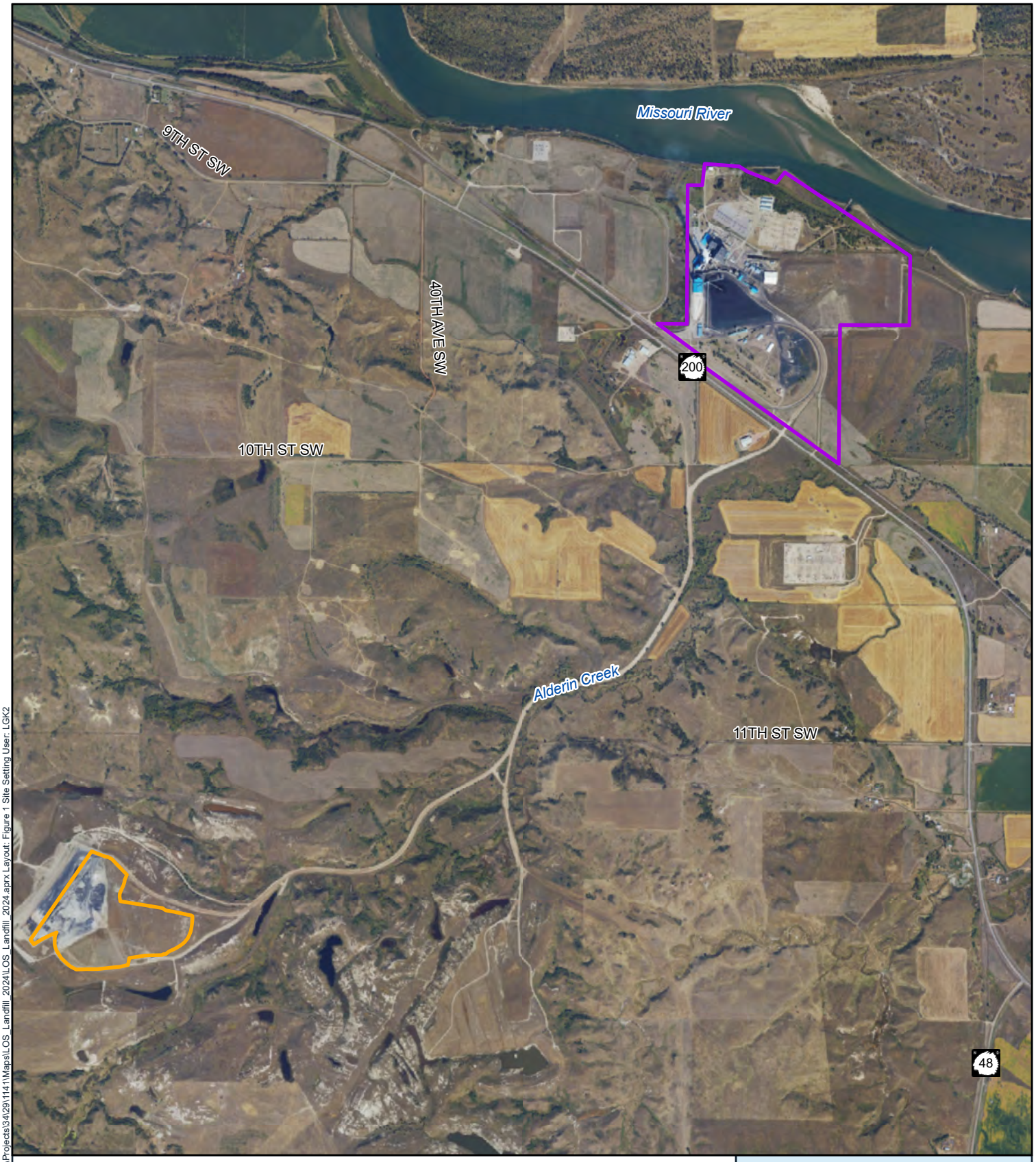
I certify that the written demonstration provided (above) for chloride in monitoring wells MW-2016-12 and MW-2016-13 is supported by the data, accurate, and consistent with our review of the groundwater data collected to date and as required under the CCR Rule ((§ 257.94(e)(2)). I further certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of North Dakota.

Kevin Solie, P.E.
ND P.E. License No. 9488
Barr Engineering Company

Dated this 27th day of March 2025

REGISTERED PROFESSIONAL ENGINEER
KEVIN L. SOLIE
PE-9488
DATE 3-27-2025
NORTH DAKOTA

Figures



Leland Olds Power Plant

LOS Landfill

N

0 1,500 3,000

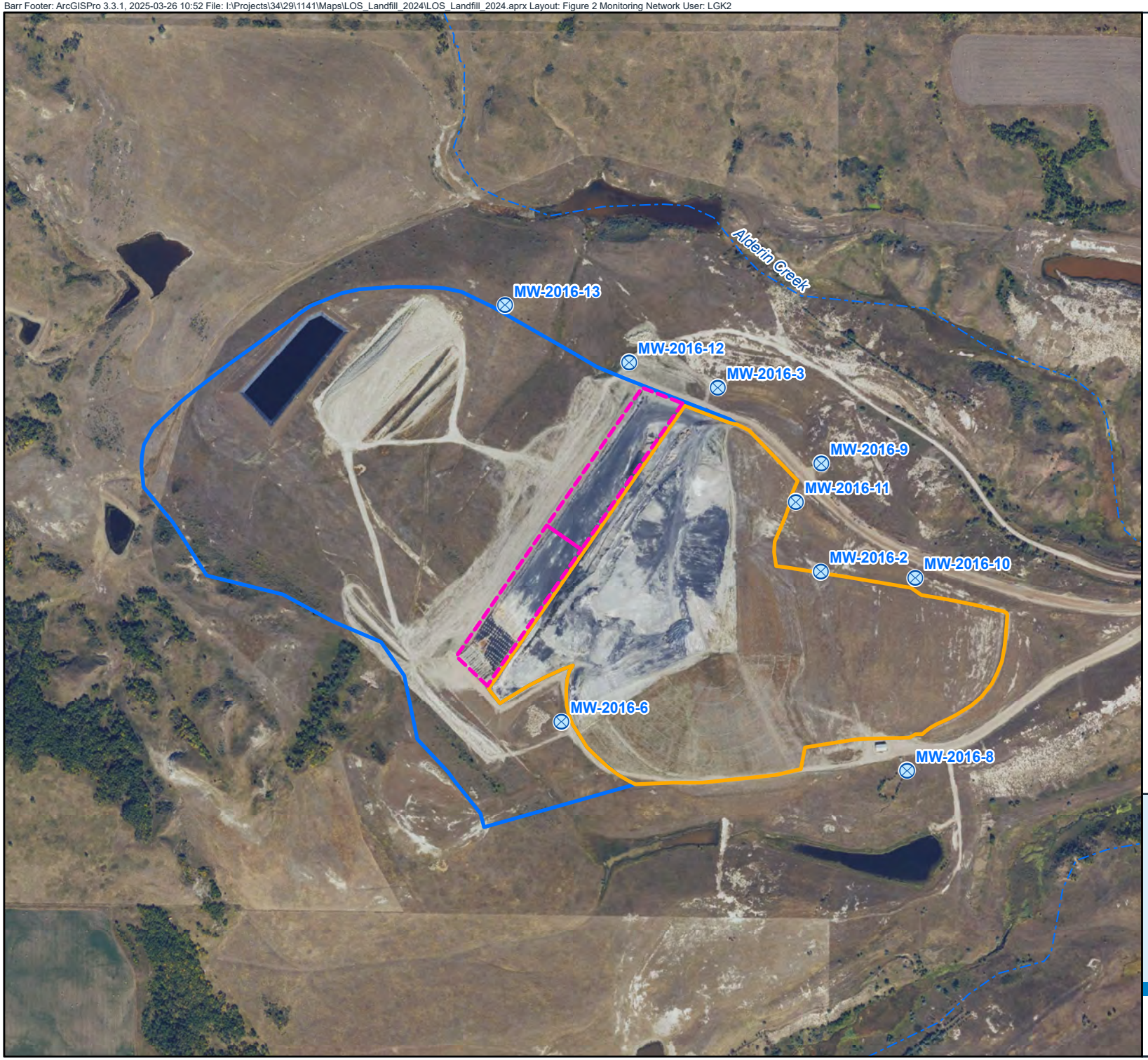
Feet

Imagery: USDA-NAIP, 2024

SITE SETTING
Leland Olds Station- Landfill
Basin Electric Power Cooperative

FIGURE 1

BARR



Monitoring Well
Existing Limits of Waste
Current Waste Placement as of 2025 (approximate)
Future Expansion Limit
Stream, Intermittent

N

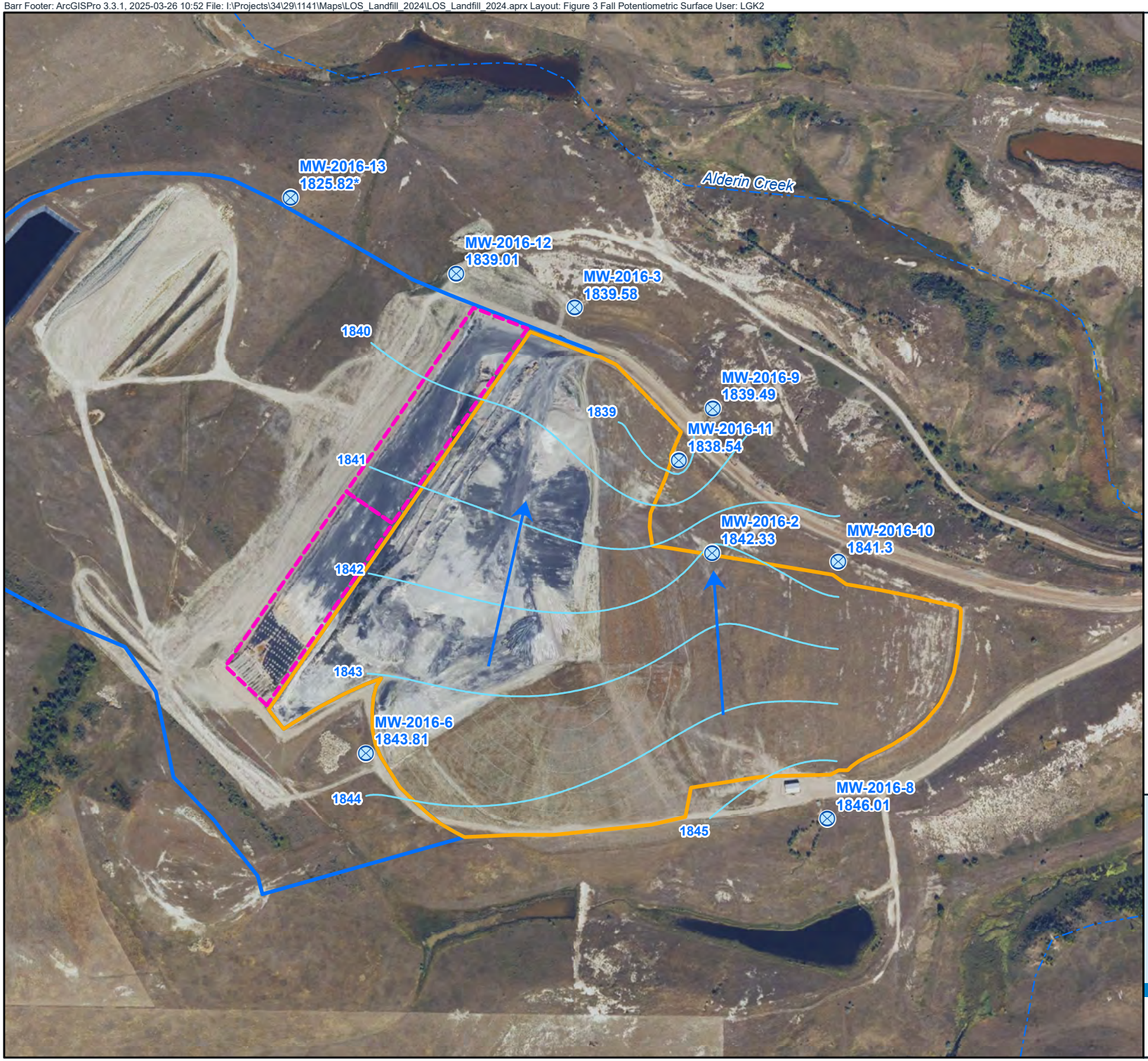
0 400 800
Feet

Imagery: USDA-NAIP, 2024

Monitoring Network
Leland Olds Station- Landfill
Basin Electric
Power Cooperative
Stanton, North Dakota

FIGURE 2

BARR



- Monitoring Well
- Existing Limits of Waste
- Current Waste Placement as of 2025 (approximate)
- Future Expansion Limit
- Groundwater Contour
- Flow Direction
- Stream, Intermittent

Notes:
Groundwater elevations were obtained on Sept. 10, 2024
*Groundwater Elevations not used for contouring

N

0 300 600
Feet

Imagery: USDA-NAIP, 2024

Fall 2024
Potentiometric Surface
Leland Olds Station- Landfill
Basin Electric Power Cooperative
Stanton, North Dakota

FIGURE 3

BARR

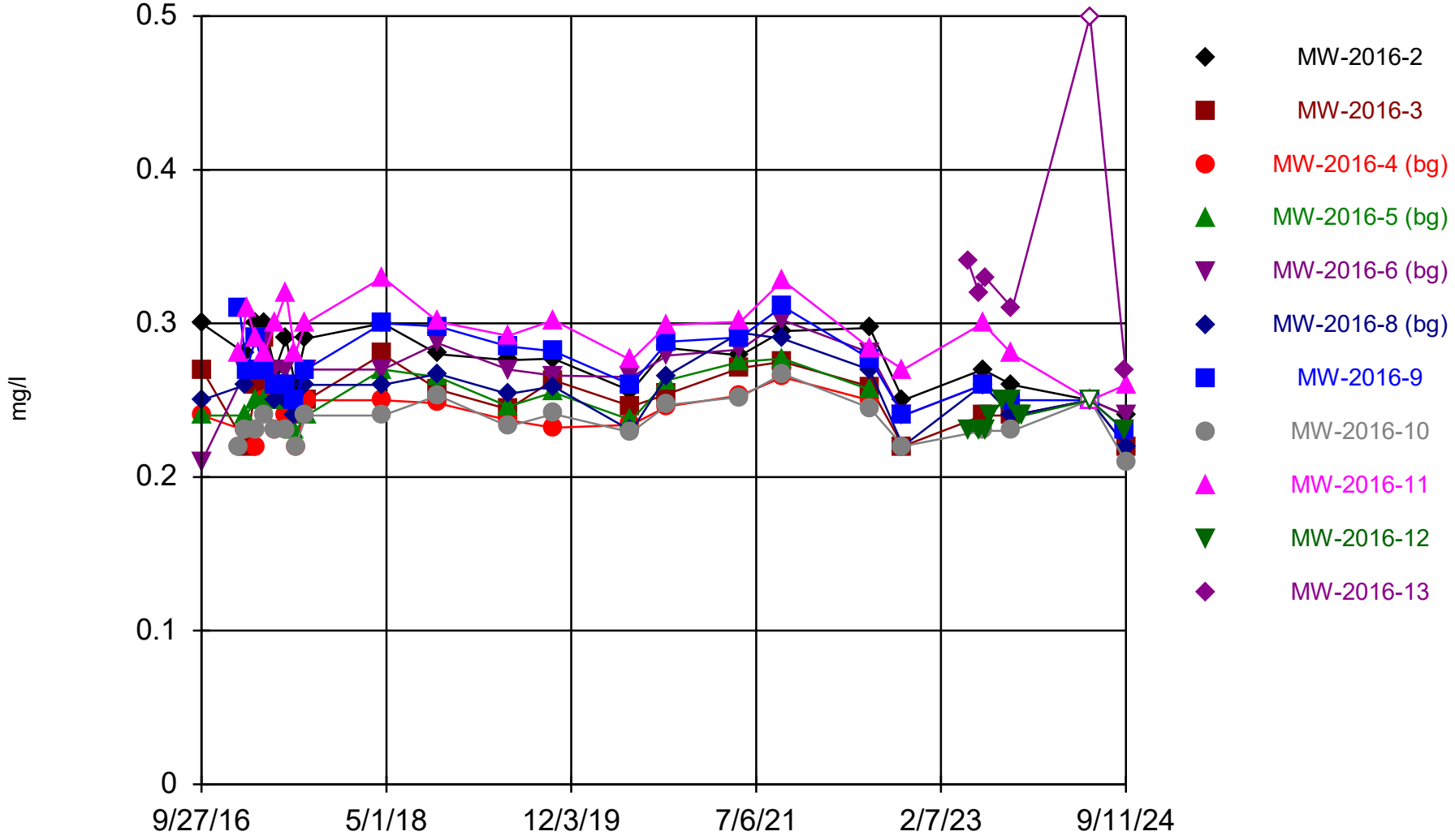
Attachments

Attachment A

Time Series Graphs

Hollow symbols indicate censored values.

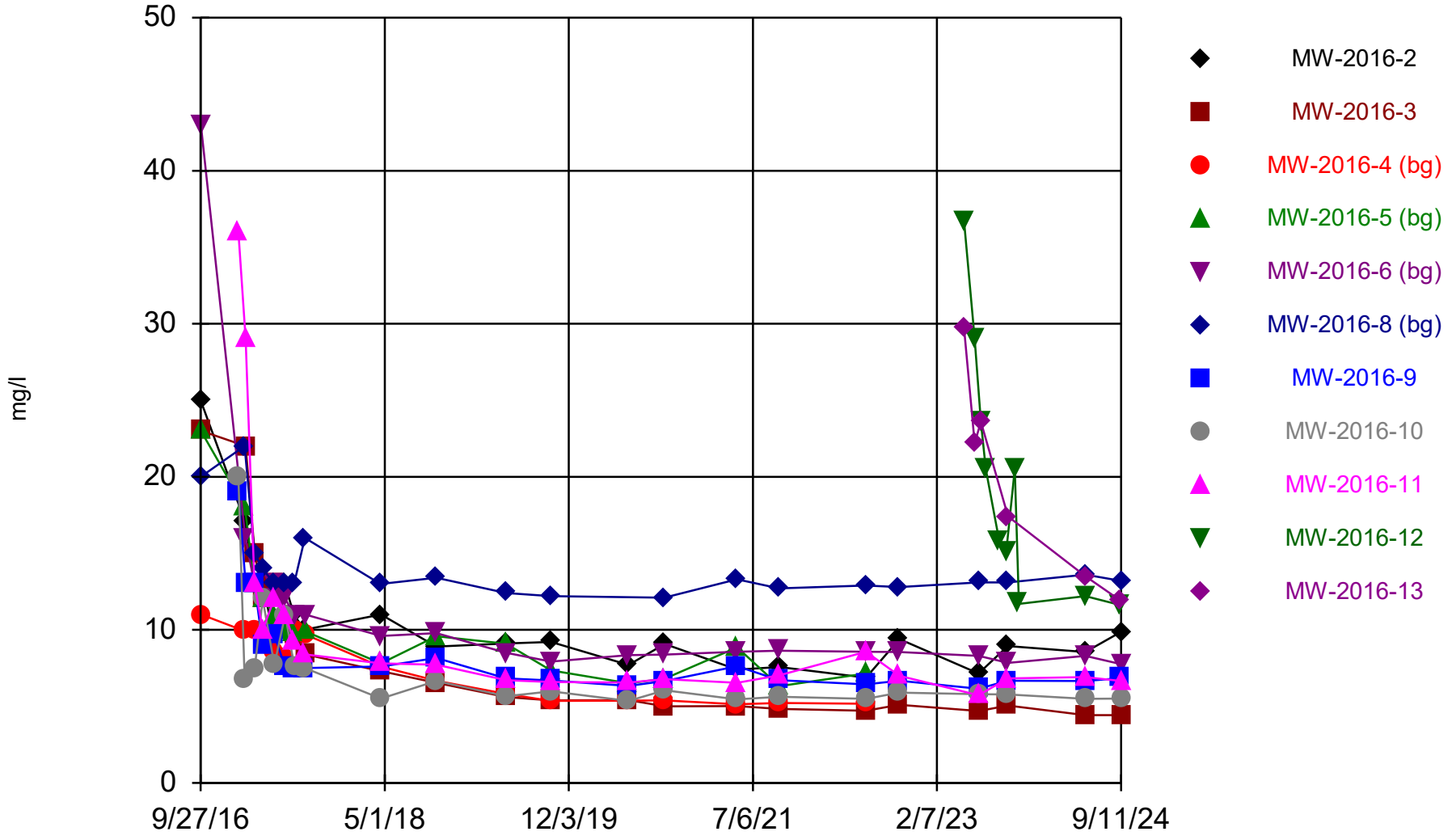
Boron, total



Time Series Analysis Run 1/2/2025 10:49 AM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill

Calcium, total

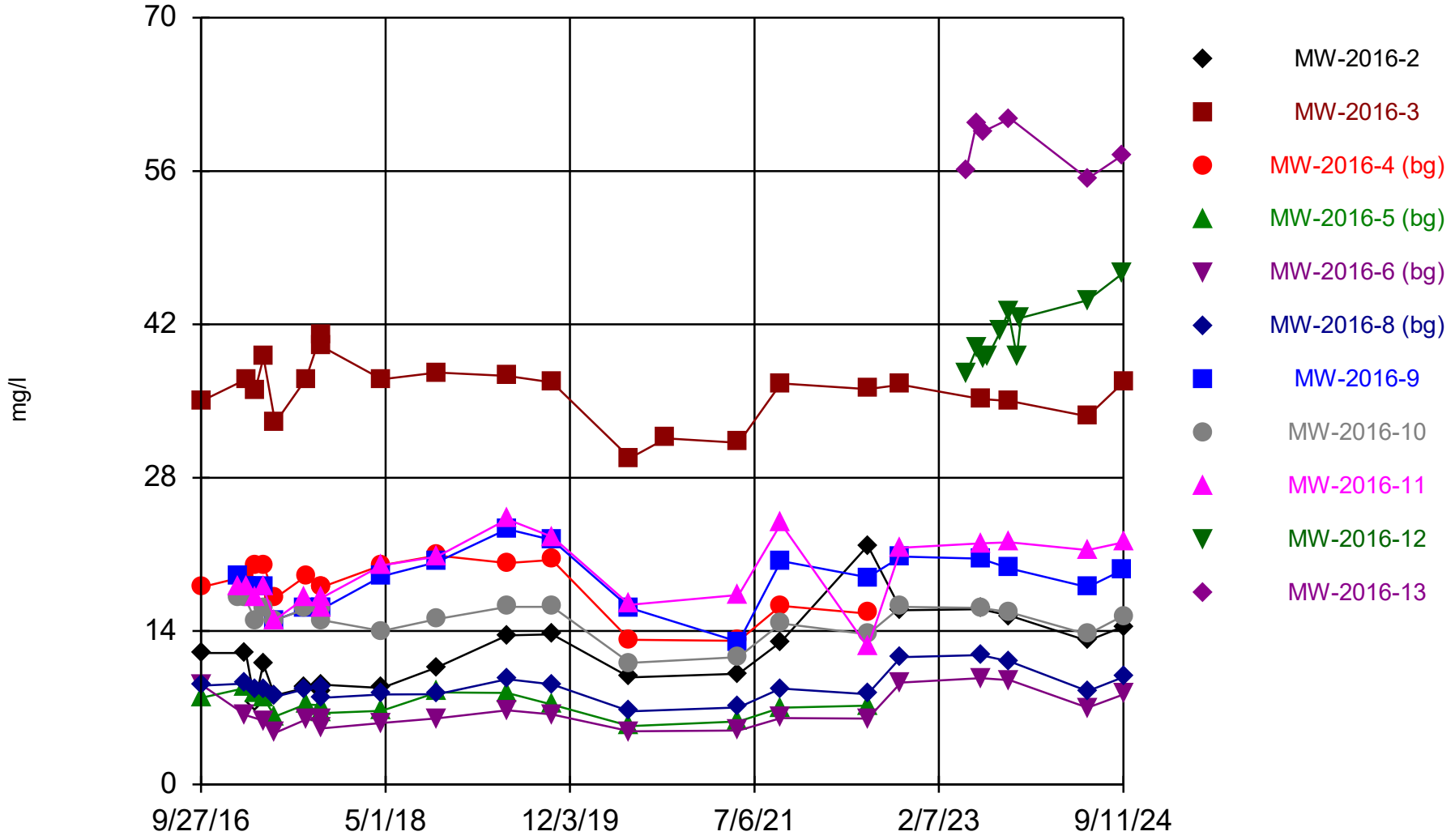


Time Series Analysis Run 1/2/2025 10:49 AM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill

Hollow symbols indicate censored values.

Chloride

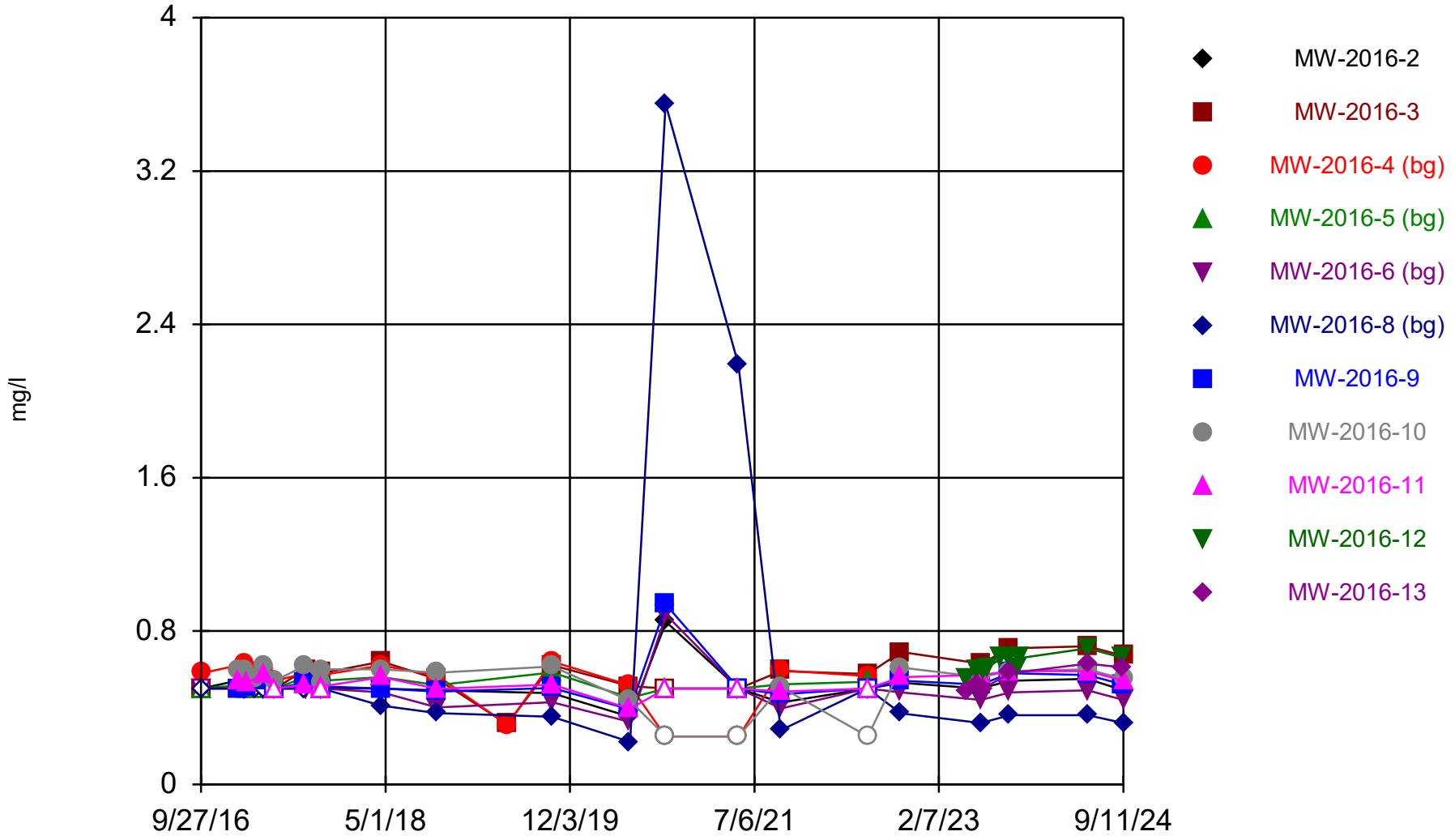


Time Series Analysis Run 1/2/2025 10:49 AM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill

Hollow symbols indicate censored values.

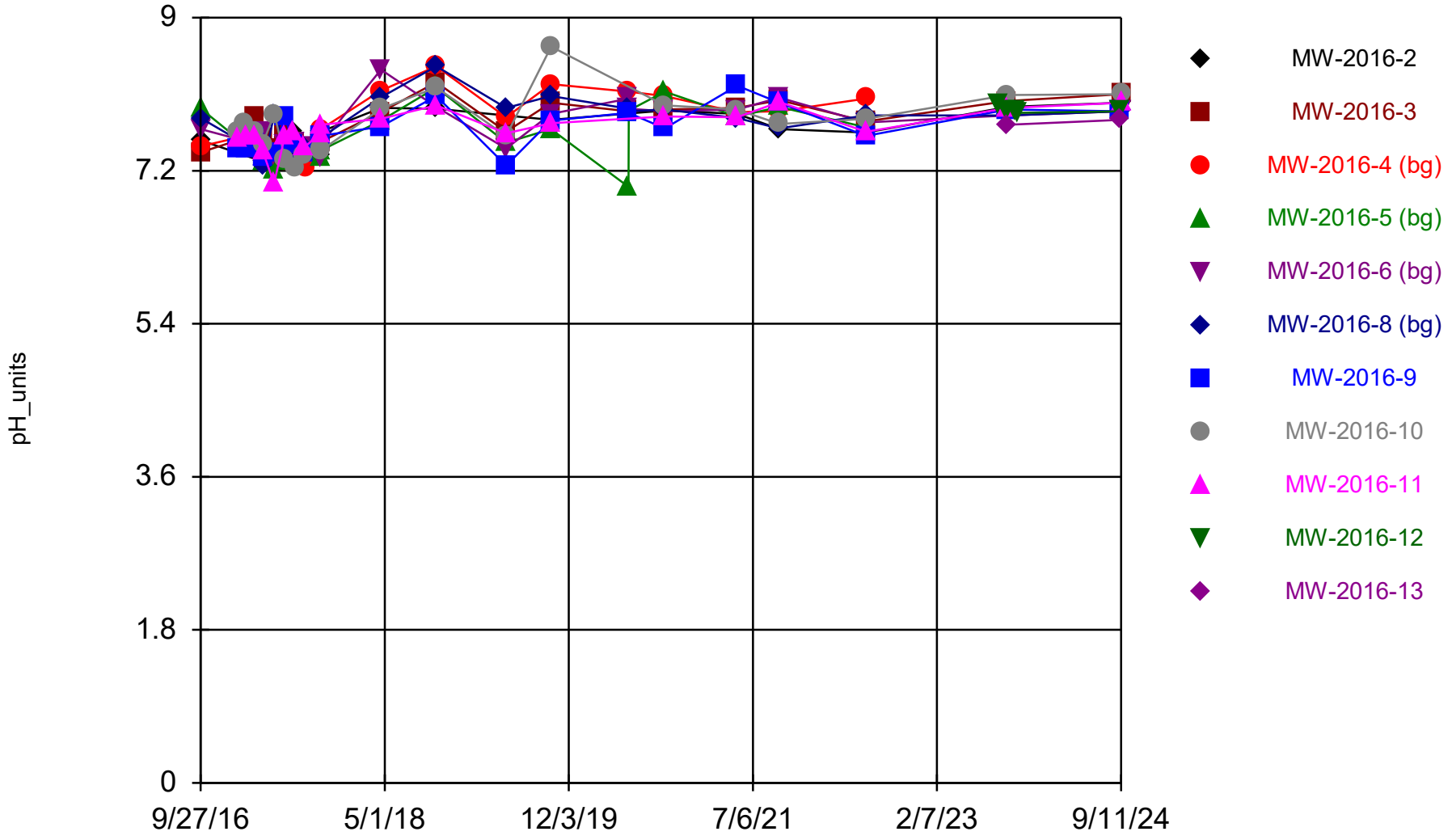
Fluoride



Time Series Analysis Run 1/2/2025 10:49 AM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill

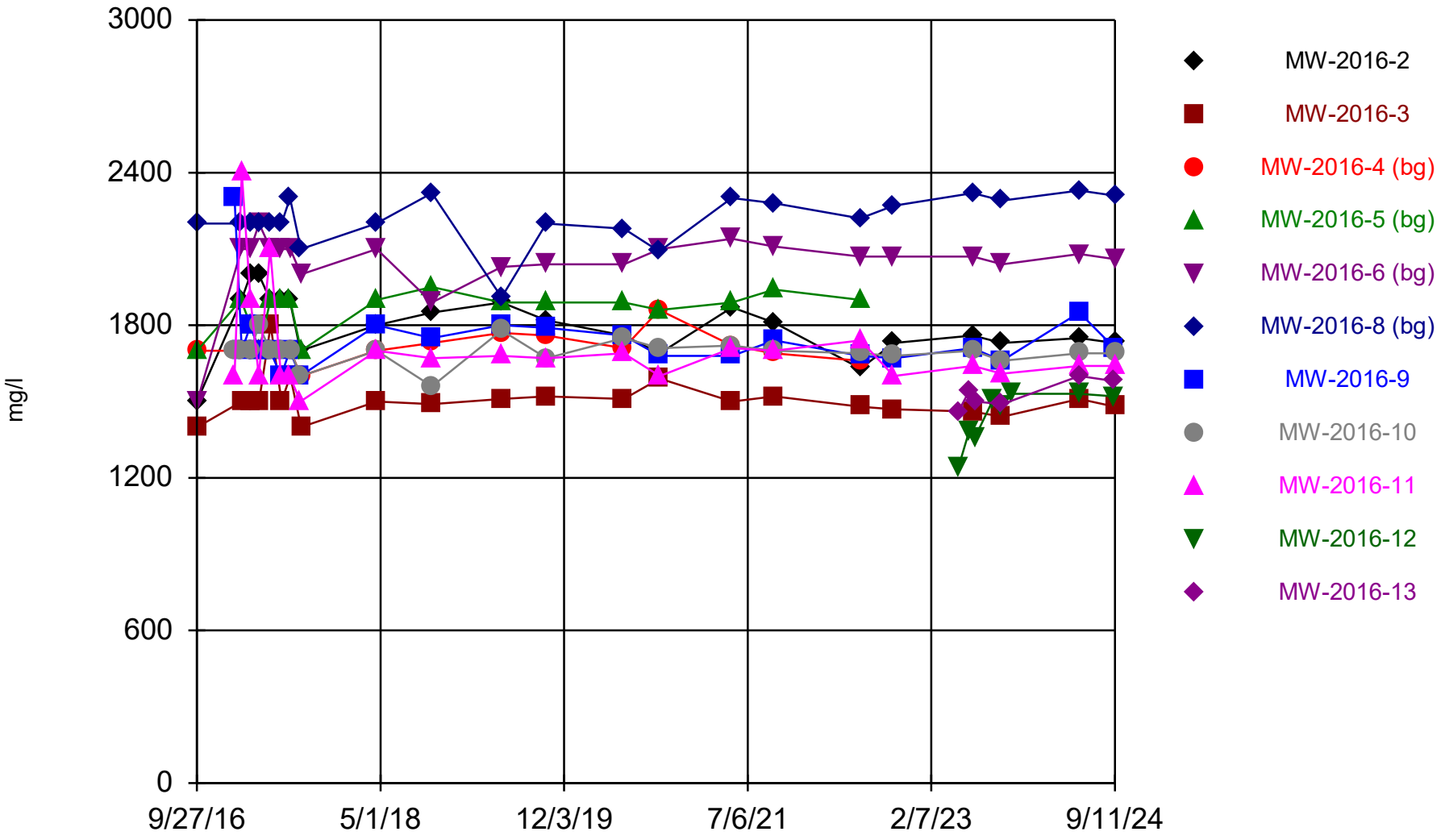
pH, field



Time Series Analysis Run 1/2/2025 10:49 AM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill

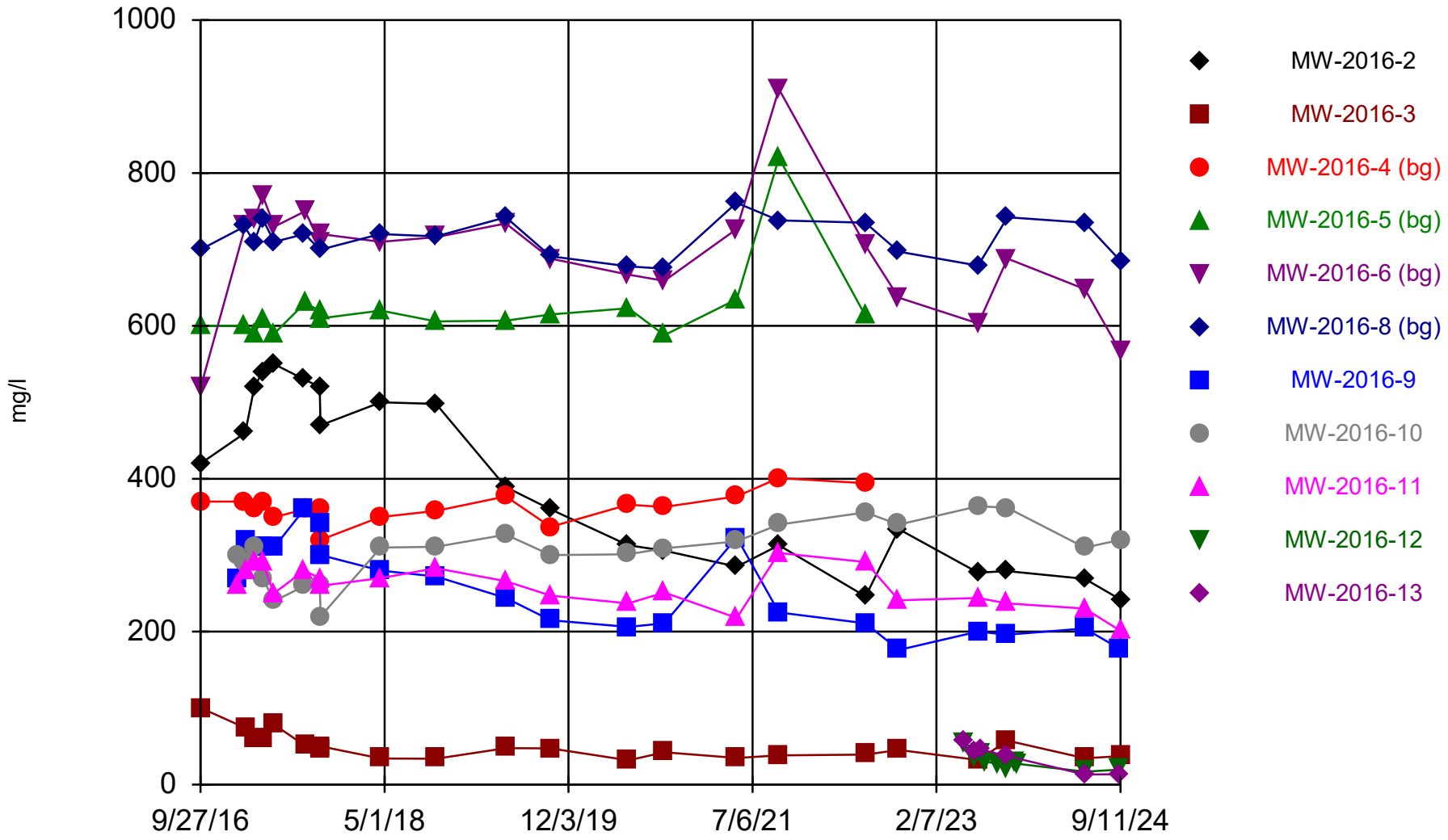
Solids, total dissolved



Time Series Analysis Run 1/2/2025 10:49 AM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill

Sulfate, as SO4



Time Series Analysis Run 1/2/2025 10:49 AM View: AIII

Leland Olds Station Client: Basin Electric Data: BEPC_LOS_CCR_Landfill

Attachment B

SPLP Data

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

Report Date: 15 Jan 10
Lab Number: 09-M4377
Work Order #:81-1634
Account #: 002040
Date Sampled: 18 Dec 09
Date Received: 21 Dec 09 10:00
PO #: 529077

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 1 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
SPLP Extraction				1312	29 Dec 09	SC
pH	12.6	units	N/A	SM4500 H+ B	30 Dec 09 17:00	JRS
Specific Conductance	15110	umhos/cm	N/A	SM2510-B	30 Dec 09 17:00	JRS
Total Suspended Solids	4	mg/l	1	SM2540-D	30 Dec 09 15:30	JRS
Total Alkalinity	2880	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Phenolphthalein Alk	2860	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Bicarbonate	< 4	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Carbonate	40	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Hydroxide	2840	mg/l CaCO3	0	SM2320-B	30 Dec 09 17:00	JRS
Tot Dis Solids(Summation)	5820	mg/l	NA	SM1030-F	15 Jan 10 13:45	Calculated
Total Hardness as CaCO3	3050	mg/l	NA	SM2340-B	6 Jan 10 9:00	Calculated
Hardness in grains/gallon	178	gr/gal	NA	SM2340-B	6 Jan 10 9:00	Calculated
Cation Summation	104	meq/L	NA	SM1030-F	6 Jan 10 9:00	Calculated
Anion Summation	95.6	meq/L	NA	SM1030-F	15 Jan 10 13:45	Calculated
Percent Error	4.32	%	NA	SM1030-F	15 Jan 10 13:45	Calculated
Sodium Adsorption Ratio	7.30		NA	USDA 20b	6 Jan 10 9:00	Calculated
Fluoride	2.75	mg/l	0.10	SM4500-F-C	30 Dec 09 17:00	JRS
Sulfate	1810	mg/l	5.00	ASTM D516-02	15 Jan 10 13:45	Morgan
Chloride	12.4	mg/l	1.0	SM4500-Cl-E	14 Jan 10 11:20	Morgan
Nitrate-Nitrite as N	< 0.1	mg/l	0.10	EPA 353.2	13 Jan 10 13:30	Morgan
Ammonia-Nitrogen as N	0.14	mg/l	0.10	EPA 350.1	4 Jan 10 12:20	Morgan
Phosphorus as P - Total	< 0.1	mg/l	0.10	EPA 365.1	12 Jan 10 13:00	Morgan
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	30 Dec 09 8:30	Eric
Calcium - Total	1220	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Magnesium - Total	< 5	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Sodium - Total	929	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Potassium - Total	116	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Aluminum - Total	< 0.1	mg/l	0.10	6010	5 Jan 10 8:55	Stacy
Barium - Total	0.36	mg/l	0.10	6010	5 Jan 10 8:55	Stacy
Iron - Total	< 0.1	mg/l	0.10	6010	5 Jan 10 8:55	Stacy
Boron - Total	< 1	mg/l	0.10	6010	7 Jan 10 10:00	Stacy
Antimony - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Arsenic - Total	0.0050	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Beryllium - Total	< 0.001	mg/l	0.0010	6020	4 Jan 10 9:34	Claudette
Cadmium - Total	0.00103	mg/l	0.00100	6020	4 Jan 10 9:34	Claudette
Chromium - Total	0.1642	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Cobalt - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Copper - Total	0.0224	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Lead - Total	0.0214	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
! = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 15 Jan 10
Lab Number: 09-M4377
Work Order #:81-1634
Account #: 002040
Date Sampled: 18 Dec 09
Date Received: 21 Dec 09 10:00
PO #: 529077

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 1 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Manganese - Total	< 0.001	mg/l	0.0010	6020	4 Jan 10 9:34	Claudette
Nickel - Total	0.0159	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Selenium - Total	0.0336	mg/l	0.0020	6020	4 Jan 10 15:28	Claudette
Silver - Total	< 0.001	mg/l	0.0010	6020	4 Jan 10 9:34	Claudette
Thallium - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Vanadium - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Zinc - Total	< 0.01	mg/l	0.0100	6020	4 Jan 10 9:34	Claudette

All analysese were performed on the extract from an ASTM D3987 extraction with a modified solution to solids ratio of 4:1.

Approved by: C Cantell

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
: = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 15 Jan 10
Lab Number: 09-M4378
Work Order #:81-1634
Account #: 002040
Date Sampled: 18 Dec 09
Date Received: 21 Dec 09 10:00
PO #: 529077

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 2 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
SPLP Extraction				1312	29 Dec 09	SC
pH	12.4	units	N/A	SM4500 H+ B	30 Dec 09 17:00	JRS
Specific Conductance	9842	umhos/cm	N/A	SM2510-B	30 Dec 09 17:00	JRS
Total Suspended Solids	1	mg/l	1	SM2540-D	30 Dec 09 15:30	JRS
Total Alkalinity	1520	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Phenolphthalein Alk	1500	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Bicarbonate	< 4	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Carbonate	40	mg/l CaCO3	4	SM2320-B	30 Dec 09 17:00	JRS
Hydroxide	1480	mg/l CaCO3	0	SM2320-B	30 Dec 09 17:00	JRS
Tot Dis Solids(Summation)	3830	mg/l	NA	SM1030-F	15 Jan 10 13:45	Calculated
Total Hardness as CaCO3	542	mg/l	NA	SM2340-B	6 Jan 10 9:00	Calculated
Hardness in grains/gallon	31.7	gr/gal	NA	SM2340-B	6 Jan 10 9:00	Calculated
Cation Summation	61.3	meq/L	NA	SM1030-F	6 Jan 10 9:00	Calculated
Anion Summation	60.4	meq/L	NA	SM1030-F	15 Jan 10 13:45	Calculated
Percent Error	0.72	%	NA	SM1030-F	15 Jan 10 13:45	Calculated
Sodium Adsorption Ratio	18.5		NA	USDA 20b	6 Jan 10 9:00	Calculated
Fluoride	2.56	mg/l	0.10	SM4500-F-C	30 Dec 09 17:00	JRS
Sulfate	1420	mg/l	5.00	ASTM D516-02	15 Jan 10 13:45	Morgan
Chloride	14.8	mg/l	1.0	SM4500-Cl-E	14 Jan 10 11:20	Morgan
Nitrate-Nitrite as N	0.29	mg/l	0.10	EPA 353.2	13 Jan 10 13:30	Morgan
Ammonia-Nitrogen as N	< 0.1	mg/l	0.10	EPA 350.1	4 Jan 10 12:20	Morgan
Phosphorus as P - Total	< 0.1	mg/l	0.10	EPA 365.1	12 Jan 10 13:00	Morgan
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	30 Dec 09 8:30	Eric
Calcium - Total	217	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Magnesium - Total	< 5	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Sodium - Total	1010	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Potassium - Total	255	mg/l	1.0	6010	6 Jan 10 9:00	Stacy
Aluminum - Total	0.14	mg/l	0.10	6010	5 Jan 10 8:55	Stacy
Barium - Total	0.40	mg/l	0.10	6010	5 Jan 10 8:55	Stacy
Iron - Total	< 0.1	mg/l	0.10	6010	5 Jan 10 8:55	Stacy
Boron - Total	< 1	mg/l	0.10	6010	7 Jan 10 10:00	Stacy
Antimony - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Arsenic - Total	0.0068	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Beryllium - Total	< 0.001	mg/l	0.0010	6020	4 Jan 10 9:34	Claudette
Cadmium - Total	0.00216	mg/l	0.00100	6020	4 Jan 10 9:34	Claudette
Chromium - Total	0.2055	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Cobalt - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Copper - Total	0.0225	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Lead - Total	0.0067	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
: = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

Report Date: 15 Jan 10
Lab Number: 09-M4378
Work Order #:81-1634
Account #: 002040
Date Sampled: 18 Dec 09
Date Received: 21 Dec 09 10:00
PO #: 529077

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 2 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Manganese - Total	< 0.001	mg/l	0.0010	6020	4 Jan 10 9:34	Claudette
Nickel - Total	0.0030	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Selenium - Total	0.0491	mg/l	0.0020	6020	4 Jan 10 15:28	Claudette
Silver - Total	< 0.001	mg/l	0.0010	6020	4 Jan 10 9:34	Claudette
Thallium - Total	< 0.002	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Vanadium - Total	0.0212	mg/l	0.0020	6020	4 Jan 10 9:34	Claudette
Zinc - Total	< 0.01	mg/l	0.0100	6020	4 Jan 10 9:34	Claudette

All analysese were performed on the extract from an ASTM D3987 extraction with a modified solution to solids ratio of 4:1.

Approved by: _____

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
! = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com
MEMBER ACIL

Sample Number: 09-M3826

Report Date: 1/15/10

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Work Order #: 81-1488

Date Collected: 11/ 6/09

Date Received: 11/11/09

Sample Description: Unit 1 Fly Ash

* PROXIMATE *			* ULTIMATE *		
ANALYTE	AS RECEIVED	DRY BASIS	ANALYTE	AS RECEIVED	DRY BASIS

* SULFUR FORMS *			* ASH FUSION *		
ANALYTE	AS RECEIVED	DRY BASIS	ANALYTE	REDUCING	OXIDIZING

* MINERAL ANALYSIS OF ASH *			* MISCELLANEOUS *		
ANALYTE	DRY BASIS		ANALYTE	AS RECEIVED	DRY BASIS
Silicon Dioxide in Ash	37.48	wt. %			
Aluminum Oxide in Ash	13.41	wt. %			
Titanium Dioxide in Ash	0.56	wt. %			
Iron Oxide in Ash	7.11	wt. %			
Calcium Oxide in Ash	21.41	wt. %			
Magnesium Oxide in Ash	8.53	wt. %			
Potassium Oxide in Ash	1.07	wt. %			
Sodium Oxide in Ash	4.05	wt. %			
SO3 in Ash	2.38	wt. %			
P2O5 in Ash	0.46	wt. %			
Strontium Oxide in Ash	0.63	wt. %			
Barium Oxide in Ash	1.00	wt. %			
Manganese Dioxide in Ash	0.12	wt. %			

Approved By: D. Zarda

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Sample Number: 09-M3828

Report Date: 1/15/10

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Work Order #: 81-1488

Date Collected: 11/ 6/09

Date Received: 11/11/09

Sample Description: Unit 2 Fly Ash

*** PROXIMATE ***

ANALYTE	AS RECEIVED	DRY BASIS

*** ULTIMATE ***

ANALYTE	AS RECEIVED	DRY BASIS

*** SULFUR FORMS ***

ANALYTE	AS RECEIVED	DRY BASIS

*** ASH FUSION ***

ANALYTE	REDUCING	OXIDIZING

*** MINERAL ANALYSIS OF ASH ***

ANALYTE	DRY BASIS	
Silicon Dioxide in Ash	29.98	wt. %
Aluminum Oxide in Ash	12.12	wt. %
Titanium Dioxide in Ash	0.46	wt. %
Iron Oxide in Ash	5.11	wt. %
Calcium Oxide in Ash	20.93	wt. %
Magnesium Oxide in Ash	7.86	wt. %
Potassium Oxide in Ash	1.62	wt. %
Sodium Oxide in Ash	6.32	wt. %
SO3 in Ash	11.38	wt. %
P2O5 in Ash	0.42	wt. %
Strontium Oxide in Ash	0.65	wt. %
Barium Oxide in Ash	1.25	wt. %
Manganese Dioxide in Ash	0.10	wt. %

*** MISCELLANEOUS ***

ANALYTE	AS RECEIVED	DRY BASIS

Approved By: D. Zardus

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

Report Date: 15 Jan 10
Lab Number: 09-M3830
Work Order #:81-1488
Account #: 002040
Date Sampled: 6 Nov 09
Date Received: 11 Nov 09 10:00

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 1 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
pH	12.6	units	N/A	SM4500 H+ B	18 Nov 09 17:00	JRS
Specific Conductance	14430	umhos/cm	N/A	SM2510-B	18 Nov 09 17:00	JRS
Total Suspended Solids	2	mg/l	1	SM2540-D	18 Nov 09 15:50	JRS
Total Alkalinity	2820	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Phenolphthalein Alk	2810	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Bicarbonate	< 4	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Carbonate	20	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Hydroxide	2800	mg/l CaCO3	0	SM2320-B	18 Nov 09 17:00	JRS
Tot Dis Solids(Summation)	5520	mg/l	NA	SM1030-F	20 Nov 09 14:00	Calculated
Total Hardness as CaCO3	3170	mg/l	NA	SM2340-B	20 Nov 09 8:55	Calculated
Hardness in grains/gallon	185	gr/gal	NA	SM2340-B	20 Nov 09 8:55	Calculated
Cation Summation	100	meq/L	NA	SM1030-F	23 Nov 09 12:00	Calculated
Anion Summation	91.1	meq/L	NA	SM1030-F	20 Nov 09 14:00	Calculated
Percent Error	4.84	%	NA	SM1030-F	23 Nov 09 12:00	Calculated
Sodium Adsorption Ratio	6.08		NA	USDA 20b	20 Nov 09 8:55	Calculated
Gross Alpha Radiation	Attached	pCi/l			21 Dec 09 5:22	
Radium 226	Attached	pCi/l			15 Dec 09 13:38	
Radium 228	Attached	pCi/l			9 Dec 09 15:28	
Fluoride	3.45	mg/l	0.10	SM4500-F-C	19 Nov 09 14:00	Morgan
Sulfate	1650	mg/l	5.00	ASTM D516-02	20 Nov 09 14:00	Morgan
Chloride	11.8	mg/l	1.0	SM4500-Cl-E	20 Nov 09 10:00	Morgan
Nitrate-Nitrite as N	0.11	mg/l	0.10	EPA 353.2	18 Nov 09 10:30	Morgan
Ammonia-Nitrogen as N	< 0.1	mg/l	0.10	EPA 350.1	23 Nov 09 12:00	Morgan
Phosphorus as P - Total	0.18	mg/l	0.10	EPA 365.1	1 Dec 09 12:30	Morgan
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	20 Nov 09 8:30	Eric
Calcium - Total	1270	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Magnesium - Total	< 5	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Sodium - Total	790	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Potassium - Total	103	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Aluminum - Total	< 0.5	mg/l	0.10	6010	23 Nov 09 8:57	Stacy
Iron - Total	< 0.5	mg/l	0.10	6010	23 Nov 09 8:57	Stacy
Boron - Total	0.20	mg/l	0.10	6010	2 Dec 09 9:23	Stacy
Antimony - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Arsenic - Total	0.0068	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Barium - Total	0.4655	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Beryllium - Total	< 0.001	mg/l	0.0010	6020	25 Nov 09 14:25	Claudette
Cadmium - Total	< 0.002	mg/l	0.00100	6020	24 Nov 09 9:18	Claudette
Chromium - Total	0.1451	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Cobalt - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Copper - Total	0.0063	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
: = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

Report Date: 15 Jan 10
Lab Number: 09-M3830
Work Order #:81-1488
Account #: 002040
Date Sampled: 6 Nov 09
Date Received: 11 Nov 09 10:00

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 1 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Lead - Total	0.0058	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Manganese - Total	0.0031	mg/l	0.0010	6020	24 Nov 09 9:18	Claudette
Nickel - Total	0.0301	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Selenium - Total	0.0302	mg/l	0.0020	6020	24 Nov 09 14:10	Claudette
Silver - Total	< 0.01**	mg/l	0.0010	6020	24 Nov 09 9:18	Claudette
Thallium - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Vanadium - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Zinc - Total	< 0.02	mg/l	0.0100	6020	24 Nov 09 9:18	Claudette
Uranium	< 0.002	mg/l	0.002	6020	24 Nov 09 9:18	Claudette

All analyses were performed on the extract from an ASTM D3987 extraction with a modified solution to solids ratio of 4:1.

** Silver was reported at ICP Reporting Limits for historical purposes.

Approved by: C Canuel

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
: = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com

MEMBER ACIL

Report Date: 15 Jan 10
Lab Number: 09-M3832
Work Order #:81-1488
Account #: 002040
Date Sampled: 6 Nov 09
Date Received: 11 Nov 09 10:00

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 2 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
pH	12.4	units	N/A	SM4500 H+ B	18 Nov 09 17:00	JRS
Specific Conductance	28610	umhos/cm	N/A	SM2510-B	18 Nov 09 17:00	JRS
Total Suspended Solids	34	mg/l	1	SM2540-D	18 Nov 09 15:50	JRS
Total Alkalinity	2260	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Phenolphthalein Alk	2200	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Bicarbonate	< 4	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Carbonate	120	mg/l CaCO3	4	SM2320-B	18 Nov 09 17:00	JRS
Hydroxide	2140	mg/l CaCO3	0	SM2320-B	18 Nov 09 17:00	JRS
Tot Dis Solids(Summation)	21100	mg/l	NA	SM1030-F	25 Nov 09 9:00	Calculated
Total Hardness as CaCO3	1410	mg/l	NA	SM2340-B	20 Nov 09 8:55	Calculated
Hardness in grains/gallon	82.2	gr/gal	NA	SM2340-B	20 Nov 09 8:55	Calculated
Cation Summation	294	meq/L	NA	SM1030-F	23 Nov 09 12:00	Calculated
Anion Summation	316	meq/L	NA	SM1030-F	25 Nov 09 9:00	Calculated
Percent Error	-3.64	%	NA	SM1030-F	25 Nov 09 9:00	Calculated
Sodium Adsorption Ratio	69.6		NA	USDA 20b	20 Nov 09 8:55	Calculated
Gross Alpha Radiation	Attached	pCi/l			11 Jan 10 23:14	
Radium 226	Attached	pCi/l			21 Dec 09 15:36	
Radium 228	Attached	pCi/l			16 Dec 09 16:15	
Fluoride	4.05	mg/l	0.10	SM4500-F-C	19 Nov 09 14:00	Morgan
Sulfate	13000	mg/l	5.00	ASTM D516-02	24 Nov 09 13:00	Morgan
Chloride	7.6	mg/l	1.0	SM4500-Cl-E	24 Nov 09 8:00	Morgan
Nitrate-Nitrite as N	2.21	mg/l	0.10	EPA 353.2	25 Nov 09 9:00	Morgan
Ammonia-Nitrogen as N	1.05	mg/l	0.10	EPA 350.1	23 Nov 09 12:00	Morgan
Phosphorus as P - Total	< 0.1	mg/l	0.10	EPA 365.1	1 Dec 09 12:30	Morgan
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	20 Nov 09 8:30	Eric
Calcium - Total	563	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Magnesium - Total	< 5	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Sodium - Total	6040	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Potassium - Total	123	mg/l	1.0	6010	20 Nov 09 8:55	Stacy
Aluminum - Total	< 1	mg/l	0.10	6010	23 Nov 09 8:57	Stacy
Iron - Total	< 1	mg/l	0.10	6010	23 Nov 09 8:57	Stacy
Boron - Total	21.4	mg/l	0.10	6010	2 Dec 09 9:23	Stacy
Antimony - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Arsenic - Total	0.0702	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Barium - Total	0.1602	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Beryllium - Total	< 0.001	mg/l	0.0010	6020	25 Nov 09 14:25	Claudette
Cadmium - Total	0.00430	mg/l	0.00100	6020	24 Nov 09 9:18	Claudette
Chromium - Total	0.6732	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Cobalt - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Copper - Total	0.1163	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
: = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

MINNESOTA VALLEY TESTING LABORATORIES, INC.
1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
1411 S. 12th St. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724
51 L Avenue ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.mvtl.com
MEMBER ACIL

Report Date: 15 Jan 10
Lab Number: 09-M3832
Work Order #:81-1488
Account #: 002040
Date Sampled: 6 Nov 09
Date Received: 11 Nov 09 10:00

Jim Berg
Basin Electric Power Cooperative
1717 E. Interstate Avenue
Bismarck ND 58503

Sample Description: Unit 2 Fly Ash

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Lead - Total	0.0090	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Manganese - Total	0.0043	mg/l	0.0010	6020	24 Nov 09 9:18	Claudette
Nickel - Total	0.0124	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Selenium - Total	0.0693	mg/l	0.0020	6020	24 Nov 09 14:10	Claudette
Silver - Total	< 0.01**	mg/l	0.0010	6020	24 Nov 09 9:18	Claudette
Thallium - Total	< 0.002	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Vanadium - Total	0.0978	mg/l	0.0020	6020	24 Nov 09 9:18	Claudette
Zinc - Total	0.1528	mg/l	0.0100	6020	24 Nov 09 9:18	Claudette
Uranium	< 0.002	mg/l	0.002	6020	24 Nov 09 9:18	Claudette

All analyses were performed on the extract from an ASTM D3987 extraction with a modified solution to solids ratio of 4:1.

** Silver was reported at ICP Reporting Limits for historical purposes.

Approved by: C Cantrell

RL = Method Reporting Limit

Elevated "Less Than Result" (<): @ = Due to sample matrix
: = Due to sample quantity
= Due to sample concentration
+ = Due to extract volume

CERTIFICATION: MN LAB # 038-999-267 ND # ND-00016

Appendix C

Groundwater Flow Rate

Appendix C
Groundwater Flow Rate
2025 Annual Monitoring Report
LOS Landfill CCR Groundwater Compliance

LOS - Landfill Groundwater Velocity Calculation

Sampling Date	6/2/2025

Upgradient: MW-2016-6

Top of Casing Elevation	1939.31	ft amsl
Depth to Water	94.47	ft below TOC
Water Level Elevation	1844.84	ft amsl

Downgradient: MW-2016-12

Top of Casing Elevation	1911.52	ft amsl
Depth to Water	72.10	ft below TOC
Water Level Elevation	1839.42	ft amsl

horizontal hydraulic	1.21E-05	cm/s	*2023 AGMCAR (AECOM, 2024)*
conductivity (Kh)	0.0343	ft/day	
porosity (n)	0.185		*2023 AGMCAR (AECOM, 2024)*
horizontal distance	2165	ft	
WL elevation difference	5.42	ft	
gradient (i)	2.503E-03	ft/ft	
linear velocity (V)	4.64E-04	ft/day	
V	**0.2**	ft/yr	

Appendix C
Groundwater Flow Rate
2025 Annual Monitoring Report
LOS Landfill CCR Groundwater Compliance

LOS - Landfill Groundwater Velocity Calculation

Sampling Date	8/11/2025

Upgradient: MW-2016-6

Top of Casing Elevation	1939.31	ft amsl
Depth to Water	96.39	ft below TOC
Water Level Elevation	1842.92	ft amsl

Downgradient: MW-2016-3

Top of Casing Elevation	1939.88	ft amsl
Depth to Water	99.55	ft below TOC
Water Level Elevation	1840.33	ft amsl

horizontal hydraulic	1.21E-05	cm/s	
conductivity (Kh)	0.0343	ft/day	*2023 AGMCAR (AECOM, 2024)*
porosity (n)	0.185		
horizontal distance	2204	ft	*2023 AGMCAR (AECOM, 2024)*
WL elevation difference	2.59	ft	
gradient (i)	1.175E-03	ft/ft	
linear velocity (V)	2.18E-04	ft/day	
V	**0.1**	ft/yr	

Appendix D

Baseline Sample Results

Appendix D
Baseline Sample Results
2025 Annual Monitoring Report
BEPC LOS Landfill

		Location	MW-2016-13	MW-2016-13	MW-2016-13	MW-2016-13	MW-2016-13	MW-2016-13	MW-2016-13	MW-2016-13
		Date	5/04/2023	6/07/2023	6/26/2023	9/20/2023	5/21/2024	9/10/2024	6/03/2025	8/12/2025
		Sample Type	N	N	N	N	N	N	N	N
		Data Status	SSource	SSource	SSource	SSource	No QC	No QC	No QC	No QC
Parameter	Analysis Location	Units								
General Parameters										
Alkalinity, bicarbonate, as CaCO3	Lab	mg/l	--	--	--	--	--	--	**1234**	**1279**
Alkalinity, carbonate, as CO3	Lab	mg/l	--	--	--	--	--	--	< 20.5 U	< 20.5 U
Alkalinity, total, as CaCO3	Lab	mg/l	--	--	--	--	--	--	**1234**	**1279**
Chloride	Lab	mg/l	**56.0**	**60.4**	**59.6**	**60.8**	**55.3**	**57.5**	**60.3**	**57.1**
Fluoride	Lab	mg/l	**0.48**	**0.52**	**0.50**	**0.58**	**0.63**	**0.61**	**0.55**	**0.61**
pH	Lab	pH units	--	--	--	--	--	--	**7.8**	**7.7**
Solids, total dissolved	Lab	mg/l	**1460**	**1540**	**1500**	**1490**	**1600**	**1580**	**1660**	**1650**
Sulfate, as SO4	Lab	mg/l	**58.1**	**42.2**	**45.7**	**37.0**	**12.9**	**13.3**	**9.28**	**15.9**
Dissolved oxygen	Field	mg/l	--	--	--	--	**0.19**	**0.23**	**0.36**	**0.23**
pH	Field	pH units	**7.48**	**7.77**	**7.73**	**7.74**	**7.79**	**7.76**	**7.33**	**7.50**
Redox (oxidation potential)	Field	mV	--	--	--	--	**-124.5**	**-87.6**	**48.6**	**-52.4**
Specific conductance @ 25 deg C	Field	umhos/cm	--	--	--	--	**2428**	**2495**	**2525**	**2552**
Temperature	Field	deg C	--	--	--	--	**9.4**	**12.0**	**10.8**	**12.2**
Turbidity	Field	NTU	--	--	--	--	**3.06**	**2.19**	**3.73**	**2.36**
Total Metals										
Antimony	Lab	mg/l	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U
Arsenic	Lab	mg/l	< 0.002 U	< 0.002 U	**0.0021**	< 0.002 U	**0.0022**	**0.0025**	**0.0021**	**0.0023**
Barium	Lab	mg/l	**0.0928**	**0.0713**	**0.0588**	**0.0603**	**0.0576**	**0.0592**	**0.0462**	**0.0488**
Beryllium	Lab	mg/l	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U
Boron	Lab	mg/l	**0.34**	**0.32**	**0.33**	**0.31**	< 0.5 U	**0.27**	**0.28**	**0.27**
Cadmium	Lab	mg/l	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U
Calcium	Lab	mg/l	**29.7**	**22.2**	**23.6**	**17.4**	**13.5**	**11.9**	**11.7**	**10.9**
Chromium	Lab	mg/l	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U
Cobalt	Lab	mg/l	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.002 U
Lead	Lab	mg/l	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U
Lithium	Lab	mg/l	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U
Magnesium	Lab	mg/l	--	--	--	--	--	--	**3.61**	**3.37**
Mercury	Lab	mg/l	< 0.0002 U	< 0.0002 U	< 0.0002 U	< 0.0002 U	< 0.0002 U	< 0.0002 U	< 0.0002 U	< 0.0002 U
Molybdenum	Lab	mg/l	**0.0651**	**0.0490**	**0.0545**	**0.0456**	**0.0692**	**0.0875**	**0.0381**	**0.0391**
Potassium	Lab	mg/l	--	--	--	--	--	--	**3.40**	**3.56**
Selenium	Lab	mg/l	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U
Sodium	Lab	mg/l	--	--	--	--	--	--	**644**	**652**
Thallium	Lab	mg/l	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U
Radiochemical Parameters										
Radium 226	Lab	pCi/l	--	--	--	--	**0.2 +/- 0.2 ND**	**0.2 +/- 0.1**	**0.2 +/- 0.1**	**0.1 +/- 0.2 ND**
Radium 228	Lab	pCi/l	--	--	--	--	**0.9 +/- 0.7 ND**	**0.08 +/- 0.6 ND**	**1.1 +/- 0.8 ND**	**0.7 +/- 0.8 ND**
Radium, combined (226+228)	Lab	pCi/l	**0.75**	**0.65**	**0.75**	**0.6**	--	--	--	--
Radium, combined (226+228)	Barr Calculation	pCi/l	--	--	--	--	**1.1 +/- 0.73 ND**	**0.3 +/- 0.6 q**	**1.3 +/- 0.8 q**	**0.8 +/- 0.8 ND**

Data Footnotes and Qualifiers

Barr Standard Footnotes and Qualifiers

--	Not analyzed/Not available.
N	Sample Type: Normal
FD	Sample Type: Field Duplicate
ND	Not detected.
No QC	Laboratory data has been excluded from Barr QA/QC procedures.
SSource	Laboratory and/or field data obtained from a secondary source external to Barr. Second source QA/QC evaluation procedures may or may not have been performed beyond the original data generator.
q	The combined radium result includes both detected and not detected values.
U	The analyte was analyzed for, but was not detected.