



2024 Annual Groundwater Monitoring and Corrective Action Report (Rev. 1)

*Milton R. Young Station
Coal Combustion Residuals (CCR) Disposal Facility
Center, ND*

Prepared for
Minnkota Power Cooperative, Inc.



December 2024 (*Amended March 2025*)

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(Rev. 1)

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Contents

Summary for CCR Unit [§257.90(e)/33.1-20-08-06]..... iii

1.0 Introduction 1

2.0 CCR Unit Groundwater Monitoring and Corrective Action Program 8

 2.1 Groundwater Monitoring System..... 8

 2.1.1 Documentation of Monitoring System 8

 2.1.2 Key Actions Completed/Problems Encountered..... 8

 2.1.3 Key Activities for Upcoming Year..... 8

 2.2 Analytical Results and Statistical Evaluation 9

 2.2.1 Documentation of Results and Evaluation 9

 2.2.2 Key Actions Completed/Problems Encountered..... 9

 2.2.3 Key Activities for Upcoming Year..... 10

3.0 Non-CCR Unit Groundwater Monitoring and Corrective Action Program 10

 3.1 Groundwater Monitoring System..... 10

 3.1.1 Documentation of Monitoring System 10

 3.1.2 Key Actions Completed..... 11

 3.1.3 Key Activities for Upcoming Year..... 11

 3.2 Analytical Results and Statistical Evaluation 11

 3.2.1 Documentation of Results and Evaluations 11

 3.2.2 Key Actions Completed/Problems Encountered..... 11

 3.2.3 Key Activities for Upcoming Year..... 12

4.0 References 13

List of Tables

Table 1	CCR Rule Requirements and Compliance
Table 2	Monitoring Well Construction Details
Table 3	Water Quality Results
Table 4	Field Blank Results
Table 5	Water Level Results

List of Figures

Figure 1	Facility Layout
Figure 2	CCR Monitoring Network
Figure 3	July 2024 Groundwater Elevations
Figure 4	October 2024 Groundwater Elevations

List of Appendices

Appendix A	Statistical Review for SSIs: Event 1
Appendix B	Statistical Review for SSIs: Event 2
Appendix C	Time Series Graphs for Appendix III Constituents
Appendix D	Statistical Review for Non-CCR Unit: Event 1
Appendix E	Statistical Review for Non-CCR Unit: Event 2
Appendix F	Time Series Graphs for Non-CCR Unit
Appendix G	Sampling Field and Laboratory Reports

Summary for CCR Unit [§257.90(e)/33.1-20-08-06]

This report satisfies the annual reporting requirements of Environmental Protection Agency 40 CFR § 257.90 (e) and North Dakota Administrative Code 33.1-20-08-06 for annual groundwater monitoring and corrective action reporting. At the beginning, end, and throughout 2024, the CCR unit was operating under the detection monitoring program outlined in § 257.94/§ 33.1-20-08-06-04. There were no statistically significant increases for any constituent listed in appendix III to the EPA CCR Rule and appendix I to the NDDEQ CCR Rule; therefore, no assessment monitoring program (§ 257.95)/(\$ 33.1-20-08-06-05), or related corrective or remedial measures (§ 257.96, § 257.97, and § 257.98)/(\$ 33.1-20-08-06-06-08)), were necessary.

1.0 Introduction

Minnkota Power Cooperative, Inc. (Minnkota) owns and operates Milton R. Young Station (Facility), which includes the Coal Combustion Residuals (CCR) cells shown on Figure 1. The Facility is located about five miles southeast of the town of Center in Oliver County in west-central North Dakota.

The CCR cells are shown in more detail on Figure 2, which also shows the Facility CCR groundwater monitoring well network. Landfill Cell 1 was closed prior to October 19, 2015; therefore, it is not subject to the CCR Rule requirements for groundwater monitoring. However, as required by North Dakota Administrative Code (NDAC) 33.1-20-13 and the North Dakota Department of Environmental Quality (NDDEQ), groundwater monitoring downgradient of Cell 1 has been conducted since 1992 and will be continued via two Non-CCR unit wells. Cell 1 and these downgradient wells will be referred to as the "Non-CCR unit". Groundwater monitoring of the Non-CCR unit is summarized in Section 3.0. Landfill Cell 2 and Surface Impoundment Cells 3 and 4 are each existing CCR units; therefore, they are required to comply with the provisions of NDAC 33.1-20-08 (Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, referred to herein as the "NDDEQ CCR Rule") and with the US Environmental Protection Agency (EPA) CCR Rule (40 CFR Parts 257 and 261 Disposal of Coal Combustion Residuals from Electric Utilities, US EPA 2015; 2018; 2020); herein these cells will be referred to as the "CCR unit."

This 2024 Annual Groundwater Monitoring and Corrective Action Report (AGMCAR) is required by NDAC 33.1-20-08 and the CCR Rule. Specific Rule requirements for the AGMCAR and demonstration of compliance are summarized in Table 1 and are described in more detail in Section 2.0.

Table 1 CCR Rule Requirements and Compliance

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in the Annual Groundwater Monitoring and Corrective Action Report	Compliance with CCR Rules
<u>§257.90(e)</u>	<u>§33.1-20-08-06-01(e)</u>	<p>Annual groundwater monitoring and corrective action report: For existing CCR landfills and existing CCR surface impoundments, no later than January thirty-first of the year following July 1, 2020, and January thirty-first of each year thereafter, the owner or operator must prepare an annual ground water monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual ground water monitoring and corrective action report no later than January thirty-first of the year following the calendar year a ground water monitoring system has been established, and January thirty-first of each year thereafter. For the preceding calendar year, the annual report must document the status of the ground water monitoring and corrective action program 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. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record. The annual report must be submitted to the department for approval and placed on the facility's publicly accessible internet site by March first of each year. At a minimum, the annual ground water monitoring and corrective action report must contain the following information (subsequent rows in this table), to the extent available:</p>	Yes. See Summary and Section 2.0.
<u>§257.90(e)(1)</u>	<u>§33.1-20-08-06-01(e)(1)</u>	<p>Map/Aerial Image: 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;</p>	Yes. See Section 2.1.1 and Figure 2.
<u>§257.90(e)(2)</u>	<u>§33.1-20-08-06-01(e)(2)</u>	<p>New/Decommissioned Wells: 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;</p>	No wells were installed or decommissioned in 2024.

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in the Annual Groundwater Monitoring and Corrective Action Report	Compliance with CCR Rules
<u>§257.90(e)(3)</u>	<u>§33.1-20-08-06-01(e)(3)</u>	Sampling Summary: In addition to all the monitoring data obtained under §257.90 - §259.98 and §33.1-20-08-06, a summary including the number of ground water samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;	Yes, all for detection monitoring. See Section 2.2.1, Table 3, Table 4, Table 5, Figure 3, and Figure 4.
<u>§257.90(e)(4)</u>	<u>§33.1-20-08-06-01(e)(4)</u>	Transition Between Programs: A narrative discussion of any transition between monitoring programs (<i>e.g.</i> , 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 (SSI) over background levels; and	No transition to assessment monitoring was necessary. See Section 2.2.2.
<u>§257.90(e)(5)</u>	<u>§33.1-20-08-06-01(e)(5)</u>	Other Information: Other information required to be included in the annual report as specified in §257.90 - §259.98 and §33.1-20-08-06	See the responses below for the other information required in §§257.90 through 259.98.

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in the Annual Groundwater Monitoring and Corrective Action Report	Compliance with CCR Rules
<u>§257.90(e)(6)</u>	<u>NA</u>	<p>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. At a minimum, the summary must specify all of the following:</p> <ul style="list-style-type: none"> • (i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95; • (ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95; • (iii) If it was determined that there was an SSI over background for one or more constituents for one or more constituents listed in appendix III to this part pursuant to §257.94(e): <ul style="list-style-type: none"> ○ (A) Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase; and ○ (B) Provide the date when the assessment monitoring program was initiated for the CCR unit. • (iv) If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in appendix IV to this part pursuant to §257.95(g) include all of the following: <ul style="list-style-type: none"> ○ (A) Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase; ○ (B) Provide the date when the assessment of corrective measures was initiated for the CCR unit; ○ (C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and ○ (D) Provide the date when the assessment of corrective measures was completed for the CCR unit. • (v) Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of remedy selection; and • (vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period. 	Yes. See Summary page iii.

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in the Annual Groundwater Monitoring and Corrective Action Report	Compliance with CCR Rules
<u>§257.90(g)(1-3)</u>	<u>§33.1-20-08-06-01(f)(1-2)</u>	<p>Suspension of groundwater monitoring requirements: The department may suspend the ground water monitoring requirements of this section for a CCR unit for up to ten years if the owner or operator provides written documentation that there is no potential for migration of the constituents listed in appendices I and II to this chapter from that CCR unit to the uppermost aquifer during the active life of the CCR unit and the post closure care period. This demonstration must be certified by a qualified professional engineer and approved by the department. . . The owner or operator of the CCR unit may secure an additional ten years for the suspension of the ground water monitoring requirements provided the owner or operator provides written documentation that there continues to be no potential for migration. The documentation must be supported, at a minimum, by the same information required for the initial monitoring suspension and must be certified by a qualified professional engineer and approved by the department. The owner or operator shall submit the documentation of their re- demonstration for the department's review and approval of their extension one year before their ground water monitoring suspension is due to expire. If the existing ground water monitoring extension expires, the owner or operator shall begin ground water detection monitoring according to this section within ninety days. The owner or operator may obtain additional ten-year ground water monitoring suspensions provided the owner or operator continues to make the written demonstration. The owner or operator shall place each completed demonstration, if more than one ten-year suspension period is sought, in the facility's operating record.</p>	No "no migration" demonstration was used.
<u>§257.94(d)(3)</u>	<u>§33.1-20-08-06-04(d)(3)</u>	<p>Detection Monitoring Program: The owner or operator must obtain approval by the department for an alternative ground water sampling and analysis frequency. The owner or operator shall include the demonstration providing the basis for the alternative monitoring frequency in the annual ground water monitoring and corrective action report required by this section.</p>	No alternative groundwater sampling frequency was used.

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in the Annual Groundwater Monitoring and Corrective Action Report	Compliance with CCR Rules
<u>§257.94(e)(2)</u>	<u>§33.1-20-08-06-04(e)(2)</u>	Detection Monitoring Program: 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 ground water quality. The owner or operator shall complete the written demonstration within ninety days of detecting a statistically significant increase over background levels. If a successful demonstration is completed within the ninety-day period, the owner or operator of the CCR unit shall continue with a detection monitoring program under this section, with approval by the department. If a successful demonstration is not completed within the ninety-day period, the owner or operator of the CCR unit shall initiate an assessment monitoring program as required under subsection 5. The owner or operator also shall include the demonstration in the annual ground water monitoring and corrective action report.	There was no SSI over background levels for any appendix III/I constituent. See Section 2.2.2.
<u>§257.95(c)(3)</u>	<u>§33.1-20-08-06-05(c)(3)</u>	Assessment monitoring program: The owner or operator shall obtain approval by the department for an alternative ground water sampling and analysis frequency. The owner or operator shall include the demonstration providing the basis for the alternative monitoring frequency in the annual ground water monitoring and corrective action report required by this section.	No transition to assessment monitoring was necessary. See Section 2.2.2.
<u>§257.95(d)(3)</u>	<u>§33.1-20-08-06-05(d)(3)</u>	Assessment monitoring program: Include the recorded concentrations required by the assessment monitoring program, identify the background concentrations established under the detection monitoring program, and identify the ground water protection standards in the annual ground water monitoring and corrective action report.	No transition to assessment monitoring was necessary. See Section 2.2.2.

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in the Annual Groundwater Monitoring and Corrective Action Report	Compliance with CCR Rules
<u>§257.95(g)(3)(ii)</u>	<u>§33.1-20-08-06-05(g)(3)(b)</u>	Assessment monitoring program: 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 ground water quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be approved by the department. If a successful demonstration is made, the owner or operator shall continue monitoring in accordance with the assessment monitoring program pursuant to this subsection and may return to detection monitoring if the constituents in appendices I and II to this chapter are at or below the established background. The owner or operator also shall include the demonstration in the annual ground water monitoring and corrective action report.	No transition to assessment monitoring was necessary. See Section 2.2.2.
<u>§257.96(a)</u>	<u>§33.1-20-08-06-06(a)</u>	Assessment of corrective measures: Within ninety days of finding that any constituent listed in appendix III/I or IV/II has been detected at a statistically significant level exceeding the ground water protection standard, or immediately upon detection of a release from a CCR unit, the owner or operator shall initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected areas to original conditions. The assessment of corrective measures must be completed within ninety days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstance and obtains approval by the department. The ninety-day deadline to complete the assessment of corrective measures may be extended for no longer than sixty days. The owner or operator also shall include the demonstration and approval in the annual ground water monitoring and corrective action report.	No transition to assessment monitoring was necessary. See Section 2.2.2.
<u>§257.93(c)</u>	<u>§33.1-20-08-06-03(c)</u>	Groundwater sampling and analysis requirements: Ground water elevations must be measured in each well immediately prior to purging, each time ground water is sampled. The owner or operator of the CCR unit shall determine the rate and direction of ground water flow each time ground water is sampled. Ground water elevations in wells which monitor the same CCR management area must be measured within a period of time short enough to avoid temporal variations in ground water flow which could preclude accurate determination of ground water flow rate and direction.	Yes. See Figure 3, Figure 4, and their attachments.

2.0 CCR Unit Groundwater Monitoring and Corrective Action Program

Section 2.0 documents the status of the groundwater monitoring and corrective action program for the CCR unit for 2024. This section has two major divisions: (2.1) Groundwater Monitoring System and (2.2) Analytical Results and Statistical Evaluation. Documentation for each division is included, as well as summaries of key actions completed/problems encountered, with resolutions, if necessary; and key activities planned for 2025.

2.1 Groundwater Monitoring System

Documentation of the CCR unit groundwater monitoring system and discussion of key actions completed in 2024 and planned for 2025 are discussed below.

2.1.1 Documentation of Monitoring System

Figure 2 shows the three upgradient (2015-1, 2015-2, and 2018-2) and the six downgradient (2015-3, 2015-4, 2015-5, 2016-1, 2018-1, and 2023-1) monitoring wells for the CCR unit groundwater monitoring system. Table 2 provides the construction details, including location coordinates, for each well. Further details on the monitoring system, the water table aquifer, site conceptual model, release conceptual model, geologic cross sections, and boring logs for the CCR unit monitoring wells are included in the *Groundwater Monitoring System Certification Report* (Barr, 2023).

2.1.2 Key Actions Completed/Problems Encountered

The following key actions for the monitoring system were completed in 2024:

- A new, downgradient, monitoring well, 2023-1, was installed in July 2023 to coincide with the addition of Cell 5 to the CCR unit. The new well underwent background sampling and began detection monitoring in 2024.
- Two sets of semiannual detection monitoring groundwater samples were collected from each of the nine monitoring wells and were analyzed for the constituents listed in appendix III of the EPA CCR Rule [§257.94(a-b)] and appendix I of the NDDEQ CCR Rule [§33.1-20-08-06-04(a-b)]

No significant problems were encountered for the CCR unit groundwater monitoring system in 2024.

2.1.3 Key Activities for Upcoming Year

The following key activities for the groundwater monitoring system are planned for 2025:

- Wells in the CCR groundwater monitoring system and dedicated bladder pumps will be operated and maintained so that they perform to their design specifications [§257.91(e)(2)]/[§33.1-20-08-02(e)(2)].

- Sampling events for semiannual detection monitoring are scheduled for April and August of 2025.

2.2 Analytical Results and Statistical Evaluation

Documentation of the analytical results and their associated statistical evaluation for the CCR unit groundwater system are provided below, followed by a discussion of key actions completed in 2024 and planned for 2025.

2.2.1 Documentation of Results and Evaluation

Table 3 provides a summary of the dates and analytical results for the two semiannual sampling events completed in 2024 for the nine wells in the CCR unit groundwater monitoring system. Table 4 shows the field blank results for the same sampling period. All samples were collected under the CCR detection monitoring program.

The CCR Rule requires that groundwater elevations be measured in each well immediately prior to purging, and that the rate and direction of groundwater flow be determined each time groundwater is sampled [§257.93(c)]/[§33.1-20-08-03(c)]. All groundwater elevations are shown on Table 5. Figure 3 and Figure 4 show contours of the groundwater elevations for the two semiannual detection monitoring sampling events. Both figures show that the groundwater gradient is generally from west to east beneath the CCR unit and toward the downgradient wells in the monitoring system; there is a local groundwater depression around wells 2015-4 and 2015-5. Attached to each of these figures are calculations for the rate of groundwater flow for each semiannual sampling event. Given the natural variation in hydraulic conductivities at the Facility (Barr, 2023), the estimated average horizontal groundwater flow velocity in the water table aquifer for the groundwater contours shown on these figures is approximately 0.05 feet/year.

2.2.2 Key Actions Completed/Problems Encountered

The following key actions were completed with respect to analytical results and statistical evaluation in 2024:

- Analytical results for the first semiannual sampling event for the downgradient wells were analyzed for SSIs using intrawell control charts (Appendix A), as described in the *Groundwater Statistical Analysis Plan* (Barr, 2022). No SSIs were identified; therefore, there was no transition to assessment monitoring.
- *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance* (US EPA, 2009) recommends updating the background water quality dataset when at least four to eight new measurements have been collected, approximately every 2-3 years when sampling semi-annually. The appendix III/I constituent backgrounds in the eight wells installed prior to 2023 were last updated in the Spring of 2022, and 5 new measurements had been recorded. As a result, the background data were updated to incorporate measurements collected prior to the Fall 2024 sampling into the background.

- Analytical results for the second semiannual sampling event for the downgradient wells were analyzed for SSIs using intrawell control charts (Appendix B), as described in the *Groundwater Statistical Analysis Plan* (Barr, 2022). Time-series graphs for the appendix III/I constituents for both upgradient and downgradient wells are provided in Appendix C. No SSIs were identified; therefore, there was no transition to assessment monitoring.

No significant problems were encountered during sampling, analysis, and statistical evaluation of the results for the CCR unit groundwater monitoring system in 2024.

2.2.3 Key Activities for Upcoming Year

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

- Evaluate analytical results from the 2025 semiannual detection monitoring events for SSIs for appendix III/I constituents according to the *Groundwater Statistical Analysis Plan* (Barr, 2022).
- Evaluate analytical results from the 2023-1 background monitoring well sampling events for appendix III/I and IV/II constituents according to the *Groundwater Statistical Analysis Plan* (Barr, 2022).

3.0 Non-CCR Unit Groundwater Monitoring and Corrective Action Program

Section 3.0 documents the status of the groundwater monitoring and corrective action program for the Non-CCR unit for 2024. The NDDEQ regulates the operation of Minnkota's CCR disposal facility under NDAC §33.1-20, special waste permit SP-0159 located at 3401 24th St SW, Center, ND 58530. This section satisfies the groundwater monitoring requirements for the Non-CCR unit under NDAC §33.1-20-13 and the general performance standards under §33.1-20-04.1 for the calendar year of 2024.

3.1 Groundwater Monitoring System

Documentation of the Non-CCR unit groundwater monitoring system and discussion of key actions completed in 2024 and planned for 2025 are discussed below.

3.1.1 Documentation of Monitoring System

Figure 2 shows the two downgradient (92-3 and 95-4) monitoring wells for the Non-CCR unit. The Non-CCR unit shares upgradient (2015-1 and 2015-2) monitoring wells with the CCR Unit. Table 2 provides construction details and location coordinates for the Non-CCR unit wells. Further information on the monitoring system, the water table aquifer, site conceptual model, release conceptual model, geologic cross sections, and boring logs for the Non-CCR unit are included in the *Groundwater Monitoring System Certification Report* (Barr, 2023).

3.1.2 Key Actions Completed

Two sets of semiannual ground water quality (detection) monitoring groundwater samples were collected from each of the four monitoring wells and were analyzed for the constituents listed in Appendix I of the NDDEQ CCR Rule (§33.1-20-08).

No significant problems were encountered for the Non-CCR unit groundwater monitoring system, and no monitoring wells were installed or decommissioned in 2024.

3.1.3 Key Activities for Upcoming Year

The following key activities for the groundwater monitoring system are planned for 2025:

- Wells in the Non-CCR unit groundwater monitoring system and dedicated bladder pumps will be operated and maintained so that they perform to their design specifications.
- Sampling events for semiannual ground water quality (detection) monitoring are scheduled for April and August of 2025.

3.2 Analytical Results and Statistical Evaluation

Documentation of the analytical results and their associated statistical evaluation for the Non-CCR unit groundwater monitoring system are provided below, followed by a discussion of key actions completed in 2024 and planned for 2025. To be consistent with the CCR unit, the Non-CCR unit is monitored for constituents listed in Appendix I of NDAC 33.1-20-08.

3.2.1 Documentation of Results and Evaluations

Table 6 provides a summary of the dates and analytical results for the two semiannual sampling events completed in 2024 as well as historic sampling events that comprise the background dataset for the two downgradient wells in the Non-CCR unit groundwater monitoring system. Analytical results for the upgradient wells in the Non-CCR unit groundwater monitoring system are shown in Table 3. All samples were collected under the ground water quality (detection) monitoring program.

3.2.2 Key Actions Completed/Problems Encountered

The following key actions were completed with respect to analytical results and statistical evaluation in 2024:

- Analytical results for the first semiannual sampling event for the downgradient wells were analyzed for SSIs using intrawell control charts (Appendix D), as described in the *Groundwater Statistical Analysis Plan* (Barr, 2022). No SSIs were identified; therefore, there was no transition to assessment monitoring.
- Analytical results for the second semiannual sampling event for the downgradient wells were analyzed for SSIs using intrawell control charts (Appendix E), as described in the *Groundwater*

Statistical Analysis Plan (Barr, 2022). Time-series graphs for the appendix I constituents for upgradient wells and for downgradient wells are provided in Appendix F. No SSIs were identified; therefore, there was no transition to assessment monitoring.

No significant problems were encountered during sampling, analysis, and statistical evaluation of the results for the Non-CCR unit groundwater monitoring system in 2024, and there were no conditions that prevented compliance with the permit.

3.2.3 Key Activities for Upcoming Year

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

- Evaluate analytical results from the 2025 semiannual ground water quality (detection) monitoring events for SSIs for Appendix I constituents according to the *Groundwater Statistical Analysis Plan* (Barr, 2022).

4.0 References

Barr, 2023, *Groundwater Monitoring System Certification Report*, Revision 4, December 2023.

Barr, 2022, *Groundwater Statistical Analysis Plan*, Revision 2, June 2022.

NDDEQ, 2020, Solid Waste Management and Land Protection Rules, NDAC Article 33.1-20

US EPA, 2020, Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; A Holistic Approach to Closure Part A: Deadline To Initiate Closure, Federal Register, Vol. 85, No. 168.

US EPA, 2018, Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Amendments to the National Minimum Criteria (Phase one, Part One), Federal Register, Vol. 83, No. 146.

US EPA, 2015, Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, Federal Register, Vol. 80, No. 74.

US EPA, 2009, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance*, EPA 530-R-09-007.

Tables

Table 2
Monitoring Well Construction Details
M. R. Young Station
Minnkota Power Cooperative, Inc.

Well Number	Location Coordinates (Latitude/Longitude)*	Orientation to CCR unit	Completion Date (Month/Day/Year)	Ground Surface Elevation (feet, MSL)	TOC Elevation (feet above MSL)	Casing/Screen Size and Material	Screen Slot Size (Inches)	Screen Interval (feet BGS)	Sand Pack Interval (feet BGS)	Sandpack	Borehole Diameter (Inches)	Pump Intake from Top of Screen (feet)
92-3	47.060775/-101.214750	Non-CCR Downgradient	9/8/1992	1991.3	1992.8	2-inch PVC Sch 80	0.010	142.5 to 152.5	137 to 153.5	20-40 silica sand	4.75	8.3
95-4	47.060047/-101.224316	Non-CCR Downgradient	8/1/1995	1992.4	1994.1	2-inch PVC Sch 80	0.010	135 to 145	130 to 151	20-40 silica sand	5.25	7.8
2015-1	47.057713/-101.224324	Upgradient	10/8/2015	2045.6	2047.7	2-inch PVC Sch 80	0.006	183 to 193	181 to 195	35-50 silica sand	6	8.5
2015-2	47.057735/-101.224324	Upgradient	10/9/2015	2045.4	2047.6	2-inch PVC Sch 80	0.006	130 to 150	128 to 150	35-50 silica sand	6	19
2015-3	47.057881/-101.214560	Downgradient	10/31/2015	2010.5	2012.8	2-inch PVC Sch 80	0.006	112 to 132	110 to 132	35-50 silica sand	6	19
2015-4	47.055212/-101.214471	Downgradient	10/20/2015	2014.9	2016.9	2-inch PVC Sch 80	0.006	116 to 136	114 to 136	35-50 silica sand	6	19
2015-5	47.053790/-101.214440	Downgradient	10/13/2015	2048.2	2050.2	2-inch PVC Sch 80	0.006	148 to 168	146 to 170	35-50 silica sand	6	19
2016-1	47.056444/-101.214409	Downgradient	10/6/2016	2026.4	2028.9	2-inch PVC Sch 80	0.006	133 to 153	131 to 153	35-50 silica sand	6	19
2018-1	47.052204/-101.214871	Downgradient	4/9/2018	2072.3	2074.8	2-inch PVC Sch 80	0.006	168 to 188	165 to 191	35-50 silica sand	6	19
2018-2	47.048810/-101.224848	Upgradient	4/6/2018	2050.8	2053.4	2-inch PVC Sch 80	0.006	196 to 216	194 to 216	35-50 silica sand	6	19
2023-1	47.050700/-101.214610	Downgradient	7/29/2023	2104.6	2107.6	2-inch PVC Sch 80	0.006	211 to 231	207.5 to 234	35-50 silica sand	6	19

* WGS84 Datum

BGS - Below ground surface.

MSL - Mean sea level.

PVC - Polyvinyl chloride.

Sch - Schedule.

Table 4
Field Blank Results
Detection Monitoring Program
Minnkota Power Cooperative, Inc.

Location			QC	QC
Date			7/03/2024	10/22/2024
Sample Type			Field Blank	Field Blank
Parameter	Total or Dissolved	Units		
Appendix III/I Constituents				
Boron	Total	mg/l	< 0.1 U	< 0.1 U
Calcium	Total	mg/l	< 1 U	< 1 U
Chloride	NA	mg/l	< 2.0 U	< 2.0 U
Fluoride	NA	mg/l	< 0.1 U	< 0.1 U
pH	NA	pH units	6.7 H	6.0 H
Solids, total dissolved	NA	mg/l	<10 U	< 10 U
Sulfate, as SO4	NA	mg/l	< 5 U	< 5 U

H - Recommended sample preservation, extraction or analysis holding time was exceeded.

NA (not applicable) - Indicates that a fractional portion of the sample is not part of the analytical testing or field collection procedures.

QC - Quality Control

U - The analyte was analyzed for, but was not detected.

Table 5
Water Level Results
Detection Monitoring Program
Minnkota Power Cooperative, Inc.

Location		Sample Type	Purge Date	Water Level Before Purge (feet)	Top of Casing Elevation (feet)	Groundwater Elevation (feet)
2015-1	Upgradient	Background	8/26/2024	134.12	2047.7	1913.58
2015-1			10/21/2024	134.21	2047.7	1913.49
2015-2	Upgradient	Background	8/26/2024	128.26	2047.6	1919.34
2015-2			10/21/2024	128.38	2047.6	1919.22
2018-2	Upgradient	Background	8/26/2024	152.61	2053.4	1900.79
2018-2			10/22/2024	152.75	2053.4	1900.65
2015-3	Downgradient	SSI Evaluation	8/26/2024	110.11	2012.8	1902.69
2015-3			10/21/2024	109.96	2012.8	1902.84
2015-4	Downgradient	SSI Evaluation	8/26/2024	120.92	2016.9	1895.98
2015-4			10/21/2024	120.98	2016.9	1895.92
2015-5	Downgradient	SSI Evaluation	8/26/2024	150.62	2050.2	1899.58
2015-5			10/21/2024	150.41	2050.2	1899.79
2016-1	Downgradient	SSI Evaluation	8/26/2024	127.72	2028.9	1901.18
2016-1			10/21/2024	127.85	2028.9	1901.05
2018-1	Downgradient	SSI Evaluation	8/26/2024	174.62	2074.8	1900.18
2018-1			10/21/2024	174.19	2074.8	1900.61
2023-1	Downgradient	SSI Evaluation	8/26/2024	207.58	2107.6	1900.02
2023-1			10/21/2024	207.58	2107.6	1900.02
92-3	Downgradient Non CCR	SSI Evaluation	8/26/2024	91.00	1992.8	1901.80
92-3			10/23/2024	91.11	1992.8	1901.69
95-4	Downgradient Non CCR	SSI Evaluation	8/26/2024	92.77	1994.1	1901.33
95-4			10/21/2024	93.02	1994.1	1901.08

Table 6
Historic Water Quality Results
Minnkota Power Cooperative, Inc.

Parameter	Total or Dissolved	Location Date		Sample Type		Data Status		92-3		92-3		92-3		92-3		92-3		92-3		92-3		92-3	
		Units	6/6/16	10/3/16	5/30/17	10/11/17	5/23/18	9/25/18	5/28/19	9/5/19	4/23/20	8/5/20	4/21/21	8/25/21	4/7/22	8/24/22	5/09/2023	8/15/2023	7/03/2024	10/23/2024	Validated	Validated	Validated
Boron	Total	mg/l	2.9	2.3	2.4	2.4	2.4	2	2.4	2.4	2.4	2.5	2.5	2.88	2.46	2.36	2.44	2.61	2.67	0.46	0.49	0.50	
Calcium	Total	mg/l	4.4	4.2	3.7	4.2	4.7	5.9	5.3	5	6.2	6	7.6	7.2	7.1	7.2	6.9	5.5	5.8	2.44	2.61	2.67	
Chloride	NA	mg/l	1.59	1.58	1.6	1.61	1.55	1.61	1.64	1.64	1.63	1.6	1.59	1.54	1.67	1.67	1.57	1.58	1.56	1.57	1.58	1.58	
Fluoride	NA	mg/l	8.4	8.2	8.7	8.7	8.7	8.6	8.7	8.7	8.8	8.6	8.4	8.4	8.7	8.2 H	8.2 H	8.6 H	8.6 H	8.2 H	8.2 H	8.6 H	
pH	pH units		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
pH, field	pH units		121	141	146	119	148	117	124	124	117	127	132	136	112	125	113	135	108	113	1140	1180	
Sulfate, as SO4	mg/l		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Solids, total dissolved, sum of constituents	mg/l		1060	1100	1090	1080	1150	1130	1140	1110	1120	1130	1180	1180	1100	1180	1140	1180	1180	--	--	--	
Appendix IV/II Constituents	NA	mg/l																					
Lithium	Total	mg/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0425	--	--	--	--	
Other Constituents																							
Boron	Dissolved	mg/l	0.51	0.48	0.46	0.5	0.51	0.46	0.45	0.47	0.45	0.46	0.45	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	
Specific conductance @ 25 °C, field	NA	umhos/cm	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1805	1822	1635	
Temperature, field	NA	deg C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11.95	9.51	10.40	
Turbidity, field	NA	NTU	--	--	--	--	--	--	--	--	--	--	--	--	--	0.10	3.77	0.00	0.00	3.77	0.00	0.00	

Source: Data has not undergone Standard Barr QA/QC Review.

Validated: Data has undergone Standard Barr QA/QC Review.

-- Not analyzed/Not available.

N Sample Type: Normal

NA (not applicable) indicates that a fractional portion of the sample is not part of the analytical testing or field collection procedures.

H Recommended sample preservation, extraction or analysis holding time was exceeded.

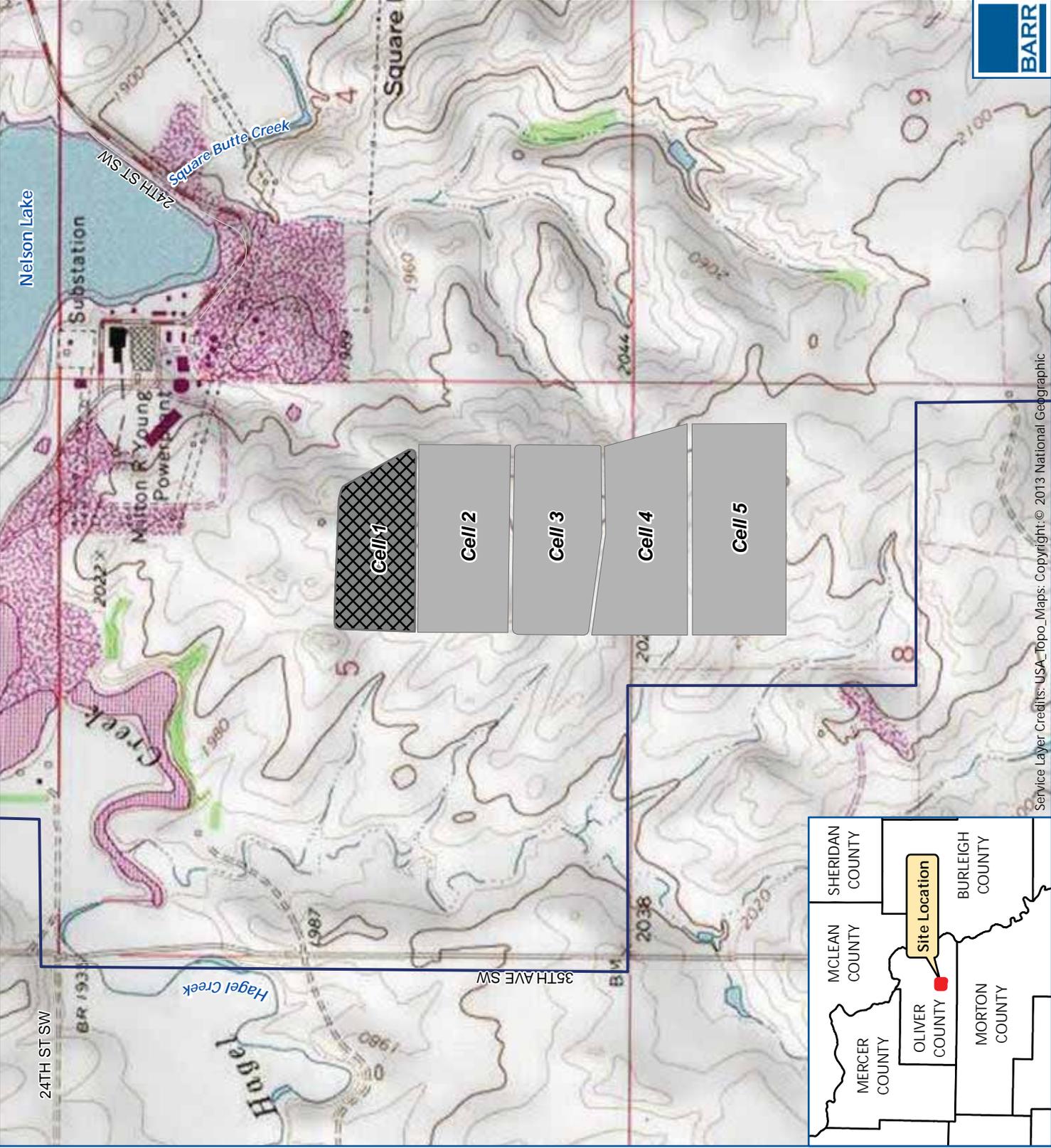
J Estimated detected value. Either certain QC criteria were not met or the concentration is between the laboratory's detection and quantitation limits.

Table 6
Historic Water Quality Results
Minnkota Power Cooperative, Inc.

Parameter	Location Date Sample Type	95-4		95-4		95-4		95-4		95-4		95-4		95-4		95-4		95-4		95-4	
		Data Status	SSource	N	SSource																
Appendix III/I Constituents																					
Boron																					
Calcium																					
Chloride																					
Fluoride																					
pH																					
pH, field																					
Sulfate, as SO4																					
Solids, total dissolved																					
Solids, total dissolved, sum of constituents																					
Appendix IV/II Constituents																					
Lithium																					
Other Constituents																					
Boron																					
Specific conductance @ 25 °C, field																					
Temperature, field																					
Turbidity, field																					

Source: Data has not undergone Standard Barr QA/QC Review.
Validated: Data has undergone Standard Barr QA/QC Review.
-- Not analyzed/Not available.
N Sample Type: Normal
N Sample Type: Field Duplicate
NA (not applicable) indicates that a fractional portion of the sample is not part of the analytical testing or field collection procedures.
H Recommended sample preservation, extraction or analysis holding time was exceeded.
J Estimated detected value. Either certain QC criteria were not met or the concentration is between the laboratory's detection and quantitation limits.

Figures

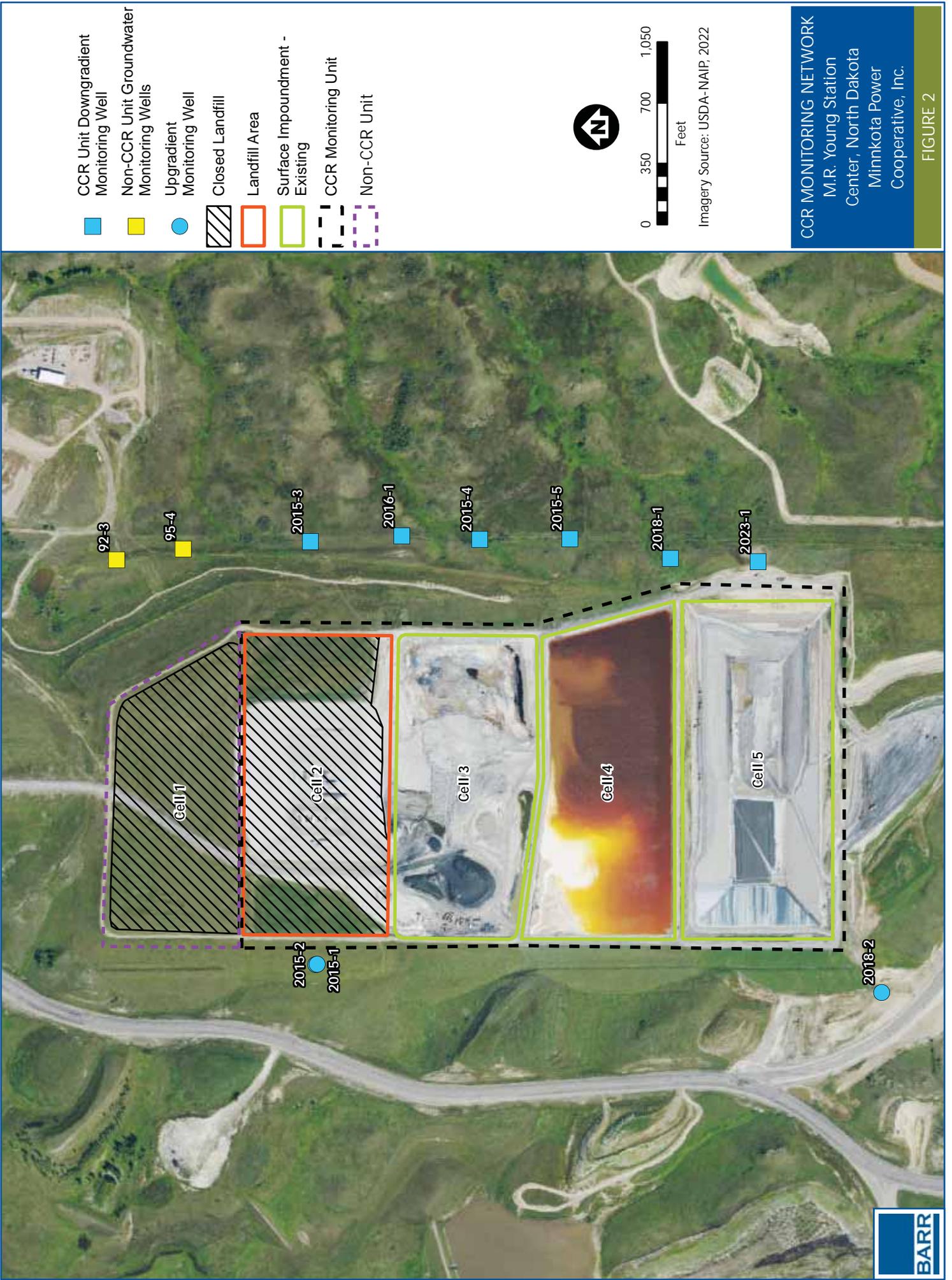


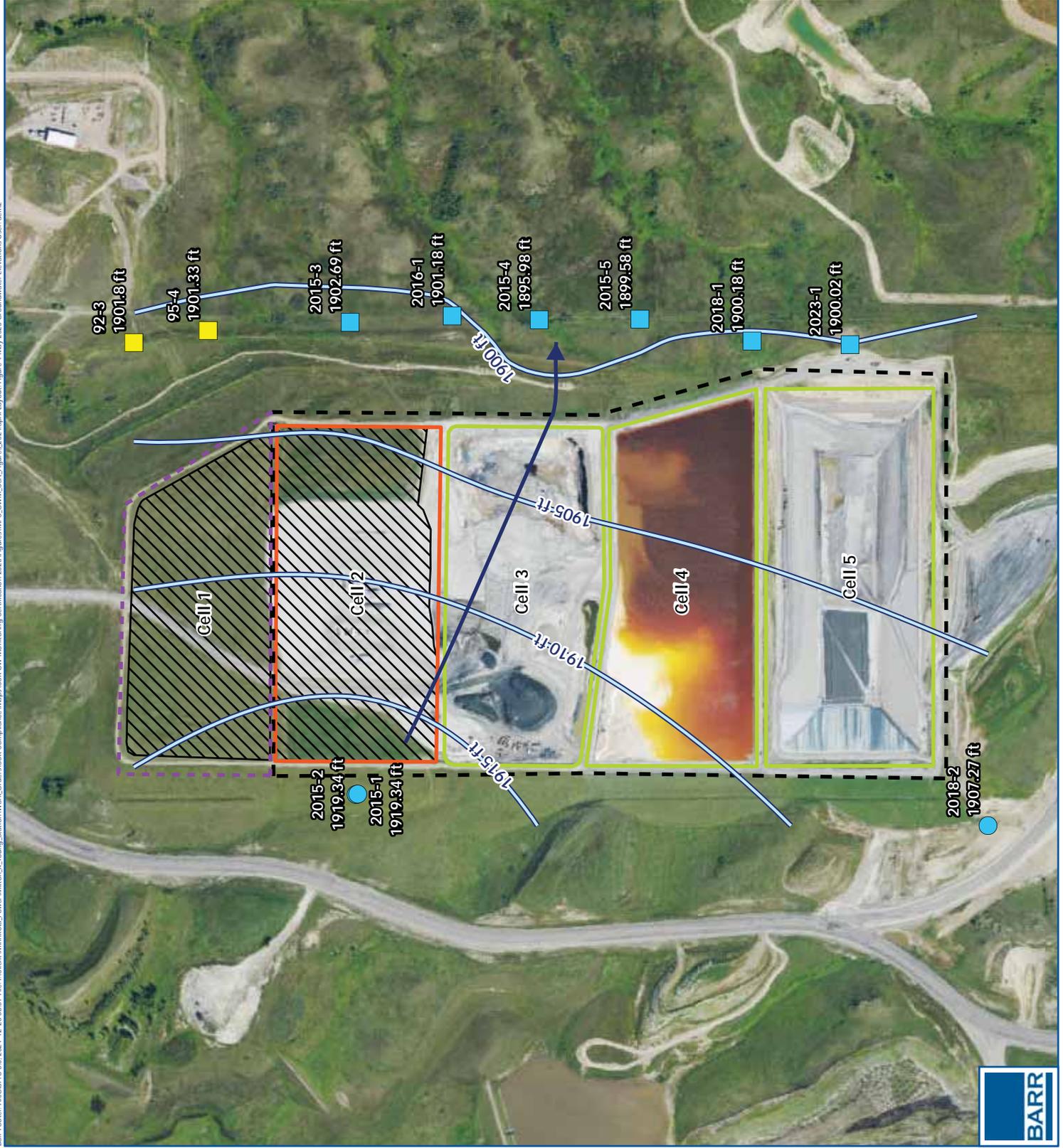
SITE LAYOUT
M.R. Young Station
Center, North Dakota
Minnkota Power
Cooperative, Inc.

BARR

Service Layer Credits: USA_Topo_Maps: Copyright © 2013 National Geographic

FIGURE 1





“The owner or operator of the CCR unit must determine the rate and direction of groundwater flow each time groundwater is sampled [§257.93(c)]/[§33.1-20-08-03(c)].”

Figure 3 shows the approximate contour elevations for the water table aquifer based on water level measurements taken in the monitoring wells in July 2024. Flow directions may be estimated as being perpendicular to the contour lines on this figure. The general flow direction is to the southeast toward the groundwater depression near wells 2015-4 and 2015-5. Using well 2015-2 for reference, the perpendicular distance between contour 1915 ft and contour 1905 ft is approximately 1,220 ft.

The horizontal average linear flow velocity (rate) under the CCR unit can be estimated as follows (Barr, 2023):

$$V = K * i/n_e$$

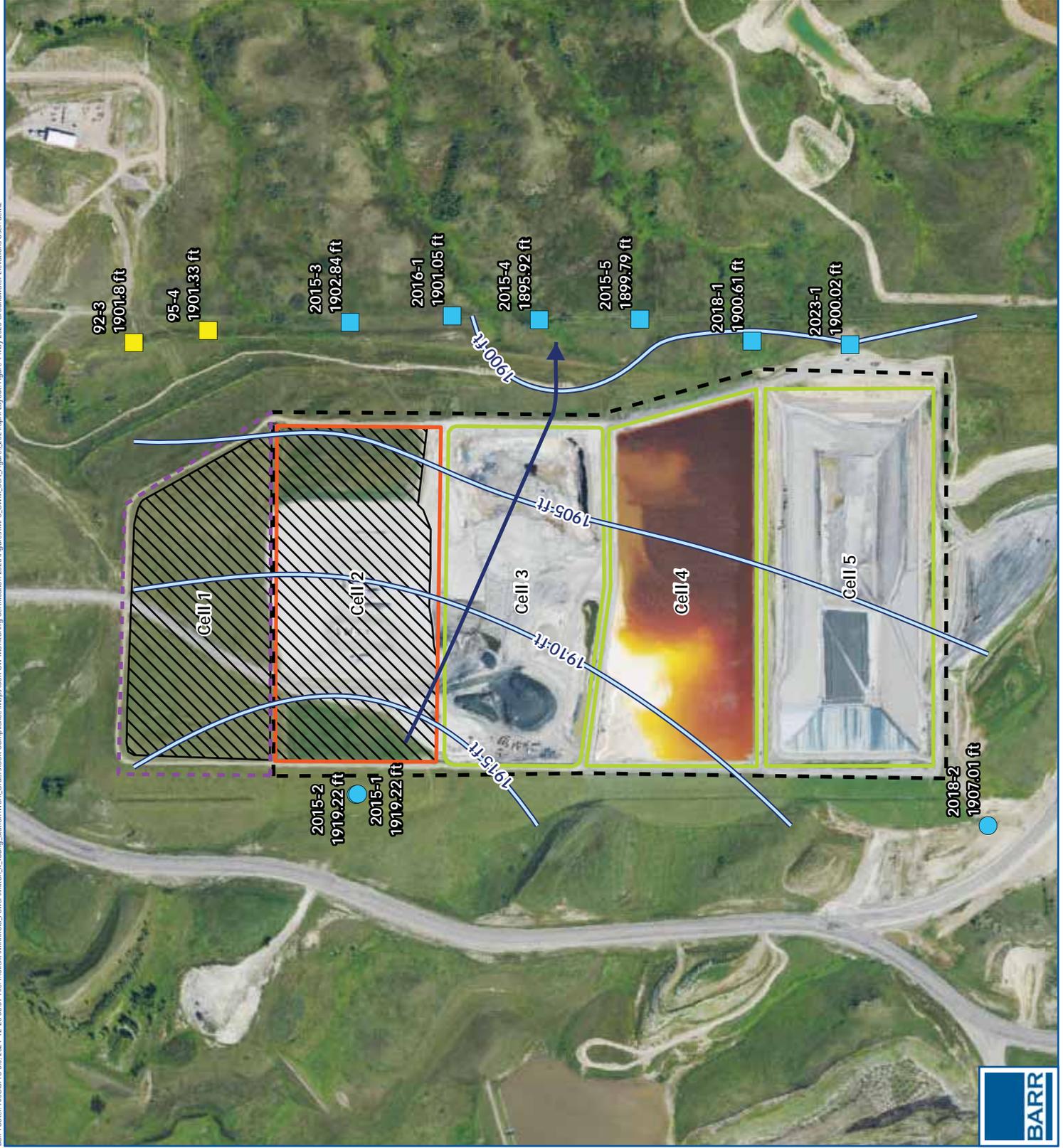
Where: V = horizontal average linear flow velocity

K = hydraulic conductivity

i = gradient = 10 ft/1,220 ft = 0.0082 for July 2024

n_e = effective porosity = 0.15 (estimated for silty-clayey sandstone)

The geometric mean of the K values measured for the monitoring wells at the Facility is 2.5×10^{-3} ft/day (Barr, 2023). Therefore, the groundwater flow rate for July 2024 is estimated to be 1.37×10^{-4} ft/day, or 0.050 ft/year.



OCTOBER 2024
GROUNDWATER ELEVATIONS
 M.R. Young Station
 Center, North Dakota
 Minnkota Power
 Cooperative, Inc.
FIGURE 4



“The owner or operator of the CCR unit must determine the rate and direction of groundwater flow each time groundwater is sampled [§257.93(c)]/[§33.1-20-08-03(c)].”

Figure 4 shows the approximate contour elevations for the water table aquifer based on water level measurements taken in the monitoring wells in October 2024. Flow directions may be estimated as being perpendicular to the contour lines on this figure. The general flow direction is to the southeast toward the groundwater depression near wells 2015-4 and 2015-5. Using well 2015-2 for reference, the perpendicular distance between contour 1915 ft and contour 1905 ft is approximately 1,220 ft.

The horizontal average linear flow velocity (rate) under the CCR unit can be estimated as follows (Barr, 2023):

$$V = K * i/n_e$$

Where: V = horizontal average linear flow velocity

K = hydraulic conductivity

i = gradient = 10 ft/1,220 ft = 0.0082 for October 2024

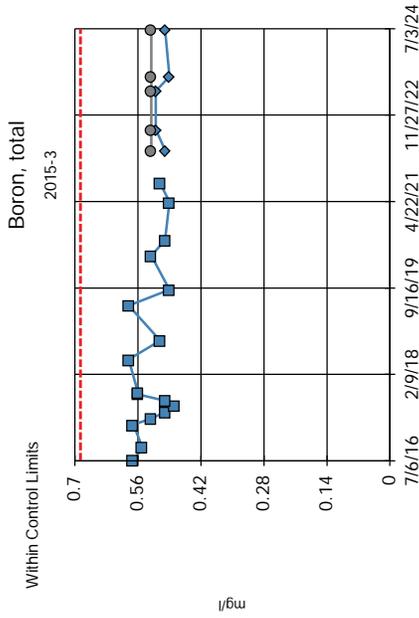
n_e = effective porosity = 0.15 (estimated for silty-clayey sandstone)

The geometric mean of the K values measured for the monitoring wells at the Facility is 2.5×10^{-3} ft/day (Barr, 2023). Therefore, the groundwater flow rate for October 2024 is estimated to be 1.37×10^{-4} ft/day, or 0.050 ft/year.

Appendices

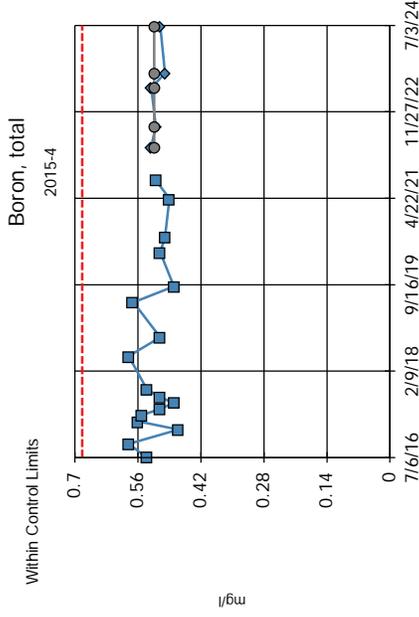
Appendix A

Statistical Review for SSIs: Event 1



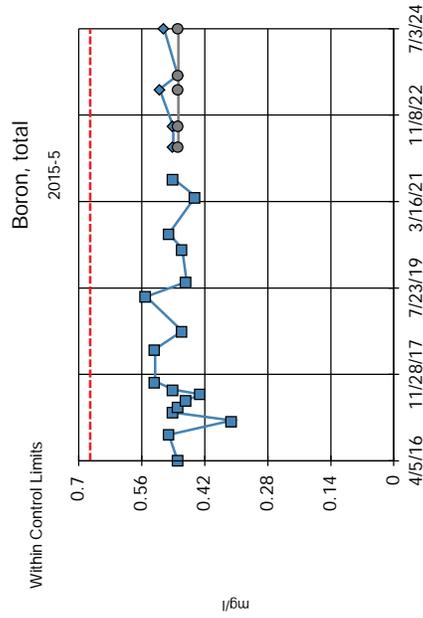
Background Data Summary: Mean=0.53, Std. Dev.=0.035, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8996, critical = 0.892. Report alpha = 0.001208. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



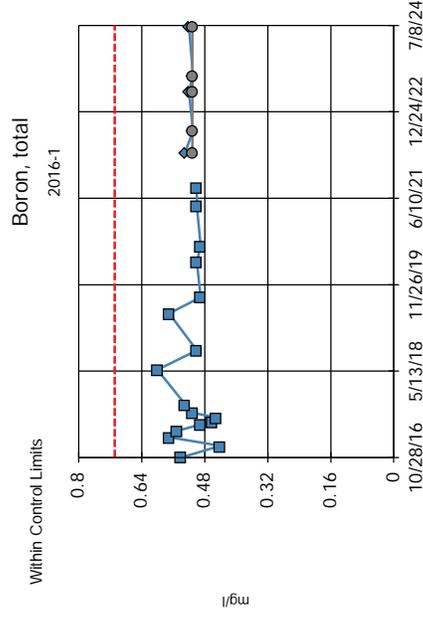
Background Data Summary: Mean=0.5235, Std. Dev.=0.03552, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9383, critical = 0.892. Report alpha = 0.001208. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



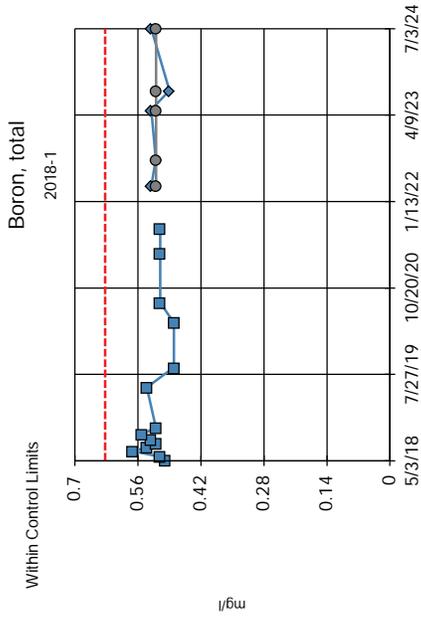
Background Data Summary: Mean=0.4782, Std. Dev.=0.04362, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.92716, critical = 0.892. Report alpha = 0.001208. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



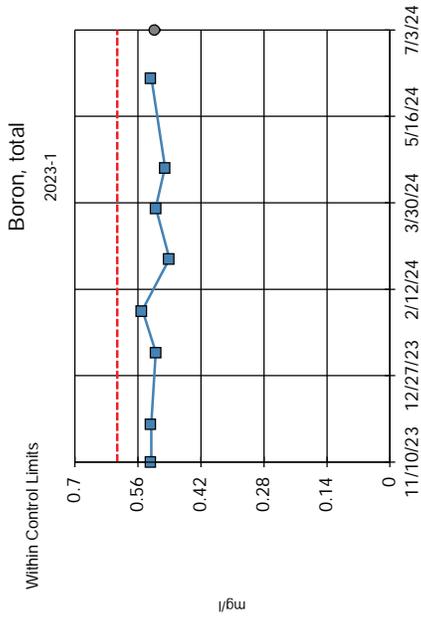
Background Data Summary: Mean=0.5112, Std. Dev.=0.04386, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9547, critical = 0.892. Report alpha = 0.001208. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



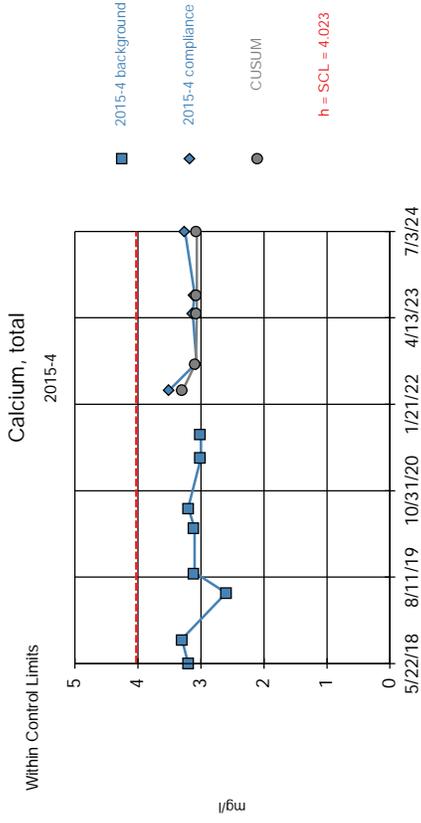
Background Data Summary: Mean=0.5193, Std. Dev.=0.02526, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.959, critical = 0.874. Report alpha = 0.001768. Dates ending 8/24/2021 used for control stats. Standardized n=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=0.5213, Std. Dev.=0.01885, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9304, critical = 0.818. Report alpha = 0.001818. Dates ending 6/7/2024 used for control stats. Standardized n=4.5, SCL=4.5.

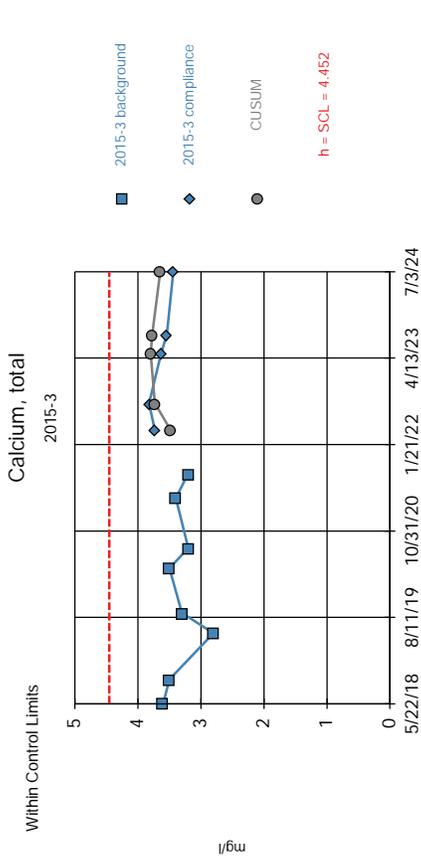
Control Chart Analysis Run 9/11/2024 12:14 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=3.063, Std. Dev.=0.2134, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8541, critical = 0.818. Report alpha = 0.00674. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII

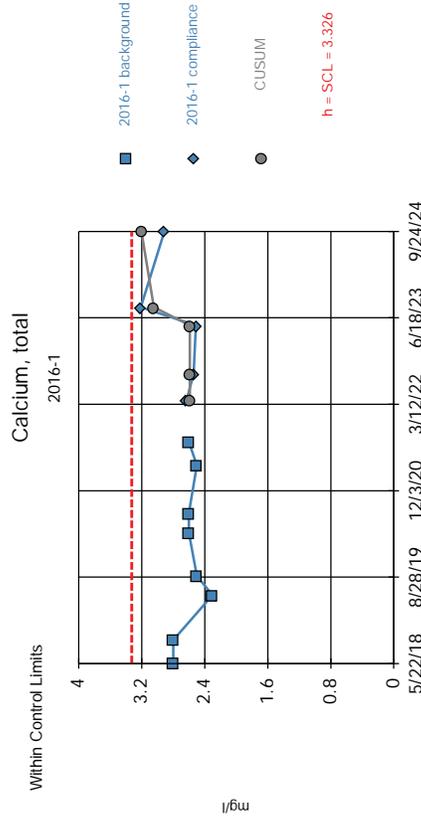
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=3.313, Std. Dev.=0.2532, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9042, critical = 0.818. Report alpha = 0.00674. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII

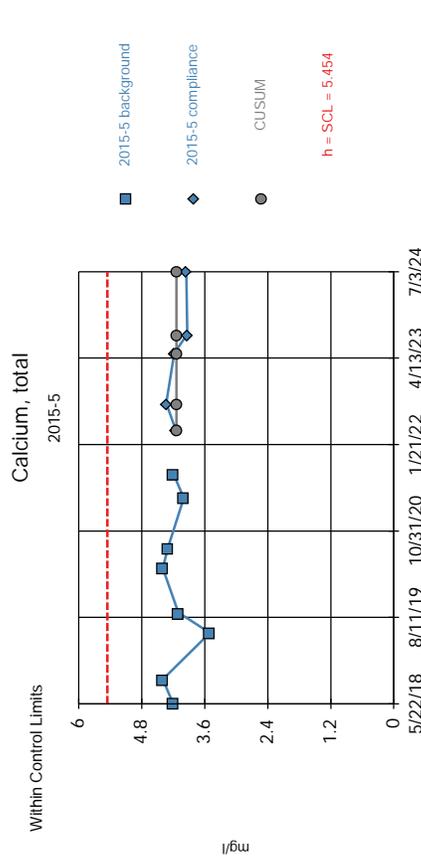
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=2.588, Std. Dev.=0.1642, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9122, critical = 0.818. Report alpha = 0.00674. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII

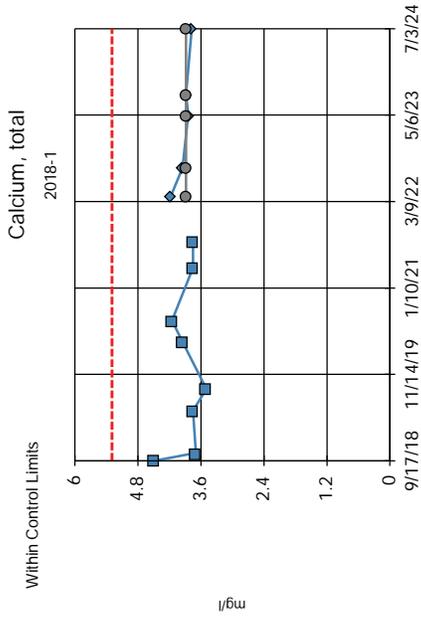
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=4.138, Std. Dev.=0.2925, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8327, critical = 0.818. Report alpha = 0.00674. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII

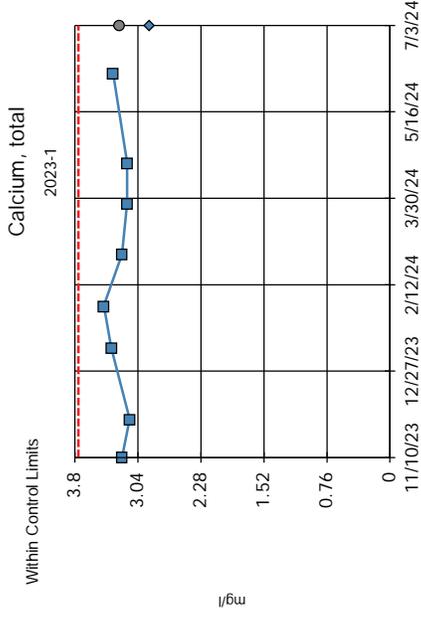
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=3.881, Std. Dev.=0.3138, n=8. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8911, critical = 0.818. Report alpha = 0.00674. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII

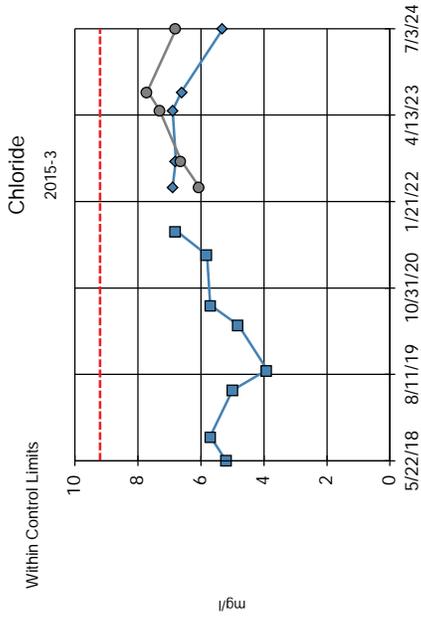
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=3.261, Std. Dev.=0.1101, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9062, critical = 0.818. Report alpha = 0.001818. Dates ending 6/7/2024 used for control stats. Standardized h=4.5, SCL=4.5.

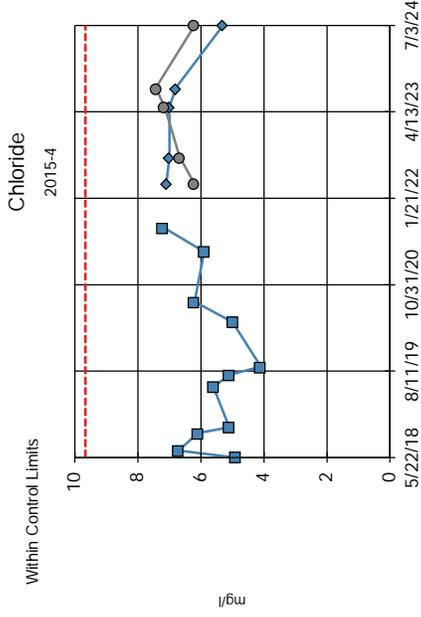
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Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



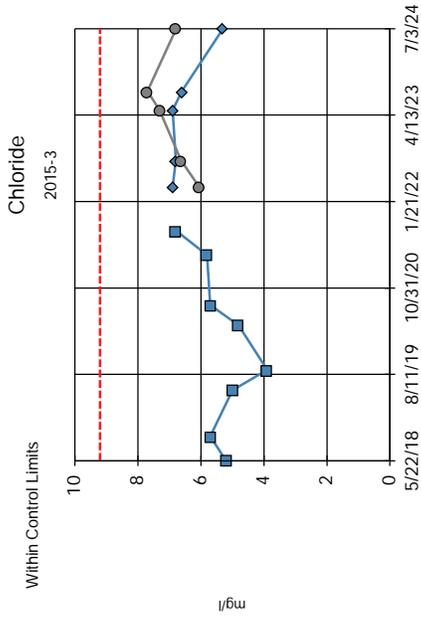
Background Data Summary: Mean=5.363, Std. Dev.=0.8535, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9679, critical = 0.818. Report alpha = 0.00674. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



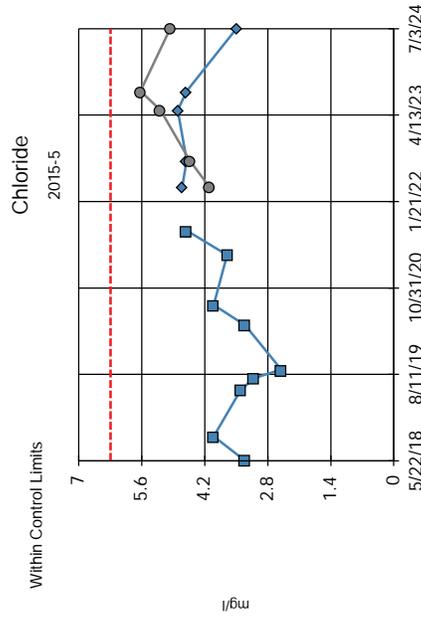
Background Data Summary: Mean=5.627, Std. Dev.=0.8979, n=11. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9744, critical = 0.85. Report alpha = 0.003054. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



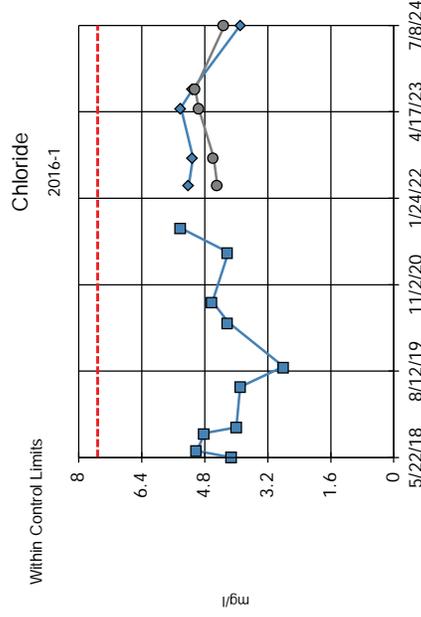
Background Data Summary: Mean=3.544, Std. Dev.=0.6106, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9744, critical = 0.829. Report alpha = 0.005208. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



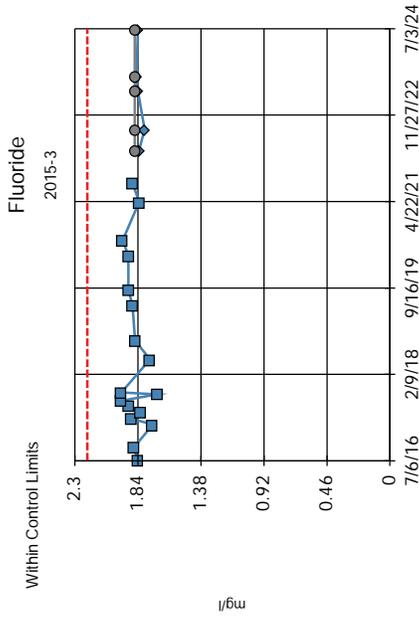
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Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



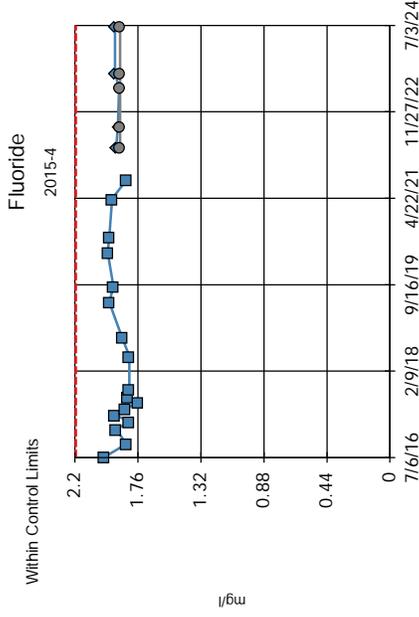
Background Data Summary: Mean=4.3, Std. Dev.=0.7149, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9465, critical = 0.842. Report alpha = 0.003902. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



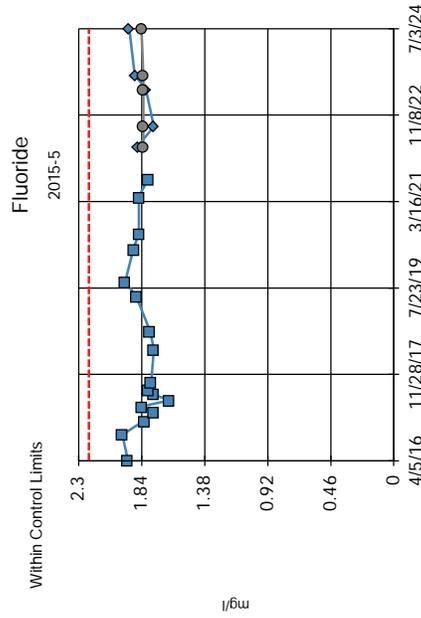
Background Data Summary: Mean=1.862, Std. Dev.=0.07699, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9214, critical = 0.892. Report alpha = 0.00115. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



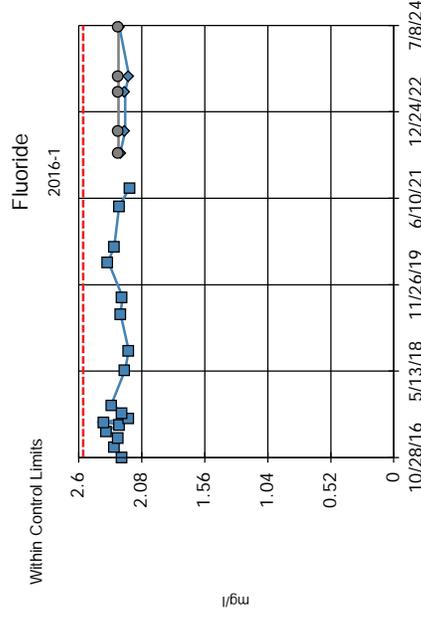
Background Data Summary: Mean=1.885, Std. Dev.=0.06866, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9411, critical = 0.892. Report alpha = 0.00115. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



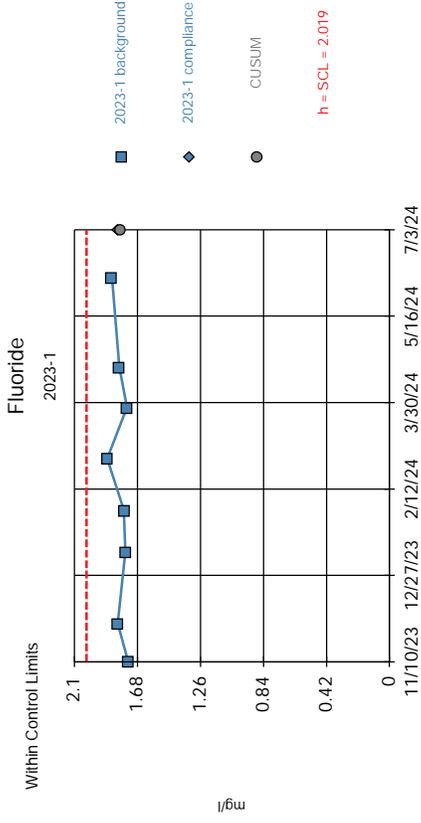
Background Data Summary: Mean=1.827, Std. Dev.=0.08851, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9674, critical = 0.892. Report alpha = 0.00115. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=2.27, Std. Dev.=0.06493, n=17. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9615, critical = 0.892. Report alpha = 0.00115. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

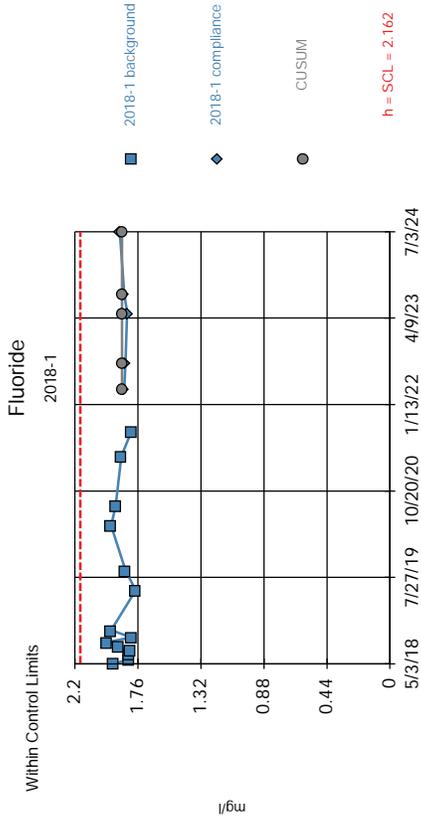
Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=1.795, Std. Dev.=0.04986, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9235, critical = 0.818. Report alpha = 0.001818. Dates ending 6/7/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 12:14 PM View: AppxIII

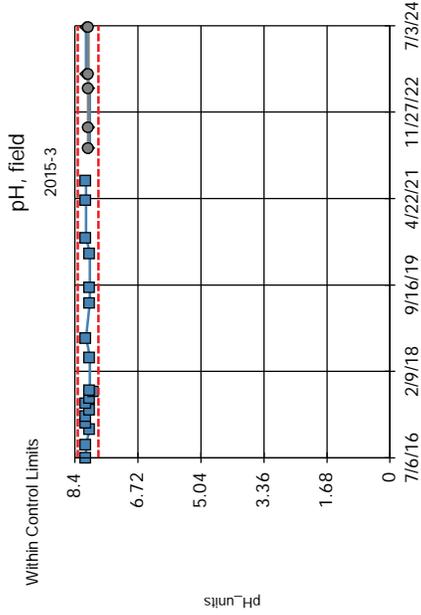
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=1.871, Std. Dev.=0.06464, n=14. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9286, critical = 0.874. Report alpha = 0.001876. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

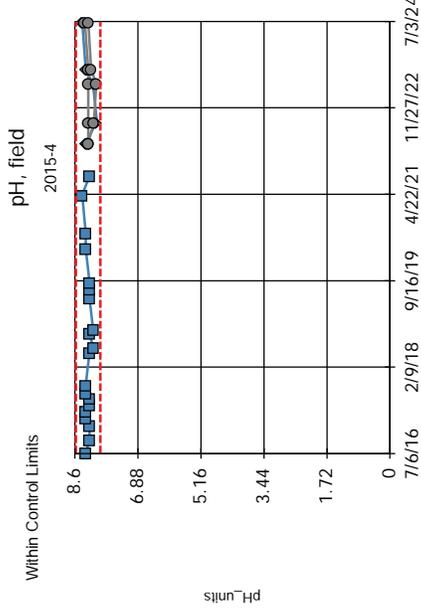
Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



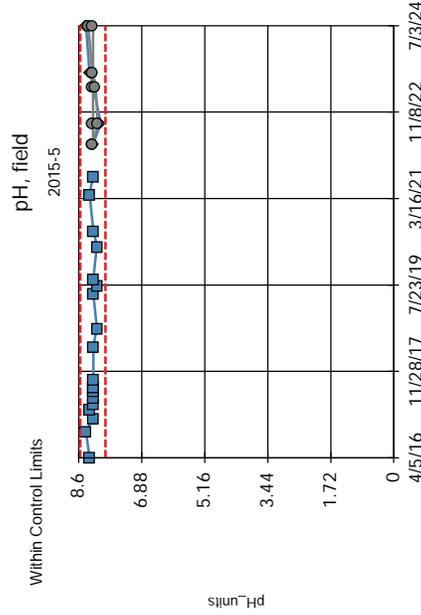
Background Data Summary: Mean=8.044, Std. Dev.=0.06157, n=18. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.743, critical = 0.897 (non-normal: user chose to continue). Report alpha = 0.001046. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



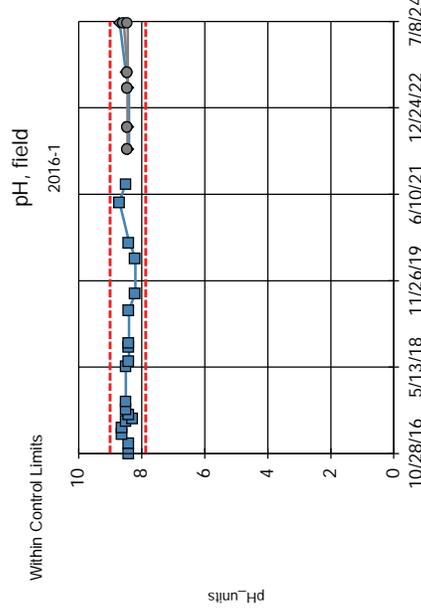
Background Data Summary: Mean=8.235, Std. Dev.=0.07452, n=20. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8526, critical = 0.905 (non-normal: user chose to continue). Report alpha = 0.000818. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:46 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



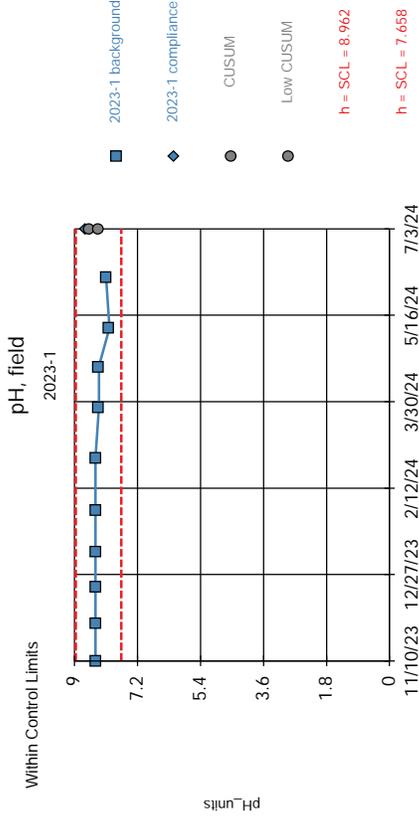
Background Data Summary: Mean=8.211, Std. Dev.=0.07584, n=18. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8123, critical = 0.897 (non-normal: user chose to continue). Report alpha = 0.001016. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=8.437, Std. Dev.=0.1257, n=19. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9211, critical = 0.901. Report alpha = 0.00092. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

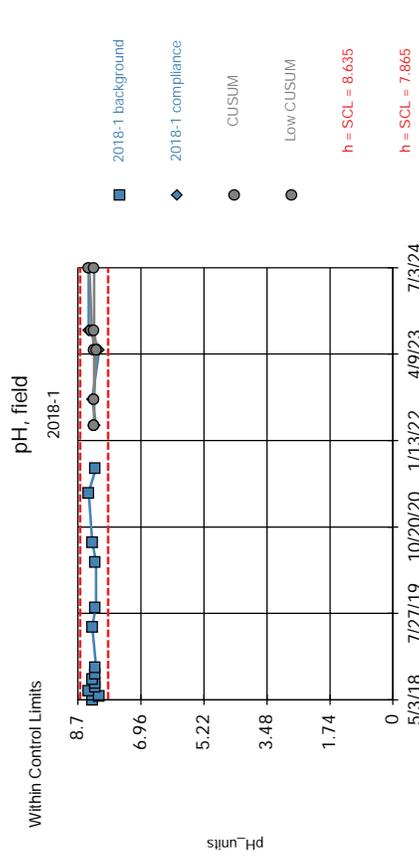
Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=8.31, Std. Dev.=0.1449, n=10. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.7006, critical = 0.842 (non-normal: user chose to continue). Report alpha = 0.000944. Dates ending 6/7/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 12:14 PM View: AppxIII

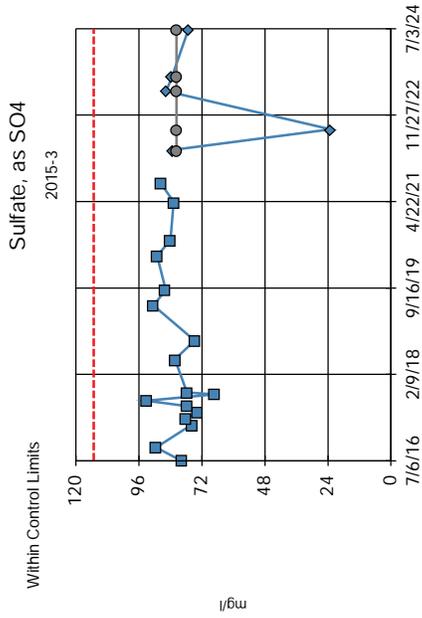
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=8.25, Std. Dev.=0.08549, n=14. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8571, critical = 0.874 (non-normal: user chose to continue). Report alpha = 0.001896. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

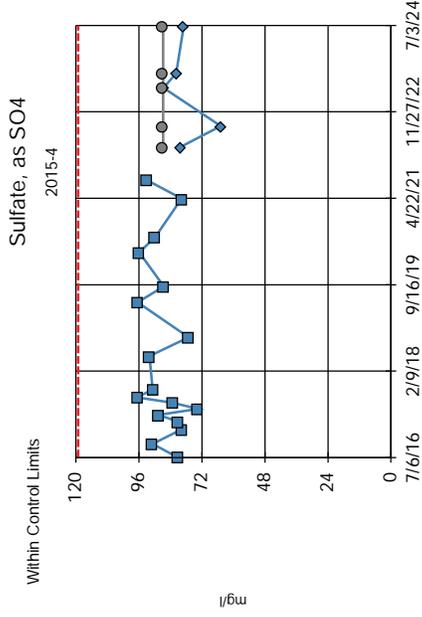
Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



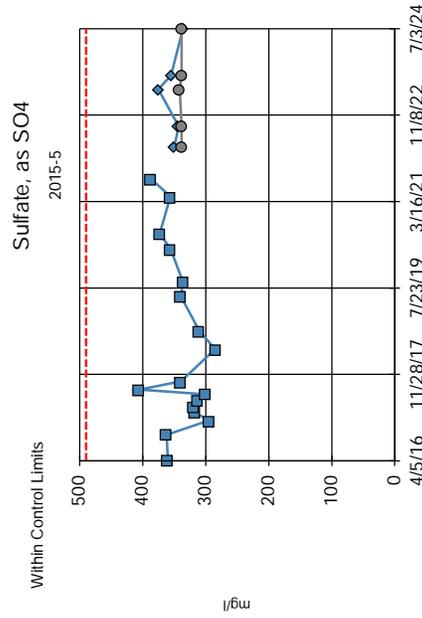
Background Data Summary: Mean=81.71, Std. Dev.=6.998, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9745, critical = 0.892. Report alpha = 0.001108. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
 Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



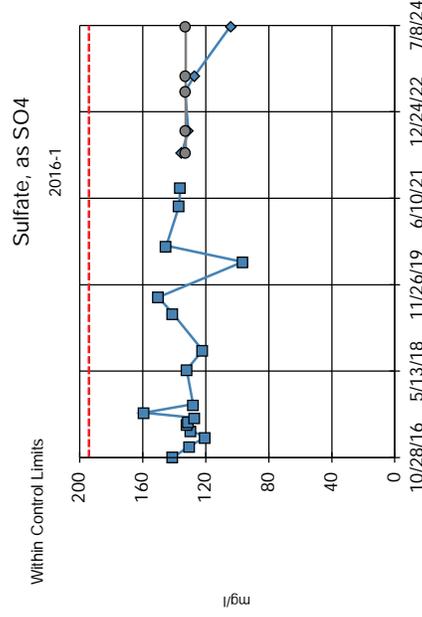
Background Data Summary: Mean=86.78, Std. Dev.=7.193, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9405, critical = 0.892. Report alpha = 0.001108. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
 Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



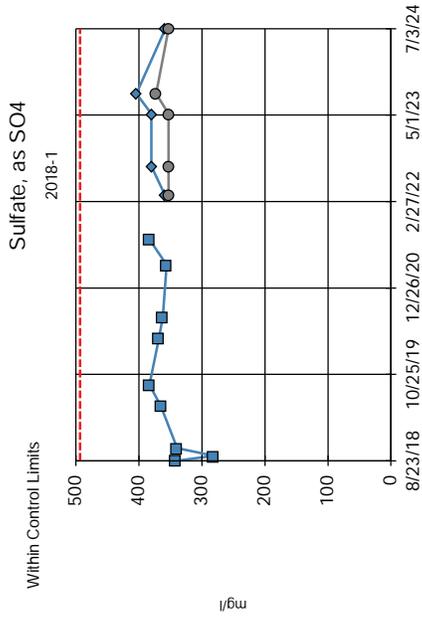
Background Data Summary: Mean=338.4, Std. Dev.=33.68, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9739, critical = 0.892. Report alpha = 0.001108. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
 Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



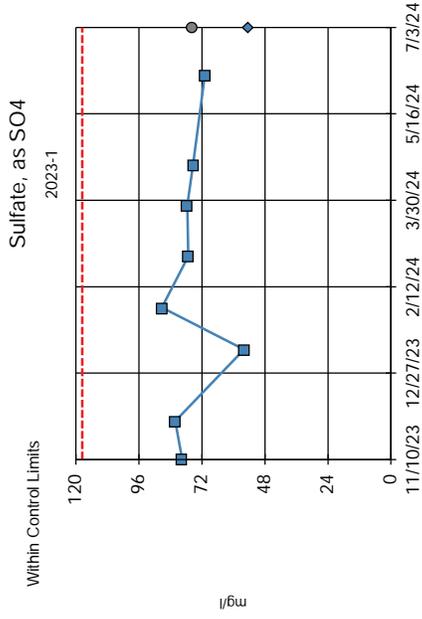
Background Data Summary: Mean=132.7, Std. Dev.=13.64, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9383, critical = 0.892. Report alpha = 0.001108. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
 Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



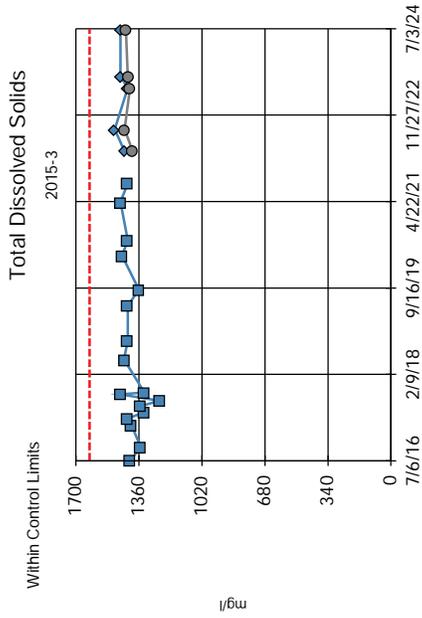
Background Data Summary: Mean=353.1, Std. Dev.=31.19, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.833, critical = 0.829. Report alpha = 0.004856. Dates ending 8/24/2021 used for control Stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
 Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



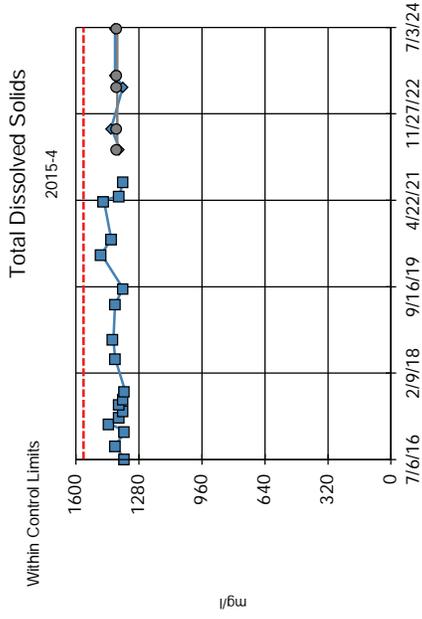
Background Data Summary: Mean=75.71, Std. Dev.=9.292, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8886, critical = 0.818. Report alpha = 0.001882. Dates ending 6/7/2024 used for control Stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 12:14 PM View: AppxIII
 Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



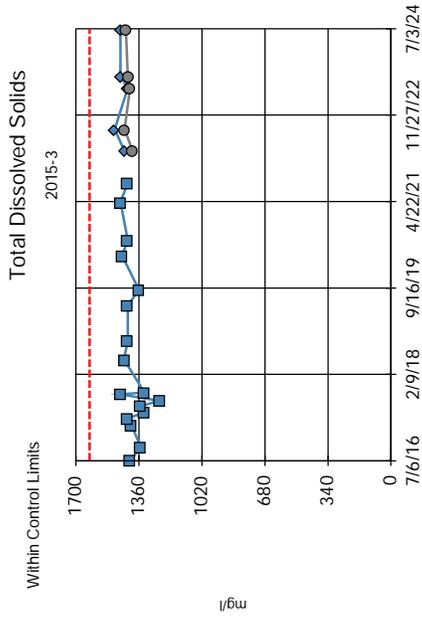
Background Data Summary (based on square transformation): Mean=194959, Std. Dev.=155322, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.8995, critical = 0.892. Report alpha = 0.001206. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



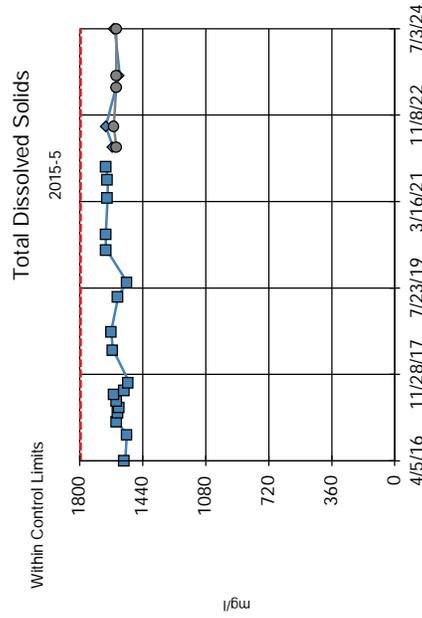
Background Data Summary (based on cube root transformation): Mean=11.16, Std. Dev.=0.09823, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8971, critical = 0.897. Report alpha = 0.00095. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



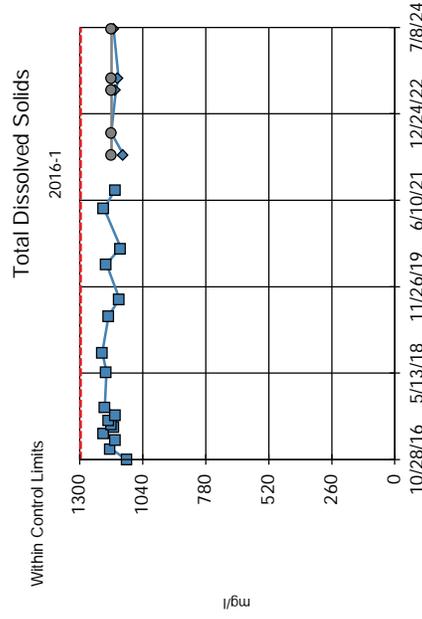
Background Data Summary: Mean=1591, Std. Dev.=45.31, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.9164, critical = 0.897. Report alpha = 0.00095. Dates ending 11/16/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



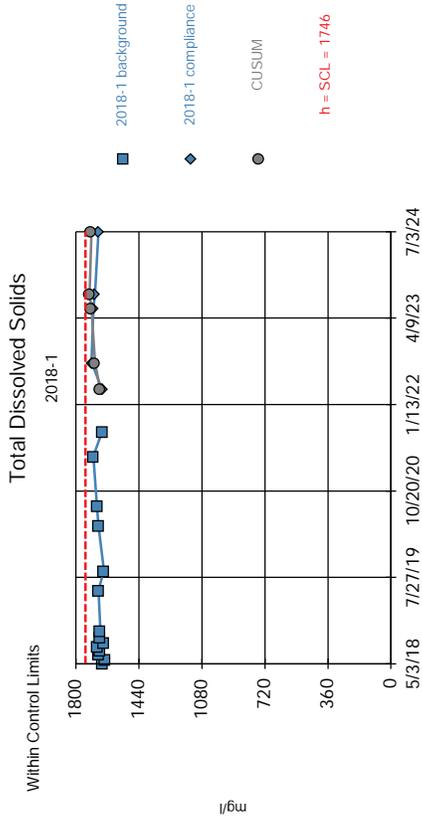
Background Data Summary: Mean=1168, Std. Dev.=28.43, n=17. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9413, critical = 0.892. Report alpha = 0.001112. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



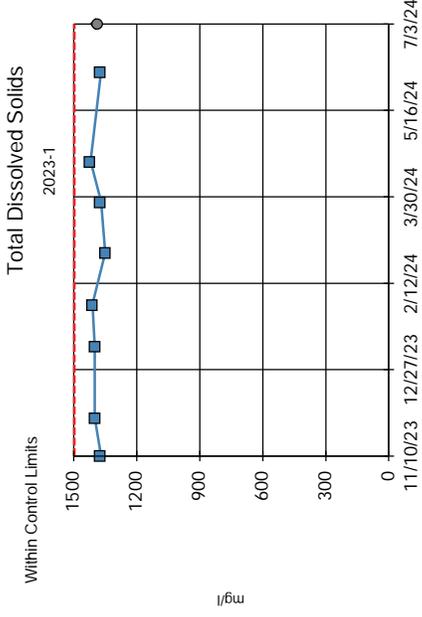
Background Data Summary: Mean=1168, Std. Dev.=28.43, n=17. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9413, critical = 0.892. Report alpha = 0.001112. Dates ending 8/23/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=1661, Std. Dev.=18.75, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9726, critical = 0.874. Report alpha = 0.0018. Dates ending 8/24/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/19/2024 2:47 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=1386, Std. Dev.=24.46, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.916, critical = 0.818. Report alpha = 0.001882. Dates ending 6/7/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 12:14 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

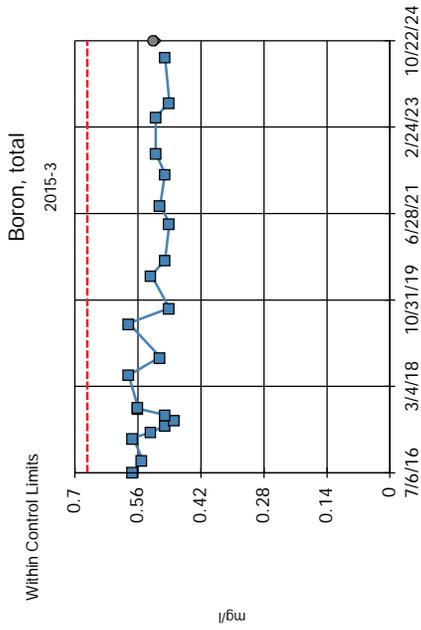
Shewhart-Cusum Control Chart / Rank Sum

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly Printed 12/19/2024, 2:49 PM

<u>Well</u>	<u>Sig.</u>	<u>h</u>	<u>SCL</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Deseas.</u>	<u>Transform</u>	<u>Method</u>
Boron, total (mg/l)	No	0.6875	0.6875	17	0.53	0.035	0	None	No	No	Param Intra
Boron, total (mg/l)	No	0.6834	0.6834	17	0.5235	0.03552	0	None	No	No	Param Intra
Boron, total (mg/l)	No	0.6745	0.6745	17	0.4782	0.04362	0	None	No	No	Param Intra
Boron, total (mg/l)	No	0.7085	0.7085	17	0.5112	0.04386	0	None	No	No	Param Intra
Boron, total (mg/l)	No	0.6329	0.6329	14	0.5193	0.02526	0	None	No	No	Param Intra
Calcium, total (mg/l)	No	4.452	4.452	8	3.313	0.2532	0	None	No	No	Param Intra
Calcium, total (mg/l)	No	4.023	4.023	8	3.063	0.2134	0	None	No	No	Param Intra
Calcium, total (mg/l)	No	5.454	5.454	8	4.138	0.2925	0	None	No	No	Param Intra
Calcium, total (mg/l)	No	3.326	3.326	8	2.588	0.1642	0	None	No	No	Param Intra
Calcium, total (mg/l)	No	5.293	5.293	8	3.881	0.3138	0	None	Yes	No	Param Intra
Chloride (mg/l)	No	9.203	9.203	8	5.363	0.8535	0	None	No	No	Param Intra
Chloride (mg/l)	No	9.668	9.668	11	5.627	0.8979	0	None	No	No	Param Intra
Chloride (mg/l)	No	6.292	6.292	9	3.544	0.6106	0	None	No	No	Param Intra
Chloride (mg/l)	No	7.517	7.517	10	4.3	0.7149	0	None	No	No	Param Intra
Chloride (mg/l)	No	7.434	7.434	14	4.929	0.5567	0	None	No	No	Param Intra
Fluoride (mg/l)	No	2.208	2.208	17	1.862	0.07699	0	None	No	No	Param Intra
Fluoride (mg/l)	No	2.194	2.194	17	1.885	0.06866	0	None	No	No	Param Intra
Fluoride (mg/l)	No	2.225	2.225	17	1.827	0.08851	0	None	No	No	Param Intra
Fluoride (mg/l)	No	2.562	2.562	17	2.27	0.06493	0	None	Yes	No	Param Intra
Fluoride (mg/l)	No	2.162	2.162	14	1.871	0.06464	0	None	Yes	No	Param Intra
pH, field (pH_units)	No	8.322&7.767	8.322&7.767	18	8.044	0.06157	0	None	No	No	Param Intra
pH, field (pH_units)	No	8.57&7.9	8.57&7.9	20	8.235	0.07452	0	None	No	No	Param Intra
pH, field (pH_units)	No	8.552&7.87	8.552&7.87	18	8.211	0.07584	0	None	No	No	Param Intra
pH, field (pH_units)	No	9.002&7.871	9.002&7.871	19	8.437	0.1257	0	None	No	No	Param Intra
pH, field (pH_units)	No	8.635&7.865	8.635&7.865	14	8.25	0.08549	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	No	113.2	113.2	17	81.71	6.998	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	No	119.2	119.2	17	86.78	7.193	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	No	489.9	489.9	17	338.4	33.68	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	No	194.1	194.1	17	132.7	13.64	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	No	493.5	493.5	9	353.1	31.19	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	No	1626	1626	17	1944959	155322	0	None	No	x^2	Param Intra
Total Dissolved Solids (mg/l)	No	1561	1561	18	11.16	0.09823	0	None	No	x^(1/3)	Param Intra
Total Dissolved Solids (mg/l)	No	1794	1794	18	1591	45.31	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	No	1296	1296	17	1168	28.43	0	None	Yes	No	Param Intra
Total Dissolved Solids (mg/l)	No	1746	1746	14	1661	18.75	0	None	No	No	Param Intra
Boron, total (mg/l)	No	0.6061	0.6061	8	0.5213	0.01885	0	None	No	No	Param Intra
Calcium, total (mg/l)	No	3.757	3.757	8	3.261	0.1101	0	None	No	No	Param Intra
Chloride (mg/l)	No	19.48	19.48	8	16.05	0.7616	0	None	No	No	Param Intra
Fluoride (mg/l)	No	2.019	2.019	8	1.795	0.04986	0	None	No	No	Param Intra
pH, field (pH_units)	No	8.962&7.658	8.962&7.658	10	8.31	0.1449	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	No	117.5	117.5	8	75.71	9.292	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	No	1496	1496	8	1386	24.46	0	None	No	No	Param Intra

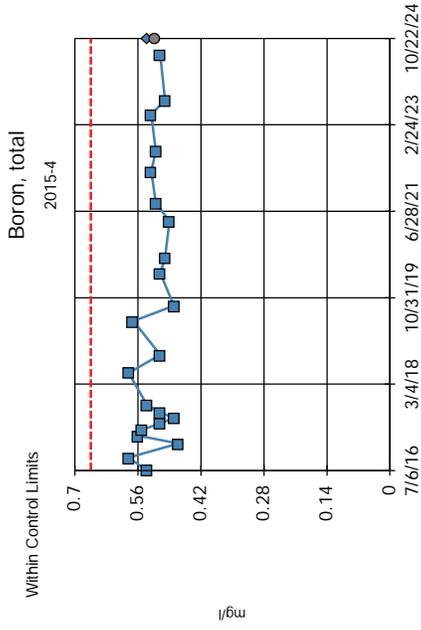
Appendix B

Statistical Review for SSIs: Event 2



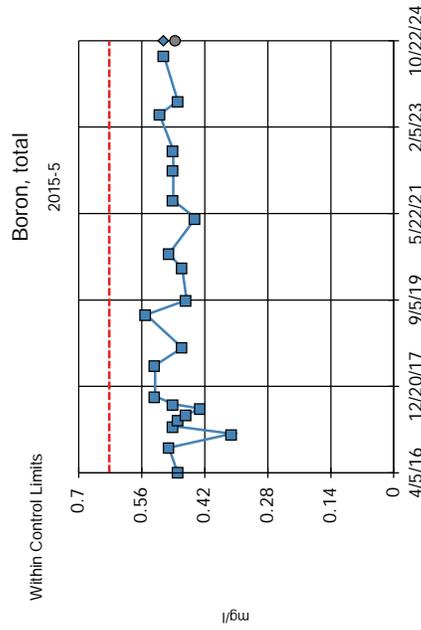
Background Data Summary: Mean=0.5245, Std. Dev.=0.03277, n=22. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values: transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.8559, critical = 0.911 (non-normal; user chose to continue). Report alpha = 0.000124. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



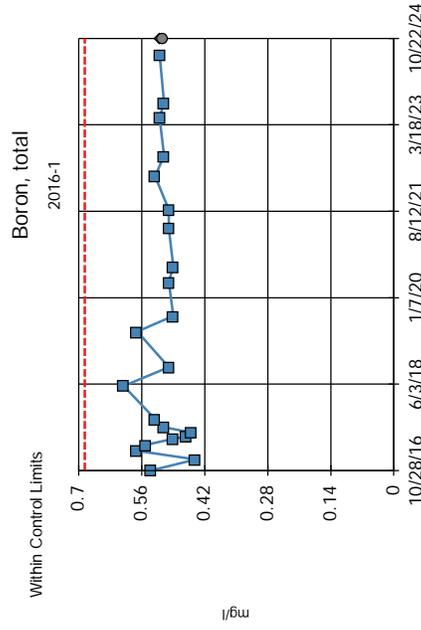
Background Data Summary: Mean=0.5223, Std. Dev.=0.03161, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9558, critical = 0.911. Report alpha = 0.000124. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



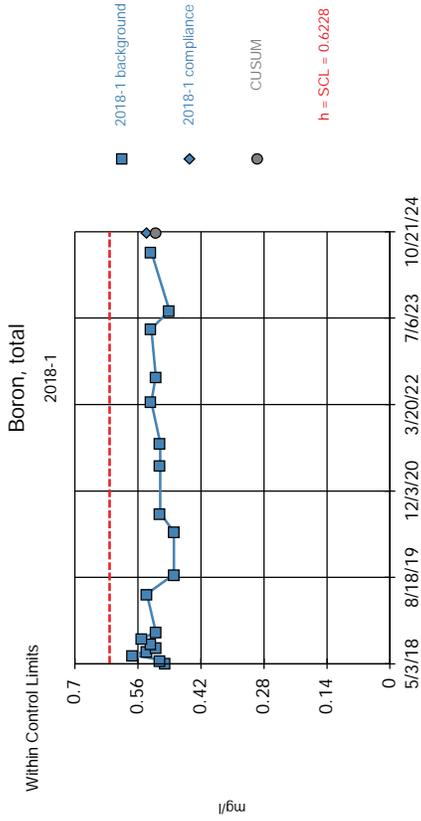
Background Data Summary (based on square transformation): Mean=0.2345, Std. Dev.=0.03659, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9396, critical = 0.911. Report alpha = 0.000124. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



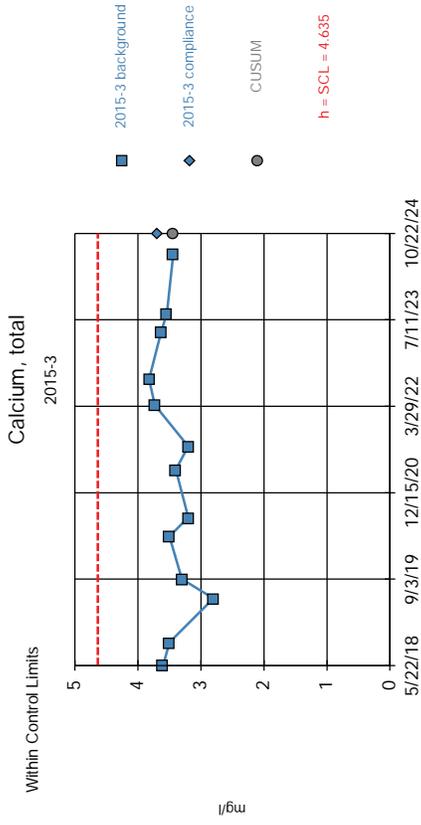
Background Data Summary: Mean=0.5127, Std. Dev.=0.03857, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9668, critical = 0.911. Report alpha = 0.000124. Dates ending 7/8/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



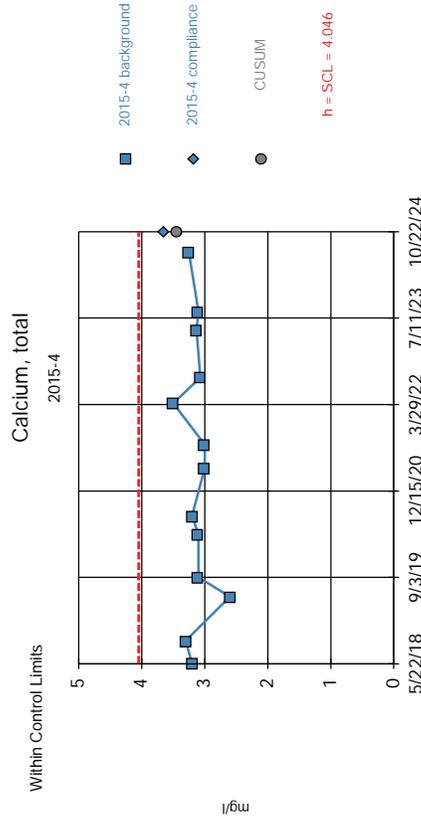
Background Data Summary: Mean=0.5195, Std. Dev.=0.02297, n=19. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9676, critical = 0.901. Report alpha = 0.000178. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



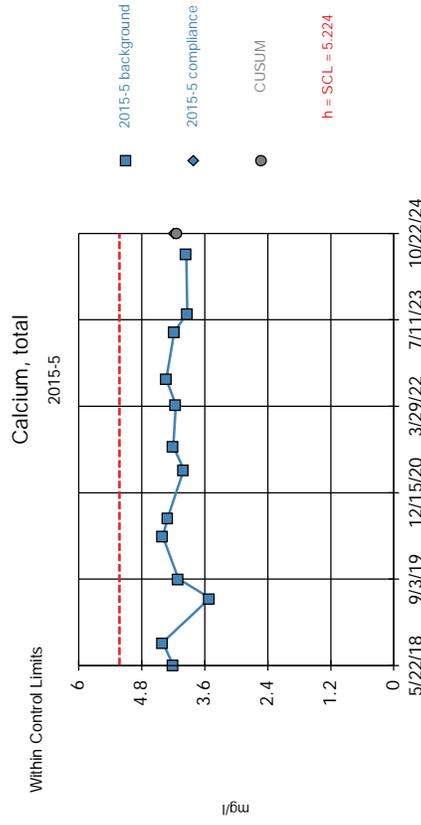
Background Data Summary: Mean=3.435, Std. Dev.=0.2666, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9418, critical = 0.866. Report alpha = 0.000526. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



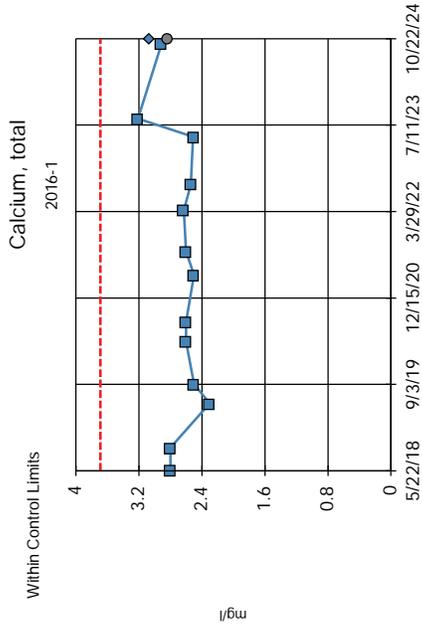
Background Data Summary: Mean=3.119, Std. Dev.=0.2061, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9, critical = 0.866. Report alpha = 0.000526. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



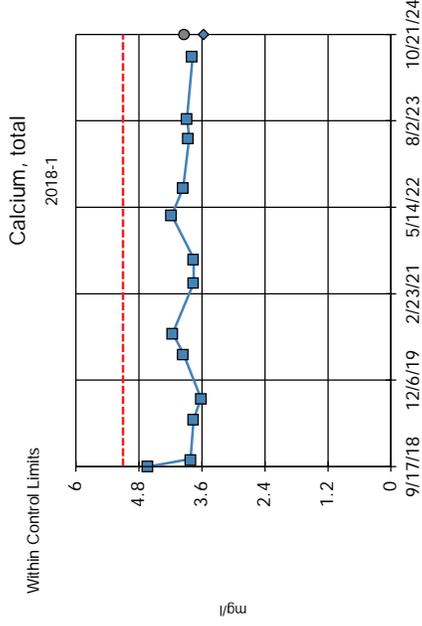
Background Data Summary: Mean=4.126, Std. Dev.=0.244, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8851, critical = 0.866. Report alpha = 0.000526. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



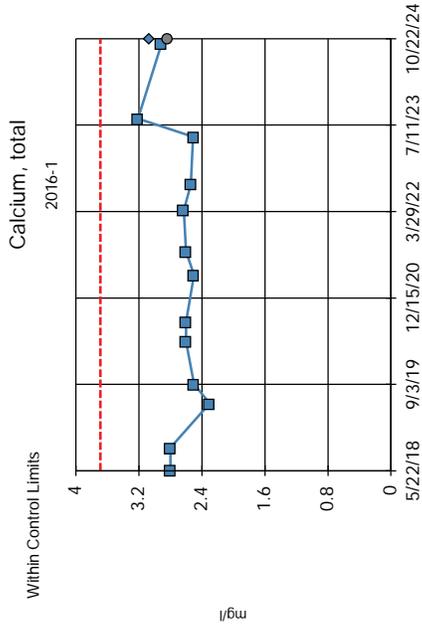
Background Data Summary: Mean=2.654, Std. Dev.=0.2297, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9021, critical = 0.866. Report alpha = 0.000526. Dates ending 9/24/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:41 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



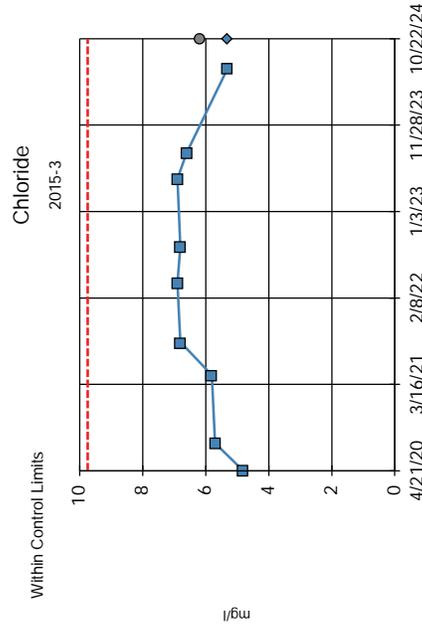
Background Data Summary: Mean=3.926, Std. Dev.=0.2615, n=13. Seasonality was detected with 95% confidence and data were deseasonalized. Analysis run on non-transformed values: Transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.7053, critical = 0.866 (non-normal: user chose to continue). Report alpha = 0.000526. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



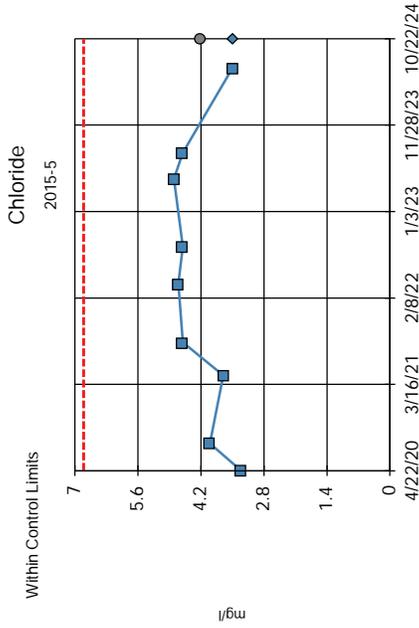
Background Data Summary: Mean=6.178, Std. Dev.=0.7934, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8489, critical = 0.829. Report alpha = 0.001342. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



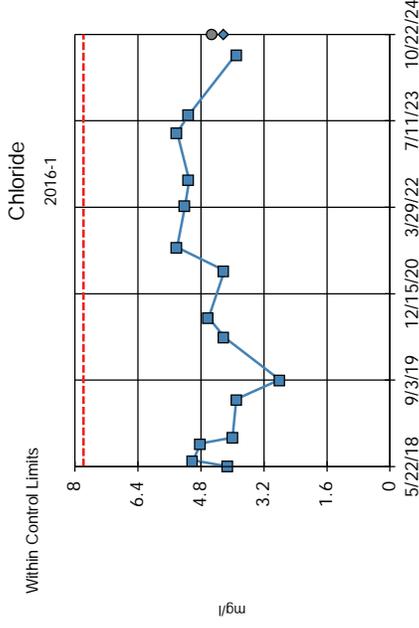
Background Data Summary: Mean=5.944, Std. Dev.=0.9619, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9286, critical = 0.887. Report alpha = 0.000268. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



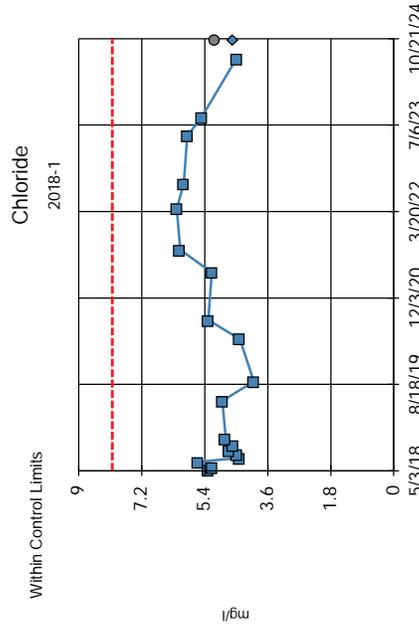
Background Data Summary: Mean=4.2, Std. Dev.=0.5788, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8476, critical = 0.829. Report alpha = 0.00137. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



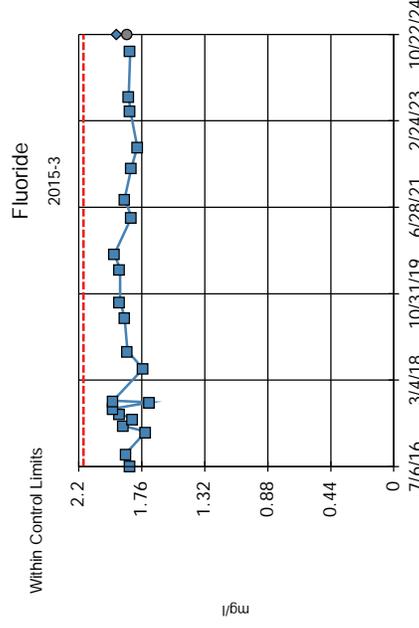
Background Data Summary: Mean=4.513, Std. Dev.=0.7259, n=15. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9146, critical = 0.881. Report alpha = 0.000316. Dates ending 7/8/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



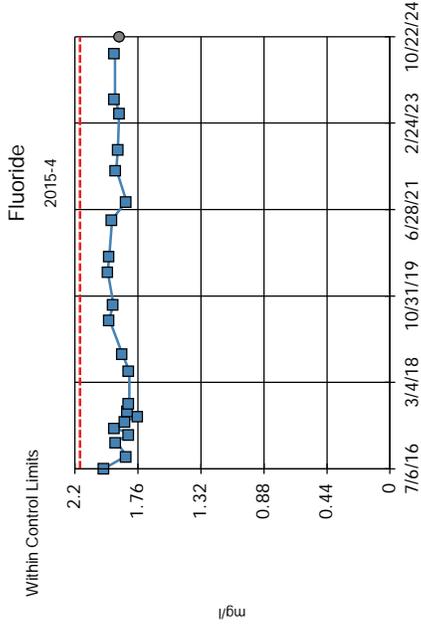
Background Data Summary: Mean=5.111, Std. Dev.=0.6506, n=19. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9539, critical = 0.901. Report alpha = 0.000202. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=1.855, Std. Dev.=0.06933, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9548, critical = 0.911. Report alpha = 0.000088. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

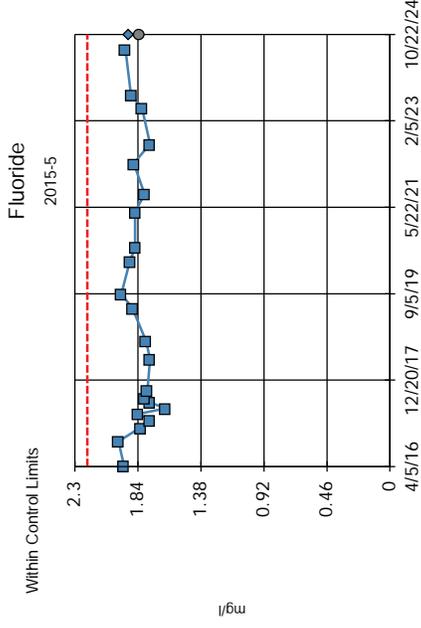
Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



■ 2015-4 background
 ◆ 2015-4 compliance
 ● CUSUM
 h = SCL = 2.165

Background Data Summary: Mean=1.89, Std. Dev.=0.06102, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9672, critical = 0.911. Report alpha = 0.000088. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

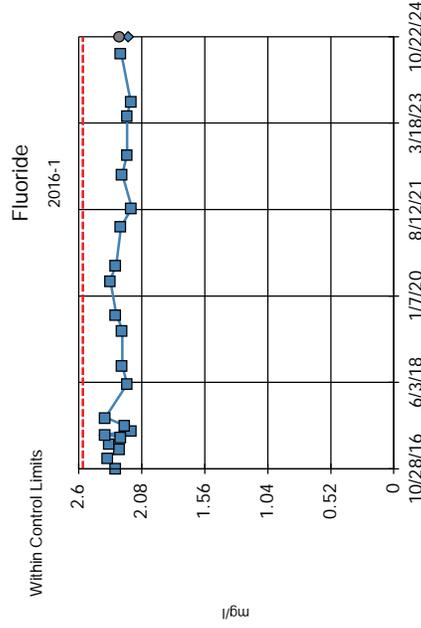
Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
 Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



■ 2015-5 background
 ◆ 2015-5 compliance
 ● CUSUM
 h = SCL = 2.209

Background Data Summary: Mean=1.832, Std. Dev.=0.08378, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9708, critical = 0.911. Report alpha = 0.000088. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

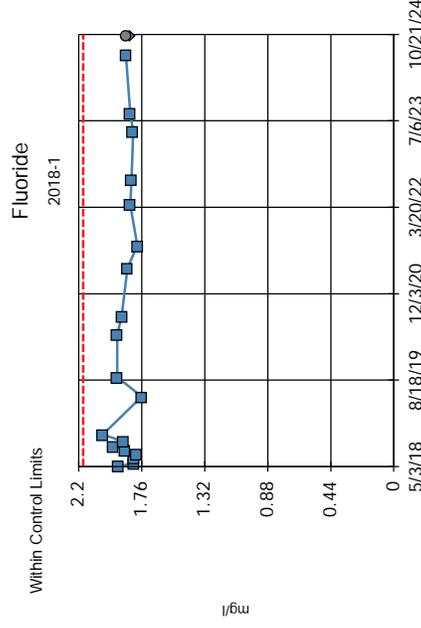
Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
 Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



■ 2016-1 background
 ◆ 2016-1 compliance
 ● CUSUM
 h = SCL = 2.565

Background Data Summary: Mean=2.26, Std. Dev.=0.06765, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9353, critical = 0.911. Report alpha = 0.000088. Dates ending 7/8/2024 used for control stats. Standardized h=4.5, SCL=4.5.

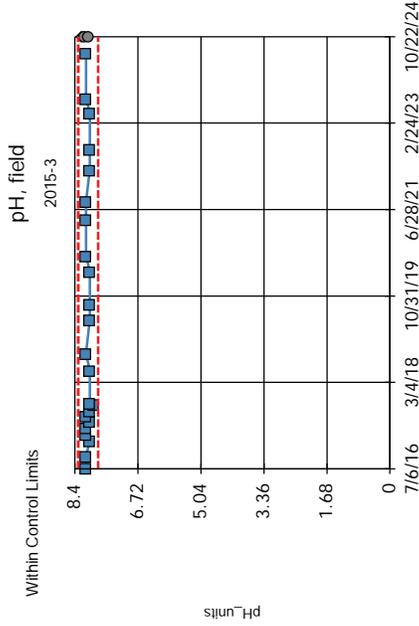
Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
 Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



■ 2018-1 background
 ◆ 2018-1 compliance
 ● CUSUM
 h = SCL = 2.169

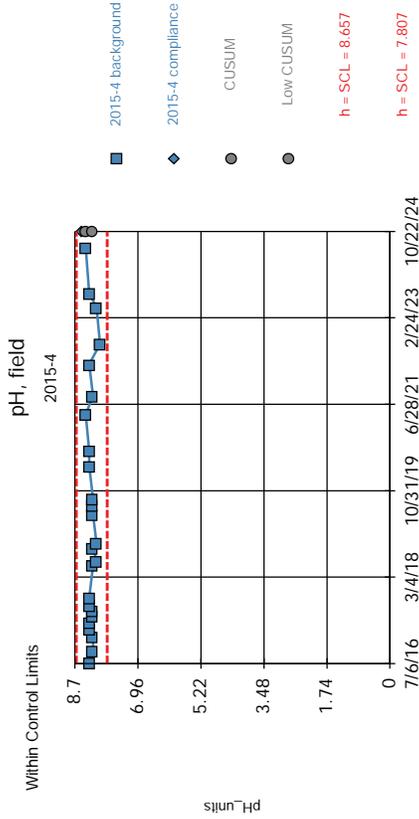
Background Data Summary: Mean=1.867, Std. Dev.=0.06717, n=19. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9649, critical = 0.901. Report alpha = 0.000174. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
 Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



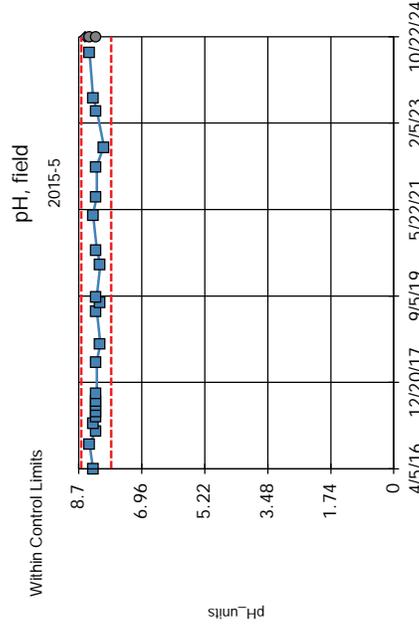
Background Data Summary: Mean=8.043, Std. Dev.=0.05898, n=23. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.7337, critical = 0.914 (non-normal: user chose to continue). Report alpha = 0.000096. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



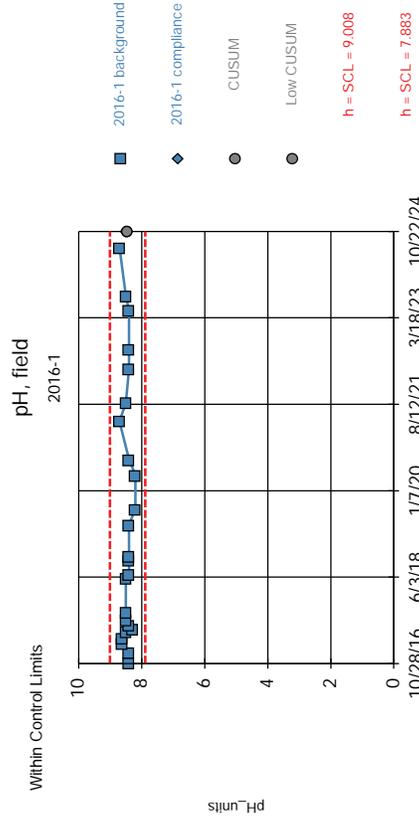
Background Data Summary: Mean=8.232, Std. Dev.=0.09452, n=25. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9029, critical = 0.918 (non-normal: user chose to continue). Report alpha = 0.000074. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



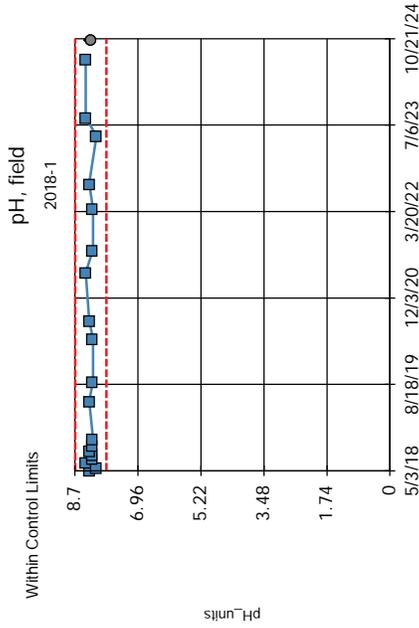
Background Data Summary: Mean=8.213, Std. Dev.=0.09197, n=23. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8656, critical = 0.914 (non-normal: user chose to continue). Report alpha = 0.000112. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



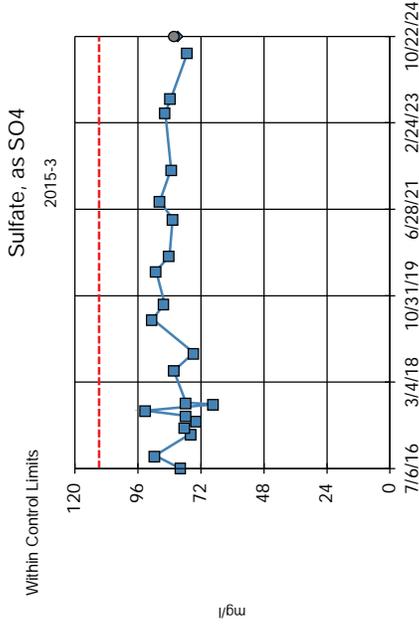
Background Data Summary: Mean=8.446, Std. Dev.=0.125, n=24. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8914, critical = 0.916 (non-normal: user chose to continue). Report alpha = 0.000104. Dates ending 7/8/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



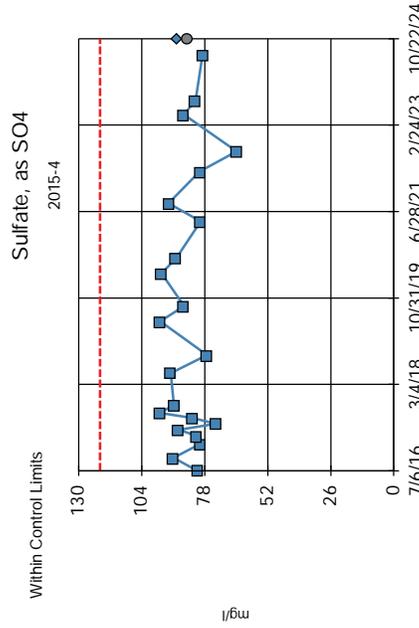
Background Data Summary: Mean=8.258, Std. Dev.=0.09612, n=19. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values: transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8698, critical = 0.901 (non-normal: user chose to continue). Report alpha = 0.000176. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



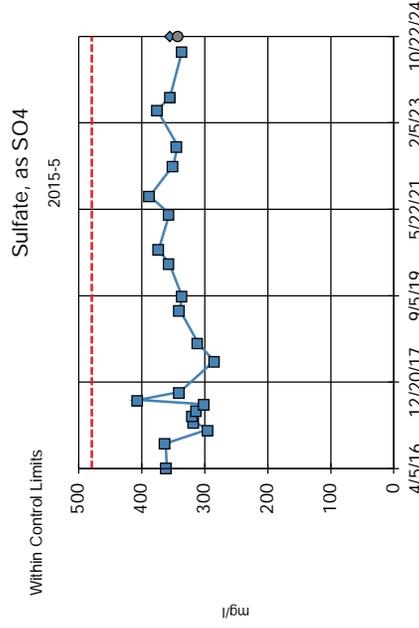
Background Data Summary: Mean=81.82, Std. Dev.=6.424, n=21. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9807, critical = 0.908. Report alpha = 0.00015. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=84.88, Std. Dev.=8.061, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.952, critical = 0.911. Report alpha = 0.000108. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

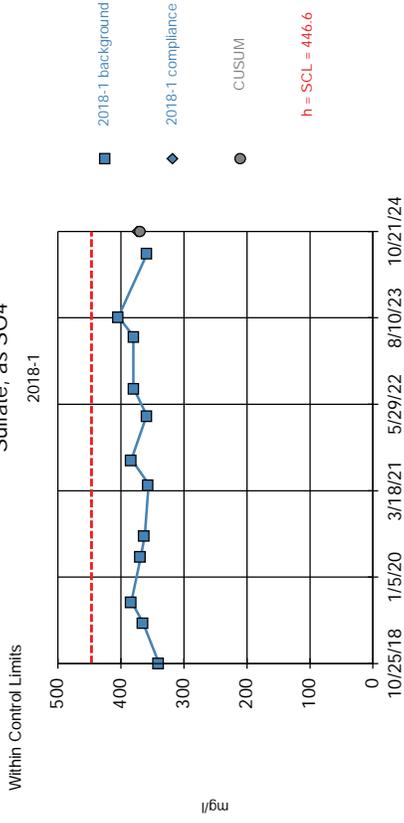
Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=341.4, Std. Dev.=30.65, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9844, critical = 0.911. Report alpha = 0.000108. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

Sulfate, as SO4

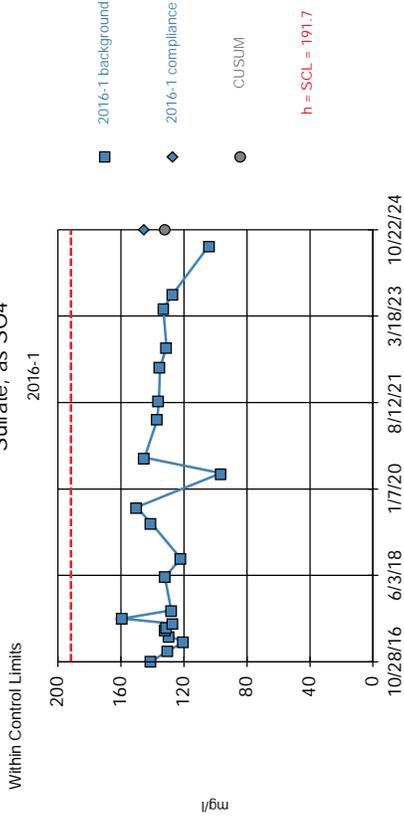


Background Data Summary: Mean=369.8, Std. Dev.=17.08, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9606, critical = 0.859. Report alpha = 0.00058. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

Sulfate, as SO4

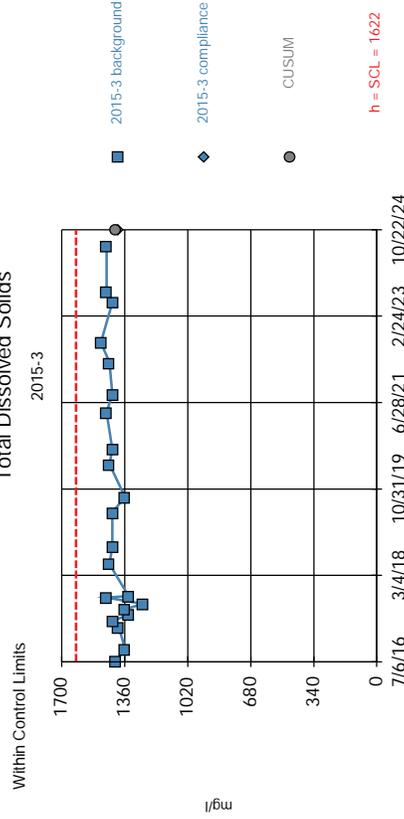


Background Data Summary: Mean=131.2, Std. Dev.=13.43, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.927, critical = 0.911. Report alpha = 0.000108. Dates ending 7/8/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

Total Dissolved Solids

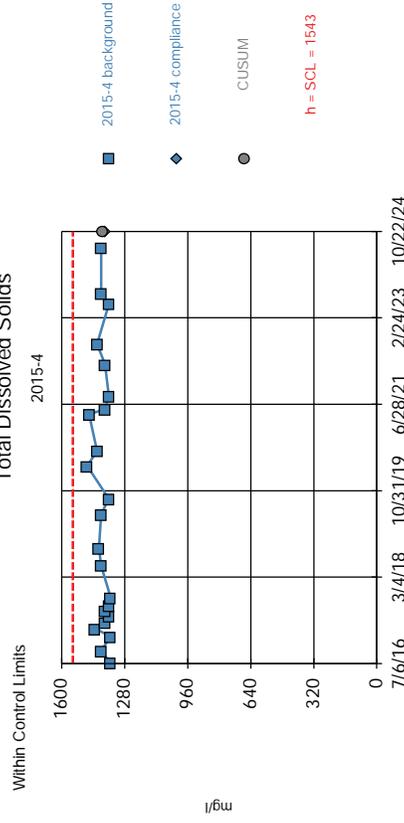


Background Data Summary (based on cube transformation): Mean=2.8e9, Std. Dev.=3.3e8, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9169, critical = 0.911. Report alpha = 0.000114. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

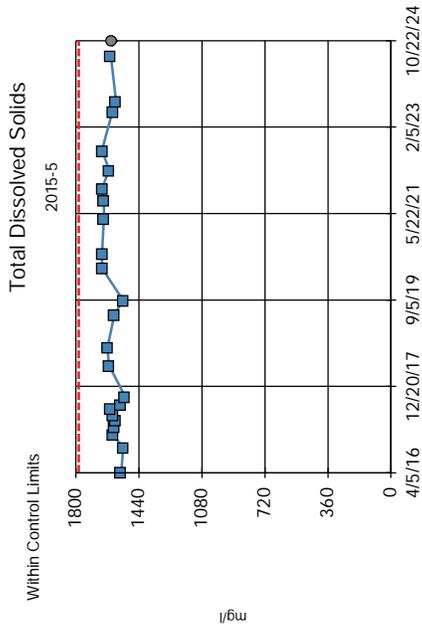
Total Dissolved Solids



Background Data Summary: Mean=1390, Std. Dev.=33.91, n=23. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8865, critical = 0.914 (non-normal: user chose to continue). Report alpha = 0.000096. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

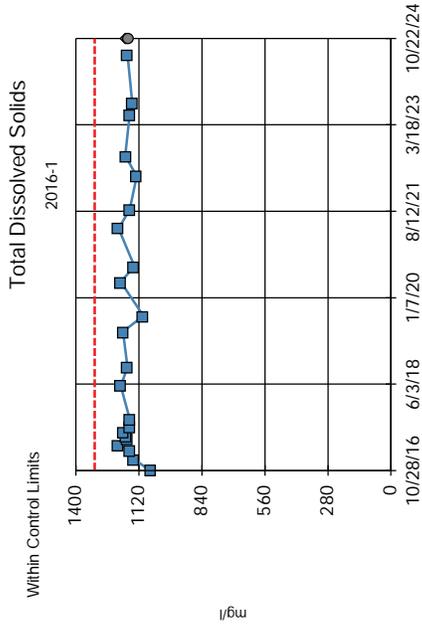
Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



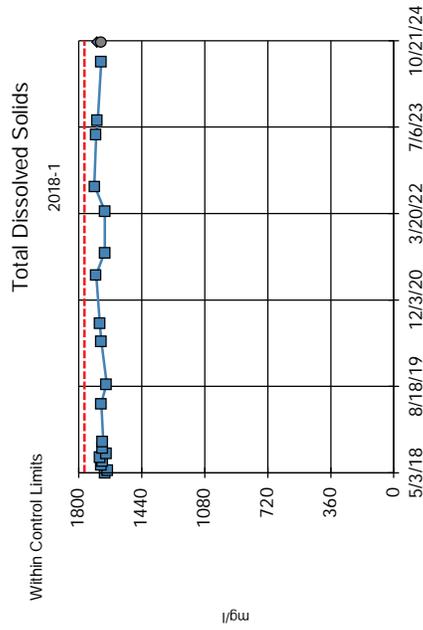
Background Data Summary: Mean=1593, Std. Dev.=42.17, n=23. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9293, critical = 0.914. Report alpha = 0.000096. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



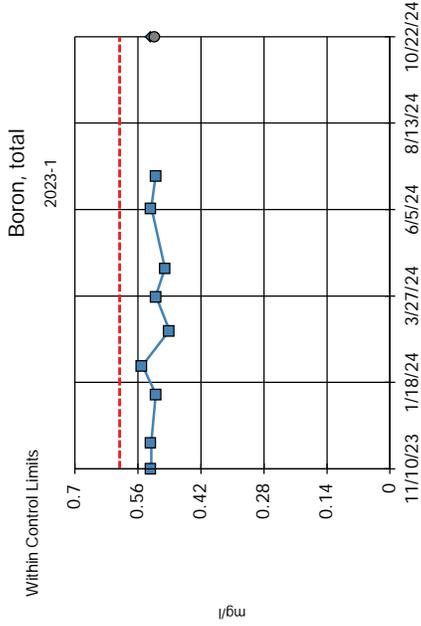
Background Data Summary: Mean=1164, Std. Dev.=34.02, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9196, critical = 0.911. Report alpha = 0.00016. Dates ending 7/8/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:42 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



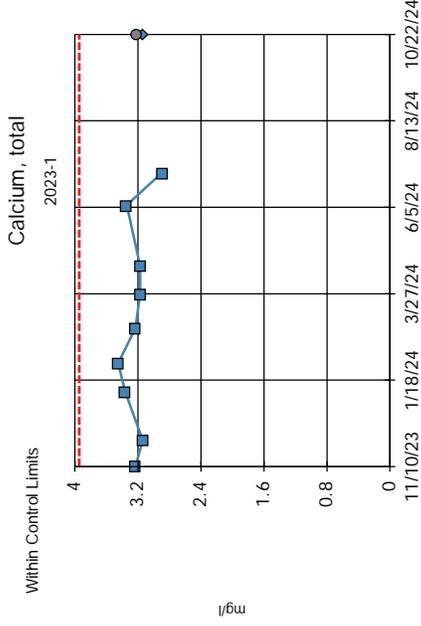
Background Data Summary: Mean=1667, Std. Dev.=22.07, n=19. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9661, critical = 0.901. Report alpha = 0.00018. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/17/2024 8:43 AM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



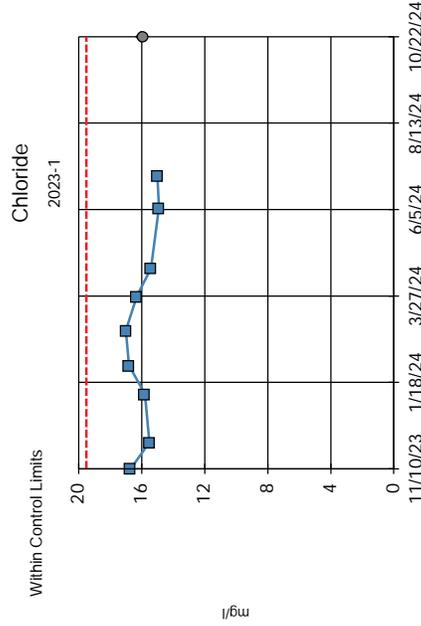
Background Data Summary: Mean=0.5211, Std. Dev.=0.01764, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9251, critical = 0.829. Report alpha = 0.00136. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/16/2024 5:28 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



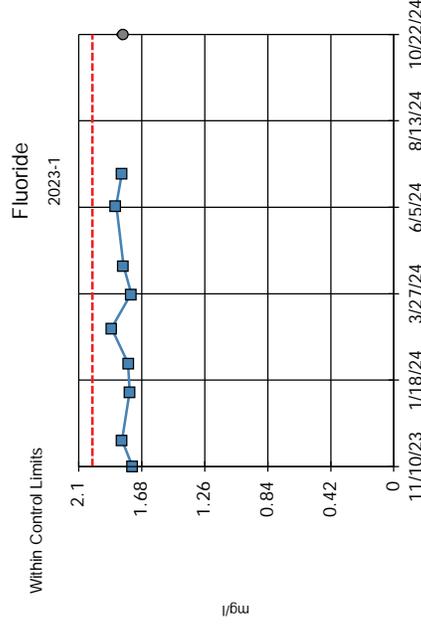
Background Data Summary: Mean=3.22, Std. Dev.=0.161, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.935, critical = 0.829. Report alpha = 0.00136. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/16/2024 5:28 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



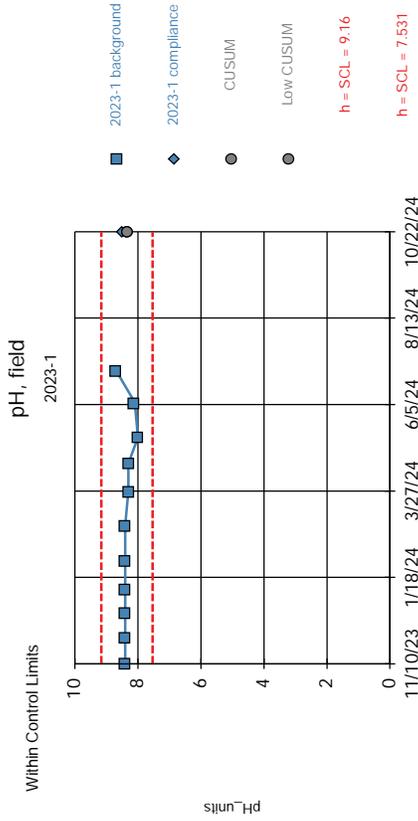
Background Data Summary: Mean=15.93, Std. Dev.=0.7937, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9198, critical = 0.829. Report alpha = 0.00136. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/16/2024 5:28 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



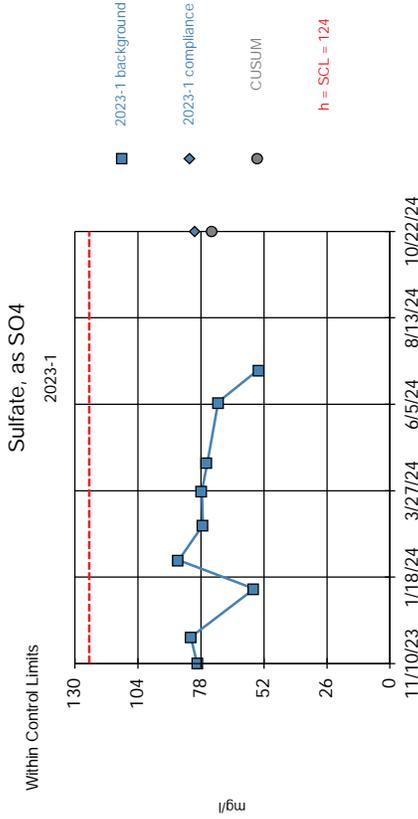
Background Data Summary: Mean=1.797, Std. Dev.=0.0469, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9388, critical = 0.829. Report alpha = 0.00136. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/16/2024 5:28 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Background Data Summary: Mean=8.345, Std. Dev.=0.1809, n=11. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8532, critical = 0.85. Report alpha = 0.000808. Dates ending 7/3/2024 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 12/16/2024 5:28 PM View: AppxIII
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly



Shewhart-Cusum Control Chart / Rank Sum

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly Printed 12/17/2024, 8:43 AM

<u>Constituent</u>	<u>Well</u>	<u>Sig.</u>	<u>h</u>	<u>SCL</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>%NDS</u>	<u>ND Adj.</u>	<u>Diseas.</u>	<u>Transform</u>	<u>Method</u>
Boron, total (mg/l)	2015-3	No	0.672	0.672	22	0.5245	0.03277	0	None	No	No	Param Intra
Boron, total (mg/l)	2015-4	No	0.6645	0.6645	22	0.5223	0.03161	0	None	No	No	Param Intra
Boron, total (mg/l)	2015-5	No	0.6318	0.6318	22	0.2345	0.03659	0	None	No	x^2	Param Intra
Boron, total (mg/l)	2016-1	No	0.6863	0.6863	22	0.5127	0.03857	0	None	No	No	Param Intra
Boron, total (mg/l)	2018-1	No	0.6228	0.6228	19	0.5195	0.02297	0	None	No	No	Param Intra
Calcium, total (mg/l)	2015-3	No	4.635	4.635	13	3.435	0.2666	0	None	No	No	Param Intra
Calcium, total (mg/l)	2015-4	No	4.046	4.046	13	3.119	0.2061	0	None	No	No	Param Intra
Calcium, total (mg/l)	2015-5	No	5.224	5.224	13	4.126	0.244	0	None	No	No	Param Intra
Calcium, total (mg/l)	2016-1	No	3.687	3.687	13	2.654	0.2297	0	None	No	No	Param Intra
Calcium, total (mg/l)	2018-1	No	5.103	5.103	13	3.926	0.2615	0	None	Yes	No	Param Intra
Chloride (mg/l)	2015-3	No	9.748	9.748	9	6.178	0.7934	0	None	No	No	Param Intra
Chloride (mg/l)	2015-4	No	10.27	10.27	16	5.944	0.9619	0	None	No	No	Param Intra
Chloride (mg/l)	2015-5	No	6.805	6.805	9	4.2	0.5788	0	None	No	No	Param Intra
Chloride (mg/l)	2016-1	No	7.78	7.78	15	4.513	0.7259	0	None	No	No	Param Intra
Chloride (mg/l)	2018-1	No	8.038	8.038	19	5.111	0.6506	0	None	No	No	Param Intra
Fluoride (mg/l)	2015-3	No	2.167	2.167	22	1.855	0.06933	0	None	No	No	Param Intra
Fluoride (mg/l)	2015-4	No	2.165	2.165	22	1.89	0.06102	0	None	No	No	Param Intra
Fluoride (mg/l)	2015-5	No	2.209	2.209	22	1.832	0.08378	0	None	No	No	Param Intra
Fluoride (mg/l)	2016-1	No	2.565	2.565	22	2.26	0.06765	0	None	No	No	Param Intra
Fluoride (mg/l)	2018-1	No	2.169	2.169	19	1.867	0.06717	0	None	No	No	Param Intra
pH, field (pH_units)	2015-3	No	8.309&7.778	8.309&7.778	23	8.043	0.05898	0	None	No	No	Param Intra
pH, field (pH_units)	2015-4	No	8.657&7.807	8.657&7.807	25	8.232	0.09452	0	None	No	No	Param Intra
pH, field (pH_units)	2015-5	No	8.627&7.799	8.627&7.799	23	8.213	0.09197	0	None	No	No	Param Intra
pH, field (pH_units)	2016-1	No	9.008&7.883	9.008&7.883	24	8.446	0.125	0	None	No	No	Param Intra
pH, field (pH_units)	2018-1	No	8.69&7.825	8.69&7.825	19	8.258	0.09612	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2015-3	No	110.7	110.7	21	81.82	6.424	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2015-4	No	121.2	121.2	22	84.88	8.061	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2015-5	No	479.3	479.3	22	341.4	30.65	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2016-1	No	191.7	191.7	22	131.2	13.43	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2018-1	No	446.6	446.6	12	369.8	17.08	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2015-3	No	1622	1622	22	2.8e9	3.3e8	0	None	No	x^3	Param Intra
Total Dissolved Solids (mg/l)	2015-4	No	1543	1543	23	1390	33.91	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2015-5	No	1783	1783	23	1593	42.17	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2016-1	No	1317	1317	22	1164	34.02	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2018-1	No	1767	1767	19	1667	22.07	0	None	No	No	Param Intra

Shewhart-Cusum Control Chart / Rank Sum

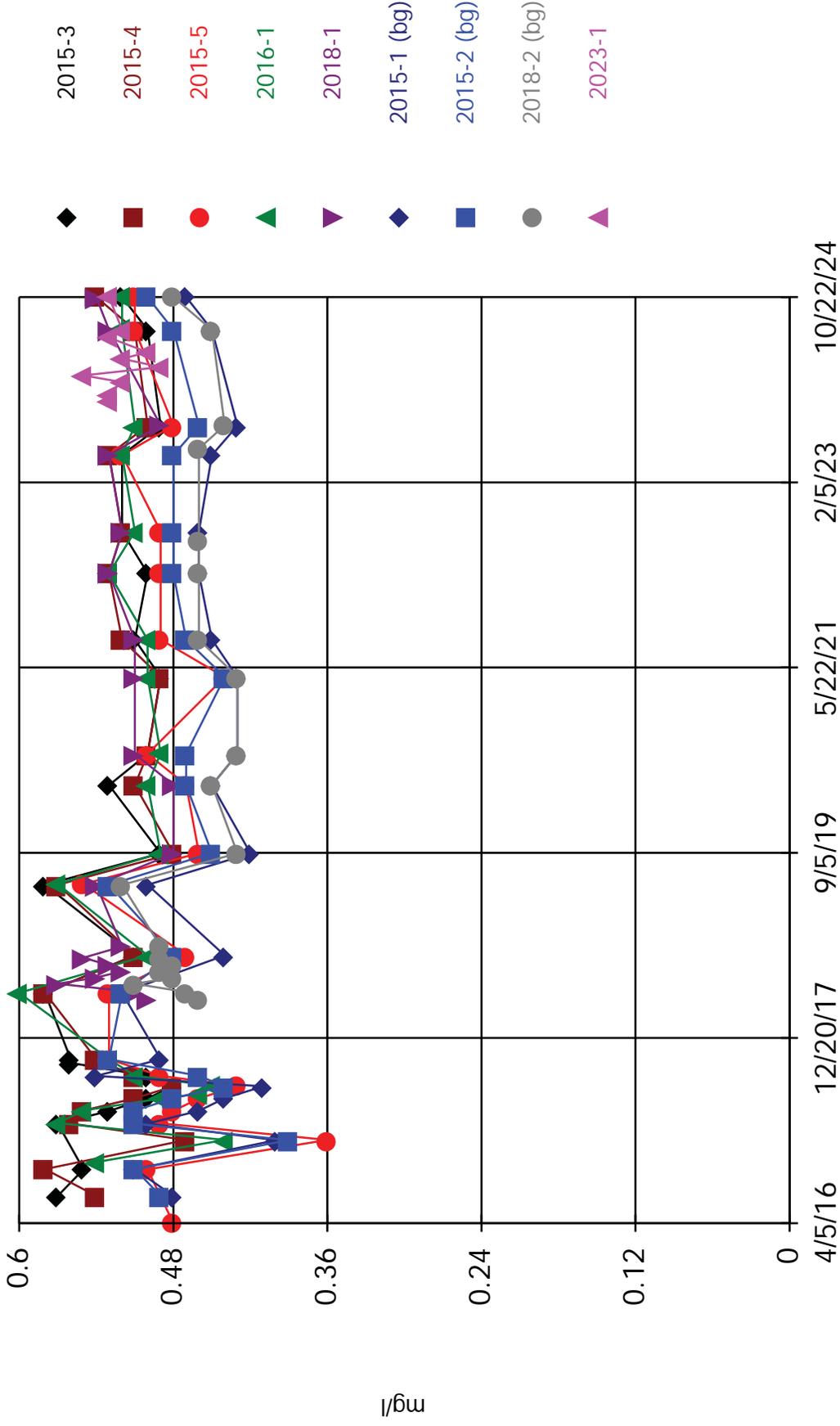
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly Printed 12/16/2024, 5:29 PM

Constituent	Well	Sig.	h	SCL	N	Mean	Std. Dev.	%NDS	ND Adj.	Deseas.	Transform	Method
Boron, total (mg/l)	2023-1	No	0.6005	0.6005	9	0.5211	0.01764	0	None	No	No	Param Intra
Calcium, total (mg/l)	2023-1	No	3.945	3.945	9	3.22	0.161	0	None	No	No	Param Intra
Chloride (mg/l)	2023-1	No	19.51	19.51	9	15.93	0.7937	0	None	No	No	Param Intra
Fluoride (mg/l)	2023-1	No	2.008	2.008	9	1.797	0.0469	0	None	No	No	Param Intra
pH, field (pH_units)	2023-1	No	9.16&7.531	9.16&7.531	11	8.345	0.1809	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/l)	2023-1	No	124	124	9	73.32	11.27	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	2023-1	No	1490	1490	9	1387	22.91	0	None	No	No	Param Intra

Appendix C

Time Series Graphs for Appendix III Constituents

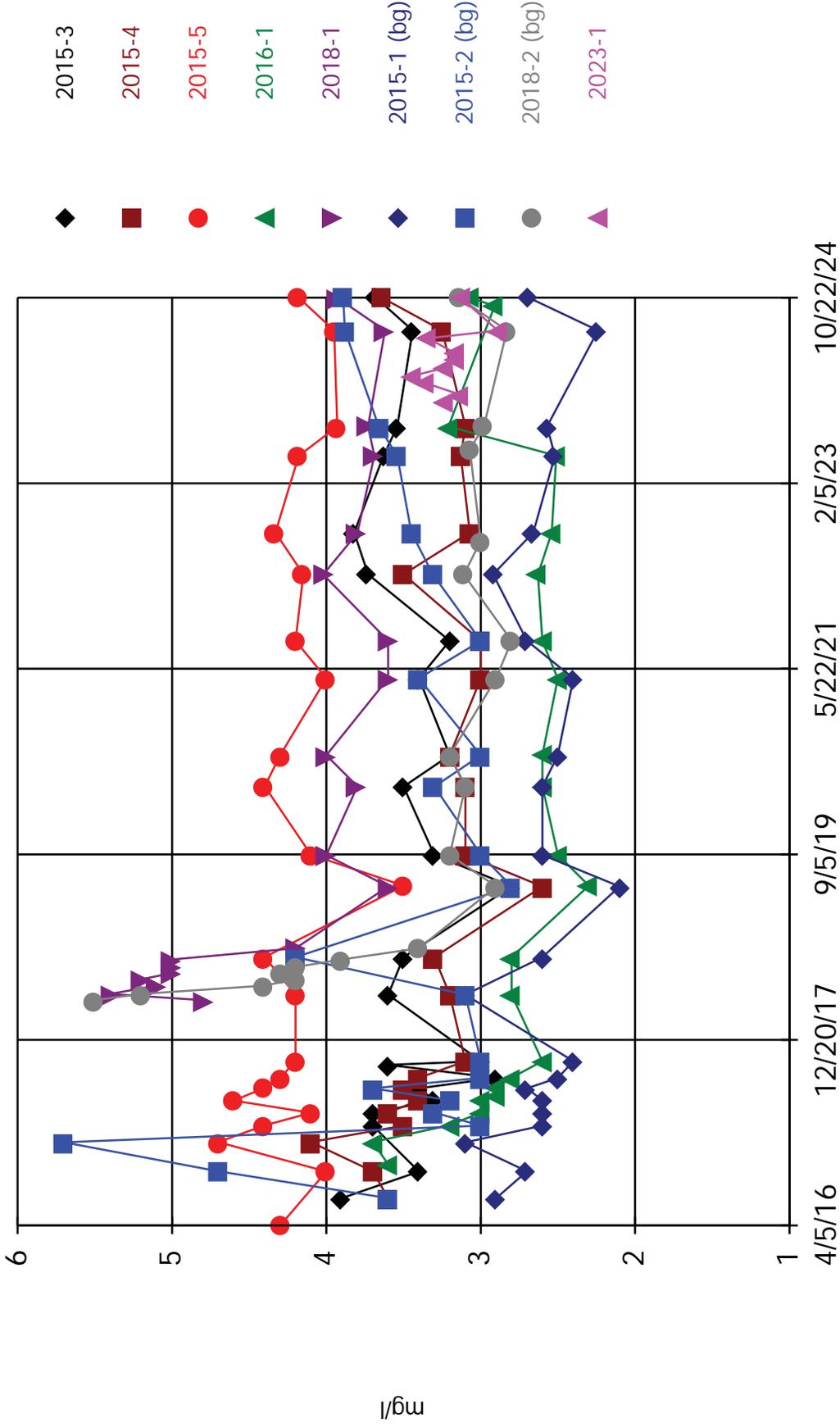
Boron, total



Time Series Analysis Run 11/18/2024 12:11 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

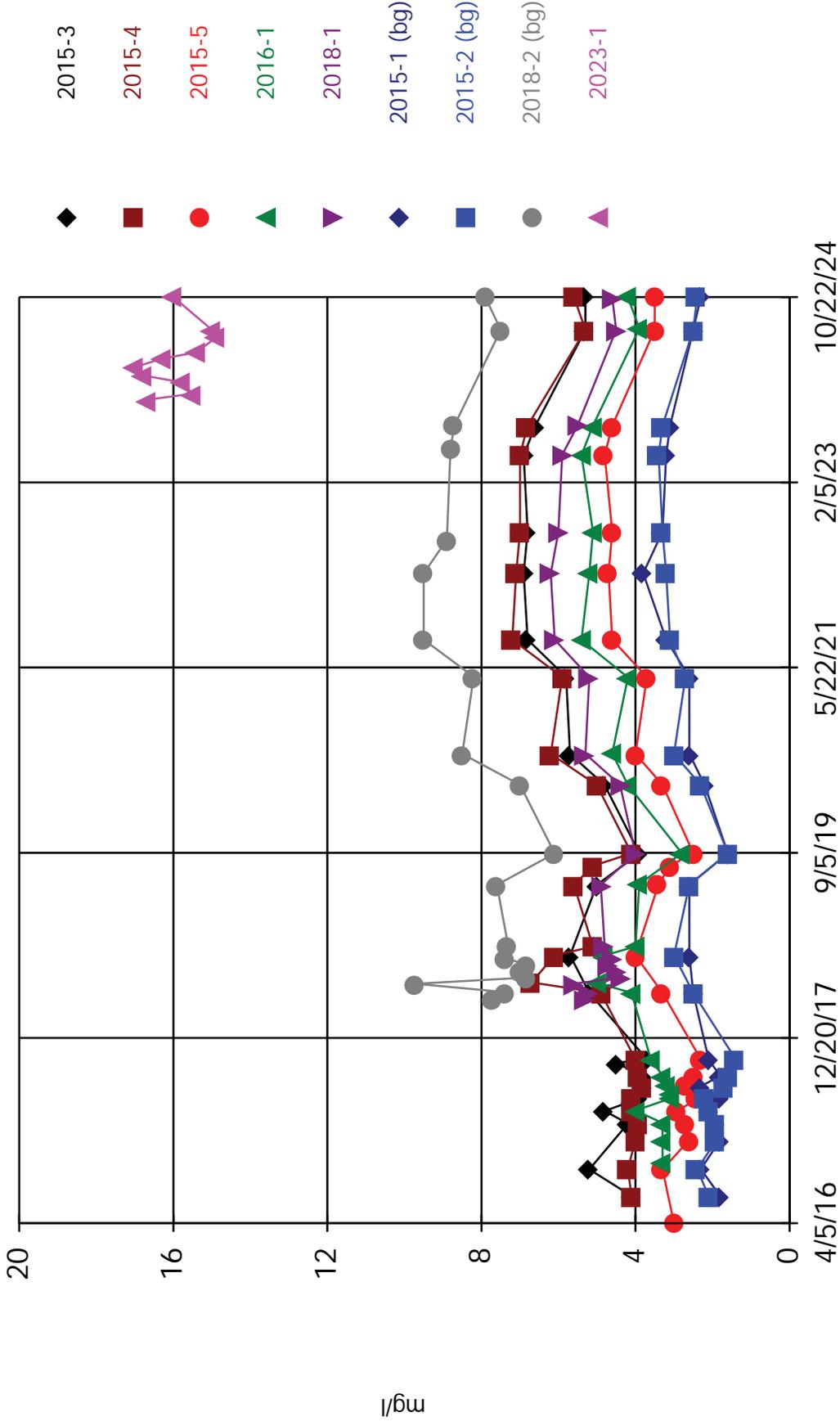
Calcium, total



Time Series Analysis Run 11/18/2024 12:11 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

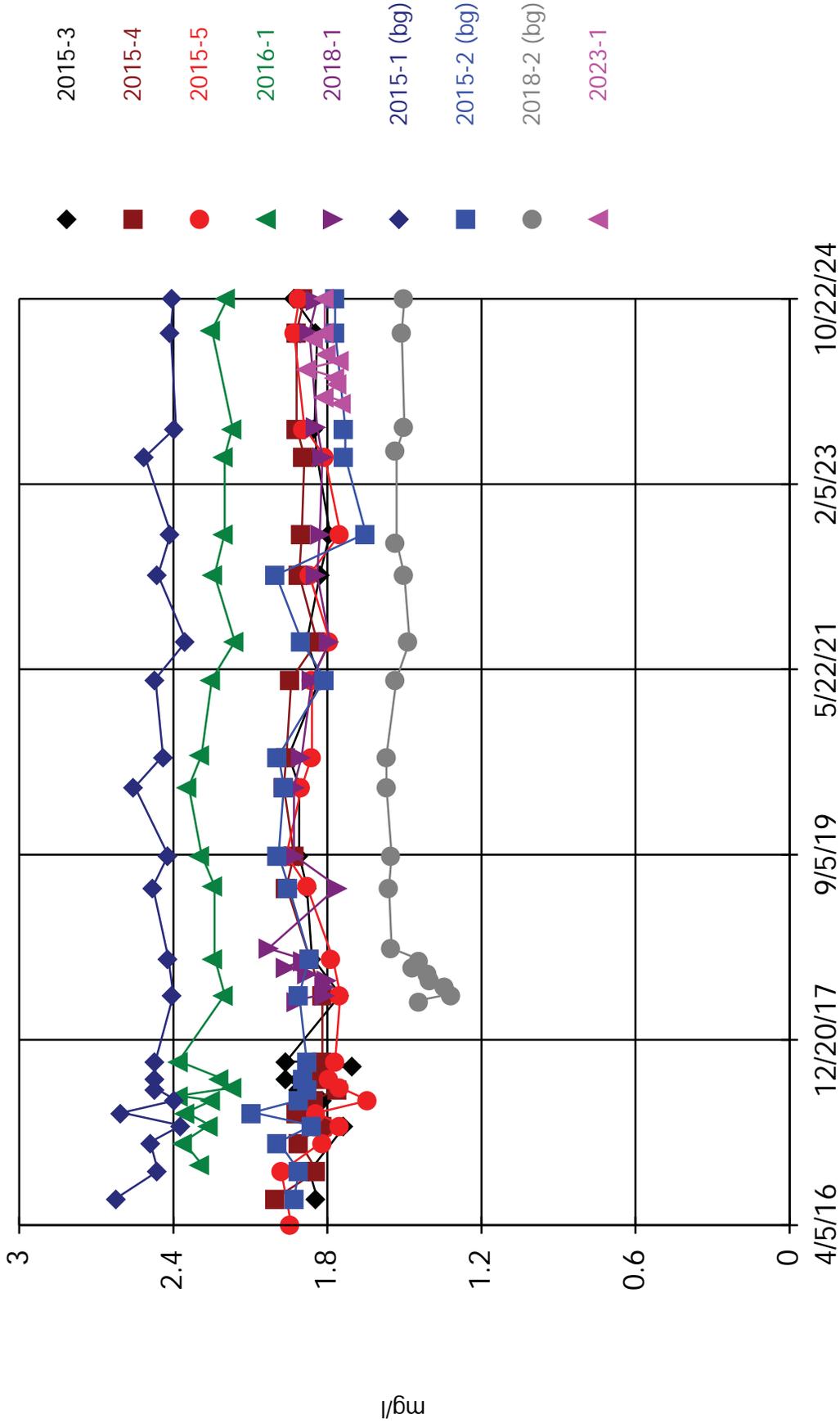
Chloride



Time Series Analysis Run 11/18/2024 12:11 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

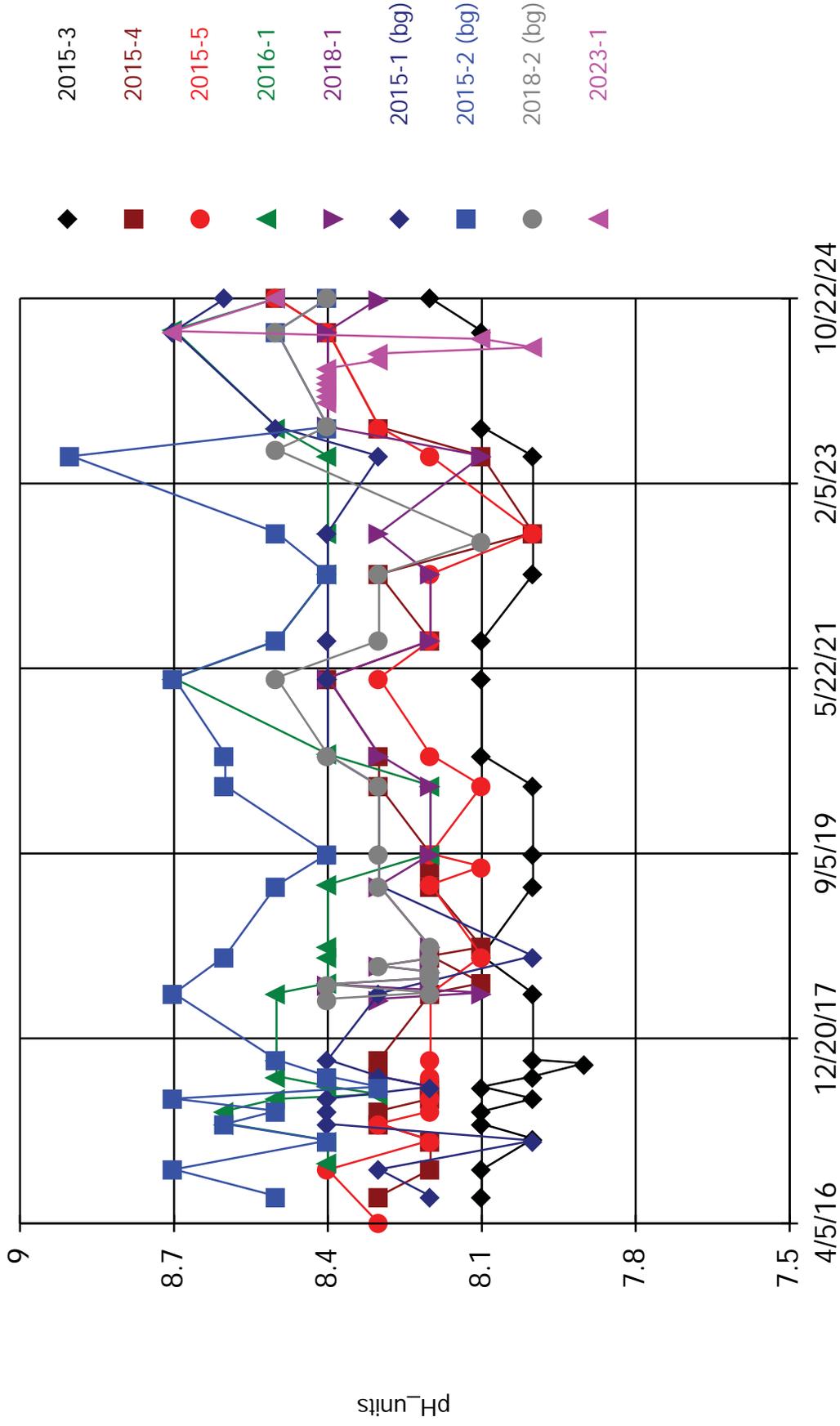
Fluoride



Time Series Analysis Run 11/18/2024 12:11 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

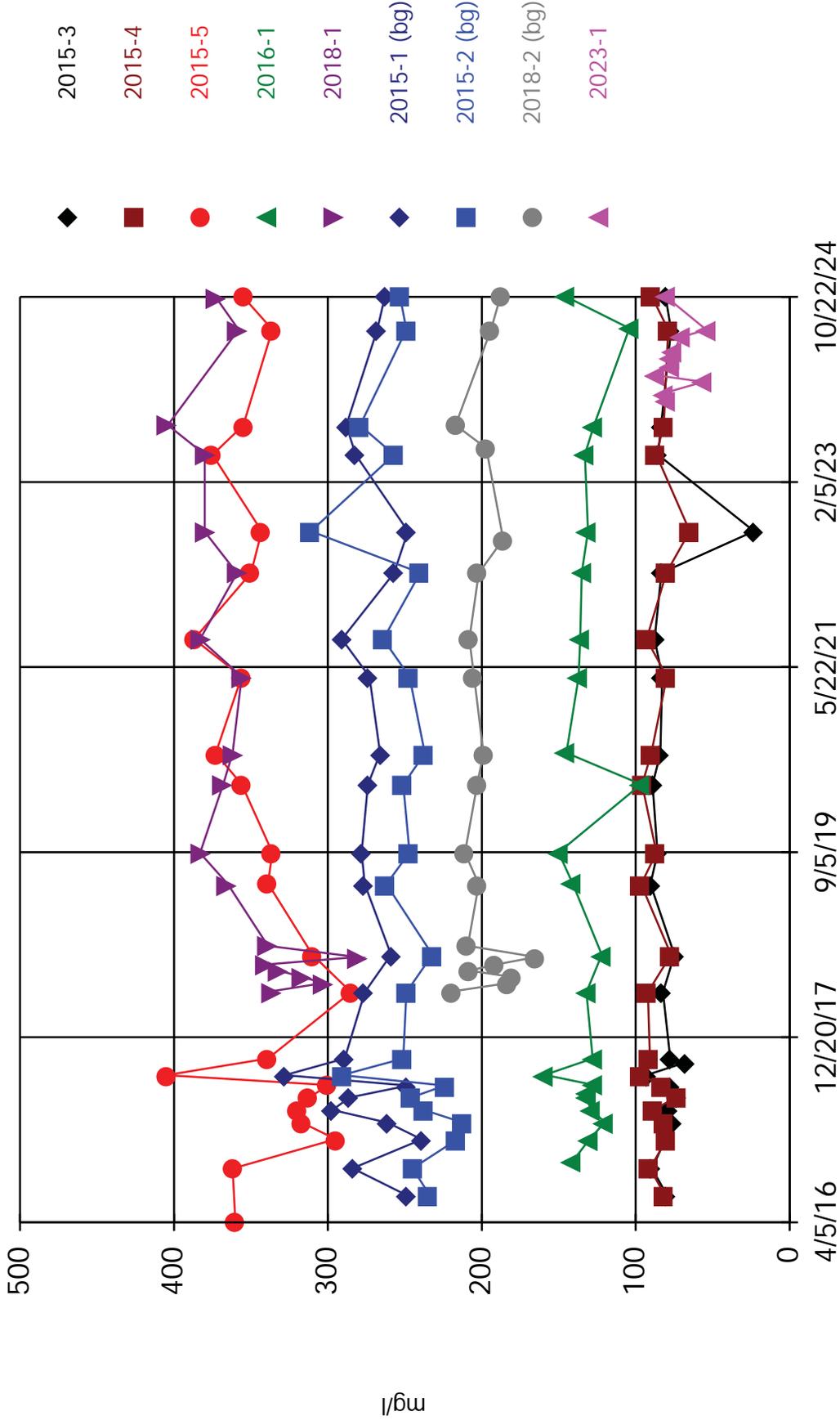
pH, field



Time Series Analysis Run 11/18/2024 12:14 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

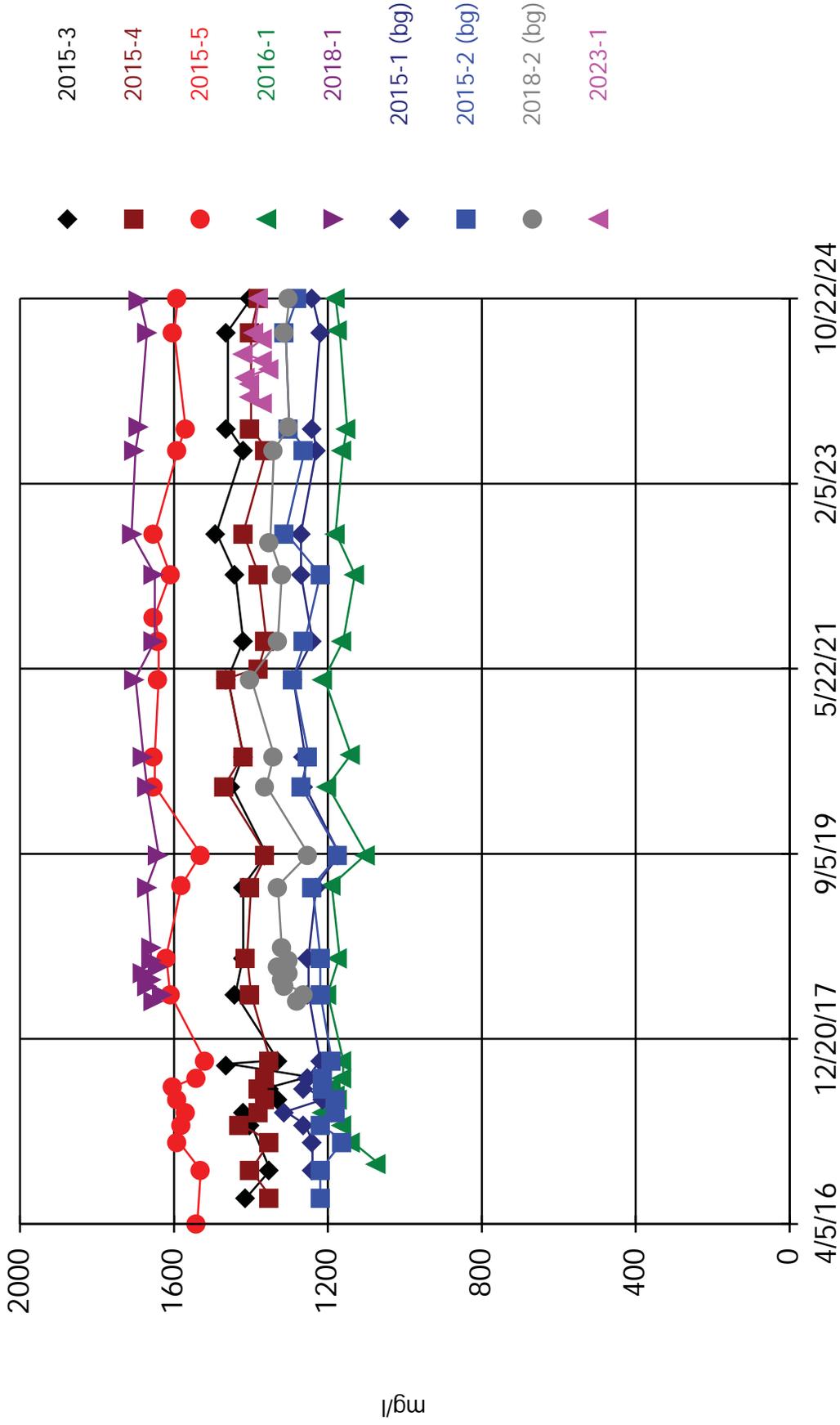
Sulfate, as SO4



Time Series Analysis Run 11/18/2024 12:11 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

Total Dissolved Solids

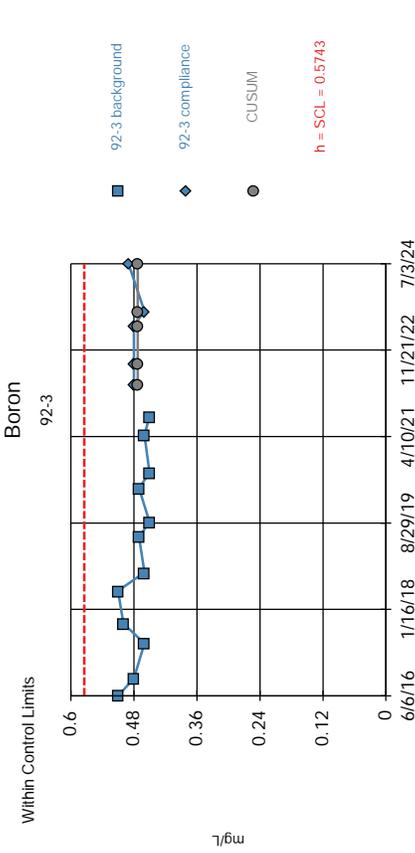


Time Series Analysis Run 11/18/2024 12:11 PM View: AppxIII

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_CCROnly

Appendix D

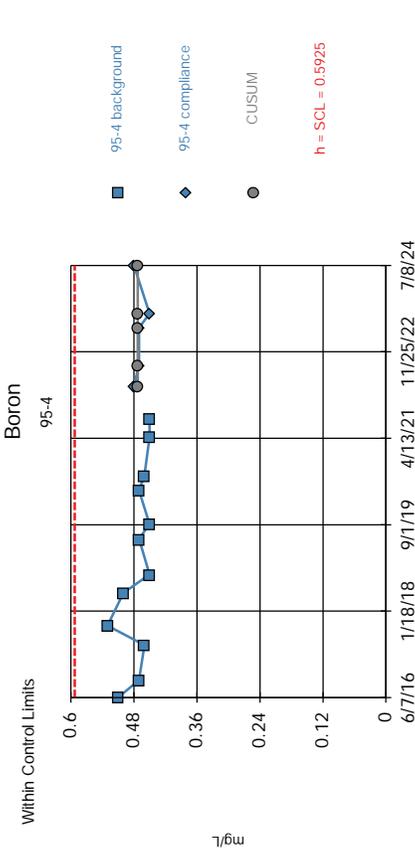
Statistical Review for Non-CCR Unit: Event 1



Background Data Summary: Mean=0.4725, Std. Dev.=0.02261, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8103, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.002656. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM

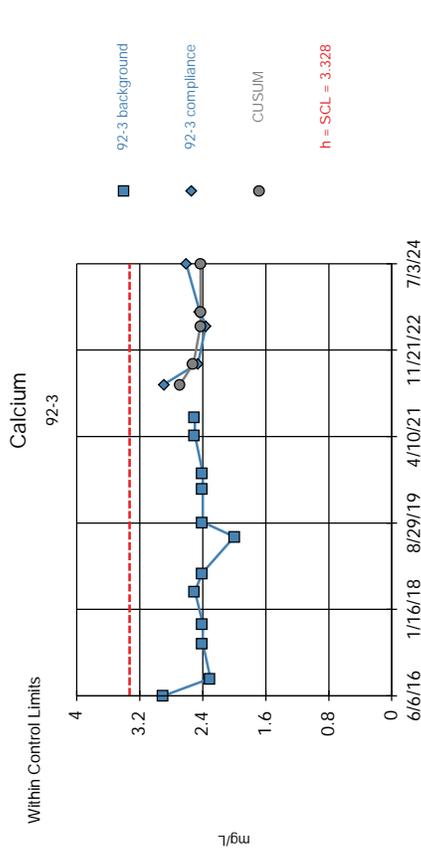
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=0.4725, Std. Dev.=0.02667, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.7683, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.002656. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM

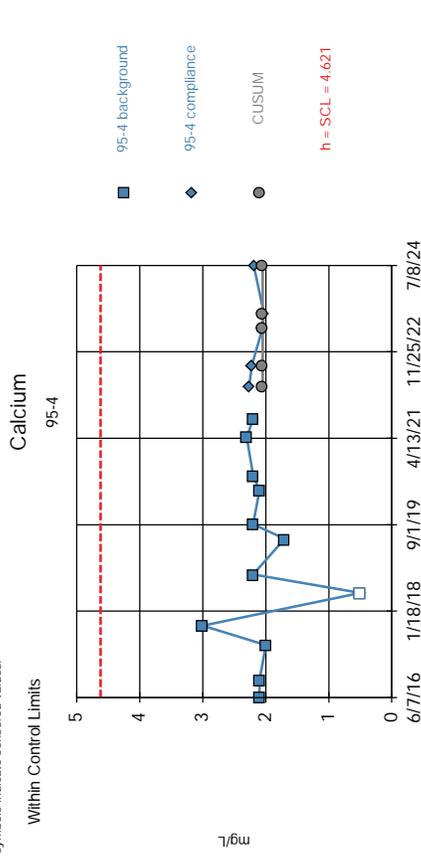
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=2.425, Std. Dev.=0.2006, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.6679, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.002656. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM

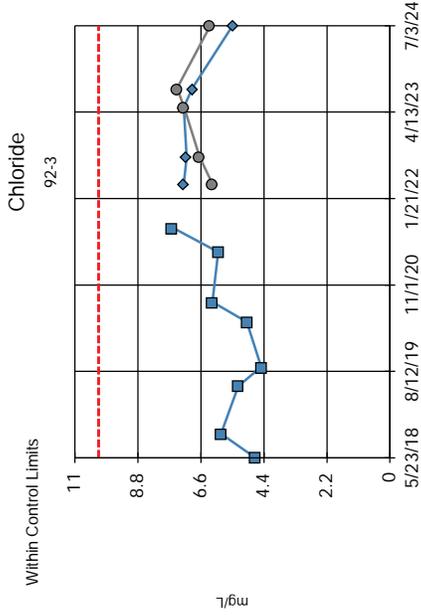
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=2.05, Std. Dev.=0.5713, n=12, 8.333% NDs. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.5316, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.002656. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

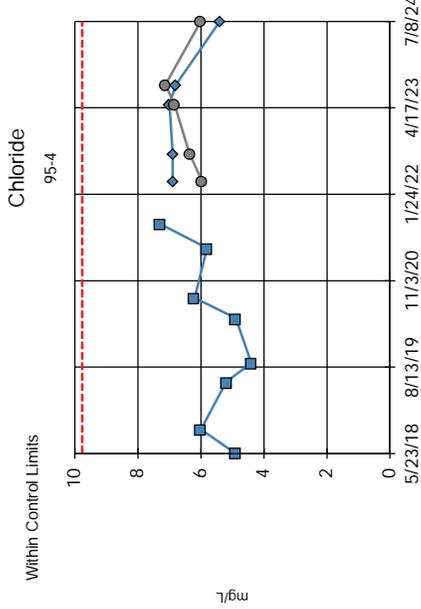


■ 92-3 background
 ◆ 92-3 compliance
 ● CUSUM
 h = SCL = 10.17

Background Data Summary: Mean=5.65, Std. Dev.=1.004, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9273, critical = 0.818. Report alpha = 0.006676. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

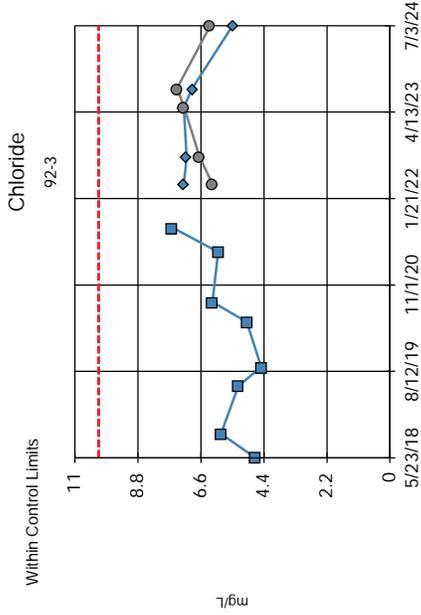


■ 95-4 background
 ◆ 95-4 compliance
 ● CUSUM
 h = SCL = 9.764

Background Data Summary: Mean=5.588, Std. Dev.=0.928, n=8. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9489, critical = 0.818. Report alpha = 0.006676. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

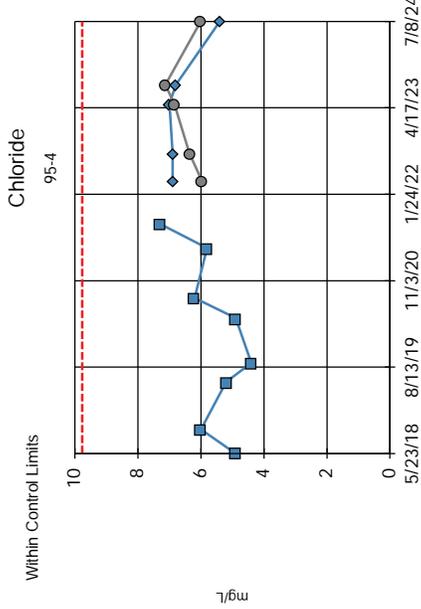


■ 92-3 background
 ◆ 92-3 compliance
 ● CUSUM
 h = SCL = 1.726

Background Data Summary: Mean=1.606, Std. Dev.=0.02678, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9412, critical = 0.859. Report alpha = 0.00269. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

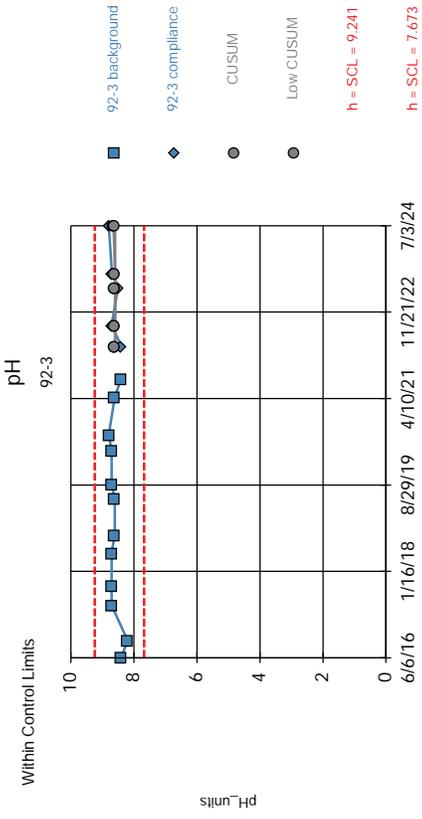


■ 95-4 background
 ◆ 95-4 compliance
 ● CUSUM
 h = SCL = 1.834

Background Data Summary: Mean=1.163, Std. Dev.=0.1491, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.3777, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.00269. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

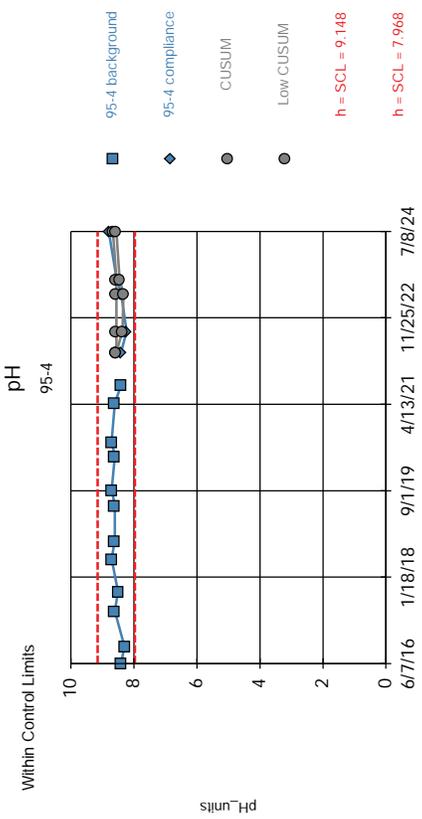
Control Chart Analysis Run 9/11/2024 1:54 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



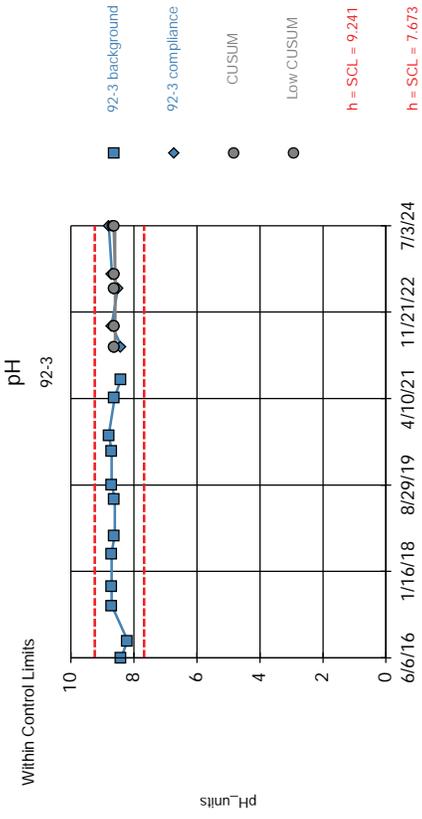
Control Chart Analysis Run 9/11/2024 1:54 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



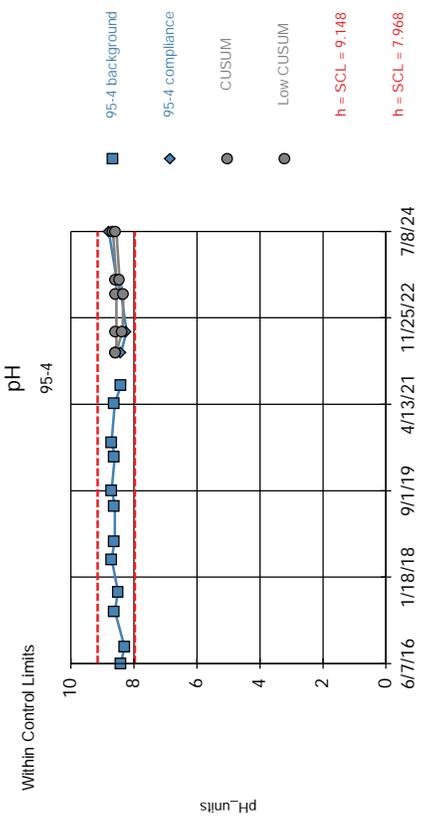
Control Chart Analysis Run 9/11/2024 1:54 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



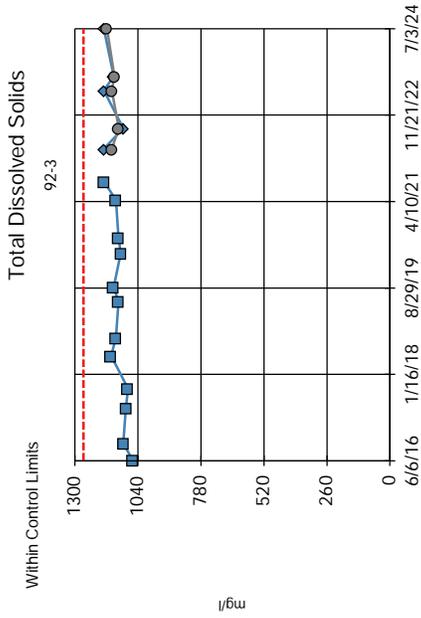
Control Chart Analysis Run 9/11/2024 1:54 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Control Chart Analysis Run 9/11/2024 1:54 PM

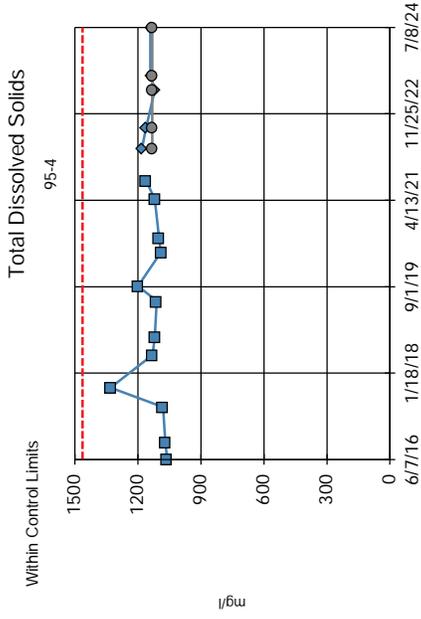
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=1118, Std. Dev.=32.51, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9906, critical = 0.859. Report alpha = 0.00269. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=1131, Std. Dev.=73.79, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.6599, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.00269. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 9/11/2024 1:54 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

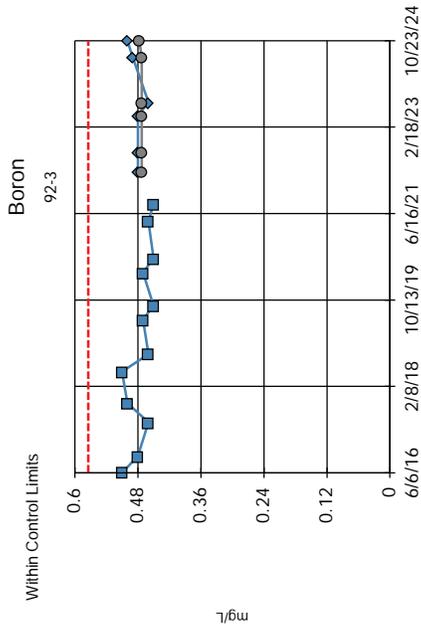
Shewhart-Cusum Control Chart / Rank Sum

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR Printed 9/11/2024, 1:55 PM

Constituent	Well	Sig.	h	SCL	N	Mean	Std. Dev.	%NDS	ND Adj.	Deseas.	Transform	Method
Boron (mg/L)	92-3	No	0.5743	0.5743	12	0.4725	0.02261	0	None	No	No	Param Intra
Boron (mg/L)	95-4	No	0.5925	0.5925	12	0.4725	0.02667	0	None	No	No	Param Intra
Calcium (mg/L)	92-3	No	3.328	3.328	12	2.425	0.2006	0	None	No	No	Param Intra
Calcium (mg/L)	95-4	No	4.621	4.621	12	2.05	0.5713	8.333	None	No	No	Param Intra
Chloride (mg/L)	92-3	No	10.17	10.17	8	5.65	1.004	0	None	No	No	Param Intra
Chloride (mg/L)	95-4	No	9.764	9.764	8	5.588	0.928	0	None	No	No	Param Intra
Fluoride (mg/L)	92-3	No	1.726	1.726	12	1.606	0.02678	0	None	No	No	Param Intra
Fluoride (mg/L)	95-4	No	1.834	1.834	12	1.163	0.1491	0	None	No	No	Param Intra
pH (pH_units)	92-3	No	9.241&7.673	9.241&7.673	12	46986	4532	0	None	No	x^5	Param Intra
pH (pH_units)	95-4	No	9.148&7.968	9.148&7.968	12	8.558	0.1311	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/L)	92-3	No	179.5	179.5	12	127.7	11.51	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/L)	95-4	No	167.4	167.4	12	113.2	12.05	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	92-3	No	1264	1264	12	1118	32.51	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	95-4	No	1463	1463	12	1131	73.79	0	None	No	No	Param Intra

Appendix E

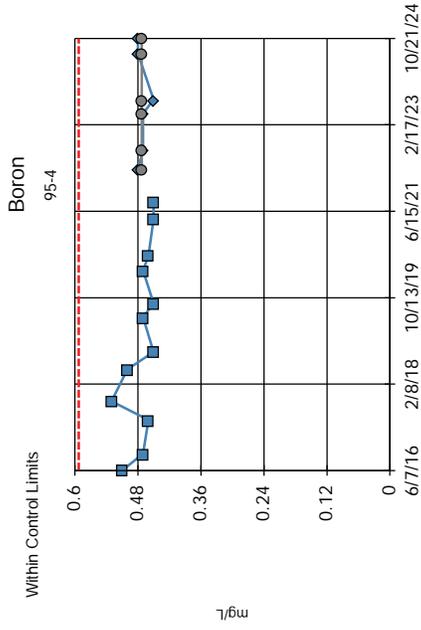
Statistical Review for Non-CCR Unit: Event 2



Background Data Summary: Mean=0.4725, Std. Dev.=0.02261, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8103, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.003022. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:15 PM

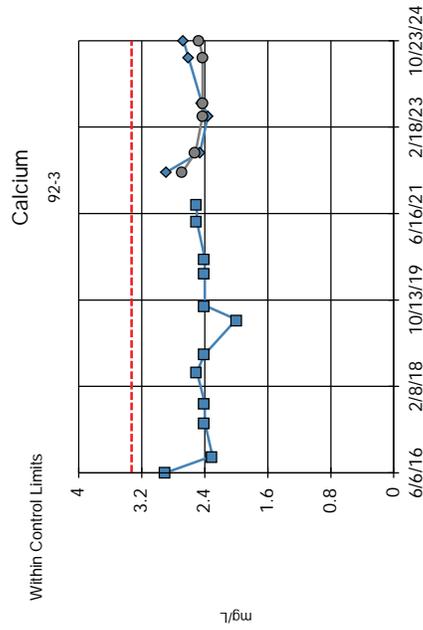
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=0.4725, Std. Dev.=0.02667, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.7683, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.003022. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:15 PM

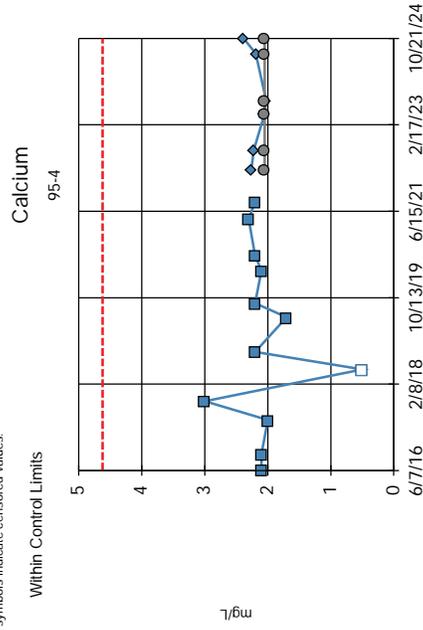
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=2.425, Std. Dev.=0.2006, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.6679, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.003022. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:15 PM

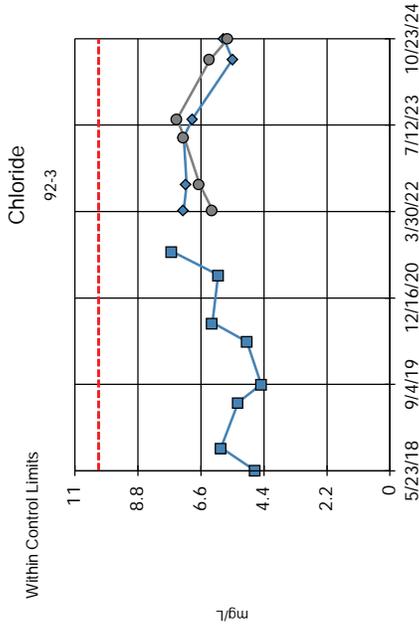
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



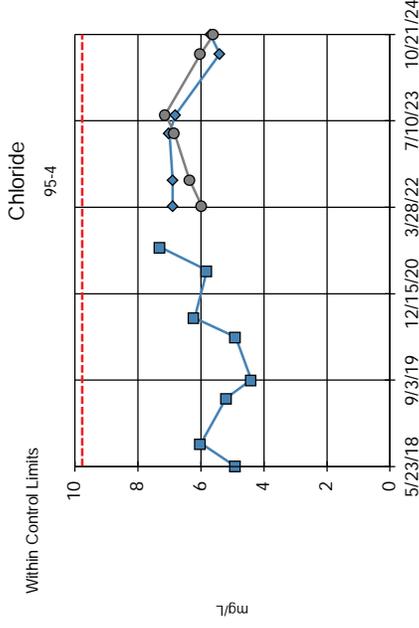
Background Data Summary: Mean=2.05, Std. Dev.=0.5713, n=12, 8.333% NDs. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values; transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.5316, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.003022. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:15 PM

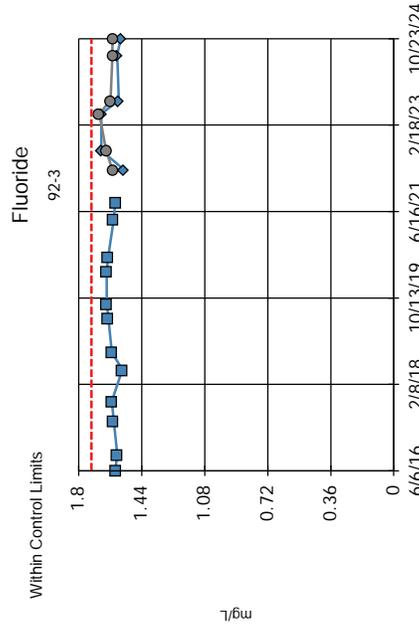
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



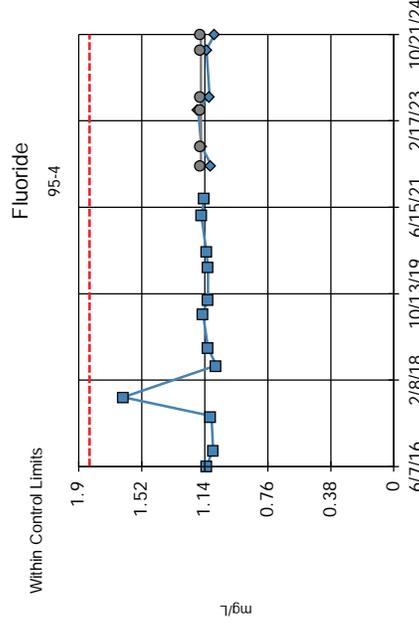
Control Chart Analysis Run 11/18/2024 1:15 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



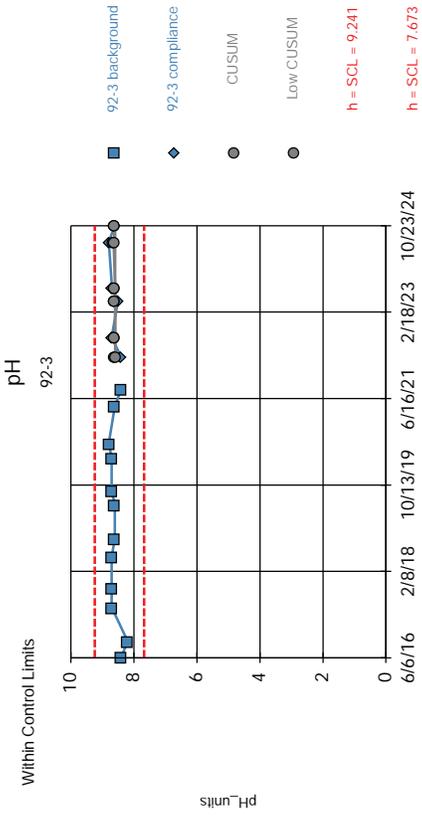
Control Chart Analysis Run 11/18/2024 1:15 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Control Chart Analysis Run 11/18/2024 1:15 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

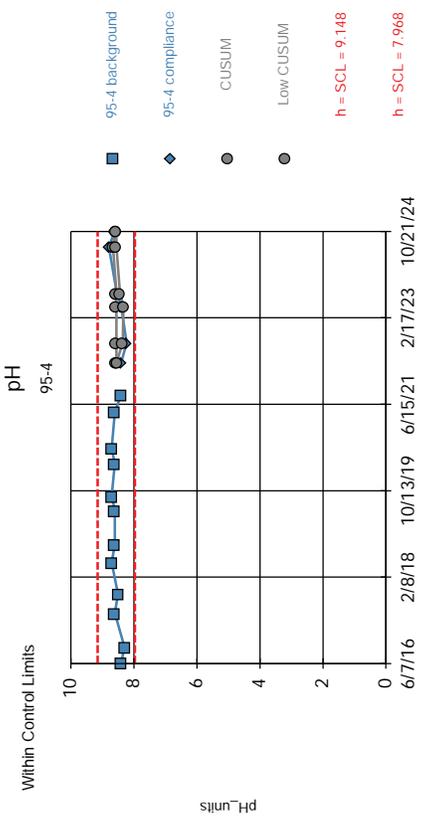


Control Chart Analysis Run 11/18/2024 1:15 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



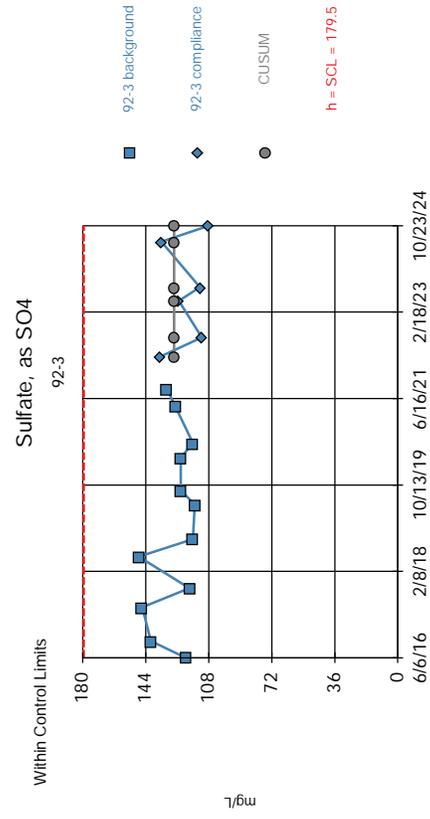
Background Data Summary (based on x²5 transformalton): Mean=46986, Std. Dev.=4532, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8592, critical = 0.859. Report alpha = 0.003052. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:16 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



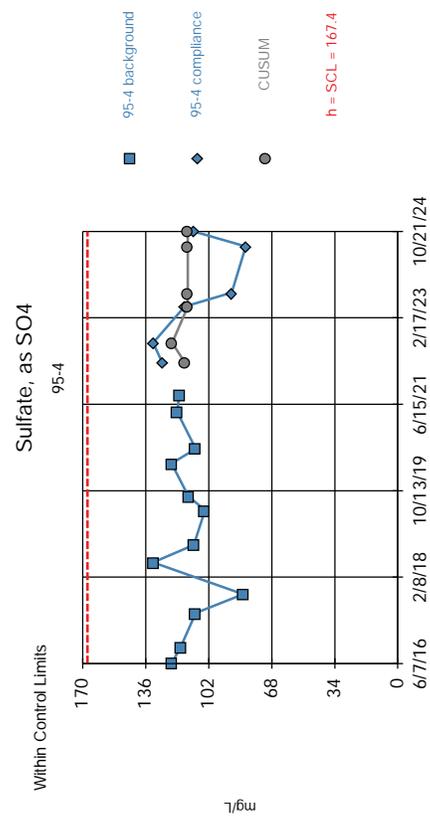
Background Data Summary: Mean=8.558, Std. Dev.=0.1311, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8672, critical = 0.859. Report alpha = 0.003052. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:16 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



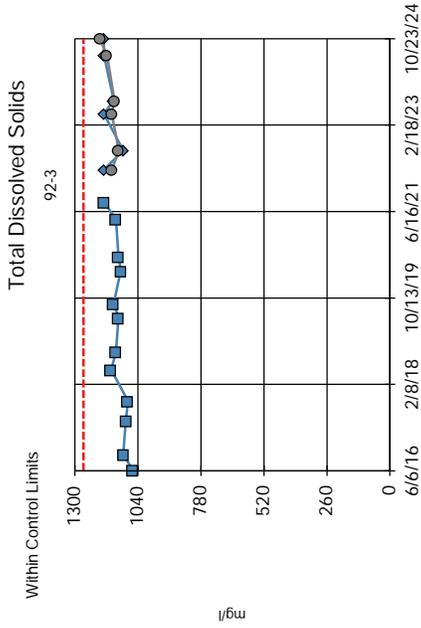
Background Data Summary: Mean=127.7, Std. Dev.=11.51, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8608, critical = 0.859. Report alpha = 0.003052. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:16 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=113.2, Std. Dev.=12.05, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9081, critical = 0.859. Report alpha = 0.003052. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

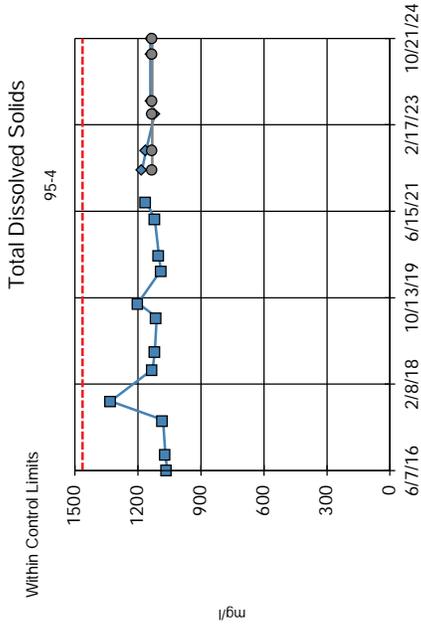
Control Chart Analysis Run 11/18/2024 1:16 PM
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=1118, Std. Dev.=32.51, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9906, critical = 0.859. Report alpha = 0.003052. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:16 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR



Background Data Summary: Mean=1131, Std. Dev.=73.79, n=12. Seasonality was not detected with 95% confidence. Analysis run on non-transformed values: Transformation unable to normalize distribution. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.6599, critical = 0.859 (non-normal: user chose to continue). Report alpha = 0.003052. Dates ending 8/25/2021 used for control stats. Standardized h=4.5, SCL=4.5.

Control Chart Analysis Run 11/18/2024 1:16 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Shewhart-Cusum Control Chart / Rank Sum

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR Printed 11/18/2024, 1:21 PM

Constituent	Well	Sig.	h	SCL	N	Mean	Std. Dev.	%NDS	ND Adj.	Deseas.	Transform	Method
Boron (mg/L)	92-3	No	0.5743	0.5743	12	0.4725	0.02261	0	None	No	No	Param Intra
Boron (mg/L)	95-4	No	0.5925	0.5925	12	0.4725	0.02667	0	None	No	No	Param Intra
Calcium (mg/L)	92-3	No	3.328	3.328	12	2.425	0.2006	0	None	No	No	Param Intra
Calcium (mg/L)	95-4	No	4.621	4.621	12	2.05	0.5713	8.333	None	No	No	Param Intra
Chloride (mg/L)	92-3	No	10.17	10.17	8	5.65	1.004	0	None	No	No	Param Intra
Chloride (mg/L)	95-4	No	9.764	9.764	8	5.588	0.928	0	None	No	No	Param Intra
Fluoride (mg/L)	92-3	No	1.726	1.726	12	1.606	0.02678	0	None	No	No	Param Intra
Fluoride (mg/L)	95-4	No	1.834	1.834	12	1.163	0.1491	0	None	No	No	Param Intra
pH (pH_units)	92-3	No	9.241&7.673	9.241&7.673	12	46986	4532	0	None	No	x^5	Param Intra
pH (pH_units)	95-4	No	9.148&7.968	9.148&7.968	12	8.558	0.1311	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/L)	92-3	No	179.5	179.5	12	127.7	11.51	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/L)	95-4	No	167.4	167.4	12	113.2	12.05	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	92-3	No	1264	1264	12	1118	32.51	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	95-4	No	1463	1463	12	1131	73.79	0	None	No	No	Param Intra

Shewhart-Cusum Control Chart / Rank Sum

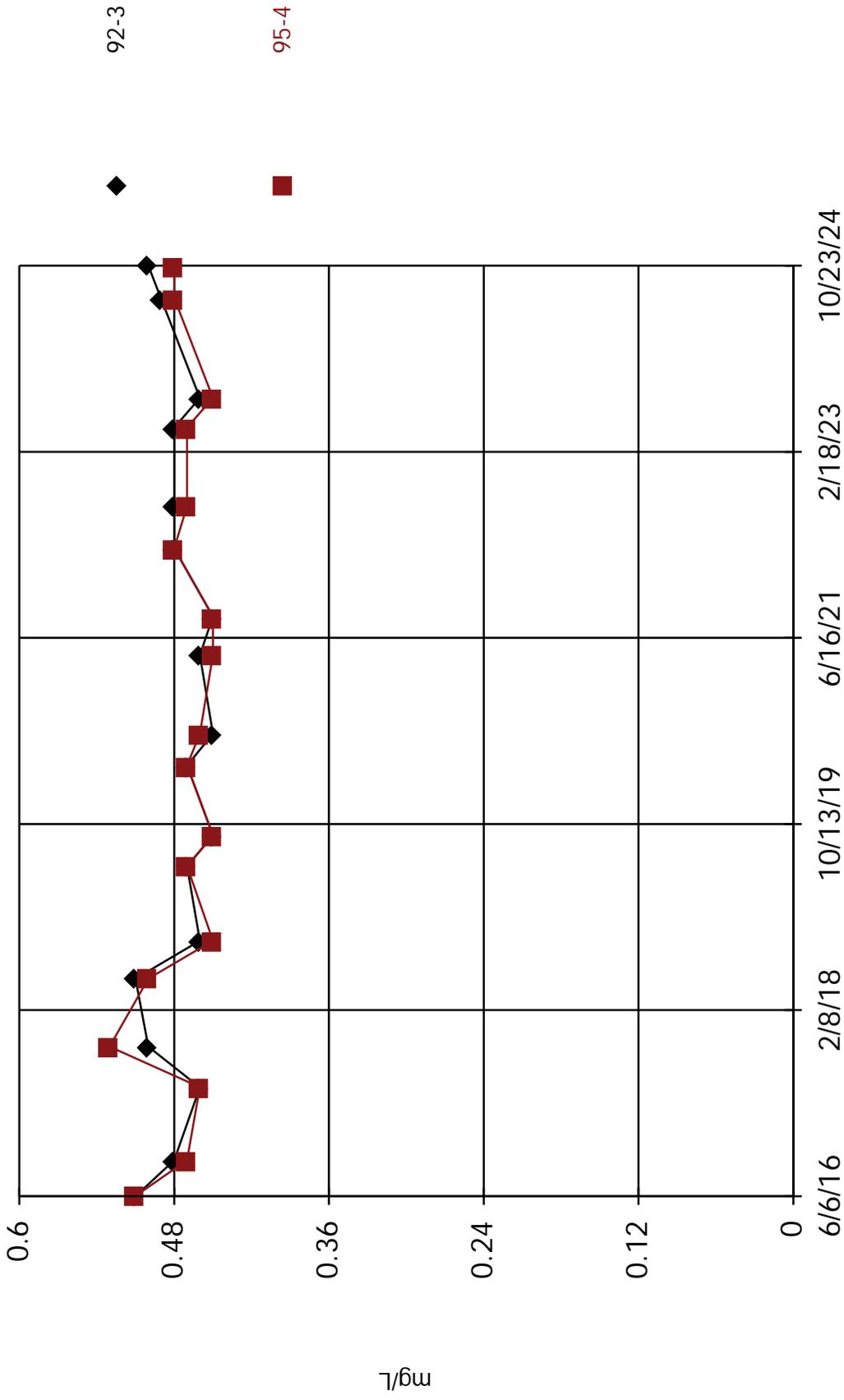
Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR Printed 11/18/2024, 1:21 PM

Constituent	Well	Sig.	h	SCL	N	Mean	Std. Dev.	%NDS	ND Adj.	Deseas.	Transform	Method
Boron (mg/L)	92-3	No	0.5743	0.5743	12	0.4725	0.02261	0	None	No	No	Param Intra
Boron (mg/L)	95-4	No	0.5925	0.5925	12	0.4725	0.02667	0	None	No	No	Param Intra
Calcium (mg/L)	92-3	No	3.328	3.328	12	2.425	0.2006	0	None	No	No	Param Intra
Calcium (mg/L)	95-4	No	4.621	4.621	12	2.05	0.5713	8.333	None	No	No	Param Intra
Chloride (mg/L)	92-3	No	10.17	10.17	8	5.65	1.004	0	None	No	No	Param Intra
Chloride (mg/L)	95-4	No	9.764	9.764	8	5.588	0.928	0	None	No	No	Param Intra
Fluoride (mg/L)	92-3	No	1.726	1.726	12	1.606	0.02678	0	None	No	No	Param Intra
Fluoride (mg/L)	95-4	No	1.834	1.834	12	1.163	0.1491	0	None	No	No	Param Intra
pH (pH_units)	92-3	No	9.241&7.673	9.241&7.673	12	46986	4532	0	None	No	x^5	Param Intra
pH (pH_units)	95-4	No	9.148&7.968	9.148&7.968	12	8.558	0.1311	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/L)	92-3	No	179.5	179.5	12	127.7	11.51	0	None	No	No	Param Intra
Sulfate, as SO4 (mg/L)	95-4	No	167.4	167.4	12	113.2	12.05	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	92-3	No	1264	1264	12	1118	32.51	0	None	No	No	Param Intra
Total Dissolved Solids (mg/l)	95-4	No	1463	1463	12	1131	73.79	0	None	No	No	Param Intra

Appendix F

Time Series Graphs for Non-CCR Unit

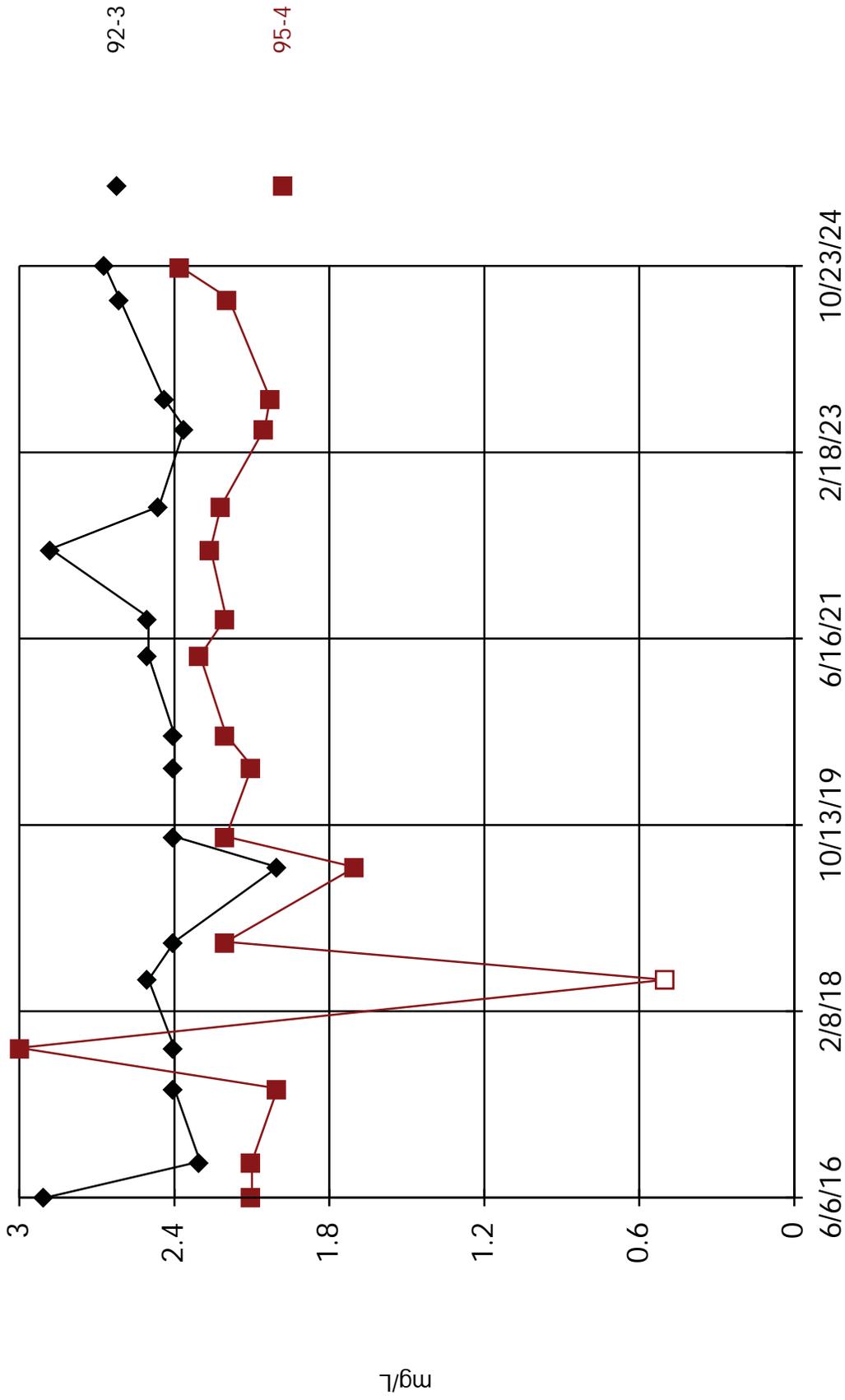
Boron



Time Series Analysis Run 11/18/2024 1:13 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

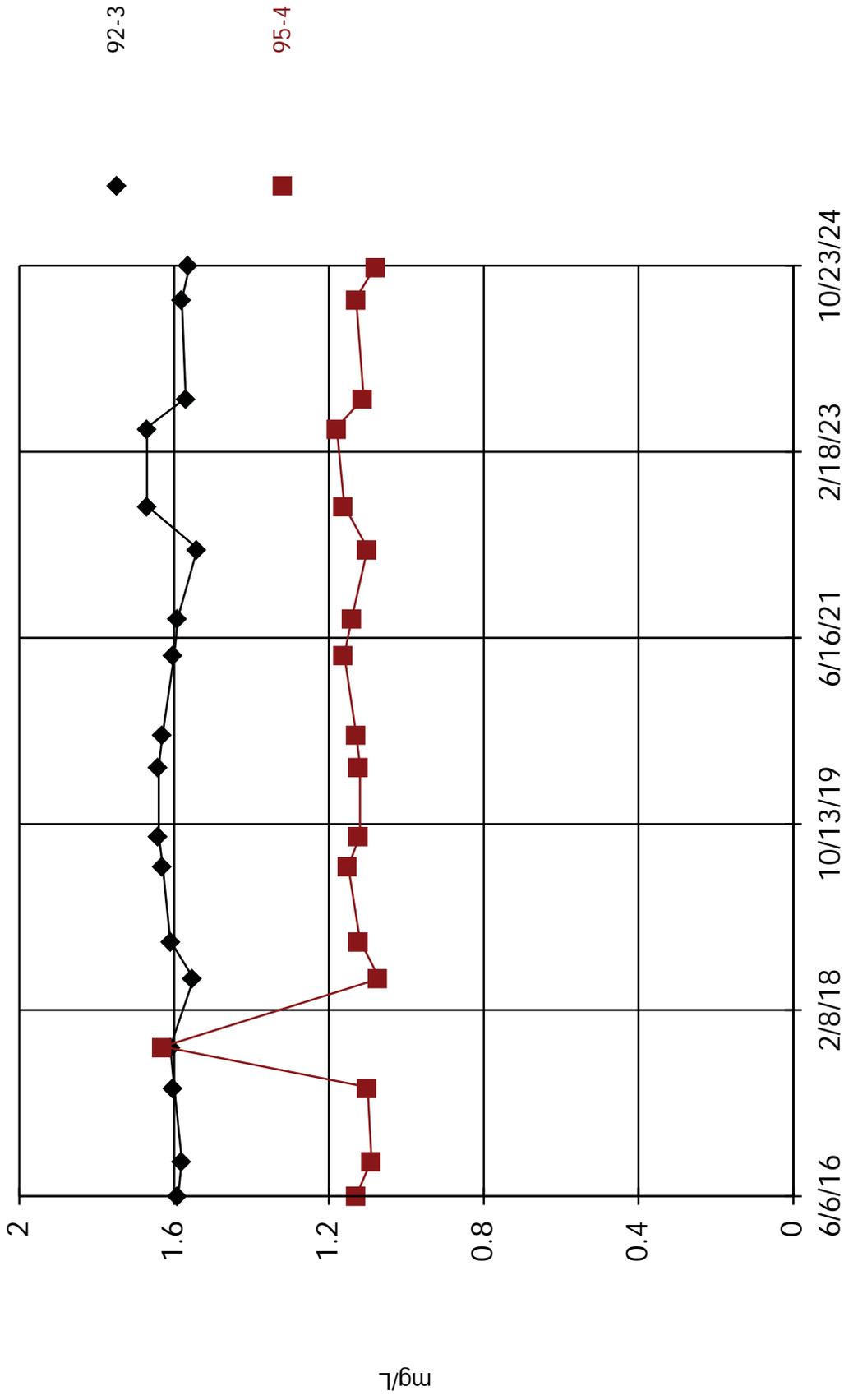
Calcium



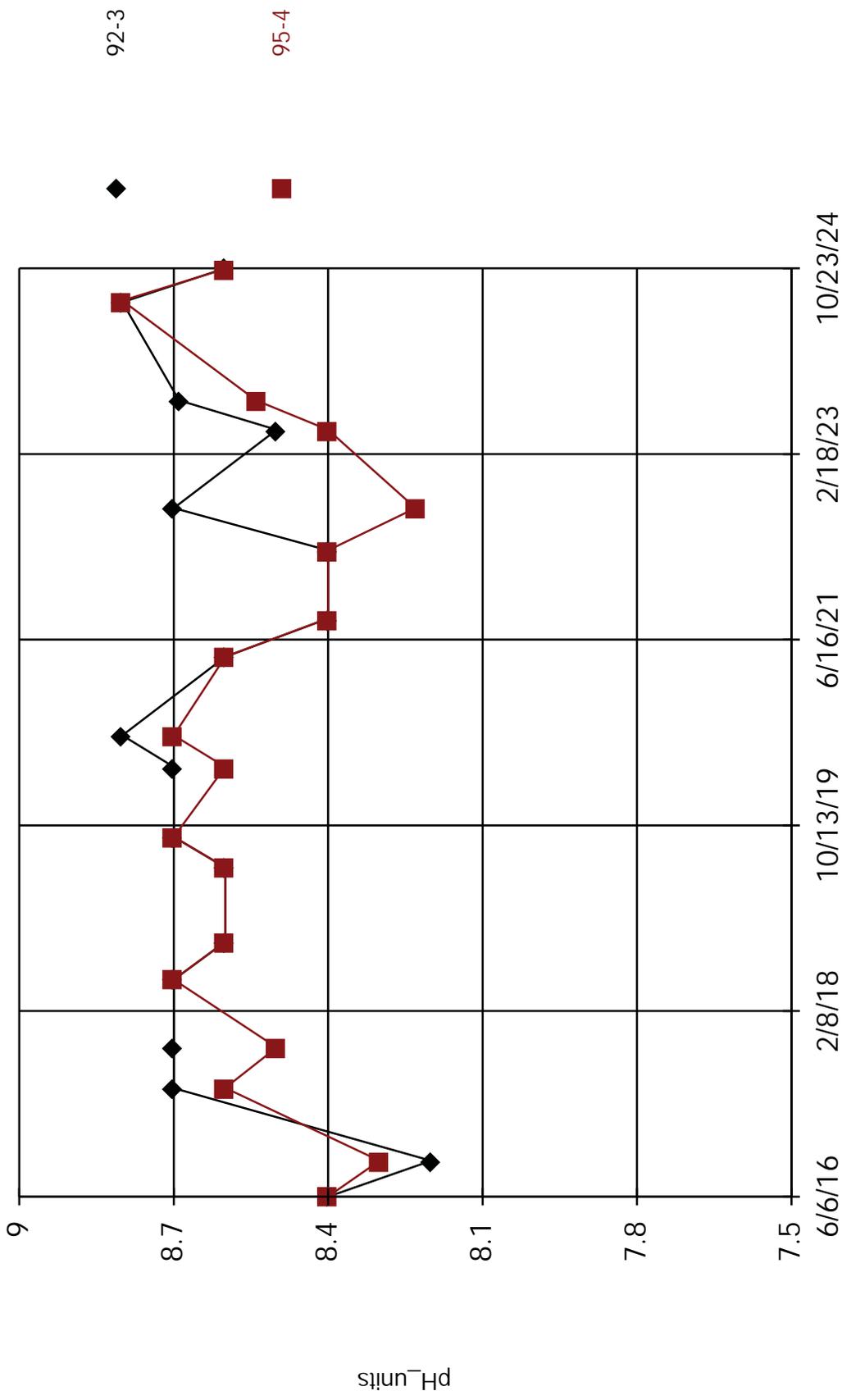
Time Series Analysis Run 11/18/2024 1:13 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Fluoride



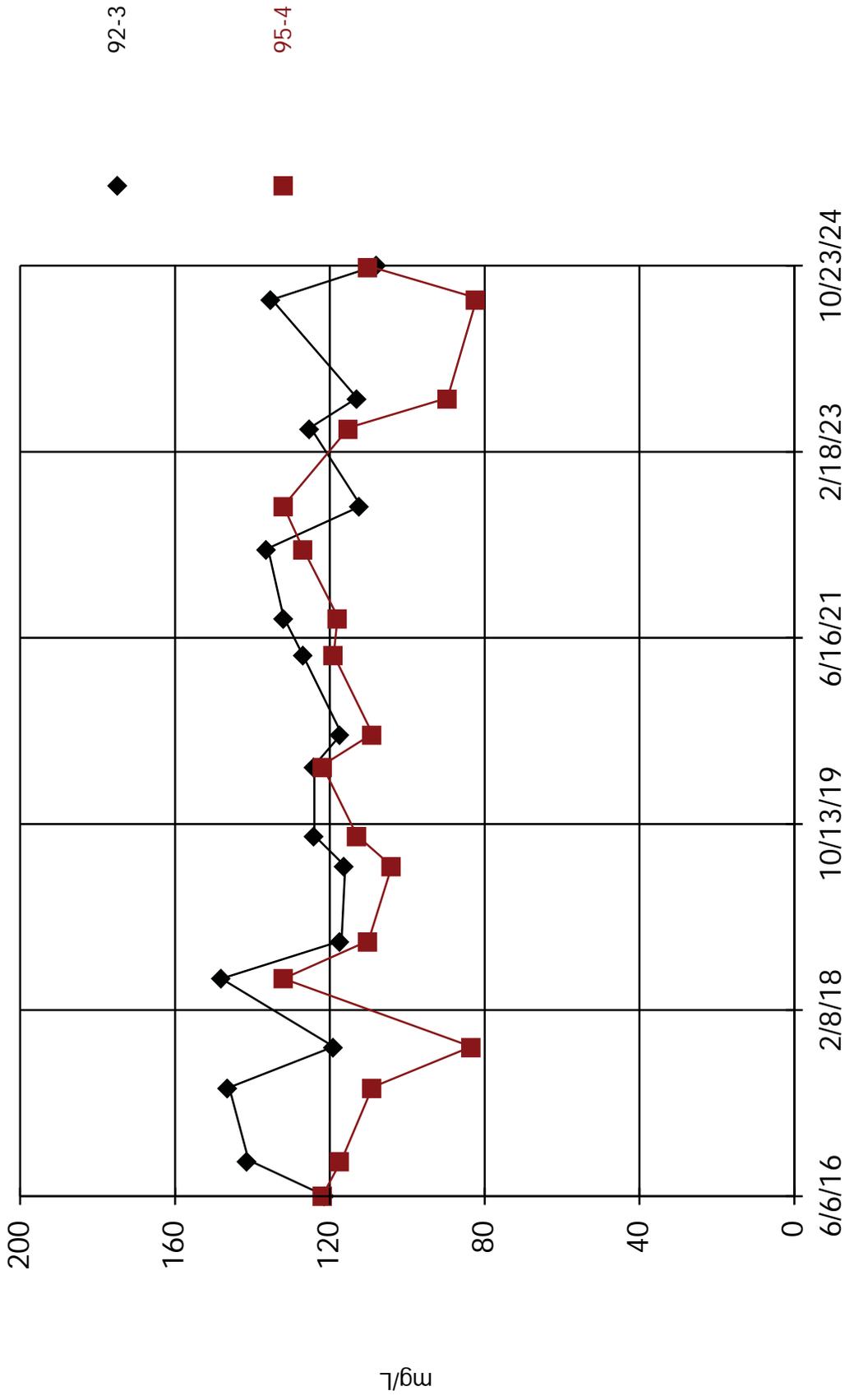
pH



Time Series Analysis Run 11/18/2024 1:13 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

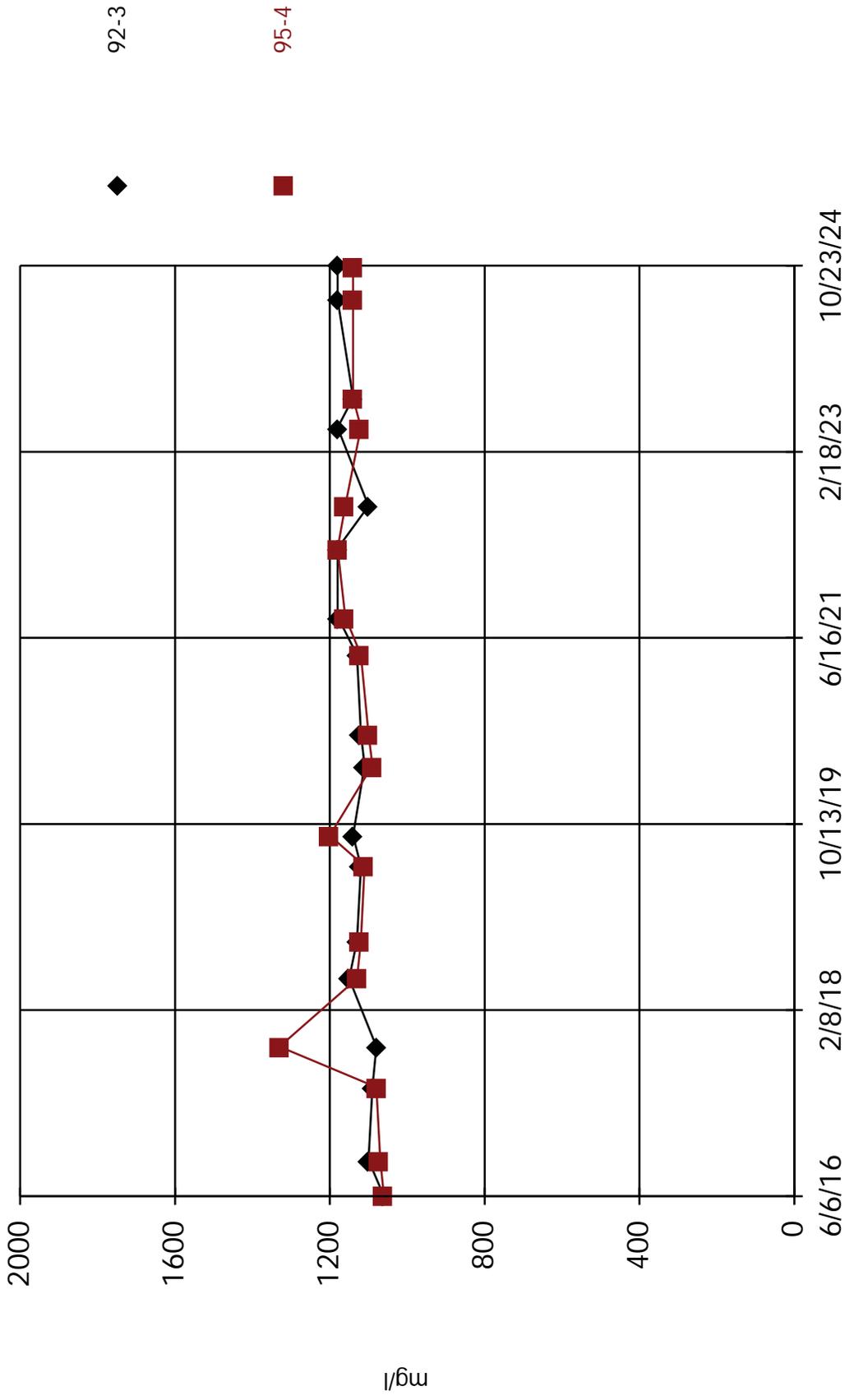
Sulfate, as SO4



Time Series Analysis Run 11/18/2024 1:14 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

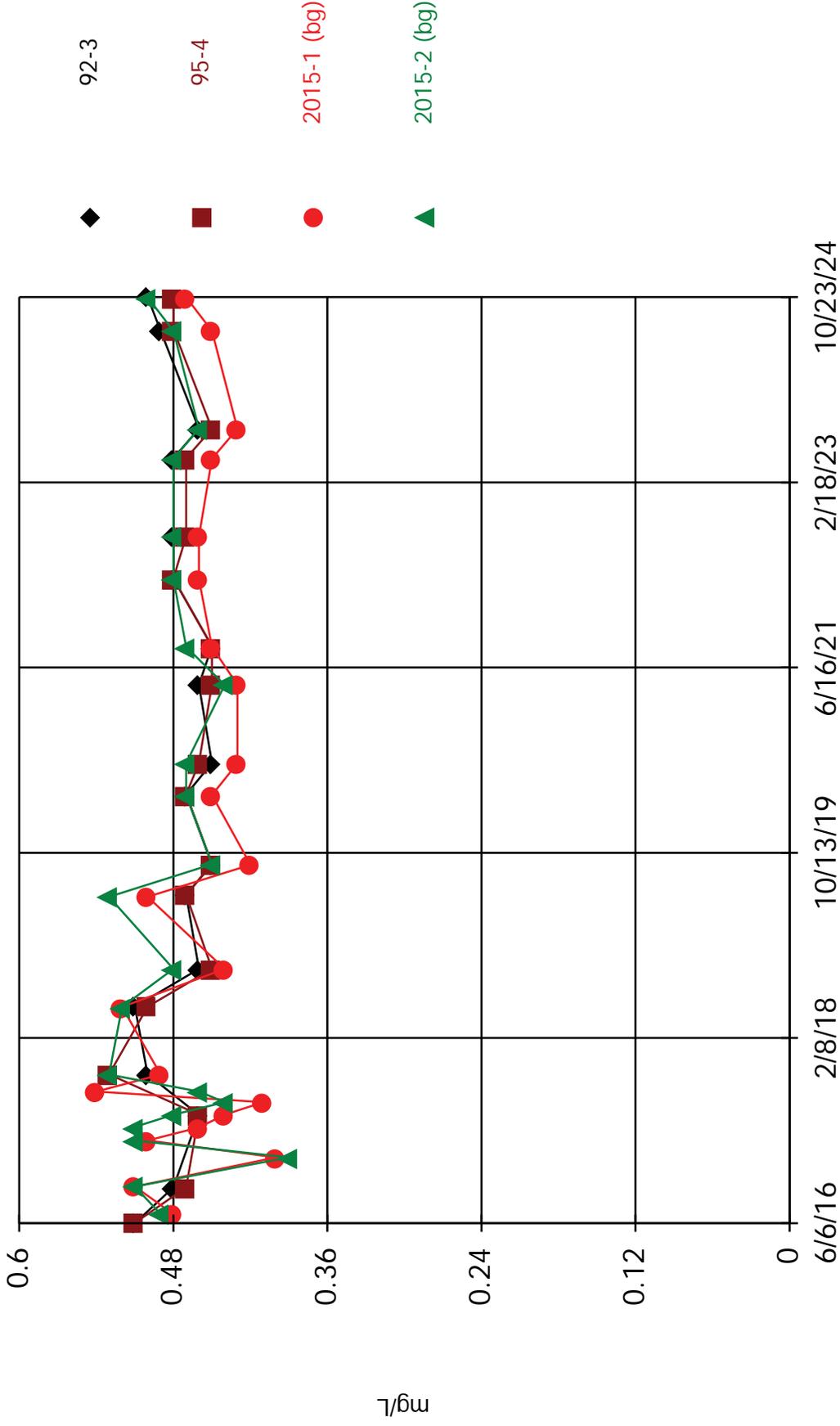
Total Dissolved Solids



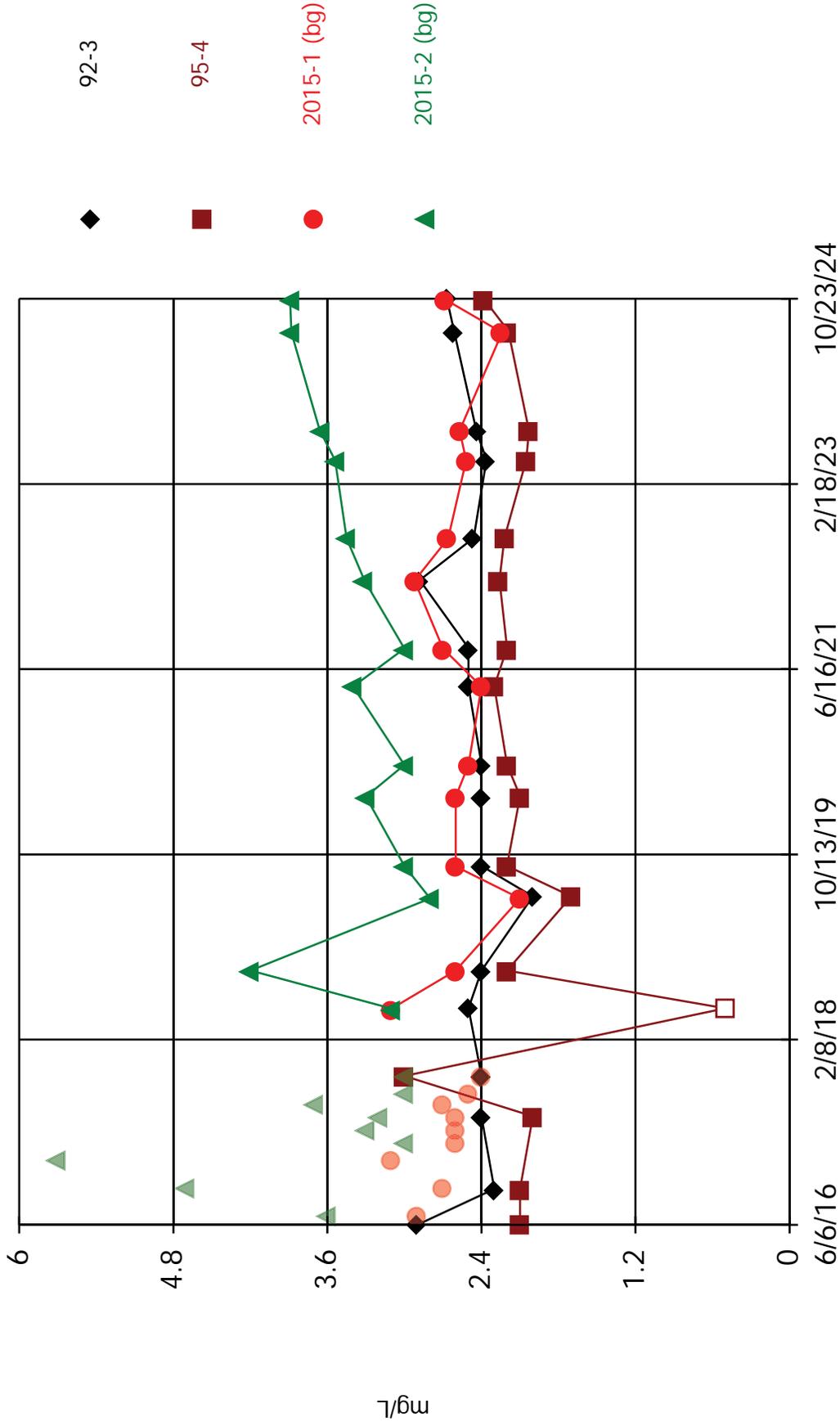
Time Series Analysis Run 11/18/2024 1:14 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Boron

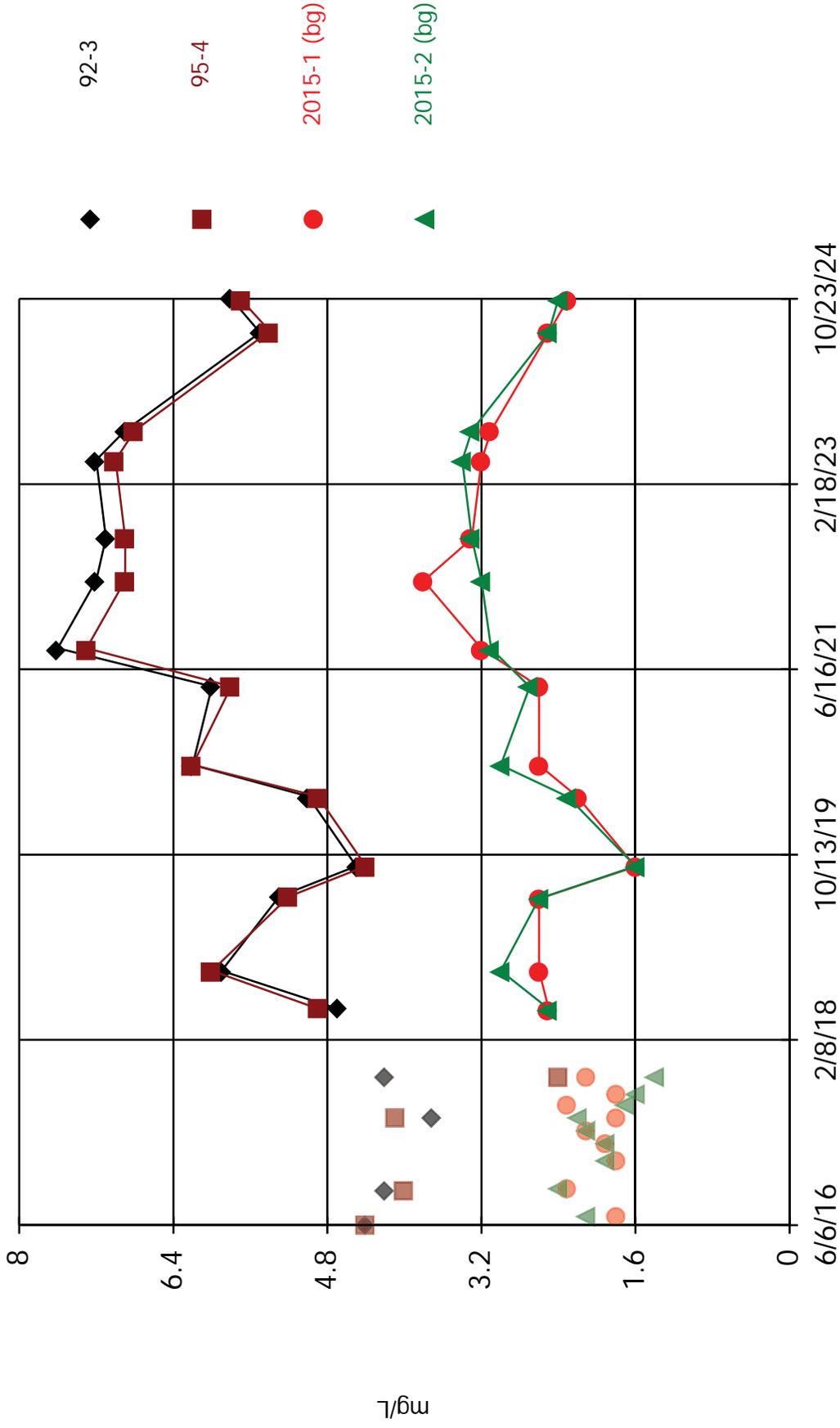


Calcium



Time Series Analysis Run 11/18/2024 1:11 PM

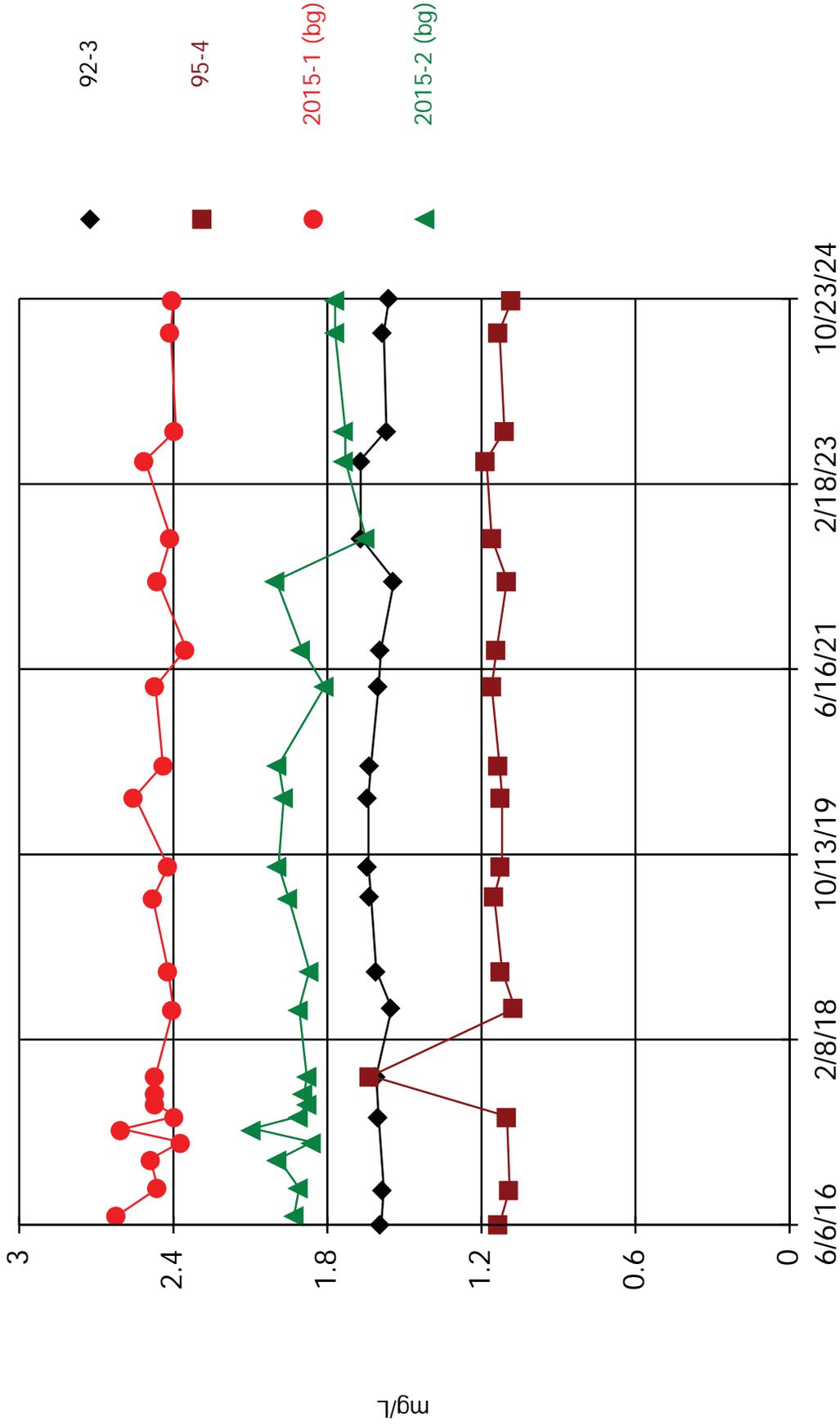
Chloride

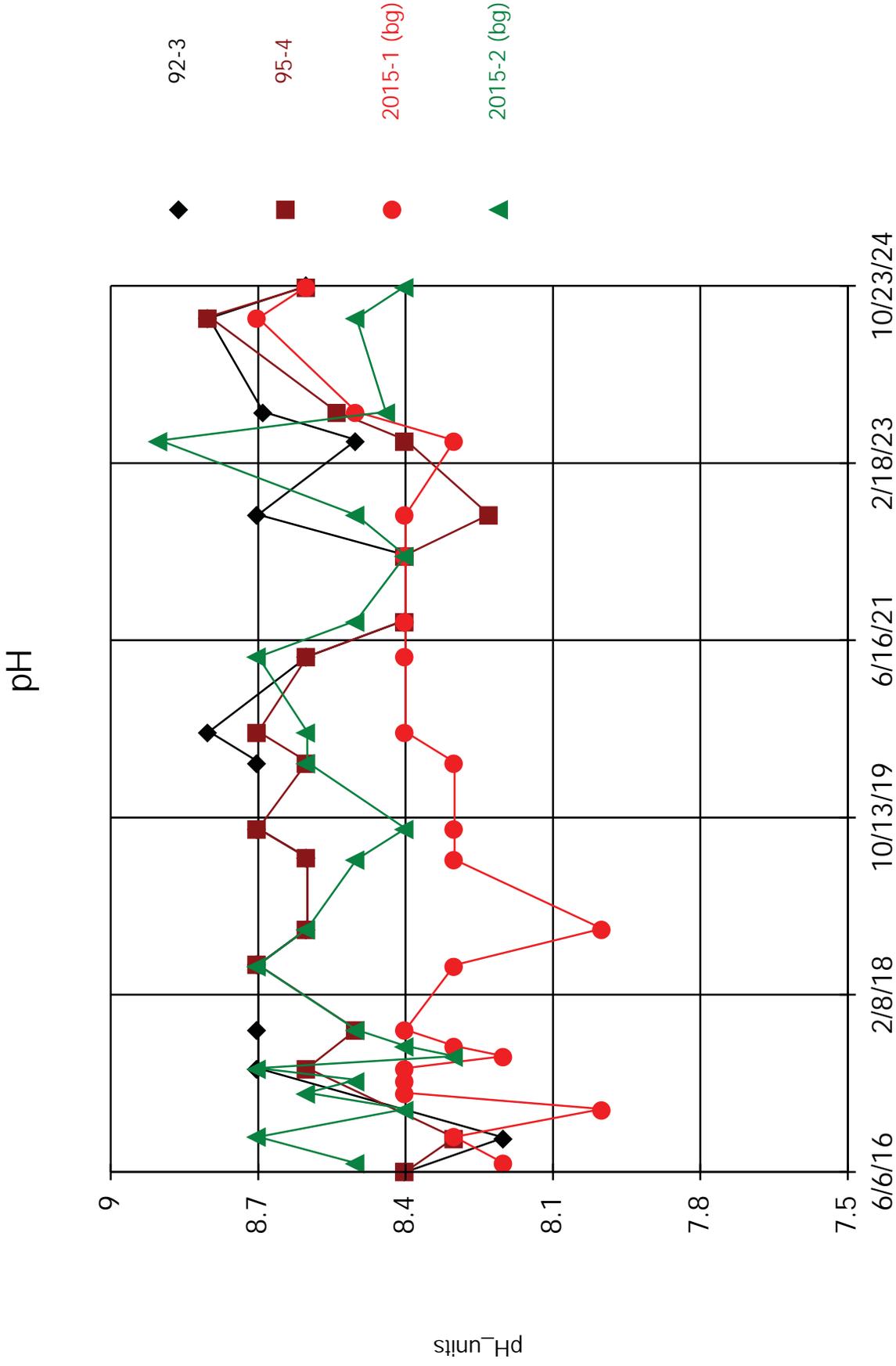


Time Series Analysis Run 11/18/2024 1:11 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Fluoride

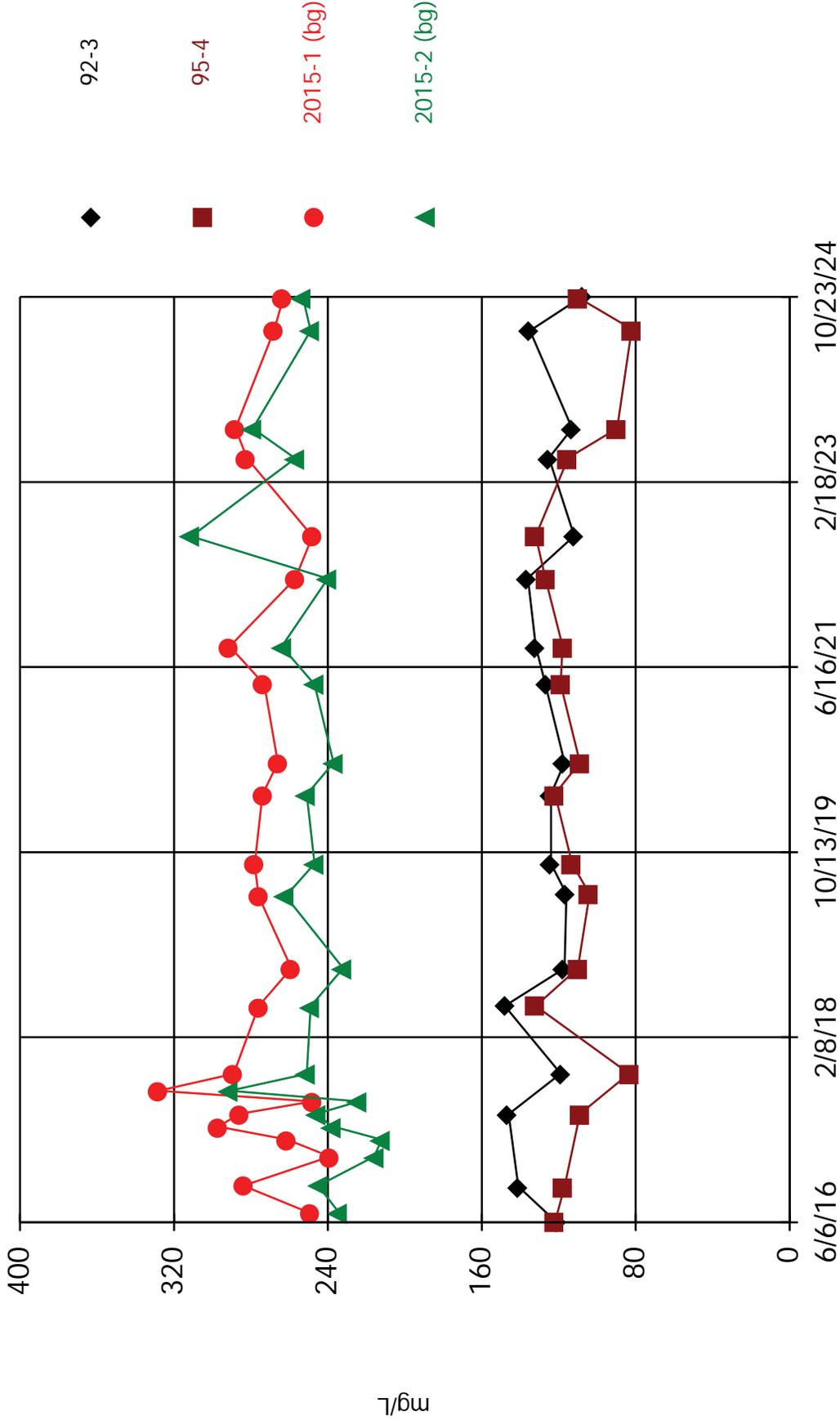




Time Series Analysis Run 11/18/2024 1:12 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

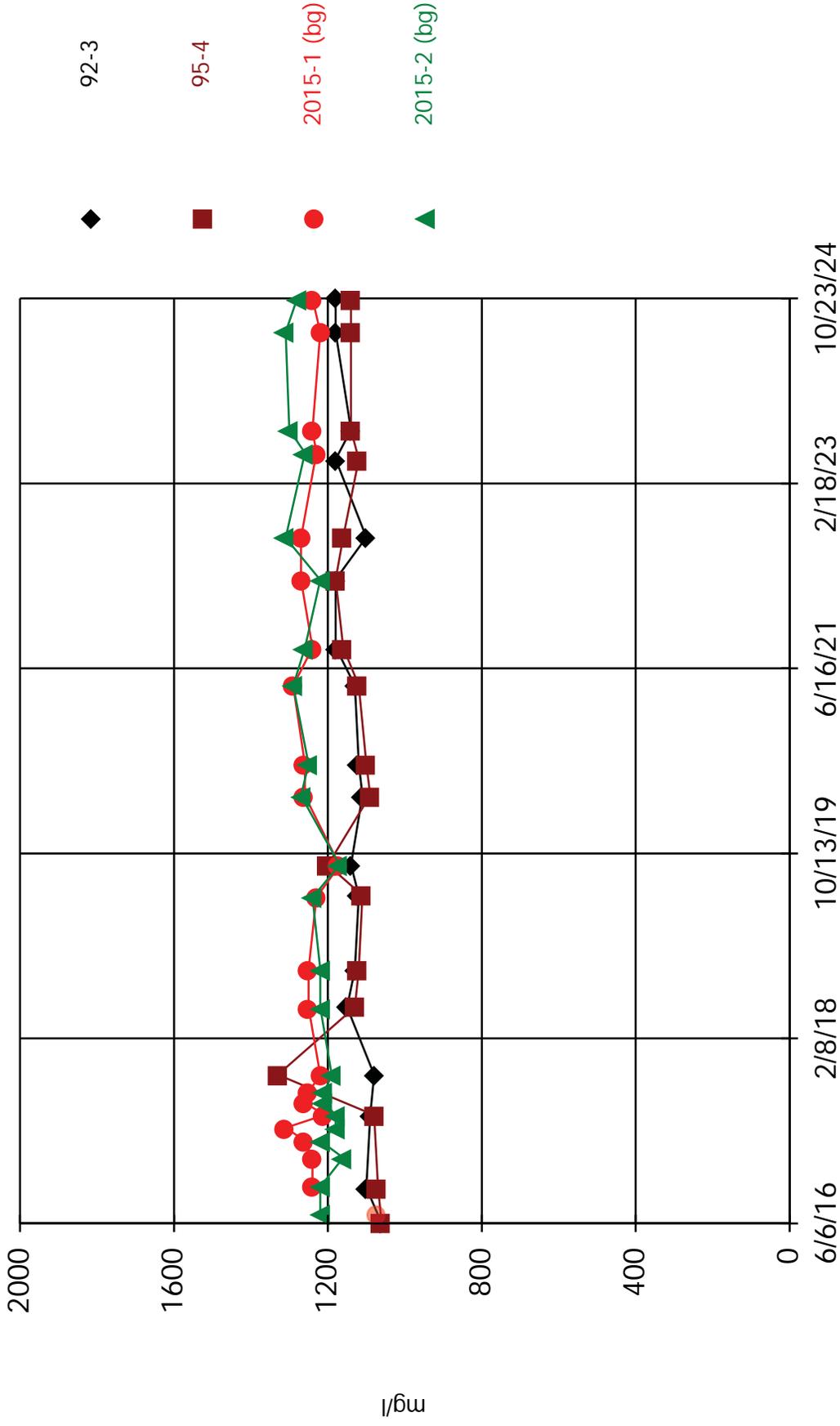
Sulfate, as SO4



Time Series Analysis Run 11/18/2024 1:11 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Total Dissolved Solids



Time Series Analysis Run 11/18/2024 1:11 PM

Milton R. Young Station Client: Minnkota Power Cooperative Data: Minnkota_NonCCR

Appendix G

Sampling Field and Laboratory Reports

MW-2023-1 Background Sampling



MINNESOTA VALLEY TESTING LABORATORIES, INC.

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



Account #: 7048

Client: Minnkota Power Cooperative

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Report Date: Tuesday, December 19, 2023 5:02:29 PM

Page 2 of 18

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 www.MVTL.com

**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 33692001 **Date Collected:** 11/10/2023 09:05 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 11/10/2023 13:05 **Collector:** MVTL Field Service
Temp @ Receipt (C): 5.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	79.5	mg/L	5	1	11/15/2023 09:50	11/15/2023 09:50	
Method: EPA 6010D							
Boron	0.53	mg/L	0.1	1	11/10/2023 17:00	11/27/2023 10:39	
Calcium	3.23	mg/L	1	1	11/10/2023 17:00	11/16/2023 12:39	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1	11/10/2023 20:25	11/10/2023 20:25	*
Method: SM4500-Cl-E 2011							
Chloride	16.7	mg/L	2.0	1	11/14/2023 11:14	11/14/2023 11:14	
Method: SM4500-F-C-2011							
Fluoride	1.74	mg/L	0.1	1	11/10/2023 20:25	11/10/2023 20:25	
Method: USGS I-1750-85							
Total Dissolved Solids	1370	mg/L	10	1	11/10/2023 15:34	11/10/2023 15:34	

Analysis Results Comments**Beryllium**

The reporting limit for this analyte has been raised to account for the reporting limit verification standard.

pH

Sample analyzed beyond holding time.

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Report Date: Tuesday, December 19, 2023 5:02:29 PM



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 www.MVTL.com



Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #:	33692
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	95.8		85	115				
LFB			100	96.5		85	115				
LFB			100	96.2		85	115				
LFB			100	98.8		85	115				
LFB			100	96.1		85	115				
MB		+5									
MB		+5									
MB		+5									
MB		+5									
MB		+5									
ML/MSD	2366006		1000	98.5	98.1	85	115	0.8	20		
ML/MSD	2380404		500	94.2	94.5	85	115	0.8	20		
ML/MSD	2388013		100	106.4	106.7	85	115	0.8	20		
ML/MSD	2391700		5000	100.5	99.8	85	115	0.4	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	94.4		90	110				
LFB			30	98.5		90	110				
LFB			30	95.5		90	110				
LFB			30	95.1		90	110				
LFB			30	95.2		90	110				
LFB			30	95.0		90	110				
MB		-2.0									
MB		-2.0									
MB		-2.0									
MB		-2.0									
MB		-2.0									
ML/MSD	3318002		30	111.3	111.7	80	120	0.0	20		

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Report Date: Tuesday, December 19, 2023 5:02:29 PM



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Account #: 7048

Client: Minnkota Power Cooperative

Chloride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MU/MSD	24677004		30	88.0	88.0	80	120	0.0	20
MU/MSD	24666007		30	100.5	93.0	80	120	5.4	20

Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
FDU/POSD	24657001		100	96.9	99.0	75	125	0.0	20
FDU/POSD	24666005		100	96.7	96.1	75	125	0.8	20
FDU/POSD	24666003		100	93.8	91.7	75	125	0.7	20
FDU/POSD	24666011		100	99.4	99.3	75	125	0.2	20
FDU/POSD	24666012		100	93.8	91.5	75	125	0.8	20
FDU/POSD	24657000		100	107.0	106.9	75	125	0.9	20

Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UP/CE			0.4	104.0		95	105		
MB		<0.1							
MU/MSD	24677003		0.4	97.9	91.3	75	125	1.0	20

Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UP/MS			100	111.0		85	115		
UP/MS			100	110.0		85	115		
MB		<1							
MB		<1							
DUP	24644003							4.1	20
DUP	24657000							2.4	20
DUP	24666007							1.4	20

pH									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
DUP	24644003							0.9	20
DUP	24657004							0.1	20

pH									
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			0	100.7		98.55	101.67		
CRM-PH			0	99.3		98.55	101.67		
CRM-PH			0	98.3		98.55	101.67		

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Fluoride									
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			3.06	104.0		83.99	111.11		
178-F			0.5	104.0		90	110		
179-F			0.5	104.0		90	110		
MS-F		<0.1							
MS-F		<0.1							
MS/MSD-F	3862020		0.5	96.0	111.0	90	120	4.5	20
Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			750	103.0		90.01	110.01		
MS		<30							
DUP	3862000							1.8	20

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ANALYTICAL SUMMARY REPORT

December 15, 2023

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

Work Order: C23110558 Quote ID: C15480

Project Name: 33692

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 11/15/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23110558-001	33692001; 2023-1	11/10/23 9:05	11/15/23	Groundwater	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, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

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

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

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 33692
Lab ID: C23110558-001
Client Sample ID: 33692001; 2023-1

Report Date: 12/15/23
Collection Date: 11/10/23 09:05
Date Received: 11/15/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.5	pCi/L			E903.0		12/11/23 15:10 / kdk
Radium 226 precision (±)	0.2	pCi/L			E903.0		12/11/23 15:10 / kdk
Radium 226 MDC	0.2	pCi/L			E903.0		12/11/23 15:10 / kdk
Radium 228	2.3	pCi/L			RA-05		12/04/23 14:21 / trs
Radium 228 precision (±)	1	pCi/L			RA-05		12/04/23 14:21 / trs
Radium 228 MDC	1.2	pCi/L			RA-05		12/04/23 14:21 / trs

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

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23110558

Report Date: 12/12/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										
Batch: RA226-11140										
Lab ID: LCS-RA226-11140	3	Laboratory Control Sample								
						Run: G542M-2_231121B				12/11/23 10:51
Radium 226		10	pCi/L	100		70	130			
Radium 226 precision (±)		1.9	pCi/L							
Radium 226 MDC		0.15	pCi/L							
Lab ID: MB-RA226-11140	3	Method Blank								
						Run: G542M-2_231121B				12/11/23 10:51
Radium 226		-0.06	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23110546-001FDUP	3	Sample Duplicate								
						Run: G542M-2_231121B				12/11/23 10:50
Radium 226		2.1	pCi/L					6.6	30	
Radium 226 precision (±)		0.48	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.21.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23110558

Report Date: 12/12/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05 Batch: RA228-7271										
Lab ID: LCS-228-RA226-11140 Run: TENNELEC-4_231121C										
3 Laboratory Control Sample 12/04/23 12:48										
Radium 228		7.3	pCi/L	111		70	130			
Radium 228 precision (±)		1.6	pCi/L							
Radium 228 MDC		0.98	pCi/L							
Lab ID: MB-RA226-11140 Run: TENNELEC-4_231121C										
3 Method Blank 12/04/23 12:48										
Radium 228		0.2	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23110546-001FDUP Run: TENNELEC-4_231121C										
3 Sample Duplicate 12/04/23 12:48										
Radium 228		1.5	pCi/L					63	30	R
Radium 228 precision (±)		0.69	pCi/L							
Radium 228 MDC		0.95	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.77.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C23110558

Login completed by: Chrystal N. Sheaff

Date Received: 11/15/2023

Reviewed by: cjohnson

Received by: dmf

Reviewed Date: 11/17/2023

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	13.4°C No ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

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.

Contact and Corrective Action Comments:

None

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Chain of Custody Record

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 2616 E Broadway Ave
 Bismarck, ND 58501
 Phone: (701) 258-9720 Fax: (701) 258-9724

MVTL
 2616 E Broadway
 Bismarck, ND 58501
 Billing Address (indicate if different from above):
 PO Box 248
 New Ulm, MN 56073

Work Order # 33692

Account #: [] Phone #: 701-258-9720

Contact: Claudette Fax #: [] For faxed report check box

Name of Sampler: [] E-mail: ccontrol@mvtl.com For e-mail report check box

Quote Number: C15480 v3 Date Submitted: 13-Nov-23

Project Name/Number: [] Purchase Order #: BL6785

Sample Information				Bottle Type				Analysis	
Lab Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled				
	33692001	2023-1	GW	10-Nov-23	0805	Untreated	Galton HNO3		Analysis Required
						Unpreserved			Ra226 & Ra228
						Glass Jar			
						Other			

Comments: Individual results as well as combined Ra226 & Ra228 must be reported for all samples.

Transferred by: T. Olson	Date: 13-Nov-23	Time: 1700	Sample Condition: []	Received by: [Signature]	Date: 11-23-23	Temp: 13.4
--------------------------	-----------------	------------	-----------------------	--------------------------	----------------	------------

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	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 33692 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: J. Grosz

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required	
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	Total Nitric			Temp (°C)	Spec. Cond.	pH		Turbidity (NTU)
001	2023-1	10/23	09:05	GW	X	X	X	X	X			5.79	211	8.40	6.02	App 1 & 2 + 566 Lit See Attachment

Comments:

Relinquished By		Sample Condition			Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time	
J. Grosz	10 Nov 23 13:05	Log In Walk In #2	5.5 TMS62 / TMS805	Tina [Signature]	10 Nov 23 13:05	

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Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
Laboratory pH		SM4500 H+ B
Laboratory Specific Conductivity	Umhos/cm	SM2510-B
Total Suspended Solids	mg/l	SM2540-D
Total Alkalinity	mg/l CaCO3	SM2320-B
Phenolphthalein Alk	mg/l CaCO3	SM2320-B
Bicarbonate	mg/l CaCO3	SM2320-B
Carbonate	mg/l CaCO3	SM2320-B
Hydroxide	mg/l CaCO3	SM2320-B
Total Dissolved Solids	mg/l	SM1030-F
Total Hardness as CaCO3	mg/l	SM2340-B
Cation Summation	mg/l	SM1030-F
Anion Summation	mg/l	SM1030-F
Percent Error	%	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Nitrate-Nitrite as N	mg/l	EPA 353.2
Phosphorous as P-Total	mg/l	EPA 365.1
Mercury- - Dissolved	mg/l	EPA 245.1
Calcium-Total	mg/l	6010
Magnesium-Total	mg/l	6010
Sodium-Total	mg/l	6010
Potassium-Total	mg/l	6010
Iron- - Dissolved	mg/l	6010
Manganese- Dissolved	mg/l	6010
Boron- - Dissolved	mg/l	6010
Arsenic- - Dissolved	mg/l	6020
Barium- - Dissolved	mg/l	6020
Cadmium- - Dissolved	mg/l	6020
Chromium- - Dissolved	mg/l	6020
Lead- - Dissolved	mg/l	6020
Molybdenum- - Dissolved	mg/l	6020
Selenium- - Dissolved	mg/l	6020
Silver- - Dissolved	mg/l	6020
Beryllium - - Dissolved	mg/l	6020

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www.MVTL.com



Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet
Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: JG

Weather Conditions: Temp: 53 F Wind: 5-15 @ out of NW Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Casing Strait?, Grout Seal Intact?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Total Depth of Well, Well Volume, Depth to Top of Pump, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment?, Duplicate Sample?, Duplicate Sample ID, Bottle List.

Control Settings table with fields: Purge, Recover, PSI.

FIELD READINGS

Table with columns: Stabilization Parameters, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment. Includes handwritten data for 11/9/23.

Table with columns: Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, Appearance or Comment.

Comments:

1 of 3

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet
Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: JG

Weather Conditions: Temp: F Wind: @ Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Casing Strait?, Grout Seal Intact?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Total Depth of Well, Well Volume, Depth to Top of Pump, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment?, Duplicate Sample?, Duplicate Sample ID, Control Settings, Bottle List.

FIELD READINGS table with columns: Purge Date, Time, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment.

Summary table with columns: Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, Appearance or Comment.

Comments:

2 of 3

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet
Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: JPH

Weather Conditions: Temp: 50 F Wind: S @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Casing Strait?, Grout Seal Intact?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Total Depth of Well, Well Volume, Depth to Top of Pump, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment?, Duplicate Sample?, Duplicate Sample ID, Bottle List, Control Settings.

FIELD READINGS

Table with columns: Purge Date, Time, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment. Includes data for multiple purges starting at 10 Nov 23.

Well Stabilized? YES NO Total Volume Purged: 40 Liters

Summary table with columns: Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, Appearance or Comment. Row for 10 Nov 23 at 0905.

Comments: well purged by Minnkota staff previous day

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 33692001 **Date Collected:** 11/10/2023 09:05 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 11/10/2023 13:05 **Collector:** MVTL Field Service
Temp @ Receipt (C): 5.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	11/14/2023 13:57	11/15/2023 09:30	
Method: EPA 6010D							
Boron	0.53	mg/L	0.1	1	11/10/2023 17:00	11/27/2023 10:39	
Cobalt	<0.1	mg/L	0.1	1	11/10/2023 17:00	11/13/2023 10:42	
Lithium	0.0541	mg/L	0.02	1	11/10/2023 17:00	11/29/2023 14:59	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	11/10/2023 17:00	11/22/2023 10:44	
Arsenic	<0.002	mg/L	0.002	5	11/10/2023 17:00	11/22/2023 10:44	
Barium	0.1056	mg/L	0.002	5	11/10/2023 17:00	11/22/2023 10:44	
Beryllium	<0.0005	mg/L	0.0005	5	11/10/2023 17:00	11/22/2023 16:06	*
Cadmium	<0.0005	mg/L	0.0005	5	11/10/2023 17:00	11/22/2023 10:44	
Chromium	<0.002	mg/L	0.002	5	11/10/2023 17:00	11/22/2023 10:44	
Lead	<0.0005	mg/L	0.0005	5	11/10/2023 17:00	11/22/2023 10:44	
Molybdenum	0.0038	mg/L	0.002	5	11/10/2023 17:00	11/22/2023 10:44	
Selenium	<0.005	mg/L	0.005	5	11/10/2023 17:00	11/22/2023 10:44	
Thallium	<0.0005	mg/L	0.0005	5	11/10/2023 17:00	11/22/2023 10:44	

Analysis Results Comments**Beryllium**

The reporting limit for this analyte has been raised to account for the reporting limit verification standard.

pH

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative

QC Results Summary										WO #:	33692
Cobalt											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
UPR-CE			0.4		107.0		81	111			
MB											
		-0.1									
MS/MSD	3364501		0.4		95.2	95.9	70	130	0.8	20	
Lithium											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
UPR-CE			0.4		108.0		81	110			
MS/MSD	3365001		0.4		100.0	95.6	70	130	4.5	20	
Antimony											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
SPR	3400014		100		91.0						
SPR	3400001		100		95.4		75	125			
SPR	3400001		100		101.0		75	125			
Arsenic											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
SPR	3400011		0.1		113.0		75	125			
SPR	3400001		0.4		100.0		75	125			
Barium											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
SPR	3400011		0.4		96.4		75	125			
Beryllium											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
SPR	3400011		0.1		121.0		75	125			
SPR	3400001		0.4		110.0		75	125			
Cadmium											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
SPR	3400011		0.4		103.0		75	125			
Chromium											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
SPR	3400011		0.4		111.0		75	125			
SPR	3400001		0.1		94.5		75	125			
Lead											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
SPR	3400011		0.4		99.8		75	125			

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Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	3406001		0.1	91.5		75	125		
Units: mg/L									
Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	3406001		0.4	114.0		75	125		
SPK	3406001		0.1	106.0		75	125		
Units: mg/L									
Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	3406001		0.4	109.0		75	125		
SPK	3406001		0.1	98.5		75	125		
Units: mg/L									
Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	3406001		0.1	94.4		75	125		
SPK	3406001		0.4	99.9		75	125		
Units: mg/L									
Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-DB			0.4	104.0		85	115		
MB		<0.1							
ML/MSD	3406001		0.4	97.9	91.3	75	125	7.0	20
Units: mg/L									
Cobalt									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-CE			0.4	107.0		85	115		
MB		<0.1							
ML/MSD	3406001		0.4	93.9	90.5	75	125	4.1	20
Units: mg/L									
Lithium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.04							
Units: mg/L									
Antimony									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MS			0.1	106.0		80	120		
MB		<0.001							
ML/MSD	3406001		0.4	109.0	103.0	75	125	5.7	20
Units: mg/L									
Arsenic									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPB-MS			0.1	101.0		80	120		

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Arsenic									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
Units: mg/L									
MB		<0.002							
MS/MSD	23092001		0.4	107.0	104.0	75	125	3.8	20

Barium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
Units: mg/L									
UFA/MS			0.1	101.0		80	120		
MB		<0.002							
MS/MSD	23092002		0.4	105.0	101.0	75	125	3.9	20

Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
Units: mg/L									
UFA/MS			0.1	103.0		80	120		
MB		<0.0005							
MS/MSD	23092003		0.4	103.0	98.0	75	125	3.4	20

Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
Units: mg/L									
UFA/MS			0.1	106.0		80	120		
MB		<0.0005							
MS/MSD	23092004		0.4	109.0	105.0	75	125	3.7	20

Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
Units: mg/L									
UFA/MS			0.1	112.0		80	120		
MB		<0.002							
MS/MSD	23092005		0.4	111.0	105.0	75	125	3.6	20

Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
Units: mg/L									
UFA/MS			0.1	104.0		80	120		
MB		<0.0005							
MS/MSD	23092006		0.4	104.0	100.0	75	125	3.9	20

Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
Units: mg/L									
UFA/MS			0.1	110.0		80	120		
MB		<0.002							
MS/MSD	23092007		0.4	114.0	110.0	75	125	3.8	20

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Selenium									
Units: mg/L									
GC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPHMS			0.1	99.9		80	120		
MS		-<0.005							
MS/MSD	23002001		0.4	108.0	103.0	75	125	4.7	20

Thallium									
Units: mg/L									
GC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPHMS			0.1	105.0		80	120		
MS		-<0.0005							
MS/MSD	23002001		0.4	106.0	102.0	75	125	2.9	20

Mercury									
Units: mg/L									
GC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPH			0.002	105.0		80	115		
UPH		-<0.0002							
MS/MSD	2314001		0.002	99.4	101.0	70	130	4.9	20
MS/MSD	2314003		0.002	98.7	96.6	70	130	5.1	20
MS/MSD	23002001		0.002	97.2	96.0	70	130	1.2	20

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Account #: 7048

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ANALYTICAL SUMMARY REPORT

December 15, 2023

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

Work Order: C23110558 Quote ID: C15480

Project Name: 33692

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 11/15/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23110558-001	33692001; 2023-1	11/10/23 9:05	11/15/23	Groundwater	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, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

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

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

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 33692
Lab ID: C23110558-001
Client Sample ID: 33692001; 2023-1

Report Date: 12/15/23
Collection Date: 11/10/23 09:05
Date Received: 11/15/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.5	pCi/L				E903.0	12/11/23 15:10 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	12/11/23 15:10 / kdk
Radium 226 MDC	0.2	pCi/L				E903.0	12/11/23 15:10 / kdk
Radium 228	2.3	pCi/L				RA-05	12/04/23 14:21 / trs
Radium 228 precision (±)	1	pCi/L				RA-05	12/04/23 14:21 / trs
Radium 228 MDC	1.2	pCi/L				RA-05	12/04/23 14:21 / trs

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

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Report Date: Tuesday, December 19, 2023 5:00:13 PM



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Account #: 7048

Client: Minnkota Power Cooperative



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Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23110558

Report Date: 12/12/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0 Batch: RA226-11140										
Lab ID: LCS-RA226-11140	3	Laboratory Control Sample								
							Run: G542M-2_231121B			12/11/23 10:51
Radium 226		10	pCi/L	100		70	130			
Radium 226 precision (±)		1.9	pCi/L							
Radium 226 MDC		0.15	pCi/L							
Lab ID: MB-RA226-11140	3	Method Blank								
							Run: G542M-2_231121B			12/11/23 10:51
Radium 226		-0.06	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23110546-001FDUP	3	Sample Duplicate								
							Run: G542M-2_231121B			12/11/23 10:50
Radium 226		2.1	pCi/L					6.6	30	
Radium 226 precision (±)		0.48	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.21.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23110558

Report Date: 12/12/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05 Batch: RA228-7271										
Lab ID: LCS-228-RA226-11140	3	Laboratory Control Sample								
										Run: TENNELEC-4_231121C 12/04/23 12:48
Radium 228		7.3	pCi/L	111		70	130			
Radium 228 precision (±)		1.6	pCi/L							
Radium 228 MDC		0.98	pCi/L							
Lab ID: MB-RA226-11140	3	Method Blank								
										Run: TENNELEC-4_231121C 12/04/23 12:48
Radium 228		0.2	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23110546-001FDUP	3	Sample Duplicate								
										Run: TENNELEC-4_231121C 12/04/23 12:48
Radium 228		1.5	pCi/L					63	30	R
Radium 228 precision (±)		0.69	pCi/L							
Radium 228 MDC		0.95	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.77.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C23110558

Login completed by: Chrystal N. Sheaff

Date Received: 11/15/2023

Reviewed by: cjohnson

Received by: dmf

Reviewed Date: 11/17/2023

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	13.4°C No ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

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.

Contact and Corrective Action Comments:

None

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Account #: 7048

Client: Minnkota Power Cooperative

Chain of Custody Record form containing fields for Laboratory Information, Sample Information, and Analysis. Includes contact details for MVTL, work order # 33692, and a table for sample tracking.

Comments: Individual results as well as combined Ra226 & Ra228 must be reported for all samples.

Summary table with columns: Transferred by, Date, Time, Sample Condition, Received by, Date, Temp. Values: T. Olson, 13-Nov-23, 1700, 11523 rad, 13.4

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 33692 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>J. Grosz</i>

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required	
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	Total Nitric			Temp (°C)	Spec. Cond.	pH		Turbidity (NTU)
001	2023-1	10/23	09:05	GW	X	X	X	X	X			5.79	211	8.40	6.02	App 1 & 2 + 566 Lit See Attachment

Comments:

Relinquished By		Sample Condition			Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time	
<i>J. Grosz</i>	10 Nov 23 13:05	Col In Walk In #2	5.5 TMS62 / TMS805	<i>Tina</i>	10 Nov 23 13:05	

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048

Client: Minnkota Power Cooperative

- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
Laboratory pH		SM4500 H+ B
Laboratory Specific Conductivity	Umhos/cm	SM2510-B
Total Suspended Solids	mg/l	SM2540-D
Total Alkalinity	mg/l CaCO3	SM2320-B
Phenolphthalein Alk	mg/l CaCO3	SM2320-B
Bicarbonate	mg/l CaCO3	SM2320-B
Carbonate	mg/l CaCO3	SM2320-B
Hydroxide	mg/l CaCO3	SM2320-B
Total Dissolved Solids	mg/l	SM1030-F
Total Hardness as CaCO3	mg/l	SM2340-B
Cation Summation	mg/l	SM1030-F
Anion Summation	mg/l	SM1030-F
Percent Error	%	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Nitrate-Nitrite as N	mg/l	EPA 353.2
Phosphorous as P-Total	mg/l	EPA 365.1
Mercury- - Dissolved	mg/l	EPA 245.1
Calcium-Total	mg/l	6010
Magnesium-Total	mg/l	6010
Sodium-Total	mg/l	6010
Potassium-Total	mg/l	6010
Iron- - Dissolved	mg/l	6010
Manganese- Dissolved	mg/l	6010
Boron- - Dissolved	mg/l	6010
Arsenic- - Dissolved	mg/l	6020
Barium- - Dissolved	mg/l	6020
Cadmium- - Dissolved	mg/l	6020
Chromium- - Dissolved	mg/l	6020
Lead- - Dissolved	mg/l	6020
Molybdenum- - Dissolved	mg/l	6020
Selenium- - Dissolved	mg/l	6020
Silver- - Dissolved	mg/l	6020
Beryllium - - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: JG

Weather Conditions: Temp: 53 °F Wind: 5-15 @ out of NW Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION				SAMPLING INFORMATION			
Well Locked?	YES	NO		Purging Method:	Bladder	Control Settings:	
Well Labeled?	YES	NO		Sampling Method:	Bladder	Purge:	7 Sec.
Casing Strait?	YES	NO		Dedicated Equipment?	YES NO	Recover:	7 Sec.
Grout Seal Intact?	YES	NO	Not Visible	Duplicate Sample?	YES NO	PS:	120
Repairs Necessary?	None			Duplicate Sample ID:			
Casing Diameter:	2"			Bottle List:			
Water Level Before Purge:	209.45 ft			1 Liter Raw			
Total Depth of Well:	— ft			500ml Nitric			
Well Volume:	12.8 liters			500ml Nitric (filtered)			
Depth to Top of Pump:	228.10 ft			250ml Sulfuric			
Water Level After Sample:	— ft						
Measurement Method:	Electric Water Level Indicator						

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%			clear, slightly turbid, turbid
	8:42	Start of Well Purge								
	8:57	—	—	—	—	2.57	215.05	467	7	Clear
	9:12	—	—	—	—	5.20	217.60	767	7	
	9:27	—	—	—	—	6.47	219.80	133	2	
	9:42	—	—	—	—	7.11	219.50	100	1.5	
	9:44	944	Turb out of range	7.02	1020	Shut Pumping	218.8'			
	10:01	—	—	—	—	7.0	220.0	133	2	
	10:36	—	—	—	—	4.77	220.65	133	2	
	11:11	—	—	—	—	4.87	221.25	67	1	
	11:23	1123	Turb out of range	1157	Shut Pumping	221.0'				
	12:17	—	—	—	—	16.1	222.0'	200	3	
Well Stabilized?		YES	NO	Total Volume Purged: _____ Liters						

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment
											Clarity, Color, Odor, Ect.

Comments:

1 of 3

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Account #: 7048

Client: Minnkota Power Cooperative



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet
Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: JG

Weather Conditions: Temp: F Wind: @ Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION and SAMPLING INFORMATION sections containing various checkboxes and data entry fields.

FIELD READINGS table with columns for Purge Date, Time, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, and Appearance or Comment.

Summary table with columns for Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, and Appearance or Comment.

Comments:

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Report Date: Monday, January 8, 2024 11:18:05 AM

Page 2 of 14

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 35469001 **Date Collected:** 12/01/2023 08:00 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 12/01/2023 14:08 **Collector:** MVTL Field Service
Temp @ Receipt (C): 1.9 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	82.1	mg/L	5	1	12/06/2023 13:01	12/06/2023 13:01	
Method: EPA 6010D							
Boron	0.53	mg/L	0.1	1	12/04/2023 09:24	12/06/2023 15:16	
Calcium	3.14	mg/L	1	1	12/04/2023 09:24	12/04/2023 12:30	
Method: SM4500 H+ B-2011							
pH	8.5	units	0.1	1	12/05/2023 19:30	12/05/2023 19:30	*
Method: SM4500-Cl-E 2011							
Chloride	15.5	mg/L	2.0	1	12/05/2023 11:38	12/05/2023 11:38	
Method: SM4500-F-C-2011							
Fluoride	1.81	mg/L	0.1	1	12/05/2023 19:30	12/05/2023 19:30	
Method: USGS I-1750-85							
Total Dissolved Solids	1400	mg/L	10	1	12/01/2023 18:00	12/01/2023 18:00	

Analysis Results Comments**Alkalinity, Total**

The reporting limit for this analyte has been raised to account for the reporting limit verification standard.

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

pH									
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	99.5		98.33	101.67		
CRM-PH			6	99.3		98.33	101.67		
CRM-PH			6	99.2		98.33	101.67		
CRM-PH			6	99.8		98.33	101.67		
DUP	25466003							0.5	20
DUP	31566003							0.3	20
DUP	31562001							0.4	20
DUP	31562004							1.0	20

Fluoride									
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			3.06	94.0		91.99	111.11		
UFB-F			0.5	98.0		90	110		
UFB-F			0.5	103.0		90	110		
UFB-F			0.5	104.0		90	110		
UFB-F			0.5	94.0		90	110		
MS-F		<0.1							
MS-F		<0.1							
MS-F		<0.1							
MS-F		<0.1							
ML/MSD-F	35470002		0.5	98.0	102.0	90	120	1.4	20
ML/MSD-F	31562001		0.5	99.0	99.0	90	120	4.7	20
ML/MSD-F	31562005		0.5	100.0	108.0	90	120	3.9	20

Total Dissolved Solids									
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	102.0		90.35	110.35		
CRM			736	102.0		90.35	110.35		
MS		<10							
MS		<10							
DUP	35234001							2.2	20
DUP	31566007							2.5	20
DUP	35469003							0.7	20

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Report Date: Monday, January 8, 2024 11:18:05 AM



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Client: Minnkota Power Cooperative



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ANALYTICAL SUMMARY REPORT

December 29, 2023

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

Work Order: C23120219 Quote ID: C15480

Project Name: 35469

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 12/6/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23120219-001	35469001; 2023-1	12/01/23 8:00	12/06/23	Groundwater	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, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

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

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

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 35469
Lab ID: C23120219-001
Client Sample ID: 35469001; 2023-1

Report Date: 12/29/23
Collection Date: 12/01/23 08:00
Date Received: 12/06/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.1	pCi/L	U		E903.0		12/18/23 12:19 / kdk
Radium 226 precision (s)	0.1	pCi/L			E903.0		12/18/23 12:19 / kdk
Radium 226 MDC	0.2	pCi/L			E903.0		12/18/23 12:19 / kdk
Radium 228	0.4	pCi/L	U		RA-05		12/12/23 15:07 / kdk
Radium 228 precision (s)	0.6	pCi/L			RA-05		12/12/23 15:07 / kdk
Radium 228 MDC	0.9	pCi/L			RA-05		12/12/23 15:07 / kdk

Report Definitions: RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)

MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23120219

Report Date: 12/27/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										
Batch: RA226-11158										
Lab ID: LCS-RA226-11158	3	Laboratory Control Sample								
										Run: TENNELEC-3_231207B 12/18/23 09:25
Radium 226		11	pCi/L	107		70	130			
Radium 226 precision (±)		2.1	pCi/L							
Radium 226 MDC		0.28	pCi/L							
Lab ID: MB-RA226-11158	3	Method Blank								Run: TENNELEC-3_231207B 12/18/23 09:25
Radium 226		0.1	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23120200-001EDUP	3	Sample Duplicate								Run: TENNELEC-3_231207B 12/18/23 09:25
Radium 226		0.75	pCi/L					6.5	30	
Radium 226 precision (±)		0.18	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.18.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23120219

Report Date: 12/27/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05 Batch: RA228-7285										
Lab ID: LCS-228-RA226-11158	3	Laboratory Control Sample								
										Run: TENNELEC-4_231207A 12/12/23 15:07
Radium 228		7.8	pCi/L	119		70	130			
Radium 228 precision (±)		1.7	pCi/L							
Radium 228 MDC		1.0	pCi/L							
Lab ID: MB-RA226-11158	3	Method Blank								
										Run: TENNELEC-4_231207A 12/12/23 15:07
Radium 228		-0.3	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23120200-001EDUP	3	Sample Duplicate								
										Run: TENNELEC-4_231207A 12/12/23 15:07
Radium 228		0.84	pCi/L					56	30	UR
Radium 228 precision (±)		0.62	pCi/L							
Radium 228 MDC		0.96	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.42.

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

R - Relative Percent Difference (RPD) exceeds advisory limit

U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C23120219

Login completed by: Hannah R. Johnson

Date Received: 12/6/2023

Reviewed by: cjohanson

Received by: dmf

Reviewed Date: 12/9/2023

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	14.9°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

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.

Contact and Corrective Action Comments:

Temperature Blank temperature for Cooler 1 was 11.7°C, Cooler 2: 14.9°C, Cooler 3: 12.1°C, and Cooler 4 12.1°C.

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories	Minnkota Power Cooperative	Chain of Custody Record
	2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	WO: 35469 	
Report To: Minnkota Power Cooperative	Attn: Joseph Grosz	Address: 3401 24 th St SW Center, ND 58530	Project Name: Minnkota - CCWDF
Phone:	Email: jgrosz@minnkota.com		Event:
CC:			Sampled By: <i>Joseph Grosz</i>

Lab Number	Sample Information				Sample Containers					Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1Gal Nitric	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	1 Dec 23	0900	GW	X	X	X	X	X	6.10	2141	8.41	0.01	See Attachment

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>J Grosz</i>	1 Dec 23 1405	Log In Walk In #2	20.1 / 1.5 TM562 / TM805	<i>Heather Huse</i>	1 Dec 23 1408

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 35469001 **Date Collected:** 12/01/2023 08:00 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 12/01/2023 14:08 **Collector:** MVTL Field Service
Temp @ Receipt (C): 1.9 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	12/13/2023 09:30	12/06/2023 13:39	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	12/04/2023 09:24	12/05/2023 10:53	
Lithium	0.0543	mg/L	0.02	1	12/04/2023 09:24	12/06/2023 10:58	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	12/04/2023 09:24	12/07/2023 14:22	
Arsenic	<0.002	mg/L	0.002	5	12/04/2023 09:24	12/07/2023 14:22	
Barium	0.1022	mg/L	0.002	5	12/04/2023 09:24	12/07/2023 14:22	
Beryllium	<0.0005	mg/L	0.0005	5	12/04/2023 09:24	12/07/2023 17:21	
Cadmium	<0.0005	mg/L	0.0005	5	12/04/2023 09:24	12/07/2023 14:22	
Chromium	<0.002	mg/L	0.002	5	12/04/2023 09:24	12/07/2023 14:22	
Lead	<0.0005	mg/L	0.0005	5	12/04/2023 09:24	12/07/2023 14:22	
Molybdenum	0.0033	mg/L	0.002	5	12/04/2023 09:24	12/07/2023 14:22	
Selenium	<0.005	mg/L	0.005	5	12/04/2023 09:24	12/07/2023 14:22	
Thallium	<0.0005	mg/L	0.0005	5	12/04/2023 09:24	12/07/2023 17:21	

Analysis Results Comments

Alkalinity, Total

The reporting limit for this analyte has been raised to account for the reporting limit verification standard.

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #: 35469
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-CE			0.4	108.0		81	111			
LFB-CE			0.4	111.0		81	111			
MB		<0.1								
MB		<0.1								
PDS	3440001		25	90.2		75	125			
PDS	3440003		250	115.0		75	125			
PDS/PDS	3118001		2	106.0	101.0	75	125	3.8	20	
PDS/PDS	3118004		2	95.7	96.5	75	125	0.3	20	
MS/MSD	3188007		0.4	93.4	81.1	75	125	1.1	20	
PDS/PDS	3188007		2	98.8	99.0	75	125	0.3	20	
MS/MSD	3188009							1.2	20	
PDS/PDS	3188009							0.5	20	
PDS/PDS	3188009							0.5	20	
MS/MSD	3540004		0.4	96.4	96.9	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-CE			0.4	113.0		81	111			
MB		<0.04								
MS/MSD	3118007		0.4	101.0	101.0	75	125	0.6	20	
PDS/PDS	3540001		2	91.0	90.5	75	125	0.6	20	
Antimony										Units: mg/L
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
LFB-MS			0.1	100.0		81	120			
MB		<0.001								
MS/MSD	3188007		0.4	104.0	103.8	75	125	2.0	20	
SPN/SPD	3540001		0.1	107.0	107.0	75	120	0.4	20	
Arsenic										Units: mg/L
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
LFB-MS			0.1	101.0		81	120			
MB		<0.001								

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Report Date: Monday, January 8, 2024 11:28:35 AM



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Account #: 7048

Client: Minnkota Power Cooperative

Arsenic									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MU/MSD	25488007		0.4	100.0	100.0	75	125	0.0	20
SPU/SPD	25489000		0.1	102.0	114.0	75	125	0.9	20
Units: mg/L									
Barium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA/MS			0.1	99.6		80	120		
MS		<0.001							
MU/MSD	25488007		0.4	97.6	97.1	75	125	0.4	20
SPU/SPD	25489000							1.0	20
Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA/MS			0.1	107.0		80	120		
MS		<0.0005							
MU/MSD	25488007		0.4	106.0	107.0	75	125	0.3	20
SPU/SPD	25489000		0.1	110.0	106.0	75	125	0.8	20
SPU/SPD	25489000		0.1	114.0	117.0	75	125	1.9	20
Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA/MS			0.1	104.0		80	120		
MS		<0.0005							
MU/MSD	25488007		0.4	100.0	103.0	75	125	2.9	20
SPU/SPD	25489000		0.1	101.0	101.0	75	125	1.2	20
Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA/MS			0.1	106.0		80	120		
MS		<0.001							
MU/MSD	25488007		0.4	104.0	104.0	75	125	0.2	20
SPU/SPD	25489000		0.1	96.7	90.5	75	125	0.8	20
Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA/MS			0.1	101.0		80	120		
MS		<0.0020							
MU/MSD	25488007		0.4	97.4	96.7	75	125	0.5	20
SPU/SPD	25489000		0.1	95.4	98.6	75	125	1.2	20

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**Account #:** 7048**Client:** Minnkota Power Cooperative

Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPL MS			0.1	106.0		80	120		
MSB									
		<0.000							
MS/MSD	3188807		0.4	101.0	105.0	75	125	1.8	20
SPK/SPD	35425801		0.1	101.0	104.0	75	125	3.8	20

Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPL MS			0.1	98.6		80	120		
MSB									
		<0.000							
MS/MSD	3188800		0.4	101.0	102.0	75	125	0.7	20
SPK/SPD	35425800		0.1	102.0	105.0	75	125	2.9	20

Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPL MS			0.1	107.0		80	120		
MSB									
		<0.0005							
MS/MSD	3188807		0.4	108.0	108.0	75	125	0.2	20
SPK/SPD	35425800		0.1	90.4	88.8	75	125	3.3	20
SPK/SPD	35425804		0.1	110.0	111.0	75	125	0.3	20

Mercury									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPL			0.002	102.0		80	115		
MSB									
		<0.0002							
MS/MSD	35488004		0.002	92.7	86.4	70	130	3.7	20

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ANALYTICAL SUMMARY REPORT

December 29, 2023

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

Work Order: C23120219 Quote ID: C15480

Project Name: 35469

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 12/6/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23120219-001	35469001; 2023-1	12/01/23 8:00	12/06/23	Groundwater	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, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

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

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

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 35469
Lab ID: C23120219-001
Client Sample ID: 35469001; 2023-1

Report Date: 12/29/23
Collection Date: 12/01/23 08:00
Date Received: 12/06/23
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.1	pCi/L	U		E903.0		12/18/23 12:19 / kdk
Radium 226 precision (s)	0.1	pCi/L			E903.0		12/18/23 12:19 / kdk
Radium 226 MDC	0.2	pCi/L			E903.0		12/18/23 12:19 / kdk
Radium 228	0.4	pCi/L	U		RA-05		12/12/23 15:07 / kdk
Radium 228 precision (s)	0.6	pCi/L			RA-05		12/12/23 15:07 / kdk
Radium 228 MDC	0.9	pCi/L			RA-05		12/12/23 15:07 / kdk

Report Definitions: RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)

MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23120219

Report Date: 12/27/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0 Batch: RA226-11158										
Lab ID: LCS-RA226-11158	3	Laboratory Control Sample								
										Run: TENNELEC-3_231207B 12/18/23 09:25
Radium 226		11	pCi/L	107		70	130			
Radium 226 precision (±)		2.1	pCi/L							
Radium 226 MDC		0.28	pCi/L							
Lab ID: MB-RA226-11158	3	Method Blank								Run: TENNELEC-3_231207B 12/18/23 09:25
Radium 226		0.1	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23120200-001EDUP	3	Sample Duplicate								Run: TENNELEC-3_231207B 12/18/23 09:25
Radium 226		0.75	pCi/L					6.5	30	
Radium 226 precision (±)		0.18	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.18.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C23120219

Report Date: 12/27/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05 Batch: RA228-7285										
Lab ID: LCS-228-RA226-11158	3	Laboratory Control Sample								
										Run: TENNELEC-4_231207A 12/12/23 15:07
Radium 228		7.8	pCi/L	119		70	130			
Radium 228 precision (±)		1.7	pCi/L							
Radium 228 MDC		1.0	pCi/L							
Lab ID: MB-RA226-11158	3	Method Blank								Run: TENNELEC-4_231207A 12/12/23 15:07
Radium 228		-0.3	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23120200-001EDUP	3	Sample Duplicate								Run: TENNELEC-4_231207A 12/12/23 15:07
Radium 228		0.84	pCi/L					56	30	UR
Radium 228 precision (±)		0.62	pCi/L							
Radium 228 MDC		0.96	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.42.

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

R - Relative Percent Difference (RPD) exceeds advisory limit

U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C23120219

Login completed by: Hannah R. Johnson

Date Received: 12/6/2023

Reviewed by: cjohnson

Received by: dmf

Reviewed Date: 12/9/2023

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	14.9°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

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.

Contact and Corrective Action Comments:

Temperature Blank temperature for Cooler 1 was 11.7°C, Cooler 2: 14.9°C, Cooler 3: 12.1°C, and Cooler 4 12.1°C.

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Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories	Minnkota Power Cooperative	Chain of Custody Record
	2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	WO: 35469 	
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF	Event:
		Sampled By: <i>Joseph Grosz</i>	

Lab Number	Sample Information				Sample Containers					Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1Gal Nitric	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	2023-1	1 Dec 23	0900	GW	X	X	X	X	X	6.10	2141	8.41	0.01	
														See Attachment

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>J Grosz</i>	1 Dec 23 1405	Log In / Walk In #2	20.1 / 1.5 TM562 / TM805	<i>Joseph Grosz</i>	1 Dec 23 1408

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Report Date: Friday, February 9, 2024 2:54:19 PM

Page 2 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID:	38296001	Date Collected:	01/09/2024 10:00	Matrix:	Groundwater		
Sample ID:	2023-1	Date Received:	01/09/2024 11:50	Collector:	MVTL Field Service		
Temp @ Receipt (C):	0.8	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual

Method: ASTM D516-16

Sulfate	56.0	mg/L	25	5	01/10/2024 11:23	01/10/2024 11:23	
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Method: EPA 6010D

Boron	0.52	mg/L	0.1	1	01/11/2024 08:45	01/19/2024 16:14	
Calcium	3.36	mg/L	1	1	01/11/2024 08:45	01/15/2024 15:22	

Method: SM4500 H+ B-2011

pH	8.4	units	0.1	1	01/09/2024 14:20	01/09/2024 14:20	*
----	------------	-------	-----	---	------------------	------------------	---

Method: SM4500-Cl-E 2011

Chloride	15.8	mg/L	2.0	1	01/09/2024 16:12	01/09/2024 16:12	
----------	-------------	------	-----	---	------------------	------------------	--

Method: SM4500-F-C-2011

Fluoride	1.76	mg/L	0.1	1	01/15/2024 16:54	01/15/2024 16:54	*
----------	-------------	------	-----	---	------------------	------------------	---

Method: USGS I-1750-85

Total Dissolved Solids	1400	mg/L	10	1	01/15/2024 16:56	01/15/2024 16:56	
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Analysis Results Comments

Cadmium, Dissolved

Recovery of internal standard out of acceptance limits; sample required dilution. Reporting limit has been elevated to account for this dilution.

Fluoride

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

Molybdenum, Dissolved

Recovery of internal standard out of acceptance limits; sample required dilution. Reporting limit has been elevated to account for this dilution.

Silver, Dissolved

Recovery of internal standard out of acceptance limits; sample required dilution. Reporting limit has been elevated to account for this dilution.

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #:	38296
Sulfate										Units: mg/L	
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
LFB			100	100.0		95	105				
LFB			100	96.3		95	105				
LFB			100	99.8		95	105				
MB		+5									
MB		+5									
MB		+5									
MS/MSD	38101001		500	91.4	93.6	80	120	1.4	20		
MS/MSD	38296001		500	95.9	95.9	95	105	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	95.2		90	100				
LFB			30	91.1		90	100				
LFB			30	95.4		90	100				
MB		+3.0									
MB		+3.0									
MB		+3.0									
MS/MSD	38146001		30	125.9	123.8	90	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-CE			0.4	101.0		95	105				
MB		+0.1									
MS/MSD	38296001		0.4	96.0	96.6	70	130	30.3	20		
Calcium										Units: mg/L	
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
LFB-M			100	110.0		90	105				
MB		+3									
DUP	38296001							1.2	20		
POI/POID	38410001		100	94.6	96.9	70	120	1.4	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		8		100.7		98.33	101.67				

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Client: Minnkota Power Cooperative

pH									
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	105.2		98.33	101.67		
CRM-PH			6	100.7		98.33	101.67		
DUP	3821300							0.1	20
Fluoride									
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			0.06	103.0		81.99	111.11		
LFB-F			0.5	108.0		90	110		
LFB-F			0.5	108.0		90	110		
LFB-F			0.5	100.0		90	110		
MB-F		<0.1							
MB-F		<0.1							
MB-F		<0.1							
ML/MSD-F	3829001		0.5	130.0	126.0	80	120	4.9	20
ML/MSD-F	3829002		0.5	106.0	94.0	80	120	4.2	20
Total Dissolved Solids									
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	101.0		90.35	110.35		
CRM			736	98.0		90.35	110.35		
CRM			736	101.0		90.35	110.35		
CRM			736	101.0		90.35	110.35		
MB		<10							
DUP	3829000							1.4	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories	Minnkota Power Cooperative	Chain of Custody Record
	2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	WO: 38296 	
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF	Event:
		Sampled By: <i>[Signature]</i>	

Lab Number	Sample Information				Sample Containers							Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	1 Gall Nitric	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)			
001	2023-1	1/9/24	1000	GW	X	X	X	X		7.17	2403	8.45	4.97	See Attachment		

Comments:

1	Relinquished By		Sample Condition		Received By	
	Name	Date/Time	Location	Temp (°C)	Name	Date/Time
1	<i>[Signature]</i>	1/9/24 1150	Walk In #2	201 TMS62 / TMS805	<i>[Signature]</i>	9 Jan 24 1150
2						

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet
Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: hth

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: 0 F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Casing Strait?, Grout Seal Intact?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Total Depth of Well, Well Volume, Depth to Top of Pump, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment?, Duplicate Sample?, Duplicate Sample ID, Control Settings, Bottle List.

FIELD READINGS table with columns: Purge Date, Time, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment.

Summary table with columns: Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, Appearance or Comment.

Comments:

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Client: Minnkota Power Cooperative

- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
x Laboratory pH		SM4500 H+ B
x Laboratory Specific Conductivity	Umhos/cm	SM2510-B
x Total Suspended Solids	mg/l	SM2540-D
x Total Alkalinity	mg/l CaCO3	SM2320-B
x Phenolphthalein Alk	mg/l CaCO3	SM2320-B
x Bicarbonate	mg/l CaCO3	SM2320-B
x Carbonate	mg/l CaCO3	SM2320-B
x Hydroxide	mg/l CaCO3	SM2320-B
x Total Dissolved Solids	mg/l	SM1030-F
x Total Hardness as CaCO3	mg/l	SM2340-B
x Cation Summation	mg/l	SM1030-F
x Anion Summation	mg/l	SM1030-F
x Percent Error	%	SM1030-F
x Fluoride	mg/l	SM4500-F-C
x Sulfate	mg/l	ASTM D516-02
x Chloride	mg/l	SM4500-Cl-E
x Nitrate-Nitrite as N	mg/l	EPA 353.2
x Phosphorous as P-Total	mg/l	EPA 365.1
x Mercury- - Dissolved	mg/l	EPA 245.1
x Calcium-Total	mg/l	6010
x Magnesium-Total	mg/l	6010
x Sodium-Total	mg/l	6010
x Potassium-Total	mg/l	6010
x Iron- - Dissolved	mg/l	6010
x Manganese- Dissolved	mg/l	6010
x Boron- - Dissolved	mg/l	6010
x Arsenic- - Dissolved	mg/l	6020
x Barium- - Dissolved	mg/l	6020
x Cadmium- - Dissolved	mg/l	6020
x Chromium- - Dissolved	mg/l	6020
x Lead- - Dissolved	mg/l	6020
x Molybdenum- - Dissolved	mg/l	6020
x Selenium- - Dissolved	mg/l	6020
x Silver- - Dissolved	mg/l	6020
x Beryllium - - Dissolved	mg/l	6020

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Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 38296001 **Date Collected:** 01/09/2024 10:00 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 01/09/2024 11:50 **Collector:** MVTL Field Service
Temp @ Receipt (C): 0.8 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	01/17/2024 08:25	01/17/2024 11:36	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	01/11/2024 08:45	01/16/2024 11:23	
Lithium	0.0534	mg/L	0.02	1	01/11/2024 08:45	01/19/2024 09:31	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	01/11/2024 08:45	01/12/2024 16:31	
Arsenic	<0.002	mg/L	0.002	5	01/11/2024 08:45	01/12/2024 13:56	
Barium	0.1099	mg/L	0.002	5	01/11/2024 08:45	01/12/2024 16:31	
Beryllium	<0.0005	mg/L	0.0005	5	01/11/2024 08:45	01/12/2024 13:56	
Cadmium	<0.0005	mg/L	0.0005	5	01/11/2024 08:45	01/12/2024 13:56	
Chromium	<0.002	mg/L	0.002	5	01/11/2024 08:45	01/12/2024 13:56	
Lead	<0.0005	mg/L	0.0005	5	01/11/2024 08:45	01/15/2024 12:08	
Molybdenum	0.0037	mg/L	0.002	5	01/11/2024 08:45	01/12/2024 13:56	
Selenium	<0.005	mg/L	0.005	5	01/11/2024 08:45	01/12/2024 13:56	
Thallium	<0.0005	mg/L	0.0005	5	01/11/2024 08:45	01/15/2024 12:08	

Analysis Results Comments

Cadmium, Dissolved

Recovery of internal standard out of acceptance limits; sample required dilution. Reporting limit has been elevated to account for this dilution.

Fluoride

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

Molybdenum, Dissolved

Recovery of internal standard out of acceptance limits; sample required dilution. Reporting limit has been elevated to account for this dilution.

Silver, Dissolved

Recovery of internal standard out of acceptance limits; sample required dilution. Reporting limit has been elevated to account for this dilution.

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #: 38296
Cobalt										
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	Units: mg/L
UFB-CE		100	0.4	100.0		81	111			
MB										
		-0.1								
MU/MSD	38296001	88.9	0.4	93.2	88.9	70	130	1.5	20	
Lithium										
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	Units: mg/L
UFB-CE			0.4	107.0		81	111			
MB										
		-0.04								
MU/MSD	38296001		0.4	106.0	104.0	75	129	1.8	20	
SPH	38296001		0.1	88.9		75	129			
Antimony										
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	Units: mg/L
UFB-MS			0.1	104.0		80	120			
MB										
		-0.001								
MU/MSD	38296001		0.4	106.0	104.0	75	129	1.8	20	
SPH	38296001		0.1	88.9		75	129			
Arsenic										
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	Units: mg/L
UFB-MS			0.1	94.2		80	120			
MB										
		-0.001								
MU/MSD	38296001		0.4	93.4	94.9	75	129	1.5	20	
SPH	38296001		0.1	91.5		75	129			
Barium										
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	Units: mg/L
UFB-MS			0.1	102.0		80	120			
MB										
		-0.001								
MU/MSD	38296001		0.4	100.0	96.7	75	126	3.4	20	
SPH	38296001		0.1	88.9		75	126			
Beryllium										
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	Units: mg/L
UFB-MS			0.1	101.0		80	120			
MB										
		-0.0005								
MU/MSD	38296001		0.4	98.6	98.7	75	129	0.1	20	
SPH	38296001		0.1	106.0		75	129			

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Account #: 7048

Client: Minnkota Power Cooperative

Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA MS			0.1	101.0		80	120		
MS		<0.0005							
MS/MSD	38296001		0.4	101.0	100.0	75	125	1.0	20
SPK	38296001		0.1	99.0		75	125		

Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA MS			0.1	108.0		80	120		
MS		<0.001							
MS/MSD	38296001		0.4	109.0	106.0	75	125	3.8	20
SPK	38296001		0.1	111.0		75	125		

Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA MS			0.1	111.0		80	120		
UFA MS			0.1	102.0		80	120		
MS		<0.0005							
MS		<0.0005							
MS/MSD	38296001		0.4	99.5	102.0	75	125	1.3	20
SPK	38296001		0.1	113.0		75	125		

Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA MS			0.1	109.0		80	120		
MS		<0.001							
MS/MSD	38296001		0.4	116.0	110.0	75	125	0.0	20
SPK	38296001		0.1	113.0		75	125		

Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA MS			0.1	91.9		80	120		
MS		<0.001							
MS/MSD	38296001		0.4	95.0	95.9	75	125	1.2	20
SPK	38296001		0.1	96.4		75	125		

Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA MS			0.1	104.0		80	120		

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Account #: 7048

Client: Minnkota Power Cooperative

Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
U/FB MS			0.1	113.0		80	120		
MS		<0.0001							
MS		<0.0001							
MS/MSD	88296001		0.4	100.0	103.0	75	125	3.0	20

Mercury									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
U/FB			0.002	91.8		85	135		
MS		<0.0001							
MS/MSD	88296001		0.002	87.2	81.8	70	130	3.7	20
MS/MSD	88494001		0.002	83.8	84.1	70	130	0.0	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories	Minnkota Power Cooperative	Chain of Custody Record
	2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	WO: 38296 	
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF	Event:
		Sampled By: <i>J. Grosz</i>	

Lab Number	Sample Information				Sample Containers							Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	1 Gall Nitric	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)			
001	2023-1	1/24/24	1000	GW	X	X	X	X		7.17	240.3	8.45	4.97	See Attachment		

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>J. Grosz</i>	1/24/24 1150	Walk In #2	20.1 (20.8)	<i>Heather Horse</i>	1/24/24 1150

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet
Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: hth

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: 0 F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Casing Strait?, Grout Seal Intact?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Total Depth of Well, Well Volume, Depth to Top of Pump, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment?, Duplicate Sample?, Duplicate Sample ID, Control Settings, Bottle List.

FIELD READINGS table with columns: Purge Date, Time, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment.

Summary table with columns: Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, Appearance or Comment.

Comments:

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- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
x Laboratory pH		SM4500 H+ B
x Laboratory Specific Conductivity	Umhos/cm	SM2510-B
x Total Suspended Solids	mg/l	SM2540-D
x Total Alkalinity	mg/l CaCO3	SM2320-B
x Phenolphthalein Alk	mg/l CaCO3	SM2320-B
x Bicarbonate	mg/l CaCO3	SM2320-B
x Carbonate	mg/l CaCO3	SM2320-B
x Hydroxide	mg/l CaCO3	SM2320-B
x Total Dissolved Solids	mg/l	SM1030-F
x Total Hardness as CaCO3	mg/l	SM2340-B
x Cation Summation	mg/l	SM1030-F
x Anion Summation	mg/l	SM1030-F
x Percent Error	%	SM1030-F
x Fluoride	mg/l	SM4500-F-C
x Sulfate	mg/l	ASTM D516-02
x Chloride	mg/l	SM4500-Cl-E
x Nitrate-Nitrite as N	mg/l	EPA 353.2
x Phosphorous as P-Total	mg/l	EPA 365.1
x Mercury- - Dissolved	mg/l	EPA 245.1
x Calcium-Total	mg/l	6010
x Magnesium-Total	mg/l	6010
x Sodium-Total	mg/l	6010
x Potassium-Total	mg/l	6010
x Iron- - Dissolved	mg/l	6010
x Manganese- Dissolved	mg/l	6010
x Boron- - Dissolved	mg/l	6010
x Arsenic- - Dissolved	mg/l	6020
x Barium- - Dissolved	mg/l	6020
x Cadmium- - Dissolved	mg/l	6020
x Chromium- - Dissolved	mg/l	6020
x Lead- - Dissolved	mg/l	6020
x Molybdenum- - Dissolved	mg/l	6020
x Selenium- - Dissolved	mg/l	6020
x Silver- - Dissolved	mg/l	6020
x Beryllium - - Dissolved	mg/l	6020

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Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 37229001 **Date Collected:** 12/21/2023 09:05 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 12/21/2023 11:05 **Collector:** MVTL Field Service
Temp @ Receipt (C): 3.0 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: Contracted Result

Radium 226	See Attached			1	01/29/2024 14:39	01/29/2024 14:39	
Radium 228	See Attached			1	01/29/2024 14:39	01/29/2024 14:39	

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ANALYTICAL SUMMARY REPORT

January 23, 2024

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

Work Order: C24010041 Quote ID: C15480

Project Name: 37229

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 1/2/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C24010041-001	37229001, 2023-1	12/21/23 9:05	01/02/24	Groundwater	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, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

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

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

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 37229
Lab ID: C24010041-001
Client Sample ID: 37229001, 2023-1

Report Date: 01/23/24
Collection Date: 12/21/23 09:05
Date Received: 01/02/24
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.1	pCi/L	U		E903.0		01/15/24 14:45 / alb
Radium 226 precision (s)	0.1	pCi/L			E903.0		01/15/24 14:45 / alb
Radium 226 MDC	0.2	pCi/L			E903.0		01/15/24 14:45 / alb
Radium 228	0.8	pCi/L	U		RA-05		01/10/24 11:26 / kdk
Radium 228 precision (s)	0.6	pCi/L			RA-05		01/10/24 11:26 / kdk
Radium 228 MDC	1	pCi/L			RA-05		01/10/24 11:26 / kdk

Report Definitions:

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

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24010041

Report Date: 01/19/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0 Batch: RA226-11185										
Lab ID: LCS-RA226-11185	3	Laboratory Control Sample								
										Run: TENNELEC-4_240104B 01/15/24 14:45
Radium 226		11	pCi/L	111		70	130			
Radium 226 precision (±)		2.2	pCi/L							
Radium 226 MDC		0.19	pCi/L							
Lab ID: MB-RA226-11185	3	Method Blank								Run: TENNELEC-4_240104B 01/15/24 14:45
Radium 226		0.03	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C24010011-001FDUP	3	Sample Duplicate								Run: TENNELEC-4_240104B 01/15/24 14:45
Radium 226		43	pCi/L					8.3	30	
Radium 226 precision (±)		8.1	pCi/L							
Radium 226 MDC		0.17	pCi/L							
- The RER result is 0.31.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Client: Minnkota Power Cooperative



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24010041

Report Date: 01/19/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05 Batch: RA228-7303										
Lab ID: LCS-228-RA226-11185	3	Laboratory Control Sample								
										Run: TENNELEC-4_240104A 01/10/24 11:26
Radium 228		7.2	pCi/L	112		70	130			
Radium 228 precision (±)		1.6	pCi/L							
Radium 228 MDC		1.1	pCi/L							
Lab ID: MB-RA226-11185	3	Method Blank								Run: TENNELEC-4_240104A 01/10/24 11:26
Radium 228		0.2	pCi/L							U
Radium 228 precision (±)		0.5	pCi/L							
Radium 228 MDC		0.9	pCi/L							
Lab ID: C24010011-001FDUP	3	Sample Duplicate								Run: TENNELEC-4_240104A 01/10/24 11:26
Radium 228		4.0	pCi/L					4.2	30	
Radium 228 precision (±)		1.1	pCi/L							
Radium 228 MDC		0.98	pCi/L							
- The RER result is 0.11.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C24010041

Login completed by: Dallas W. Smith

Date Received: 1/2/2024

Reviewed by: cindy

Received by: slr

Reviewed Date: 1/8/2024

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	0.1°C Melted Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

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.

Contact and Corrective Action Comments:

None

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories	Minnkota Power Cooperative	Chain of Custody Record
	2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	WO: 37229 	
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF	Event:
		Sampled By: <i>J. Grosz</i>	

Lab Number	Sample Information				Sample Containers				Field Readings				Analysis Required	
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	Legal Nitric					
001	2023-1	21 Dec 23	02:05	GW					X					Radium 226-288 See Attachment 4/21 Dec 23

Comments:

	Relinquished By		Sample Condition		Received By	
	Name	Date/Time	Location	Temp (°C)	Name	Date/Time
1	<i>J. Grosz</i>	21 Dec 23 11:05	Leg In Walk In #2	20.3 TMS62 / TMS60	<i>T. ...</i>	21 Dec 23 11:05
2						

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF

Event:
Sample ID: 2023-1
Sampling Personal: J. K.

Weather Conditions: Temp: 25°F Wind: W @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION			
Well Locked?	YES	NO	
Well Labeled?	YES	NO	
Casing Strait?	YES	NO	
Grout Seal Intact?	YES	NO	Not Visible
Repairs Necessary?			
Casing Diameter:	2"		
Water Level Before Purge:	207.58	ft	
Total Depth of Well:		ft	
Well Volume:	12.6	liters	
Depth to Top of Pump:	226.10	ft	
Water Level After Sample:	219.10	ft	
Measurement Method:	Electric Water Level Indicator		

SAMPLING INFORMATION			
Purging Method:	Bladder		
Sampling Method:	Bladder		
Dedicated Equipment?	YES	NO	
Duplicate Sample?	YES	NO	
Duplicate Sample ID:			
Bottle List:			
1 Liter Raw 1 Gal Nitro			
500ml Nitric			
500ml Nitric (filtered)			
250ml Sulfuric			
Control Settings:			
Purge:	10	10	Sec
Recover:	20	50	Sec
PSI:	120	120	

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±20	Turbidity (NTU) <5.0 or 10%	Water Level (ft)	Pumping Rate mL/Min	Liters Removed	Appearance or Comment	
Purge Date	Time	±0.5°								clear, slightly turbid, turbid	
20 Dec 23	0825	Start of Well Purge									
	0830	6.95	2128	8.40	1.1	-2.5	0.1	216.0	700.0	1.5	Clear
	0930	6.91	2106	8.46	0.00	-220.2	9.14	225.05	320.0	18.0	Clear
	1000	4.06	2110	8.58	0.00	-226.5	97.84	220.94	310.0	19.0	Clear
		Purged 30 min									
21 Dec 23	0815	Start of Sample Purge									
	0820	5.45	2108	8.43	0.18	-152.7	64.96	212.95	100.0	0.5	Clear
	0850	5.21	2138	8.42	0.00	-24.0	8.25	215.05	100.0	3.0	Clear
	0855	5.35	2126	8.43	0.00	-210.6	6.60	215.87	100.0	0.5	Clear
	0900	5.67	2124	8.43	0.00	-212.7	5.38	215.68	100.0	0.5	Clear
	0905	5.45	2123	8.44	0.00	-24.0	5.60	216.10	100.0	0.5	Clear
		Well Stabilized?	YES	NO	Total Volume Purged: 33.5 Liters						
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH		Turbidity (NTU)				Appearance or Comment	
21 Dec 23	0905	5.45	2123	8.44		5.60				Clear	
Comments:											

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Account #: 7048

Client: Minnkota Power Cooperative

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Page 2 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID:	39863001	Date Collected:	02/01/2024 09:10	Matrix:	Groundwater		
Sample ID:	2023-1	Date Received:	02/01/2024 11:20	Collector:	MVTL Field Service		
Temp @ Receipt (C):	3.5	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual

Method: ASTM D516-16

Sulfate	87.2	mg/L	5	1	02/07/2024 09:37	02/07/2024 09:37	
---------	-------------	------	---	---	------------------	------------------	--

Method: EPA 6010D

Boron	0.55	mg/L	0.1	1	02/01/2024 16:43	02/19/2024 15:54	
Calcium	3.45	mg/L	1	1	02/01/2024 16:43	02/05/2024 12:08	

Method: SM4500 H+ B-2011

pH	8.5	units	0.1	1	02/02/2024 16:03	02/02/2024 16:03	*
----	------------	-------	-----	---	------------------	------------------	---

Method: SM4500-Cl-E 2011

Chloride	16.8	mg/L	2.0	1	02/06/2024 09:30	02/06/2024 09:30	
----------	-------------	------	-----	---	------------------	------------------	--

Method: SM4500-F-C-2011

Fluoride	1.77	mg/L	0.1	1	02/02/2024 16:03	02/02/2024 16:03	
----------	-------------	------	-----	---	------------------	------------------	--

Method: USGS I-1750-85

Total Dissolved Solids	1410	mg/L	10	1	02/05/2024 10:51	02/05/2024 10:51	
------------------------	-------------	------	----	---	------------------	------------------	--

Analysis Results Comments

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #:	39863
Sulfate										Units: mg/L	
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
LFB			100	101.0		95	115				
LFB			100	101.0		95	115				
LFB			100	104.0		95	115				
MB		+5									
MB		+5									
MB		+5									
MS/MSD	40012001		500	91.8	92.1	80	120	0.2	20		
MS/MSD	40014001		1000	95.7	96.5	80	110	0.8	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	97.3		90	110				
LFB			30	96.7		90	110				
LFB			30	96.6		90	110				
MB		+3.0									
MB		+3.0									
MB		+3.0									
MS/MSD	39912001		30	105.3	105.4	80	120	0.0	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-CE			0.4	101.0		80	110				
MB		+0.1									
MS/MSD	39963001		0.4	100.0	101.0	70	130	1.5	20		
PDU/P100	41029001		20	98.2	98.7	75	125	0.4	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-40			100	111.0		80	110				
MB		+1									
DUP	39924001							1.7	20		
PDU/P100	39963001		100	116.0	115.0	75	125	0.1	20		

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pH									
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			9	100.0		98.33	101.67		
CRM PH			9	101.0		98.33	101.67		
DUP	29863001							0.9	20

Fluoride									
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			0.06	100.0		81.99	111.11		
SPK F			0.5	104.0		90	118		
SPK F			0.5	106.0		90	118		
MS F		<0.1							
MS F		<0.1							
ML/MSD	29863000		1	100.0	93.0	86	120	1.4	20
ML/MSD	29863000		0.5	106.0	108.0	80	120	0.8	20

Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			736	100.0		90.35	110.33		
CRM			736	100.0		90.35	110.33		
CRM			736	100.0		90.35	110.33		
CRM			736	101.0		90.35	110.33		
MS		<10							
DUP	29863001							1.5	20

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	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WD: 39863 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>[Signature]</i>

Lab Number	Sample Information				Sample Containers							Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gall Nitric	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)			
001	2023-1	Feb 24	0910	GW	X	X	X	X						CCWDF NDDH Parameter List, App I and App II (See Attachments)		

Comments:

Relinquished By		Sample Condition			Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time	
<i>[Signature]</i>	Feb 24 11:00	Logan Walk In #2	20.1 TMS62 / TMS85	<i>[Signature]</i>	Feb 24 11:00	

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: J. H.

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: 30°F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES (NO)
Well Labeled?	YES (NO)
Casing Strait?	YES (NO)
Grout Seal Intact?	YES (NO) Not Visible
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	207.50 ft
Total Depth of Well:	ft
Well Volume:	12.7 liters
Depth to Top of Pump:	228.1 ft
Water Level After Sample:	ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION		Control Settings:
Purging Method:	Bladder	Purge: 10 / 10 Sec.
Sampling Method:	Bladder	Recover: 10 / 10 Sec.
Dedicated Equipment?	YES (NO)	PSI: 120 / 120
Duplicate Sample?	YES (NO)	
Duplicate Sample ID:		
Bottle List:		
1 Liter Raw		
500ml Nitric		
500ml Nitric (filtered)		
250ml Sulfuric		

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%	(ft)			clear, slightly turbid, turbid
31 Jan 24	1052	Start of Well Purge									
	1057	6.95	2015	8.39	0.35	-45.7	7.59	210.65	300.0	1.5	Clear
	1142	6.61	2014	8.41	0.00	-269.9	101.34	214.85	300.0	13.5	Clear
	1227	11.75	2012	8.40	0.00	-239.4	167.71	218.05	300.0	18.5	Clear
1 Feb 24	0620	Partial Day									
	0625	6.01	2019	8.43	0.00	-194.0	134.20	213.75	100.0	0.5	Clear
	0855	6.30	2026	8.39	0.00	-217.3	13.33	216.12	100.0	3.0	Clear
	0900	6.25	2010	8.40	0.00	-220.6	14.05	216.95	100.0	0.5	Clear
	0905	6.27	2008	8.40	0.00	-227.7	9.51	217.37	100.0	0.5	Clear
	0910	6.33	2026	8.39	0.00	-226.1	16.84	218.05	100.0	0.5	Clear
Well Stabilized? YES (NO)											
Total Volume Purged:										32.5	Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
1 Feb 24	0910	6.33	2026	8.39	16.84	Clear

Comments:

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- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
✓ Laboratory pH		SM4500 H+ B
✓ Laboratory Specific Conductivity	Umhos/cm	SM2510-B
✓ Total Suspended Solids	mg/l	SM2540-D
✓ Total Alkalinity	mg/l CaCO3	SM2320-B
✓ Phenolphthalein Alk	mg/l CaCO3	SM2320-B
✓ Bicarbonate	mg/l CaCO3	SM2320-B
✓ Carbonate	mg/l CaCO3	SM2320-B
✓ Hydroxide	mg/l CaCO3	SM2320-B
✓ Total Dissolved Solids	mg/l	SM1030-F
✓ Total Hardness as CaCO3	mg/l	SM2340-B
✓ Cation Summation	mg/l	SM1030-F
✓ Anion Summation	mg/l	SM1030-F
✓ Percent Error	%	SM1030-F
✓ Fluoride	mg/l	SM4500-F-C
✓ Sulfate	mg/l	ASTM D516-02
✓ Chloride	mg/l	SM4500-Cl-E
✓ Nitrate-Nitrite as N	mg/l	EPA 353.2
✓ Phosphorous as P-Total	mg/l	EPA 365.1
✓ Mercury - Dissolved	mg/l	EPA 245.1
✓ Calcium-Total	mg/l	6010
✓ Magnesium-Total	mg/l	6010
✓ Sodium-Total	mg/l	6010
✓ Potassium-Total	mg/l	6010
✓ Iron - Dissolved	mg/l	6010
✓ Manganese- Dissolved	mg/l	6010
✓ Boron - Dissolved	mg/l	6010
✓ Arsenic - Dissolved	mg/l	6020
✓ Barium - Dissolved	mg/l	6020
✓ Cadmium - Dissolved	mg/l	6020
✓ Chromium - Dissolved	mg/l	6020
✓ Lead - Dissolved	mg/l	6020
✓ Molybdenum - Dissolved	mg/l	6020
✓ Selenium - Dissolved	mg/l	6020
✓ Silver - Dissolved	mg/l	6020
✓ Beryllium - - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 39863001 **Date Collected:** 02/01/2024 09:10 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 02/01/2024 11:20 **Collector:** MVTL Field Service
Temp @ Receipt (C): 3.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	0.0002	mg/L	0.0002	1	02/07/2024 10:50	02/07/2024 14:05	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	02/01/2024 16:43	02/05/2024 10:01	
Lithium	0.0519	mg/L	0.02	1	02/01/2024 16:43	02/02/2024 14:34	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	02/01/2024 16:43	02/06/2024 11:20	
Arsenic	<0.002	mg/L	0.002	5	02/01/2024 16:43	02/06/2024 11:20	
Barium	0.1087	mg/L	0.002	5	02/01/2024 16:43	02/06/2024 11:20	
Beryllium	<0.0005	mg/L	0.0005	5	02/01/2024 16:43	02/06/2024 11:20	
Cadmium	<0.0005	mg/L	0.0005	5	02/01/2024 16:43	02/06/2024 11:20	
Chromium	0.0024	mg/L	0.002	5	02/01/2024 16:43	02/06/2024 11:20	
Lead	<0.001	mg/L	0.001	5	02/01/2024 16:43	02/06/2024 11:20	
Molybdenum	0.0034	mg/L	0.002	5	02/01/2024 16:43	02/06/2024 11:20	
Selenium	<0.005	mg/L	0.005	5	02/01/2024 16:43	02/06/2024 11:20	
Thallium	<0.0005	mg/L	0.0005	5	02/01/2024 16:43	02/06/2024 11:20	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #:	39863
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-CE			0.4	103.0		85	115				
MB										<0.1	
MU/VSD	28421001							0.0	20		
MU/VSD	28863001		0.4	89.1	86.4	75	125	0.7	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-CE			0.4	100.0		85	115				
MB										<0.04	
MU/VSD	28863001		0.4	91.7	89.9	75	125	2.0	20		
Antimony										Units: mg/L	
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
LFB-MS			0.1	104.0		80	120				
MB										<0.001	
MU/VSD	28421001							0.0	20		
MU/VSD	28863001		0.4	104.0	105.0	75	125	0.2	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	95.7		80	120				
MB										<0.001	
MU/VSD	28421001		1	107.0	105.0	75	125	1.9	20		
SP6	28421001		2	101.0		75	125				
MU/VSD	28863001		0.4	102.0	102.0	75	125	1.0	20		
Barium										Units: mg/L	
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
LFB-MS			0.1	103.0		80	120				
MB										<0.001	
MU/VSD	28421001							1.0	20		
MU/VSD	28863001		0.4	99.6	97.1	75	125	3.0	20		
Beryllium										Units: mg/L	
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
LFB-MS			0.1	104.0		80	120				

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Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.000L							
ML/MSD	29421001							0.0	20
ML/MSD	29863001		0.4	101.0	102.0	75	125	1.0	20
Cadmium									
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		<0.000L							
ML/MSD	29421001							1.1	20
ML/MSD	29863001		0.4	101.0	105.0	75	125	1.0	20
Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	104.0		80	120		
MB		<0.001							
ML/MSD	29421001							2.2	20
ML/MSD	29863001		0.4	104.0	103.0	75	125	0.2	20
Lead									
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		<0.001							
ML/MSD	29421001							0.7	20
ML/MSD	29863001		0.4	98.2	97.3	75	125	1.0	20
Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	108.0		80	120		
MB		<0.001							
ML/MSD	29421001							0.0	20
ML/MSD	29863001		0.4	100.0	106.0	75	125	1.0	20
Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	99.4		80	120		
MB		<0.001							
ML/MSD	29421001		1	100.0	103.0	75	125	1.0	20
SPR	29421001		2	99.2		75	125		

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Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MU/VSD	2860002		0.4	103.0	98.3	75	125	3.0	20
Units: mg/L									
Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1FB-NI			0.1	97.9		80	120		
Units: mg/L									
NI									
MU/VSD	28421001	<0.0005						0.0	20
MU/VSD	2860002		0.4	95.8	94.5	75	125	0.8	20
Mercury									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
1FB			0.002	98.1		80	110		
Units: mg/L									
1FB									
MU/VSD	4000000	<0.0002	0.002	99.8	104.0	70	130	4.9	20

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Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WD: 39863 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>[Signature]</i>

Lab Number	Sample Information				Sample Containers							Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gall Nitric	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)			
001	2023-1	Feb 24	0910	GW	X	X	X	X						CCWDF NDDH Parameter List, App I and App II (See Attachments)		

Comments:

Relinquished By		Sample Condition			Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time	
<i>[Signature]</i>	Feb 24 11:00	Logan Walk In #2	20.1 TMS62 / TMS805	<i>[Signature]</i>	Feb 24 11:00	

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet
Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: J. H.

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: 30 F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Casing Strait?, Grout Seal Intact?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Total Depth of Well, Well Volume, Depth to Top of Pump, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment?, Duplicate Sample?, Duplicate Sample ID, Control Settings, Bottle List.

FIELD READINGS

FIELD READINGS table with columns: Purge Date, Time, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment.

Summary table with columns: Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, Appearance or Comment.

Comments:

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- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
✓ Laboratory pH		SM4500 H+ B
✓ Laboratory Specific Conductivity	Umhos/cm	SM2510-B
✓ Total Suspended Solids	mg/l	SM2540-D
✓ Total Alkalinity	mg/l CaCO3	SM2320-B
✓ Phenolphthalein Alk	mg/l CaCO3	SM2320-B
✓ Bicarbonate	mg/l CaCO3	SM2320-B
✓ Carbonate	mg/l CaCO3	SM2320-B
✓ Hydroxide	mg/l CaCO3	SM2320-B
✓ Total Dissolved Solids	mg/l	SM1030-F
✓ Total Hardness as CaCO3	mg/l	SM2340-B
✓ Cation Summation	mg/l	SM1030-F
✓ Anion Summation	mg/l	SM1030-F
✓ Percent Error	%	SM1030-F
✓ Fluoride	mg/l	SM4500-F-C
✓ Sulfate	mg/l	ASTM D516-02
✓ Chloride	mg/l	SM4500-Cl-E
✓ Nitrate-Nitrite as N	mg/l	EPA 353.2
✓ Phosphorous as P-Total	mg/l	EPA 365.1
✓ Mercury - Dissolved	mg/l	EPA 245.1
✓ Calcium-Total	mg/l	6010
✓ Magnesium-Total	mg/l	6010
✓ Sodium-Total	mg/l	6010
✓ Potassium-Total	mg/l	6010
✓ Iron - Dissolved	mg/l	6010
✓ Manganese- Dissolved	mg/l	6010
✓ Boron - Dissolved	mg/l	6010
✓ Arsenic - Dissolved	mg/l	6020
✓ Barium - Dissolved	mg/l	6020
✓ Cadmium - Dissolved	mg/l	6020
✓ Chromium - Dissolved	mg/l	6020
✓ Lead - Dissolved	mg/l	6020
✓ Molybdenum - Dissolved	mg/l	6020
✓ Selenium - Dissolved	mg/l	6020
✓ Silver - Dissolved	mg/l	6020
✓ Beryllium - - Dissolved	mg/l	6020

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Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	<input type="checkbox"/>
Arsenic	<input type="checkbox"/>
Barium	<input type="checkbox"/>
Beryllium	<input type="checkbox"/>
Cadmium	<input type="checkbox"/>
Chromium	<input type="checkbox"/>
Cobalt	<input type="checkbox"/>
Fluoride	<input type="checkbox"/>
Lead	<input type="checkbox"/>
Lithium	<input checked="" type="checkbox"/>
Mercury	<input type="checkbox"/>
Molybdenum	<input type="checkbox"/>
Selenium	<input type="checkbox"/>
Thallium	<input type="checkbox"/>
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 39866001 **Date Collected:** 02/01/2024 09:10 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 02/01/2024 11:20 **Collector:** MVTL Field Service
Temp @ Receipt (C): 3.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: Contracted Result

Radium 226	See Attached			1		04/09/2024 10:56	
Radium 228	See Attached			1		04/09/2024 10:56	

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Report Date: Wednesday, April 10, 2024 2:15:56 PM



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ANALYTICAL SUMMARY REPORT

April 01, 2024

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

Work Order: C24020299 Quote ID: C15480

Project Name: 39866

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 2/9/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C24020299-001	39866001, 2023-1	02/01/24 9:10	02/09/24	Groundwater	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, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

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

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

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 39866
Lab ID: C24020299-001
Client Sample ID: 39866001, 2023-1

Report Date: 04/01/24
Collection Date: 02/01/24 09:10
Date Received: 02/09/24
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U		E903.0		03/27/24 12:38 / alb
Radium 226 precision (s)	0.1	pCi/L			E903.0		03/27/24 12:38 / alb
Radium 226 MDC	0.2	pCi/L			E903.0		03/27/24 12:38 / alb
Radium 228	0.4	pCi/L	U		RA-05		03/22/24 13:04 / kdk
Radium 228 precision (s)	0.6	pCi/L			RA-05		03/22/24 13:04 / kdk
Radium 228 MDC	1	pCi/L			RA-05		03/22/24 13:04 / kdk
Radium 226 + Radium 228	0.6	pCi/L	U		A7500-RA		03/30/24 12:53 / dmf
Radium 226 + Radium 228 precision (s)	0.6	pCi/L			A7500-RA		03/30/24 12:53 / dmf
Radium 226 + Radium 228 MDC	1	pCi/L			A7500-RA		03/30/24 12:53 / dmf

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

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QA/QC Summary Report

Prepared by Casper, WY Branch

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0 Batch: RA226-11257										
Lab ID: LCS-RA226-11257	3	Laboratory Control Sample								
										Run: TENNELEC-3_240319C 03/27/24 12:38
Radium 226		9.2	pCi/L	92		70	130			
Radium 226 precision (±)		1.8	pCi/L							
Radium 226 MDC		0.18	pCi/L							
Lab ID: MB-RA226-11257	3	Method Blank								Run: TENNELEC-3_240319C 03/27/24 12:38
Radium 226		0.1	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C24030387-001FDUP	3	Sample Duplicate								Run: TENNELEC-3_240319C 03/27/24 12:38
Radium 226		28	pCi/L					0.2	30	
Radium 226 precision (±)		5.3	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.01.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24020299

Report Date: 03/30/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05 Batch: RA228-7353										
Lab ID: LCS-228-RA226-11257	3	Laboratory Control Sample								
										Run: TENNELEC-4_240319A 03/22/24 13:04
Radium 228		6.9	pCi/L	109		70	130			
Radium 228 precision (±)		1.5	pCi/L							
Radium 228 MDC		1.0	pCi/L							
Lab ID: MB-RA226-11257	3	Method Blank								Run: TENNELEC-4_240319A 03/22/24 13:04
Radium 228		0.3	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C24030387-001FDUP	3	Sample Duplicate								Run: TENNELEC-4_240319A 03/22/24 13:04
Radium 228		1.4	pCi/L					60	30	R
Radium 228 precision (±)		0.74	pCi/L							
Radium 228 MDC		1.0	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.63.

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

R - Relative Percent Difference (RPD) exceeds advisory limit

U - Not detected at Minimum Detectable Concentration (MDC)

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Report Date: Wednesday, April 10, 2024 2:15:56 PM



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Account #: 7048

Client: Minnkota Power Cooperative



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Gilette, WY 307.686.7175 • Helena, MT 406.442.0711

Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C24020299

Login completed by: Dallas W. Smith

Date Received: 2/9/2024

Reviewed by: Icadreau

Received by: DRS

Reviewed Date: 2/15/2024

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	11.0°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

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.

Contact and Corrective Action Comments:

None

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperati WO: 39866 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Gross Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgross@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>Jerry Gross</i>

Report To: Minnkota Power Cooperative Attn: Joseph Gross Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgross@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>Jerry Gross</i>
---	-----	---

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	1 Gal Nitric						
001	2023-1	1/6/24	09:10	GW					X					Radium 226 and 228 Combined	

Comments: *1/6/24*

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>Jerry Gross</i>	1/6/24	Log In	2.3	<i>H. Host</i>	1/30/24
	11:0	Walk in #2	TMS62/4M806		16:0
2					

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: J. Ph

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: 30°F Wind: W @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Casing Strait?, Grout Seal Intact?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Total Depth of Well, Well Volume, Depth to Top of Pump, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment?, Duplicate Sample?, Duplicate Sample ID, Control Settings, Bottle List.

FIELD READINGS table with columns: Purge Date, Time, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment.

Summary table with columns: Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, Appearance or Comment.

Comments:

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Report Date: Tuesday, March 26, 2024 3:33:45 PM

Page 2 of 9

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 41856001 **Date Collected:** 02/29/2024 09:10 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 03/01/2024 08:30 **Collector:** MVTL Field Service
Temp @ Receipt (C): 2.9 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	77.2	mg/L	5	1	03/06/2024 11:01	03/06/2024 11:01	
Method: EPA 6010D							
Boron	0.49	mg/L	0.1	1	03/01/2024 14:01	03/04/2024 14:55	
Calcium	3.23	mg/L	1	1	03/01/2024 14:01	03/04/2024 11:30	
Method: SM4500 H+ B-2011							
pH	8.5	units	0.1	1	03/01/2024 19:32	03/01/2024 19:32	*
Method: SM4500-Cl-E 2011							
Chloride	17.0	mg/L	3.0	1	03/21/2024 08:06	03/21/2024 12:40	
Method: SM4500-F-C-2011							
Fluoride	1.88	mg/L	0.1	1	03/01/2024 19:32	03/01/2024 19:32	
Method: USGS I-1750-85							
Total Dissolved Solids	1350	mg/L	10	1	03/01/2024 16:38	03/01/2024 16:38	

Analysis Results Comments**Alkalinity, Total**

The reporting limit for this analyte has been raised to account for the reporting limit verification standard.

Nitrate + Nitrite as N

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

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #:	41856
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	95.5		85	115				
LFB			100	95.7		85	115				
LFB			100	101.0		85	115				
MB		<5									
MB		<5									
MB		<5									
ML/MSD	41832003		1000	91.2	93.7	85	115	0.7	20		
ML/MSD	41832004		1000	72.3	74.9	85	115	1.1	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-CE			0.4	101.0		85	115				
MB		<0.1									
ML/MSD	41818001		0.4	101.0	106.0	75	125	1.3	20		
Calcium										Units: mg/L	
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
LFB-AL			100	113.0		85	115				
MB		<1									
ML/MSD	41818002		100	125.0	124.0	75	125	0.3	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		96.33	101.67				
CRM-PH			6	100.3		96.33	101.67				
CRM-PH			6	100.0		96.33	101.67				
DUP	41548001										
DUP	41900004							0.4	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			0.06	95.7		81.99	111.11				
LFB-F			0.5	100.0		90	110				
LFB-F			0.5	98.0		90	110				
MB-F		<0.1									

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Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB									
+0.1									
MS/MSD	41675002		11.5	94.0	90.0	90	120	3.9	20

Total Dissolved Solids									
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									
MS/MSD	41748003		70	101.0	90.0	90.0	110.0	0.4	20

Chloride									
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									
MS/MSD	41819000		300	111.9	112.4	90	120	0.8	20

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Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories	Minnkota Power Cooperative	Chain of Custody Record
	2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	WO: 41856 	
Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>Jrb</i>	

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	1 Gal Nitric	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)		
001	2023-1	29 Feb 24	09:10	GW	X	X	X			2.45	2116	6.75	4.85	CCWDF NDDH Parameter List, App I and App II (See Attachments)	

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>Jrb</i>	29 Feb 24	Log 50	2.1 2.9	<i>Harshad Khor</i>	1 Mar 24
	1 Mar 24	Walk In #2	TM562 / <i>HTMS</i>		0830
	0830				

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Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
 Event: _____
 Sample ID: 2023-1
 Sampling Personal: JTB

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Weather Conditions: Temp: 20 °F Wind: W @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	(NO)
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Grout Seal Intact?	(YES)	NO
Repairs Necessary?		Not Visible
Casing Diameter:	<u>2"</u>	
Water Level Before Purge:	<u>207.48</u>	ft
Total Depth of Well:	<u>224.10</u>	ft
Well Volume:		liters
Depth to Top of Pump:	<u>228.10</u>	ft
Water Level After Sample:	<u>217.05</u>	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder	Control Settings:
Sampling Method:	Bladder	Purge: <u>10</u> Sec.
Dedicated Equipment?	(YES) NO	Recover: <u>20</u> Sec.
Duplicate Sample?	YES (NO)	PSI: <u>120</u>
Duplicate Sample ID:		
Bottle List:		
1 Liter Raw	<u>1 Gal Nitric</u>	
500ml Nitric		
500ml Nitric (filtered)		
250ml Sulfuric		

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±20	Turbidity (NTU) <5.0 or 10%	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment	
Purge Data	Time										
28 Feb 24	1000	Start of Well Purge									
	1005	5.59	2126	8.45	0.46	-116.6	6.27	211.75	300.0	1.5	Clear
	1050	7.86	2112	8.42	0.00	-246.1	2.64	220.10	300.0	13.5	Clear
	1130	4.87	2086	8.48	0.00	-240.5	86.80	806.20	300.0	12.0	Clear
29 Feb 24	0830	Purged 0.25 Start of Sample									
	0900	7.66	2119	8.36	0.00	-237.4	3.97	216.44	100.0	3.0	Clear
	0905	7.55	2119	8.37	0.00	-229.0	4.12	216.61	100.0	0.5	Clear
	0910	7.45	2118	8.38	0.00	-228.6	4.83	216.78	100.0	0.5	Clear
Well Stabilized?		(YES)	NO	Total Volume Purged: <u>31.0</u> Liters							

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
29 Feb 24	0910	7.45	2118	8.38	4.85	Clear

Comments: _____

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Client: Minnkota Power Cooperative

- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
Laboratory pH		SM4500 H+ B
Laboratory Specific Conductivity	Umhos/cm	SM2510-B
Total Suspended Solids	mg/l	SM2540-D
Total Alkalinity	mg/l CaCO3	SM2320-B
Phenolphthalein Alk	mg/l CaCO3	SM2320-B
Bicarbonate	mg/l CaCO3	SM2320-B
Carbonate	mg/l CaCO3	SM2320-B
Hydroxide	mg/l CaCO3	SM2320-B
Total Dissolved Solids	mg/l	SM1030-F
Total Hardness as CaCO3	mg/l	SM2340-B
Cation Summation	mg/l	SM1030-F
Anion Summation	mg/l	SM1030-F
Percent Error	%	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Nitrate-Nitrite as N	mg/l	EPA 353.2
Phosphorous as P-Total	mg/l	EPA 365.1
Mercury - Dissolved	mg/l	EPA 245.1
Calcium-Total	mg/l	6010
Magnesium-Total	mg/l	6010
Sodium-Total	mg/l	6010
Potassium-Total	mg/l	6010
Iron - Dissolved	mg/l	6010
Manganese- Dissolved	mg/l	6010
Boron - Dissolved	mg/l	6010
Arsenic - Dissolved	mg/l	6020
Barium - Dissolved	mg/l	6020
Cadmium - Dissolved	mg/l	6020
Chromium - Dissolved	mg/l	6020
Lead - Dissolved	mg/l	6020
Molybdenum - Dissolved	mg/l	6020
Selenium - Dissolved	mg/l	6020
Silver - Dissolved	mg/l	6020
Beryllium - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Report Date: Tuesday, March 26, 2024 3:33:45 PM



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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 41856001 **Date Collected:** 02/29/2024 09:10 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 03/01/2024 08:30 **Collector:** MVTL Field Service
Temp @ Receipt (C): 2.9 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	03/07/2024 09:15	03/07/2024 11:25	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	03/01/2024 14:01	03/06/2024 10:01	
Lithium	0.0500	mg/L	0.02	1	03/01/2024 14:01	03/06/2024 15:39	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	03/01/2024 14:01	03/05/2024 14:20	
Arsenic	<0.002	mg/L	0.002	5	03/01/2024 14:01	03/05/2024 14:20	
Barium	0.1093	mg/L	0.002	5	03/01/2024 14:01	03/05/2024 14:20	
Beryllium	<0.0005	mg/L	0.0005	5	03/01/2024 14:01	03/05/2024 16:05	
Cadmium	<0.0005	mg/L	0.0005	5	03/01/2024 14:01	03/05/2024 14:20	
Chromium	<0.002	mg/L	0.002	5	03/01/2024 14:01	03/05/2024 14:20	
Lead	<0.0005	mg/L	0.0005	5	03/01/2024 14:01	03/05/2024 14:20	
Molybdenum	0.0031	mg/L	0.002	5	03/01/2024 14:01	03/05/2024 14:20	
Selenium	<0.005	mg/L	0.005	5	03/01/2024 14:01	03/05/2024 14:20	
Thallium	<0.0005	mg/L	0.0005	5	03/01/2024 14:01	03/05/2024 14:20	

Analysis Results Comments

Alkalinity, Total

The reporting limit for this analyte has been raised to account for the reporting limit verification standard.

Nitrate + Nitrite as N

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

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #: 41856
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 (%)	
1PB-CE			0.4	107.0		95	115			
MB										<0.1
M1/VSD	41816001		0.4	96.4	96.0	75	125	1.6	20	
P05/P00D	41818001		1	94.3	93.0	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 (%)	
1PB			0.4	103.0		95	110			
MB										<0.04
M1/VSD	41816001		0.4	93.1	96.4	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 (%)	
1PB-MS			0.1	105.0		80	120			
MB										<0.001
M1/VSD	41816001		0.4	113.0	118.0	75	125	1.8	20	
SP6	41816001		0.1	109.0		75	125			
Arsenic										Units: mg/L
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
1PB-MS			0.1	102.0		80	120			
MB										<0.001
M1/VSD	41816001		0.4	115.0	114.0	75	125	1.9	20	
SP6	41816001		0.1	111.0		75	125			
Barium										Units: mg/L
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
1PB-MS			0.1	104.0		80	120			
MB										<0.001
M1/VSD	41816001		0.4	109.0	112.0	75	125	2.2	20	
SP6	41816001		0.1	104.0		75	125			
Beryllium										Units: mg/L
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
1PB-MS			0.1	104.0		80	120			
MB										<0.0005

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**Account #:** 7048**Client:** Minnkota Power Cooperative

Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MU/MSD	42804001		0.4	118.0	110.0	75	125	0.0	20
SPK	42804001		0.1	108.0		75	125		
Units: mg/L									
Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA/MS			0.1	113.0		80	120		
MB		<0.0005							
MU/MSD	42804001		0.4	112.0	118.0	75	125	4.8	20
SPK	42804001		0.1	117.0		75	125		
Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA/MS			0.1	107.0		80	120		
MB		<0.001							
MU/MSD	42804001		0.4	116.0	116.0	75	125	0.2	20
SPK	42804001		0.1	110.0		75	125		
Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA/MS			0.1	106.0		80	120		
MB		<0.0005							
MU/MSD	42804001		0.4	108.0	108.0	75	125	1.2	20
SPK	42804001		0.1	106.0		75	125		
Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA/MS			0.1	113.0		80	120		
MB		<0.001							
MU/MSD	42804001		0.4	120.0	124.0	75	125	1.2	20
SPK	42804001		0.1	118.0		75	125		
Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UFA/MS			0.1	101.0		80	120		
MB		<0.005							
MU/MSD	42804001		0.4	109.0	114.0	75	125	4.3	20
SPK	42804001		0.1	113.0		75	125		

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Client: Minnkota Power Cooperative

Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPR MS			0.1	108.0		80	120		
MS									
		<0.0000							
MS/MSD	42104000		0.4	110.0	111.0	75	125	1.4	20
SPK	42104000		0.1	106.0		75	125		
Mercury									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPR			0.002	89.0		85	135		
MS									
		<0.0000							
MS/MSD	42104000		0.002	89.2	82.2	70	130	11.8	20

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Company: Minnkota - CCWDF
 Event: _____
 Sample ID: 2023-1
 Sampling Personal: JTB

Weather Conditions: _____ Temp: 20 °F Wind: W @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION			
Well Locked?	YES	(NO)	
Well Labeled?	YES	NO	
Casing Strait?	YES	NO	
Grout Seal Intact?	(YES)	NO	Not Visible
Repairs Necessary?			
Casing Diameter:	<u>2"</u>		
Water Level Before Purge:	<u>207.48</u>	ft	
Total Depth of Well:	<u>224.10</u>	ft	
Well Volume:		liters	
Depth to Top of Pump:	<u>228.10</u>	ft	
Water Level After Sample:	<u>217.05</u>	ft	
Measurement Method:	Electric Water Level Indicator		

SAMPLING INFORMATION			
Purging Method:	Bladder		Control Settings:
Sampling Method:	Bladder		Purge: <u>10</u> Sec.
Dedicated Equipment?	(YES)	NO	Recover: <u>20</u> Sec.
			PSI: <u>120</u>
Duplicate Sample?	YES	(NO)	
Duplicate Sample ID:	-		
Bottle List:			
1 Liter Raw	<u>1 Gal Nitric</u>		
500ml Nitric			
500ml Nitric (filtered)			
250ml Sulfuric			

FIELD READINGS												
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±20	Turbidity (NTU) <5.0 or 10%	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment	
Purge Data		Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%	(ft)	ml/Min	Clear, slightly turbid, turbid	
28 Feb 24		1000	Start of Well Purge									
		1005	5.59	2126	8.45	0.46	-116.6	6.27	211.95	300.0	1.5	Clear
		1050	7.86	2112	8.42	0.00	-246.1	2.64	220.10	300.0	13.5	Clear
		1130	4.87	2086	8.48	0.00	-240.5	86.80	806.20	300.0	12.0	Clear
29 Feb 24		0830	Purged 10 min									
		0900	7.66	2119	8.36	0.00	-237.4	3.97	216.44	100.0	3.0	Clear
		0905	7.55	2119	8.37	0.00	-229.0	4.12	216.61	100.0	0.5	Clear
		0910	7.45	2118	8.38	0.00	-228.6	4.83	216.78	100.0	0.5	Clear
Well Stabilized?		YES		NO								
										Total Volume Purged: <u>31.0</u> Liters		

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
29 Feb 24	0910	7.45	2118	8.38	4.85	Clear

Comments: _____

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Account #: 7048

Client: Minnkota Power Cooperative

- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
Laboratory pH		SM4500 H+ B
Laboratory Specific Conductivity	Umhos/cm	SM2510-B
Total Suspended Solids	mg/l	SM2540-D
Total Alkalinity	mg/l CaCO3	SM2320-B
Phenolphthalein Alk	mg/l CaCO3	SM2320-B
Bicarbonate	mg/l CaCO3	SM2320-B
Carbonate	mg/l CaCO3	SM2320-B
Hydroxide	mg/l CaCO3	SM2320-B
Total Dissolved Solids	mg/l	SM1030-F
Total Hardness as CaCO3	mg/l	SM2340-B
Cation Summation	mg/l	SM1030-F
Anion Summation	mg/l	SM1030-F
Percent Error	%	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Nitrate-Nitrite as N	mg/l	EPA 353.2
Phosphorous as P-Total	mg/l	EPA 365.1
Mercury - Dissolved	mg/l	EPA 245.1
Calcium-Total	mg/l	6010
Magnesium-Total	mg/l	6010
Sodium-Total	mg/l	6010
Potassium-Total	mg/l	6010
Iron - Dissolved	mg/l	6010
Manganese- Dissolved	mg/l	6010
Boron - Dissolved	mg/l	6010
Arsenic - Dissolved	mg/l	6020
Barium - Dissolved	mg/l	6020
Cadmium - Dissolved	mg/l	6020
Chromium - Dissolved	mg/l	6020
Lead - Dissolved	mg/l	6020
Molybdenum - Dissolved	mg/l	6020
Selenium - Dissolved	mg/l	6020
Silver - Dissolved	mg/l	6020
Beryllium - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 41857001 **Date Collected:** 02/29/2024 09:10 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 03/01/2024 08:30 **Collector:** MVTL Field Service
Temp @ Receipt (C): 2.9 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: Contracted Result

Radium 226	See Attached			1		04/15/2024 10:54	
Radium 228	See Attached			1		04/15/2024 10:54	

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Report Date: Monday, April 15, 2024 11:22:54 AM



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Account #: 7048

Client: Minnkota Power Cooperative



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Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

ANALYTICAL SUMMARY REPORT

April 11, 2024

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

Work Order: C24030172 Quote ID: C15480
Project Name: 41857

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 3/6/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C24030172-001	41857001, 2023-1	02/29/24 9:10	03/06/24	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, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

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

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

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 41857
Lab ID: C24030172-001
Client Sample ID: 41857001, 2023-1

Report Date: 04/11/24
Collection Date: 02/29/24 09:10
Date Received: 03/06/24
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U		E903.0		03/18/24 12:16 / alb
Radium 226 precision (±)	0.1	pCi/L			E903.0		03/18/24 12:16 / alb
Radium 226 MDC	0.2	pCi/L			E903.0		03/18/24 12:16 / alb
Radium 228	3.5	pCi/L			RA-05		03/19/24 13:56 / kdk
Radium 228 precision (±)	1.3	pCi/L			RA-05		03/19/24 13:56 / kdk
Radium 228 MDC	1.7	pCi/L			RA-05		03/19/24 13:56 / kdk
Radium 226 + Radium 228	3.6	pCi/L			A7500-RA		03/20/24 15:05 / dmf
Radium 226 + Radium 228 precision (±)	1.3	pCi/L			A7500-RA		03/20/24 15:05 / dmf
Radium 226 + Radium 228 MDC	1.7	pCi/L			A7500-RA		03/20/24 15:05 / dmf

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

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Report Date: Monday, April 15, 2024 11:22:54 AM



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Account #: 7048

Client: Minnkota Power Cooperative



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24030172

Report Date: 04/08/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0 Batch: RA226-11250										
Lab ID: LCS-RA226-11250	3	Laboratory Control Sample								
										Run: TENNELEC-4_240307D 03/18/24 10:21
Radium 226		11	pCi/L	108		70	130			
Radium 226 precision (±)		2.1	pCi/L							
Radium 226 MDC		0.22	pCi/L							
Lab ID: MB-RA226-11250	3	Method Blank								Run: TENNELEC-4_240307D 03/18/24 10:21
Radium 226		0.04	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C24030138-001ADUP	3	Sample Duplicate								Run: TENNELEC-4_240307D 03/18/24 12:16
Radium 226		0.59	pCi/L					15	30	
Radium 226 precision (±)		0.21	pCi/L							
Radium 226 MDC		0.27	pCi/L							
- The RER result is 0.33.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24030172

Report Date: 04/08/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05 Batch: RA226-7347R										
Lab ID: LCS-228-RA226-11250	3	Laboratory Control Sample								
										Run: TENNELEC-3_240307B 03/19/24 12:19
Radium 228		6.3	pCi/L	99		70	130			
Radium 228 precision (±)		1.5	pCi/L							
Radium 228 MDC		1.3	pCi/L							
Lab ID: MB-RA226-11250	3	Method Blank								Run: TENNELEC-3_240307B 03/19/24 12:19
Radium 228		0.3	pCi/L							U
Radium 228 precision (±)		0.8	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C24030138-001ADUP	3	Sample Duplicate								Run: TENNELEC-3_240307B 03/19/24 12:19
Radium 228		3.4	pCi/L					110	30	R
Radium 228 precision (±)		1.2	pCi/L							
Radium 228 MDC		1.5	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 1.54.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C24030172

Login completed by: Dallas W. Smith

Date Received: 3/6/2024

Reviewed by: darcy

Received by: DF

Reviewed Date: 3/13/2024

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	8.8°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>

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.

Contact and Corrective Action Comments:

The temperature of the samples for shipping container 1 was 7.8°C and shipping container 2 was 8.8°C.

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Chain of Custody Record

(24010172)
Work Order # 41857

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2616 E Broadway Ave
Bismarck, ND 58501
Phone: (701) 258-9720 Fax: (701) 258-9724

MVTL
2616 E Broadway
Bismarck, ND 58501
Billing Address (indicate if different from above):
PO Box 249
New Ulm, MN 56073

Toll Free: (800) 279-6885

Account #: 701-268-9720
Phone #: 701-268-9720
Fax #: For faxed report check box
Contact: Claudette
E-mail: cclaudette@mvtl.com
Name of Sampler: For e-mail report check box
Quote Number: C15480 v5
Date Submitted: 4-Mar-24
Project Name/Number: BL8833
Purchase Order #: BL8833

Sample Information		Bottle Type		Analysis Required	
Lab Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled
	41857001	2023-1	GW	29-Feb-24	09:10
			Untreated		
			Galton H2O3		
			VOC Vials		
			Unpreserved		
			Glass Jar		
			Other		

Comments: Individual results as well as combined Ra226 & Ra228 must be reported for all samples.

Transferred by: T. Olson	Date: 4-Mar-24	Time: 1700	Sample Condition:	Received by: <i>Robert...</i>	Date: 3-6-24	Temp:
--------------------------	----------------	------------	-------------------	-------------------------------	--------------	-------

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Account #: 7048

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	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 41857 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>Joseph Grosz</i>

Lab Number	Sample Information				Sample Containers				Field Readings				Analysis Required	
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	1 Gal Nitric					
001	2023-1	29 Feb 24	09:10	GW					X					Radium 226 and 228 Combined

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>Joseph Grosz</i>	19 Feb 24 08:30	Coq In Walk In #2	21.2 TM562 / JMBOS	<i>Heather Horse</i>	19 Feb 24 08:30
2					

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Company: Minnkota - CCWDF
 Event:
 Sample ID: 2023-1
 Sampling Personal: JH

Weather Conditions: Temp: 20 °F Wind: 6 @ S-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION			
Well Locked?	YES	NO	
Well Labeled?	YES	NO	
Casing Strait?	YES	NO	
Grout Seal Intact?	YES	NO	Not Visible
Repairs Necessary?			
Casing Diameter:	2"		
Water Level Before Purge:	207.46	ft	
Total Depth of Well:	229.10	ft	
Well Volume:		liters	
Depth to Top of Pump:	228.10	ft	
Water Level After Sample:	217.05	ft	
Measurement Method:	Electric Water Level Indicator		

SAMPLING INFORMATION			
Purging Method:	Bladder		
Sampling Method:	Bladder		
Dedicated Equipment?	YES	NO	
Duplicate Sample?	YES	NO	
Duplicate Sample ID:	-		
Bottle List:			
3 Liter Raw			
500ml Nitric			
500ml Nitric (filtered)			
250ml Sulfuric			
Control Settings:			
Purge:	10	Sec.	
Recover:	20	Sec.	
PSI:	120		

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (mL/Min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				Clarity, Color, Odor, Ect.
28 Feb 24	1000	Start of Well Purge									
	1005	5.59	2126	8.43	0.46	-114.1	6.27	211.95	300.0	1.5	Clear
	1050	7.86	2112	8.42	0.00	-246.1	2.64	210.10	300.0	13.5	Clear
	1130	4.87	2086	8.48	0.00	-240.5	86.80	Below Pump	300.0	12.0	Clear
		Purge End									
29 Feb 24	0830	Start	Stabilization					211.01	100.0		
	0900	7.66	2119	8.36	0.00	-237.4	3.97	216.44	100.0	3.0	Clear
	0905	7.55	2117	8.37	0.00	-229.0	4.12	216.61	100.0	0.5	Clear
	0910	7.45	2118	8.38	0.00	-228.6	4.83	216.78	100.0	0.5	Clear

Well Stabilized? YES NO Total Volume Purged: 31.0 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
29 Feb 24	0910	7.45	2118	8.38	4.83	Clear

Comments:

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Page 2 of 10



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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 44114001 **Date Collected:** 03/28/2024 15:40 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 03/29/2024 12:40 **Collector:** MVTL Field Service
Temp @ Receipt (C): 1.3 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	77.5	mg/L	5	1		04/03/2024 15:05	
Method: EPA 6010D							
Boron	0.52	mg/L	0.1	1	03/29/2024 16:10	04/10/2024 10:45	
Calcium	3.17	mg/L	1	1	03/29/2024 16:10	04/05/2024 14:33	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		03/29/2024 15:25	*
Method: SM4500-Cl-E 2011							
Chloride	16.3	mg/L	2.0	1		04/02/2024 11:21	
Method: SM4500-F-C-2011							
Fluoride	1.75	mg/L	0.1	1		03/29/2024 15:25	
Method: USGS I-1750-85							
Total Dissolved Solids	1370	mg/L	10	1		03/29/2024 16:20	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #: 44114
Sulfate										
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	95.2		85	115			
LFB			100	96.0		85	115			
LFB			100	91.5		85	115			
MB		+5								
MB		+5								
MB		+5								
MS/MSD	4437001		500	96.8	96.2	85	115	0.1	20	
MS/MSD	4437002		500	79.8	84.4	85	115	3.9	20	
Chloride										
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
LFB			30	95.4		90	110			
LFB			30	95.0		90	110			
LFB			30	96.8		90	110			
LFB			30	96.0		90	110			
LFB			30	97.0		90	110			
LFB			30	95.8		90	110			
LFB			30	95.1		90	110			
MB		-2.0								
MB		-2.0								
MB		-2.0								
MB		+2.0								
MB		-2.0								
MB		-2.0								
MB		-2.0								
MS/MSD	4318001		30	96.7	96.3	80	120	0.0	20	
MS/MSD	4300001		30	93.2	93.2	80	120	0.0	20	
MS/MSD	4306001		30	104.9	103.4	80	120	0.7	20	

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Client: Minnkota Power Cooperative

Boron		Units: mg/L							
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)

UPL-CE			0.4	105.0		80	115		
--------	--	--	-----	-------	--	----	-----	--	--

MS		<0.1							
----	--	------	--	--	--	--	--	--	--

MU/MSD	44114001		0.4	99.6	91.2	70	130	2.1	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 (%)

UPL-AN			100	107.0		85	115		
--------	--	--	-----	-------	--	----	-----	--	--

MS		<1							
----	--	----	--	--	--	--	--	--	--

DUP	4404001							0.0	20
-----	---------	--	--	--	--	--	--	-----	----

FDU/POSD	4407001		100	98.1	97.6	75	125	0.2	20
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FDU/POSD	4407002		100	113.0	115.8	75	125	1.4	20
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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	100.5		98.33	101.67		
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CRM-PH			6	100.5		98.33	101.67		
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CRM-PH			6	100.3		98.33	101.67		
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CRM-PH			6	100.2		98.33	101.67		
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DUP	4404001							1.7	20
-----	---------	--	--	--	--	--	--	-----	----

DUP	4404002							2.1	20
-----	---------	--	--	--	--	--	--	-----	----

DUP	4405006							1.0	20
-----	---------	--	--	--	--	--	--	-----	----

DUP	4411001							1.6	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			15.0	104.0		83.99	111.11		
-------	--	--	------	-------	--	-------	--------	--	--

UPL-F			0.5	98.0		90	110		
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UPL-F			0.5	100.0		90	110		
-------	--	--	-----	-------	--	----	-----	--	--

UPL-F			0.5	98.0		90	110		
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UPL-F			0.5	100.0		90	110		
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MS-F		<0.1							
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MS-F		<0.1							
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MS-F		<0.1							
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MS-F		<0.1							
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MS-F		<0.1							
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MS-F		<0.1							
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MS-F		<0.1							
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Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
M1/M50-F	4404002		0.5	98.0	96.0	80	120	1.1	20
M1/M50-F	4405002		0.5	96.0	94.0	80	120	1.7	20
M1/M50-F	4411002		0.5	90.0	90.0	80	120	0.0	20

Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			750	99.0	98.95	98.95	110.95		
M9		135							
QUP	4411402							0.7	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 44114 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>Joseph Grosz</i>

Lab Number	Sample Information				Sample Containers								Field Readings				Analysis Required	
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	Equal Nitric					Temp (°C)	Spec. Cond.	pH		Turbidity (NTU)
001	2023-1	29 Apr 24	1540	GW	X	X	X	X						7.37	2151	8.27	453	CCWDF NDDH Parameter List, App I and App II (See Attachments)

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>Joseph Grosz</i>	29 Apr 24 1540	Log In	20.1 / 1.3	<i>Andrew Hart</i>	29 Apr 24 1540
		Walk In #2	TMS62 / TMS05		

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: _____
Sample ID: 2023-1
Sampling Personal: J. H. G.

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: _____ °F Wind: _____ @ Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Repairs Necessary?		
Casing Diameter:	2"	
Water Level Before Purge:	203.56	ft
Depth to Top of Pump:	228.10	ft
Well Volume:	12.7	liters
Water Level After Sample:		ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder	
Sampling Method:	Bladder	
Dedicated Equipment?	YES	NO
Duplicate Sample?	YES	NO
Duplicate Sample ID:		
Bottle List:		
1 Liter Raw	1 Gal Nitric	
500ml Nitric		
500ml Nitric (filtered)		
250ml Sulfuric		

Control Settings:	
Purge: 0 / 0	Sec.
Recover: 22 / 52	Sec.
PSI: 120 / 120	

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment	
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%			Clarity, Color, Odor, Ect.	
27 Mar 24	1525	Start of Well Purge									
	1530	7.82	2147	8.52	1.60	226	10.97	209.45	300.0	1.5	Clear
	1615	7.60	2145	8.29	0.00	-221.5	4.47	221.64	300.0	13.5	Clear
	1650	7.71	2141	8.35	0.00	-229.7	28.60	Below Pump	300.0	10.5	Clear
		Purged Down									
28 Mar 24	1450	7.61	2136	8.36	0.17	162	51.87	210.62	100.0	0.5	Clear
	1530	7.39	2153	8.36	0.00	-221.4	4.35	216.05	100.0	3.5	Clear
	1535	7.33	2152	8.27	0.00	-223.5	4.44	216.57	100.0	0.5	Clear
	1540	7.39	2151	8.27	0.00	-225.6	4.53	217.03	100.0	0.5	Clear

Well Stabilized? YES NO

Total Volume Purged: 30.5 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
28 Mar 24	1540	7.39	2151	8.27	4.53	Clear

Comments: _____

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- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
✓ Laboratory pH		SM4500 H+ B
✓ Laboratory Specific Conductivity	Umhos/cm	SM2510-B
✓ Total Suspended Solids	mg/l	SM2540-D
✓ Total Alkalinity	mg/l CaCO3	SM2320-B
✓ Phenolphthalein Alk	mg/l CaCO3	SM2320-B
✓ Bicarbonate	mg/l CaCO3	SM2320-B
✓ Carbonate	mg/l CaCO3	SM2320-B
✓ Hydroxide	mg/l CaCO3	SM2320-B
✓ Total Dissolved Solids	mg/l	SM1030-F
✓ Total Hardness as CaCO3	mg/l	SM2340-B
✓ Cation Summation	mg/l	SM1030-F
✓ Anion Summation	mg/l	SM1030-F
✓ Percent Error	%	SM1030-F
✓ Fluoride	mg/l	SM4500-F-C
✓ Sulfate	mg/l	ASTM D516-02
✓ Chloride	mg/l	SM4500-Cl-E
✓ Nitrate-Nitrite as N	mg/l	EPA 353.2
✓ Phosphorous as P-Total	mg/l	EPA 365.1
✓ Mercury- - Dissolved	mg/l	EPA 245.1
✓ Calcium-Total	mg/l	6010
✓ Magnesium-Total	mg/l	6010
✓ Sodium-Total	mg/l	6010
✓ Potassium-Total	mg/l	6010
✓ Iron- - Dissolved	mg/l	6010
✓ Manganese- Dissolved	mg/l	6010
✓ Boron- - Dissolved	mg/l	6010
✓ Arsenic- - Dissolved	mg/l	6020
✓ Barium- - Dissolved	mg/l	6020
✓ Cadmium- - Dissolved	mg/l	6020
✓ Chromium- - Dissolved	mg/l	6020
✓ Lead- - Dissolved	mg/l	6020
✓ Molybdenum- - Dissolved	mg/l	6020
✓ Selenium- - Dissolved	mg/l	6020
✓ Silver- - Dissolved	mg/l	6020
✓ Beryllium - - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 44114001 **Date Collected:** 03/28/2024 15:40 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 03/29/2024 12:40 **Collector:** MVTL Field Service
Temp @ Receipt (C): 1.3 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	04/01/2024 10:05	04/01/2024 12:18	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	03/29/2024 16:10	04/01/2024 11:33	
Lithium	0.0551	mg/L	0.02	1	03/29/2024 16:10	04/02/2024 12:34	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	03/29/2024 16:10	04/02/2024 17:24	
Arsenic	<0.002	mg/L	0.002	5	03/29/2024 16:10	04/02/2024 17:24	
Barium	0.1122	mg/L	0.002	5	03/29/2024 16:10	04/02/2024 17:24	
Beryllium	<0.0005	mg/L	0.0005	5	03/29/2024 16:10	04/02/2024 17:24	
Cadmium	<0.0005	mg/L	0.0005	5	03/29/2024 16:10	04/02/2024 17:24	
Chromium	<0.002	mg/L	0.002	5	03/29/2024 16:10	04/02/2024 17:24	
Lead	0.0005	mg/L	0.0005	5	03/29/2024 16:10	04/02/2024 17:24	
Molybdenum	0.0021	mg/L	0.002	5	03/29/2024 16:10	04/02/2024 17:24	
Selenium	<0.005	mg/L	0.005	5	03/29/2024 16:10	04/02/2024 17:24	
Thallium	<0.0005	mg/L	0.0005	5	03/29/2024 16:10	04/02/2024 17:24	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #:	44114
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 (%)		
UFB-C6			0.4	106.0		80	115				
MB		+0.1									
FDU/POD	43814001		30	109.0	110.0	75	125	1.2	20		
FDU/POD	43814002		10	110.0	111.0	75	125	1.3	20		
FDU/POD	44020002		30	108.0	108.0	75	125	0.1	20		
FDU/POD	44023004		0.4	95.7	87.3	75	125	4.9	20		
MS/MSD	44114001		0.4	91.5	96.6	70	130	5.5	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 (%)		
UFB-C6			0.4	106.0		80	115				
MB		+0.04									
MS/MSD	44114001		0.4	91.7	91.4	70	130	0.2	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 (%)		
UFB-A5			0.1	101.0		80	120				
UFB-A5			0.1	97.4		80	120				
MB		+0.001									
MB		+0.001									
MS/MSD	44114001		0.4	102.0	100.0	75	125	1.2	20		
SP6	44114001		0.1	106.0		75	125				
Arsenic										Units: mg/L	
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
UFB-A5			0.1	94.9		80	120				
UFB-A5			0.1	95.3		80	120				
MB		+0.001									
MB		+0.001									
MS/MSD	44114001		0.4	96.6	99.2	75	125	2.8	20		
SP6	44114001		0.1	106.0		75	125				
Barium										Units: mg/L	
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
UFB-A5			0.1	99.6		80	120				

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Account #: 7048

Client: Minnkota Power Cooperative

Barium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB MS			0.1	96.7		80	120		
MS		<0.001							
MS		<0.001							
MS/MSD	44114001		0.4	85.5	95.9	75	125	1.4	20
SP4	44114001		0.1	100.0		75	125		

Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB MS			0.1	94.0		80	120		
LFB MS			0.1	97.0		80	120		
MS		<0.0005							
MS		<0.0005							
MS/MSD	44114001		0.4	91.4	95.7	75	125	0.9	20
SP4	44114001		0.1	100.0		75	125		

Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB MS			0.1	101.0		80	120		
LFB MS			0.1	96.4		80	120		
MS		<0.0005							
MS		<0.0005							
MS/MSD	44114001		0.4	98.5	98.2	75	125	0.3	20
SP4	44114001		0.1	99.5		75	125		

Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB MS			0.1	101.0		80	120		
LFB MS			0.1	100.0		80	120		
MS		<0.001							
MS		<0.001							
MS/MSD	44114001		0.4	98.0	101.0	75	125	2.5	20
SP4	44114001		0.1	110.0		75	125		

Lead									
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	98.0		80	120		

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**Account #:** 7048**Client:** Minnkota Power Cooperative

Lead									
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	99.8		80	120		
MS		<0.0000							
MS		<0.0000							
MS/MSD	44114001		0.4	95.2	95.9	75	125	0.8	20
SPK	44114002		0.1	96.5		75	125		

Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB MS			0.1	104.0		80	120		
LFB MS			0.1	100.0		80	120		
MS		<0.000							
MS		<0.000							
MS/MSD	44114001		0.4	101.0	104.0	75	125	0.4	20
SPK	44114002		0.1	113.0		75	125		

Selenium									
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	98.0		80	120		
LFB MS			0.1	95.8		80	120		
MS		<0.000							
MS		<0.000							
MS/MSD	44114001		0.4	96.6	95.3	75	125	0.5	20
SPK	44114002		0.1	97.3		75	125		

Thallium									
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	98.0		80	120		
LFB MS			0.1	99.9		80	120		
MS		<0.0000							
MS		<0.0000							
MS/MSD	44114001		0.4	95.9	95.6	75	125	0.8	20
SPK	44114002		0.1	96.4		75	125		

Mercury									
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	100.0		85	115		

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Account #: 7048

Client: Minnkota Power Cooperative

Mercury		Units: mg/L							
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UP		<0.0002	0.002	95.6		80	115		
UP		<0.0002							
MS		<0.0002							
MS/MSD	41803001		0.002	103.0	103.0	70	130	4.0	20
MS/MSD	43603007		0.002	96.0	97.4	70	130	0.0	20
MS/MSD	43614012		0.002	99.6	96.6	70	130	0.0	20
MS/MSD	43614013		0.002	96.7	101.0	70	130	0.1	20
MS/MSD	44040003		0.002	103.0	103.0	70	130	0.0	20
MS/MSD	44114001		0.002	98.4	99.0	70	130	0.0	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 44114 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>Joseph Grosz</i>

Lab Number	Sample Information				Sample Containers								Field Readings				Analysis Required	
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	Equal Nitric					Temp (°C)	Spec. Cond.	pH		Turbidity (NTU)
001	2023-1	29 May 24	1540	GW	X	X	X	X						7.37	2151	8.27	453	CCWDF NDDH Parameter List, App I and App II (See Attachments)

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>Joseph Grosz</i>	29 May 24 1540	Log In	20.1 / 1.3	<i>Andrew Hart</i>	29 May 24 1540
		Walk In #2	TMS62 / TMS05		

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
 Event: _____
 Sample ID: 2023-1
 Sampling Personal: J. H. [Signature]

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Weather Conditions: Temp: _____ °F Wind: _____ @ Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Repairs Necessary?		
Casing Diameter:	<u>2"</u>	
Water Level Before Purge:	<u>203.56</u>	ft
Depth to Top of Pump:	<u>220.10</u>	ft
Well Volume:	<u>12.7</u>	liters
Water Level After Sample:	ft	
Measurement Method:	<u>Electric Water Level Indicator</u>	

SAMPLING INFORMATION

Purging Method:	<u>Bladder</u>	Control Settings:
Sampling Method:	<u>Bladder</u>	Purge: <u>0</u> / <u>0</u> Sec.
Dedicated Equipment?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	Recover: <u>0</u> / <u>0</u> Sec.
Duplicate Sample?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	PSI: <u>120</u> / <u>120</u>
Duplicate Sample ID:		
Bottle List:		
1 Liter Raw 1 Gal Nitric		
500ml Nitric		
500ml Nitric (filtered)		
250ml Sulfuric		

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Time	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment
											Clarity, Color, Odor, Ect.
	<u>27 Mar 24</u>										
	<u>1525</u>	Start of Well Purge									
	<u>1530</u>	<u>7.82</u>	<u>2147</u>	<u>8.52</u>	<u>1.60</u>	<u>226</u>	<u>10.97</u>	<u>209.45</u>	<u>300.0</u>	<u>1.5</u>	<u>Clear</u>
	<u>1615</u>	<u>7.60</u>	<u>2145</u>	<u>8.29</u>	<u>0.00</u>	<u>-221.5</u>	<u>4.47</u>	<u>221.64</u>	<u>300.0</u>	<u>13.5</u>	<u>Clear</u>
	<u>1650</u>	<u>7.71</u>	<u>2141</u>	<u>8.35</u>	<u>0.00</u>	<u>-229.7</u>	<u>28.60</u>	<u>Below Pump</u>	<u>300.0</u>	<u>10.5</u>	<u>Clear</u>
		Purged Down									
	<u>28 Mar 24</u>										
	<u>1450</u>	<u>7.61</u>	<u>2136</u>	<u>8.28</u>	<u>0.17</u>	<u>162</u>	<u>51.87</u>	<u>212.05</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1530</u>	<u>7.39</u>	<u>2153</u>	<u>8.26</u>	<u>0.00</u>	<u>-221.4</u>	<u>4.35</u>	<u>216.05</u>	<u>100.0</u>	<u>3.5</u>	<u>Clear</u>
	<u>1535</u>	<u>7.33</u>	<u>2152</u>	<u>8.27</u>	<u>0.00</u>	<u>-223.5</u>	<u>4.44</u>	<u>216.57</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1540</u>	<u>7.39</u>	<u>2151</u>	<u>8.27</u>	<u>0.00</u>	<u>-225.6</u>	<u>4.53</u>	<u>217.03</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>

Well Stabilized? YES NO

Total Volume Purged: 30.5 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
<u>28 Mar 24</u>	<u>1540</u>	<u>7.39</u>	<u>2151</u>	<u>8.27</u>	<u>4.53</u>	<u>Clear</u>

Comments: _____

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Client: Minnkota Power Cooperative

- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
✓ Laboratory pH		SM4500 H+ B
✓ Laboratory Specific Conductivity	Umhos/cm	SM2510-B
✓ Total Suspended Solids	mg/l	SM2540-D
✓ Total Alkalinity	mg/l CaCO3	SM2320-B
✓ Phenolphthalein Alk	mg/l CaCO3	SM2320-B
✓ Bicarbonate	mg/l CaCO3	SM2320-B
✓ Carbonate	mg/l CaCO3	SM2320-B
✓ Hydroxide	mg/l CaCO3	SM2320-B
✓ Total Dissolved Solids	mg/l	SM1030-F
✓ Total Hardness as CaCO3	mg/l	SM2340-B
✓ Cation Summation	mg/l	SM1030-F
✓ Anion Summation	mg/l	SM1030-F
✓ Percent Error	%	SM1030-F
✓ Fluoride	mg/l	SM4500-F-C
✓ Sulfate	mg/l	ASTM D516-02
✓ Chloride	mg/l	SM4500-Cl-E
✓ Nitrate-Nitrite as N	mg/l	EPA 353.2
✓ Phosphorous as P-Total	mg/l	EPA 365.1
✓ Mercury- - Dissolved	mg/l	EPA 245.1
✓ Calcium-Total	mg/l	6010
✓ Magnesium-Total	mg/l	6010
✓ Sodium-Total	mg/l	6010
✓ Potassium-Total	mg/l	6010
✓ Iron- - Dissolved	mg/l	6010
✓ Manganese- Dissolved	mg/l	6010
✓ Boron- - Dissolved	mg/l	6010
✓ Arsenic- - Dissolved	mg/l	6020
✓ Barium- - Dissolved	mg/l	6020
✓ Cadmium- - Dissolved	mg/l	6020
✓ Chromium- - Dissolved	mg/l	6020
✓ Lead- - Dissolved	mg/l	6020
✓ Molybdenum- - Dissolved	mg/l	6020
✓ Selenium- - Dissolved	mg/l	6020
✓ Silver- - Dissolved	mg/l	6020
✓ Beryllium - - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹	
Boron	<input checked="" type="checkbox"/>
Calcium	<input checked="" type="checkbox"/>
Chloride	<input checked="" type="checkbox"/>
Fluoride	<input checked="" type="checkbox"/>
pH	<input checked="" type="checkbox"/>
Sulfate	<input checked="" type="checkbox"/>
Total Dissolved Solids (TDS)	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹	
Antimony	
Arsenic	
Barium	
Beryllium	
Cadmium	
Chromium	
Cobalt	
Fluoride	
Lead	
Lithium	<input checked="" type="checkbox"/>
Mercury	
Molybdenum	
Selenium	
Thallium	
Radium 226 and 228 combined	<input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 44120001 **Date Collected:** 03/28/2024 15:40 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 03/29/2024 12:40 **Collector:** MVTL Field Service

Temp @ Receipt (C): 7.7

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: Contracted Result

Radium 226	See Attached			1		05/02/2024 08:13	
Radium 228	See Attached			1		05/02/2024 08:13	

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Account #: 7048

Client: Minnkota Power Cooperative



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ANALYTICAL SUMMARY REPORT

May 01, 2024

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

Work Order: C24040089 Quote ID: C15480
Project Name: 44120

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 4/2/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C24040089-001	44120001, 2023-1	03/28/24 15:40	04/02/24	Groundwater	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, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

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

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

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 44120
Lab ID: C24040089-001
Client Sample ID: 44120001, 2023-1

Report Date: 05/01/24
Collection Date: 03/28/24 15:40
Date Received: 04/02/24
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.08	pCi/L	U		E903.0		04/29/24 10:03 / alb
Radium 226 precision (±)	0.1	pCi/L			E903.0		04/29/24 10:03 / alb
Radium 226 MDC	0.2	pCi/L			E903.0		04/29/24 10:03 / alb
Radium 228	0.5	pCi/L	U		RA-05		04/17/24 14:19 / kdk
Radium 228 precision (±)	0.7	pCi/L			RA-05		04/17/24 14:19 / kdk
Radium 228 MDC	1.1	pCi/L			RA-05		04/17/24 14:19 / kdk
Radium 226 + Radium 228	0.6	pCi/L	U		A7500-RA		04/30/24 14:52 / dmf
Radium 226 + Radium 228 precision (±)	0.7	pCi/L			A7500-RA		04/30/24 14:52 / dmf
Radium 226 + Radium 228 MDC	1.1	pCi/L			A7500-RA		04/30/24 14:52 / dmf

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

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Report Date: Thursday, May 2, 2024 5:47:05 PM



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Account #: 7048

Client: Minnkota Power Cooperative



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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24040089

Report Date: 04/30/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0 Batch: RA226-11292										
Lab ID: LCS-RA226-11292	3	Laboratory Control Sample								
										Run: TENNELEC-4_240423E 04/29/24 10:03
Radium 226		9.4	pCi/L	94		70	130			
Radium 226 precision (±)		1.8	pCi/L							
Radium 226 MDC		0.22	pCi/L							
Lab ID: MB-RA226-11292	3	Method Blank								Run: TENNELEC-4_240423E 04/29/24 10:03
Radium 226		0.02	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C24040089-001ADUP	3	Sample Duplicate								Run: TENNELEC-4_240423E 04/29/24 10:03
Radium 226		0.090	pCi/L					12	30	U
Radium 226 precision (±)		0.12	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.06.										
Lab ID: C24040640-001DDUP	3	Sample Duplicate								Run: TENNELEC-4_240423E 04/29/24 11:10
Radium 226		9.9	pCi/L					15	30	
Radium 226 precision (±)		1.9	pCi/L							
Radium 226 MDC		0.18	pCi/L							
- The RER result is 0.56.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Account #: 7048

Client: Minnkota Power Cooperative



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Gillette, WY 307.686.7175 • Helena, MT 406.442.0711

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24040089

Report Date: 04/30/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05 Batch: RA228-7372										
Lab ID: LCS-228-RA226-11280	3	Laboratory Control Sample								
										Run: TENNELEC-4_240410A 04/17/24 14:18
Radium 228		6.2	pCi/L	98		70	130			
Radium 228 precision (±)		1.4	pCi/L							
Radium 228 MDC		1.1	pCi/L							
Lab ID: MB-RA226-11280	3	Method Blank								
										Run: TENNELEC-4_240410A 04/17/24 14:18
Radium 228		0.4	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C24040091-002AMS	3	Sample Matrix Spike								
										Run: TENNELEC-4_240410A 04/17/24 14:19
Radium 228		5.9	pCi/L	93		70	130			
Radium 228 precision (±)		1.3	pCi/L							
Radium 228 MDC		0.98	pCi/L							
Lab ID: C24040091-002AMSD	3	Sample Matrix Spike Duplicate								
										Run: TENNELEC-4_240410A 04/17/24 14:19
Radium 228		6.2	pCi/L	99		70	130	5.6	30	
Radium 228 precision (±)		1.4	pCi/L							
Radium 228 MDC		1.0	pCi/L							
- The RER result is 0.17.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C24040089

Login completed by: Dakota R. Sawyer

Date Received: 4/2/2024

Reviewed by: lleprowse

Received by: LEL

Reviewed Date: 4/4/2024

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	13.0°C No ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

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.

Contact and Corrective Action Comments:

The temperature of the samples for shipping container 1 was 10.4°C, shipping container 2 was 12.6°C, shipping container 3 was 13.0°C, shipping container 4 was 12.7°C and shipping container 5 was 12.3°C.

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 44120 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>J. Grosz</i>

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	1 Gal Nitric						
001	2023-1	28 Feb 24	1540	GW					X					Radium 226 and 228 Combined	

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>J. Grosz</i>	29 Feb 24 12:40	Cliff in Walk in #2	7.9 TMS62 / TMS805	<i>Heather Horst</i>	28 Feb 24 12:40
2					

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Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Company: Minnkota - CCWDF
 Event: _____
 Sample ID: 2023-1
 Sampling Personal: J. H.

Weather Conditions: Temp: _____ °F Wind: _____ @ _____ Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Well Labeled?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Repairs Necessary?	
Casing Diameter:	<u>2"</u>
Water Level Before Purge:	<u>207.56</u> ft
Depth to Top of Pump:	<u>228.10</u> ft
Well Volume:	<u>12.7</u> liters
Water Level After Sample:	ft
Measurement Method:	<u>Electric Water Level Indicator</u>

SAMPLING INFORMATION

Purging Method:	<u>Bladder</u>	Control Settings:
Sampling Method:	<u>Bladder</u>	Purge: <u>8</u> / <u>0</u> Sec.
Dedicated Equipment?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	Recover: <u>22</u> / <u>52</u> Sec.
Duplicate Sample?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	PSI: <u>120</u> / <u>120</u>
Duplicate Sample ID:		
Bottle List:		
1 Liter Raw	1 Gal Nitric	
500ml Nitric		
500ml Nitric (filtered)		
250ml Sulfuric		

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%				Clarity, Color, Odor, Ect.
<u>27 Mar 24</u>	<u>1525</u>	<u>Start of Well Purge</u>									
	<u>1530</u>	<u>7.82</u>	<u>2147</u>	<u>8.52</u>	<u>1.80</u>	<u>73.6</u>	<u>10.92</u>	<u>209.45</u>	<u>300.0</u>	<u>1.5</u>	<u>Clear</u>
	<u>1615</u>	<u>7.80</u>	<u>2145</u>	<u>8.29</u>	<u>0.00</u>	<u>-221.5</u>	<u>9.42</u>	<u>221.64</u>	<u>300.0</u>	<u>3.5</u>	<u>Clear</u>
	<u>1650</u>	<u>7.71</u>	<u>2141</u>	<u>8.35</u>	<u>0.00</u>	<u>-229.7</u>	<u>28.60</u>	<u>Below Pump</u>	<u>300.0</u>	<u>10.5</u>	<u>Clear</u>
<u>28 Mar 24</u>	<u>1450</u>	<u>Stop of 566 11220m Range</u>									
	<u>1455</u>	<u>7.61</u>	<u>2136</u>	<u>8.38</u>	<u>0.17</u>	<u>16.2</u>	<u>51.87</u>	<u>212.05</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1530</u>	<u>7.39</u>	<u>2153</u>	<u>8.26</u>	<u>0.00</u>	<u>-221.4</u>	<u>4.35</u>	<u>216.05</u>	<u>100.0</u>	<u>3.5</u>	<u>Clear</u>
	<u>1535</u>	<u>7.37</u>	<u>2152</u>	<u>8.22</u>	<u>0.00</u>	<u>-222.5</u>	<u>4.44</u>	<u>216.57</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1540</u>	<u>7.39</u>	<u>2151</u>	<u>8.27</u>	<u>0.00</u>	<u>-222.6</u>	<u>4.53</u>	<u>217.03</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>

Well Stabilized? YES NO Total Volume Purged: 30.5 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
<u>28 Mar 24</u>	<u>1540</u>	<u>7.39</u>	<u>2151</u>	<u>8.27</u>	<u>4.53</u>	<u>Clear</u>

Comments: _____

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Account #: 7048

Client: Minnkota Power Cooperative

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Page 2 of 9

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 46020001 **Date Collected:** 04/19/2024 10:30 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 04/19/2024 12:37 **Collector:** MVTL Field Service
Temp @ Receipt (C): 2.7 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	75.3	mg/L	5	1		04/24/2024 15:49	*
Method: EPA 6010D							
Boron	0.50	mg/L	0.1	1	04/19/2024 16:51	04/23/2024 14:49	
Calcium	3.17	mg/L	1	1	04/19/2024 16:51	04/23/2024 10:22	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		04/19/2024 15:21	*
Method: SM4500-Cl-E 2011							
Chloride	15.4	mg/L	2.0	1		04/23/2024 15:09	
Method: SM4500-F-C-2011							
Fluoride	1.80	mg/L	0.1	1		04/19/2024 15:21	
Method: USGS I-1750-85							
Total Dissolved Solids	1420	mg/L	10	1		04/19/2024 14:00	

Analysis Results Comments**Alkalinity, Total**

Target analyte detected in method blank at one half or greater of reporting limit. Reporting limit has been elevated.

Silver, Dissolved

Matrix spike and/or matrix spike duplicate recoveries were low. Low recoveries were due to the amount of spike added and the use of HCl in the metals digestion process. Data was accepted based on the acceptable recoveries of the post digestion spikes and/or LCS.

Sulfate

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

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #:	46020
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	97.7		85	115				
LFB			100	94.1		85	115				
LFB			100	103.0		85	115				
LFB			100	107.0		85	115				
MB		+5									
MB		+5									
MB		+5									
MB		+5									
ML/MSD	43701000		100	93.6	94.2	85	115	0.8	20		
ML/MSD	43570001		100	94.9	87.0	85	115	1.3	20		
ML/MSD	49020001		100	79.0	77.0	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	93.9		90	110				
LFB			30	91.1		90	110				
LFB			30	93.4		90	110				
LFB			30	92.7		90	110				
LFB			30	94.4		90	110				
LFB			30	93.8		90	110				
LFB			30	95.2		90	110				
MB		+3.0									
MB		+3.0									
MB		+3.0									
MB		+3.0									
MB		+3.0									
MB		+3.0									
MB		+3.0									
ML/MSD	43700001		30	92.0	89.7	90	110	0.0	20		
ML/MSD	41000001		30	79.2	72.4	85	110	0.0	20		

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Chloride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MU/MSD	4560001		30	91.1	91.9	80	120	0.8	20
Units: mg/L									
Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-CE			0.4	104.0		80	115		
MS									
		<0.1							
FDU/POD	4560001		0.4	87.0	86.5	75	125	0.2	20
MU/MSD	4600001		0.4	97.0	95.4	70	130	0.7	20
Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-M			100	109.0		80	115		
MS									
		>1							
DUP	4480001							2.9	20
FDU/POD	4480001		100	105.0	106.0	75	125	0.9	20
FDU/POD	4560001		100	101.0	103.0	75	125	0.7	20
FDU/POD	4600001		100	100.0	101.0	75	125	0.2	20
pH									
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	100.2		96.33	101.67		
CRM-PH			6	99.8		96.33	101.67		
DUP	4600001							0.4	20
Fluoride									
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			3.06	104.0		83.99	111.11		
LFB-F			0.3	104.0		90	110		
LFB-F			0.3	102.0		90	110		
MS-F									
		<0.1							
MS-F		<0.1							
MU/MSD	4600001		0.5	94.0	114.0	80	120	0.9	20
Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			150	101.0		90.90	110.90		
MS									
		>30							
DUP	4600001							1.4	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperativ WO: 46020 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: kgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>[Signature]</i>

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HN03	500 mL HN03 (Filtered)	250 mL H2SO4	1 Gall Nitric	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)		
001	2023-1	17 Apr 24	10:30	GW	X	X	X	X		6.27	1853	8.26	0.85	CCWDF NDDH Parameter List, App I and App II (See Attachments)	

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>[Signature]</i>	17 Apr 24 12:37	Walk In #2	2.7 TM562 (TR805)	Heather Hase	17 Apr 24 12:37

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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet
Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: J. My

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: 25 F Wind: NW @ 10-15 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Depth to Top of Pump, Well Volume, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment?, Duplicate Sample?, Duplicate Sample ID, Bottle List.

FIELD READINGS table with columns: Purge Date, Time, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment.

Summary table with columns: Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, Appearance or Comment.

Comments:

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- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
x Laboratory pH		SM4500 H+ B
x Laboratory Specific Conductivity	Umhos/cm	SM2510-B
x Total Suspended Solids	mg/l	SM2540-D
x Total Alkalinity	mg/l CaCO3	SM2320-B
x Phenolphthalein Alk	mg/l CaCO3	SM2320-B
x Bicarbonate	mg/l CaCO3	SM2320-B
x Carbonate	mg/l CaCO3	SM2320-B
x Hydroxide	mg/l CaCO3	SM2320-B
x Total Dissolved Solids	mg/l	SM1030-F
x Total Hardness as CaCO3	mg/l	SM2340-B
x Cation Summation	mg/l	SM1030-F
x Anion Summation	mg/l	SM1030-F
x Percent Error	%	SM1030-F
x Fluoride	mg/l	SM4500-F-C
x Sulfate	mg/l	ASTM D516-02
x Chloride	mg/l	SM4500-Cl-E
x Nitrate-Nitrite as N	mg/l	EPA 353.2
x Phosphorous as P-Total	mg/l	EPA 365.1
x Mercury-- Dissolved	mg/l	EPA 245.1
x Calcium-Total	mg/l	6010
x Magnesium-Total	mg/l	6010
x Sodium-Total	mg/l	6010
x Potassium-Total	mg/l	6010
x Iron- - Dissolved	mg/l	6010
x Manganese- Dissolved	mg/l	6010
x Boron- - Dissolved	mg/l	6010
x Arsenic- - Dissolved	mg/l	6020
x Barium- - Dissolved	mg/l	6020
x Cadmium- - Dissolved	mg/l	6020
x Chromium- - Dissolved	mg/l	6020
x Lead- - Dissolved	mg/l	6020
x Molybdenum- - Dissolved	mg/l	6020
x Selenium- - Dissolved	mg/l	6020
x Silver- - Dissolved	mg/l	6020
x Beryllium - - Dissolved	mg/l	6020

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Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹
Boron <input checked="" type="checkbox"/>
Calcium <input checked="" type="checkbox"/>
Chloride <input checked="" type="checkbox"/>
Fluoride <input checked="" type="checkbox"/>
pH <input checked="" type="checkbox"/>
Sulfate <input checked="" type="checkbox"/>
Total Dissolved Solids (TDS) <input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium <input checked="" type="checkbox"/>
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined <input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 46020001 **Date Collected:** 04/19/2024 10:30 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 04/19/2024 12:37 **Collector:** MVTL Field Service
Temp @ Receipt (C): 2.7 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	04/24/2024 09:45	04/24/2024 11:50	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	04/19/2024 16:51	04/22/2024 14:00	
Lithium	0.0522	mg/L	0.02	1	04/19/2024 16:51	04/24/2024 10:27	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	04/19/2024 16:51	04/29/2024 12:27	
Arsenic	<0.002	mg/L	0.002	5	04/19/2024 16:51	04/29/2024 12:27	
Barium	0.1044	mg/L	0.002	5	04/19/2024 16:51	04/29/2024 12:27	
Beryllium	<0.0005	mg/L	0.0005	5	04/19/2024 16:51	04/29/2024 12:27	
Cadmium	<0.0005	mg/L	0.0005	5	04/19/2024 16:51	04/29/2024 12:27	
Chromium	<0.002	mg/L	0.002	5	04/19/2024 16:51	04/29/2024 12:27	
Lead	<0.0005	mg/L	0.0005	5	04/19/2024 16:51	04/29/2024 12:27	
Molybdenum	0.0021	mg/L	0.002	5	04/19/2024 16:51	04/29/2024 12:27	
Selenium	<0.005	mg/L	0.005	5	04/19/2024 16:51	04/29/2024 12:27	
Thallium	<0.0005	mg/L	0.0005	5	04/19/2024 16:51	04/29/2024 12:27	

Analysis Results Comments

Alkalinity, Total

Target analyte detected in method blank at one half or greater of reporting limit. Reporting limit has been elevated.

Silver, Dissolved

Matrix spike and/or matrix spike duplicate recoveries were low. Low recoveries were due to the amount of spike added and the use of HCl in the metals digestion process. Data was accepted based on the acceptable recoveries of the post digestion spikes and/or LCS.

Sulfate

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

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #: 46020
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-CE			0.4	106.0		85	115			
MB										<0.1
M1/MSD	4602001		0.4	89.0	89.4	70	120	0.4	20	
P01/P01D	4602003		0.4	89.2	89.6	75	120	0.5	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-CE			0.4	105.0		85	115			
MB										<0.04
M1/MSD	4602001		0.4	95.0	95.4	70	130	0.4	20	
Antimony										Units: mg/L
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
LFB-MS			0.1	102.0		85	115			
MB										<0.001
M1/MSD	4602001		0.4	101.0	101.0	75	125	1.7	20	
SP6	4602003		0.1	106.0		75	125			
SP6	46024005		0.1	106.0		75	125			
SP6	46418001		0.2	100.0		75	125			
Arsenic										Units: mg/L
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
LFB-MS			0.1	98.7		85	115			
MB										<0.001
M1/MSD	4602001		0.4	99.9	102.0	75	125	1.0	20	
SP6	4602003		0.1	106.0		75	125			
SP6	46024005		0.1	103.0		75	125			
SP6	46418001		0.2	104.0		75	125			
Barium										Units: mg/L
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
LFB-MS			0.1	97.0		85	115			
MB										<0.001
M1/MSD	4602001		0.4	93.1	93.3	75	125	0.2	20	
SP6	4602003		0.1	91.6		75	125			

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Barium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	44074000		0.1	96.9		75	125		
SPK	44118000		0.2	98.4		75	125		
Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPR-MS			0.1	100.0		85	115		
MS		<0.0005							
MS/MSD	44020000		0.4	101.0	104.0	75	125	3.8	20
SPK	44020000		0.1	105.0		75	125		
SPK	44074000		0.1	104.0		75	125		
SPK	44118000		0.2	113.0		75	125		
Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPR-MS			0.1	102.0		85	115		
MS		<0.0005							
MS/MSD	44020000		0.4	94.5	97.8	75	125	3.4	20
SPK	44020000		0.1	95.4		75	125		
SPK	44074000		0.1	94.2		75	125		
SPK	44118000		0.2	101.0		75	125		
Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPR-MS			0.1	104.0		85	115		
MS		<0.001							
MS/MSD	44020000		0.4	105.0	104.0	75	125	0.2	20
SPK	44020000		0.1	104.0		75	125		
SPK	44074000		0.1	94.9		75	125		
SPK	44118000		0.2	104.0		75	125		
Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPR-MS			0.1	99.2		85	115		
MS		<0.0005							
MS/MSD	44020000		0.4	99.2	96.4	75	125	3.3	20
SPK	44020000		0.1	94.3		75	125		

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Lead									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	44074000		0.1	96.6		75	125		
SPK	44418000		0.2	101.0		75	125		
Molybdenum									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPR-MS			0.1	107.0		85	115		
MS		<0.001							
MS/MSD	44020000		0.4	106.0	105.0	75	125	0.7	20
SPK	44020000		0.1	109.0		75	125		
SPK	44074000		0.1	105.0		75	125		
SPK	44418000		0.2	103.0		75	125		
Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPR-MS			0.1	101.0		85	115		
MS		<0.01							
MS/MSD	44020000		0.4	100.0	103.0	75	125	1.9	20
SPK	44020000		0.1	95.0		75	125		
SPK	44074000		0.1	95.8		75	125		
SPK	44418000		0.2	100.0		75	125		
Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPR-MS			0.1	100.0		85	115		
MS		<0.0005							
MS/MSD	44020000		0.4	95.0	95.0	75	125	0.8	20
SPK	44020000		0.1	93.1		75	125		
SPK	44074000		0.1	97.1		75	125		
SPK	44418000		0.2	98.9		75	125		
Mercury									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPR			0.002	101.0		85	115		
UPR		<0.0002							
MS/MSD	44020000		0.002	89.0	105.0	70	130	13.4	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperativ WO: 46020 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: agrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>[Signature]</i>

Lab Number	Sample Information				Sample Containers							Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HN03	500 mL HN03 (Filtered)	250 mL H2SO4	1 Gall Nitric	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)			
001	2023-1	17 Apr 24	10:30	GW	X	X	X	X		6.27	1853	8.26	0.85	CCWDF NDDH Parameter List, App I and App II (See Attachments)		

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>[Signature]</i>	17 Apr 24 12:37	Walk In #2	2.7 TM562 (TR805)	Heather Hase	17 Apr 24 12:37

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
 Event: _____
 Sample ID: 2023-1
 Sampling Personal: [Signature]

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Weather Conditions: Temp: 25°F Wind: NW @ 10-15 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Well Labeled?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Repairs Necessary?	
Casing Diameter:	<u>2"</u>
Water Level Before Purge:	<u>203.46</u> ft
Depth to Top of Pump:	<u>220.10</u> ft
Well Volume:	<u>12.7</u> liters
Water Level After Sample:	<u>219.95</u> ft
Measurement Method:	<u>Electric Water Level Indicator</u>

SAMPLING INFORMATION

Purging Method:	<u>Bladder</u>	Control Settings:
Sampling Method:	<u>Bladder</u>	Purge: <u>6</u> / <u>6</u> Sec.
Dedicated Equipment?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	Recover: <u>24</u> / <u>54</u> Sec.
Duplicate Sample?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	PSI: <u>120</u> / <u>120</u>
Duplicate Sample ID:		
Bottle List:		
1 Liter Raw	1 Gal Nitric	
500ml Nitric		
500ml Nitric (filtered)		
250ml Sulfuric		

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.	
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%			clear, slightly turbid, turbid	
<u>18 Apr 24</u>	<u>1225</u>	Start of Well Purge									
	<u>1830</u>	<u>8.14</u>	<u>1839</u>	<u>8.31</u>	<u>0.00</u>	<u>-223.4</u>	<u>6.01</u>	<u>222.12</u>	<u>300.0</u>	<u>13.5</u>	<u>Clear</u>
	<u>1350</u>	<u>8.26</u>	<u>1847</u>	<u>8.20</u>	<u>0.00</u>	<u>-227.6</u>	<u>2.9.89</u>	<u>Rehump</u>	<u>300.0</u>	<u>12.0</u>	<u>Clear</u>
		Purged									
<u>19 Apr 24</u>	<u>0945</u>	Start of Stabilization Purge									
	<u>0950</u>	<u>9.63</u>	<u>1842</u>	<u>8.25</u>	<u>2.91</u>	<u>62.5</u>	<u>87.52</u>	<u>212.15</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1010</u>	<u>5.95</u>	<u>1847</u>	<u>8.27</u>	<u>0.33</u>	<u>-123.0</u>	<u>1.40</u>	<u>213.10</u>	<u>100.0</u>	<u>2.0</u>	<u>Clear</u>
	<u>1015</u>	<u>6.03</u>	<u>1844</u>	<u>8.27</u>	<u>0.20</u>	<u>-117.7</u>	<u>0.51</u>	<u>214.12</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1020</u>	<u>6.15</u>	<u>1838</u>	<u>8.26</u>	<u>0.15</u>	<u>-154.0</u>	<u>0.22</u>	<u>215.13</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1025</u>	<u>6.29</u>	<u>1851</u>	<u>8.27</u>	<u>0.12</u>	<u>-170.1</u>	<u>0.74</u>	<u>216.05</u>	<u>100.0</u>	<u>1.5</u>	<u>Clear</u>
	<u>1030</u>	<u>6.22</u>	<u>1853</u>	<u>8.26</u>	<u>0.11</u>	<u>-173.4</u>	<u>0.35</u>	<u>217.00</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
		Well Stabilized?		<u>YES</u>	<u>NO</u>	Total Volume Purged:		<u>300.0</u>	Liters		
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH		Turbidity (NTU)				Appearance or Comment Clarity, Color, Odor, Ect.	
<u>19 Apr 24</u>	<u>1030</u>	<u>6.27</u>	<u>1853</u>	<u>8.26</u>		<u>0.35</u>				<u>Clear</u>	
Comments:											

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Account #: 7048

Client: Minnkota Power Cooperative

- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
x Laboratory pH		SM4500 H+ B
x Laboratory Specific Conductivity	Umhos/cm	SM2510-B
x Total Suspended Solids	mg/l	SM2540-D
x Total Alkalinity	mg/l CaCO3	SM2320-B
x Phenolphthalein Alk	mg/l CaCO3	SM2320-B
x Bicarbonate	mg/l CaCO3	SM2320-B
x Carbonate	mg/l CaCO3	SM2320-B
x Hydroxide	mg/l CaCO3	SM2320-B
x Total Dissolved Solids	mg/l	SM1030-F
x Total Hardness as CaCO3	mg/l	SM2340-B
x Cation Summation	mg/l	SM1030-F
x Anion Summation	mg/l	SM1030-F
x Percent Error	%	SM1030-F
x Fluoride	mg/l	SM4500-F-C
x Sulfate	mg/l	ASTM D516-02
x Chloride	mg/l	SM4500-Cl-E
x Nitrate-Nitrite as N	mg/l	EPA 353.2
x Phosphorous as P-Total	mg/l	EPA 365.1
x Mercury - - Dissolved	mg/l	EPA 245.1
x Calcium-Total	mg/l	6010
x Magnesium-Total	mg/l	6010
x Sodium-Total	mg/l	6010
x Potassium-Total	mg/l	6010
x Iron - - Dissolved	mg/l	6010
x Manganese- Dissolved	mg/l	6010
x Boron - - Dissolved	mg/l	6010
x Arsenic - - Dissolved	mg/l	6020
x Barium - - Dissolved	mg/l	6020
x Cadmium - - Dissolved	mg/l	6020
x Chromium - - Dissolved	mg/l	6020
x Lead - - Dissolved	mg/l	6020
x Molybdenum - - Dissolved	mg/l	6020
x Selenium - - Dissolved	mg/l	6020
x Silver - - Dissolved	mg/l	6020
x Beryllium - - Dissolved	mg/l	6020

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Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹
Boron
Calcium
Chloride
Fluoride <input checked="" type="checkbox"/>
pH <input checked="" type="checkbox"/>
Sulfate
Total Dissolved Solids (TDS) <input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium <input checked="" type="checkbox"/>
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined <input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 46023001 **Date Collected:** 04/19/2024 10:30 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 04/19/2024 12:37 **Collector:** MVTL Field Service
Temp @ Receipt (C): 2.7 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: Contracted Result

Radium 226	See Attached			1		05/24/2024 14:10	
Radium 228	See Attached			1		05/24/2024 14:10	

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ANALYTICAL SUMMARY REPORT

May 24, 2024

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

Work Order: C24040825 Quote ID: C15480

Project Name: 46023

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 4/25/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C24040825-001	46023001, 2023-1	04/19/24 10:30	04/25/24	Groundwater	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, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

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

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

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 46023
Lab ID: C24040825-001
Client Sample ID: 46023001, 2023-1

Report Date: 05/24/24
Collection Date: 04/19/24 10:30
Date Received: 04/25/24
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L			E903.0		05/06/24 12:44 / alb
Radium 226 precision (s)	0.1	pCi/L			E903.0		05/06/24 12:44 / alb
Radium 226 MDC	0.1	pCi/L			E903.0		05/06/24 12:44 / alb
Radium 228	0.3	pCi/L	U		RA-05		05/01/24 12:13 / kdk
Radium 228 precision (s)	0.5	pCi/L			RA-05		05/01/24 12:13 / kdk
Radium 228 MDC	0.8	pCi/L			RA-05		05/01/24 12:13 / kdk
Radium 226 + Radium 228	0.6	pCi/L	U		A7500-RA		05/07/24 12:13 / dmf
Radium 226 + Radium 228 precision (s)	0.5	pCi/L			A7500-RA		05/07/24 12:13 / dmf
Radium 226 + Radium 228 MDC	0.8	pCi/L			A7500-RA		05/07/24 12:13 / dmf

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

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories Work Order: C24040825 Report Date: 05/10/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0 Batch: RA226-11296										
Lab ID: LCS-RA226-11296	3	Laboratory Control Sample								
										Run: TENNELEC-3_240426B 05/06/24 10:37
Radium 226		10	pCi/L	102		70	130			
Radium 226 precision (±)		2.0	pCi/L							
Radium 226 MDC		0.20	pCi/L							
Lab ID: MB-RA226-11296	3	Method Blank								Run: TENNELEC-3_240426B 05/06/24 10:37
Radium 226		0.2	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C24040696-001ADUP	3	Sample Duplicate								Run: TENNELEC-3_240426B 05/06/24 12:44
Radium 226		0.19	pCi/L					43	30	UR
Radium 226 precision (±)		0.15	pCi/L							
Radium 226 MDC		0.22	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.48.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05 Batch: RA228-7380										
Lab ID: LCS-228-RA226-11296	3	Laboratory Control Sample								
							Run: TENNELEC-4_240426A			05/01/24 12:13
Radium 228		6.4	pCi/L	102		70	130			
Radium 228 precision (±)		1.4	pCi/L							
Radium 228 MDC		0.90	pCi/L							
Lab ID: MB-RA226-11296	3	Method Blank								
							Run: TENNELEC-4_240426A			05/01/24 12:13
Radium 228		0.3	pCi/L							U
Radium 228 precision (±)		0.5	pCi/L							
Radium 228 MDC		0.6	pCi/L							
Lab ID: C24040696-001ADUP	3	Sample Duplicate								
							Run: TENNELEC-4_240426A			05/01/24 12:13
Radium 228		0.91	pCi/L					120	30	R
Radium 228 precision (±)		0.57	pCi/L							
Radium 228 MDC		0.88	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.92.

Qualifiers:

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

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C24040825

Login completed by: Lisa X. Quezada

Date Received: 4/25/2024

Reviewed by: lleprose

Received by: AJS

Reviewed Date: 4/30/2024

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	18.5°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

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.

Contact and Corrective Action Comments:

None

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Chain of Custody Record form containing company information, contact details, sample information table, and analysis requirements.

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	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 46023 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: <i>Jeremy Meyer</i>

Lab Number	Sample Information				Sample Containers				Field Readings				Analysis Required	
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 ml HNO3	500 ml HNO3 (filtered)	250 ml H2SO4	1 Gal Nitric					
001	2023-1	19 Apr 24	1030	GW					X					Radium 226 and 228 Combined

Comments:

	Relinquished By		Sample Condition		Received By	
	Name	Date/Time	Location	Temp (°C)	Name	Date/Time
1	<i>[Signature]</i>	19 Apr 24 1217	Log In Walk In #2	0.1 2.7 TMS62 / TMS65	<i>Wendee Horst</i>	19 Apr 23 1257
2						

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Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
 Event: _____
 Sample ID: 2023-1
 Sampling Personal: [Signature]

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Weather Conditions: Temp: 25 F Wind: NW @ 10-15 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Well Labeled?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Repairs Necessary?	
Casing Diameter:	<u>2"</u>
Water Level Before Purge:	<u>223.46</u> ft
Depth to Top of Pump:	<u>280.10</u> ft
Well Volume:	<u>12.7</u> liters
Water Level After Sample:	<u>219.95</u> ft
Measurement Method:	<u>Electric Water Level Indicator</u>

SAMPLING INFORMATION		Control Settings:
Purging Method:	<u>Bladder</u>	Purge: <u>6</u> / <u>6</u> Sec.
Sampling Method:	<u>Bladder</u>	Recover: <u>24</u> / <u>54</u> Sec.
Dedicated Equipment?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	PSI: <u>120</u> / <u>120</u>
Duplicate Sample?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Duplicate Sample ID:		
Bottle List:		
1 Liter Raw 1 Gal Nitric		
500ml Nitric		
500ml Nitric (filtered)		
250ml Sulfuric		

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment	
Purge Data	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%			clear, slightly turbid, turbid	
18 Apr 24	1225										
	1810	8.14	1839	8.31	0.00	-223.4	6.01	222.32	300.0	13.5	Clear
	1350	8.26	1847	8.30	0.00	-227.6	29.87	216.00	300.0	12.0	Clear
19 Apr 24											
	0945	5.24	1837	8.25	2.91	69.5	37.52	220.87			
	0950	9.63	1832	8.25	0.37	-123.0	1.60	212.15	100.0	0.5	Clear
	1010	5.95	1847	8.27	0.37	-143.7	0.51	213.10	100.0	2.0	Clear
	1015	6.05	1844	8.27	0.30	-143.7	0.51	214.12	100.0	0.5	Clear
	1020	6.15	1838	8.26	0.15	-159.0	0.22	215.12	100.0	0.5	Clear
1025	6.29	1851	8.27	0.12	-170.1	0.74	216.45	100.0	3.5	Clear	
1030	6.27	1853	8.26	0.11	-173.4	0.35	217.00	100.0	0.5	Clear	
Well Stabilized? YES NO										Total Volume Purged: 30.0 Liters	

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
19 Apr 24	1030	6.27	1853	8.26	0.35	Clear

Comments: _____

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Account #: 7048

Client: Minnkota Power Cooperative

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Report Date: Monday, July 22, 2024 5:27:30 PM

Page 2 of 9



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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID:	50936001	Date Collected:	06/07/2024 10:20	Matrix:	Groundwater		
Sample ID:	2023-1	Date Received:	06/07/2024 12:13	Collector:	MVTL Field Service		
Temp @ Receipt (C):	2.0	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual

Method: ASTM D516-16

Sulfate	70.9	mg/L	5	1		06/12/2024 10:09	
---------	-------------	------	---	---	--	------------------	--

Method: EPA 6010D

Boron	0.53	mg/L	0.1	1	06/09/2024 11:52	06/14/2024 14:48	
Calcium	3.34	mg/L	1	1	06/09/2024 11:52	06/11/2024 14:15	

Method: SM4500 H+ B-2011

pH	8.5	units	0.1	1		06/07/2024 22:54	*
----	------------	-------	-----	---	--	------------------	---

Method: SM4500-Cl-E 2011

Chloride	14.9	mg/L	2.0	1		06/11/2024 12:23	
----------	-------------	------	-----	---	--	------------------	--

Method: SM4500-F-C-2011

Fluoride	1.85	mg/L	0.1	1		06/07/2024 22:54	
----------	-------------	------	-----	---	--	------------------	--

Method: USGS I-1750-85

Total Dissolved Solids	1370	mg/L	10	1		06/07/2024 14:00	
------------------------	-------------	------	----	---	--	------------------	--

Analysis Results Comments

Silver, Dissolved

Matrix spike and/or matrix spike duplicate recoveries were low. Low recoveries were due to the amount of spike added and the use of HCl in the metals digestion process. Data was accepted based on the acceptable recoveries of the post digestion spikes and/or LCS.

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary							WO #: 50936			
Sulfate										
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	Units: mg/L
LFB			100	99.6		85	115			
LFB			100	99.7		85	115			
LFB			100	102.0		85	115			
LFB			100	98.6		85	115			
LFB			100	97.4		85	115			
LFB			100	101.0		85	115			
LFB			100	104.0		85	115			
MB		<5								
MB		<5								
MB		<5								
MB		<5								
MB		<5								
MB		<5								
MB		<5								
MB		<5								
MS/MSD	3077900		100	99.7	99.7	85	115	1.0	20	
MS/MSD	3087602		2000	99.6	99.6	85	115	0.6	20	
MS/MSD	3087607		100	92.0	94.5	85	115	2.7	20	
MS/MSD	3088004		100	92.0	95.9	85	115	4.0	20	
MS/MSD	5102900		1000	76.9	80.5	85	115	3.8	20	
MS/MSD	5117500		100	89.6	88.3	85	115	0.3	20	
Chloride										
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	Units: mg/L
LFB			30	95.3		90	110			
LFB			30	94.3		90	110			
LFB			30	94.0		90	110			
LFB			30	94.2		90	110			
LFB			30	94.5		90	110			
LFB			30	95.0		90	110			
LFB			30	94.0		90	110			

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Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPL-CE			0.4	105.0		80	115		
MB									
		<0.1							
FDU/POD	5061001		8	111.0	114.0	75	125	2.9	20
MS/MSD	5061001		0.4	96.1	94.6	70	130	1.0	20
Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
UPL-AL			100	115.0		80	135		
MB									
		<1							
FDU/POD	5071001		100	101.0	108.0	75	125	0.1	20
FDU/POD	5081001		100	106.0	108.0	75	125	0.3	20
FDU/POD	5081006		100	106.0	105.0	75	125	0.4	20
FDU/POD	5071004		100	101.0	108.0	75	125	0.5	20
FDU/POD	5071008		100	111.0	111.0	75	125	0.2	20
FDU/POD	5081004		100	109.0	108.0	75	125	0.4	20
FDU/POD	5081004		100	111.0	111.0	75	125	0.4	20
FDU/POD	5081008		100	104.0	105.0	75	125	0.7	20
SUP	5091001							2.7	20
FDU/POD	5081008		100	106.0	107.0	75	125	0.9	20
pH									
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	105.5		96.53	104.47		
CRM-PH			6	100.3		96.53	104.47		
SUP	5011001							0.5	20
Fluoride									
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			0.06	103.0		81.88	111.11		
UPL-F			0.5	100.0		90	110		
UPL-F			0.5	98.0		90	110		
UPL-F			0.5	93.0		90	110		
UPL-F			0.5	97.0		90	110		
MB-F									
		<0.1							

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Account #: 7048

Client: Minnkota Power Cooperative

Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS-F		<0.1							
MS-F		<0.1							
MS-F		<0.1							
MS/MSD-F	3087N011		0.5	94.0	94.0	80	120	0.0	20
MS/MSD-F	3087N011		0.5	102.0	96.0	80	120	5.0	20

Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			756	100.0		90.35	110.33		
ME		<30							
DUP	3070A000							0.0	20

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event: _____
Sample ID: 2023-1
Sampling Personal: Dakota Kutzall

Weather Conditions: Temp: 71 °F Wind: W @ 20-25 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Well Labeled?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Repairs Necessary?	-	
Casing Diameter:	<u>2"</u>	
Water Level Before Purge:	<u>267.24</u>	ft
Depth to Top of Pump:	<u>228.10</u>	ft
Well Volume:	<u>12.8</u>	liters
Water Level After Sample:	<u>216.50</u>	ft
Measurement Method:	<u>Electric Water Level Indicator</u>	

SAMPLING INFORMATION

Purging Method:	<u>Bladder</u>
Sampling Method:	<u>Bladder</u>
Dedicated Equipment?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Duplicate Sample?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Duplicate Sample ID:	-
Bottle List:	
1 Liter Raw	1 Gal Nitric
500ml Nitric	
500ml Nitric (Filtered)	
250ml Sulfuric	

Control Settings:	
Purge:	<u>7 / 16</u> Sec.
Recover:	<u>23 / 54</u> Sec.
PSI:	<u>120 / 120</u>

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment	
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±20	<5.0 or 10%			clear, slightly turbid, turbid	
<u>6 June 24</u>	<u>1248</u>	Start of Well Purge									
	<u>1333</u>	<u>4.51</u>	<u>2144</u>	<u>8.21</u>	<u>0.03</u>	<u>-177.4</u>	<u>0.30</u>	<u>221.62</u>	<u>300.0</u>	<u>13.5</u>	<u>Clear</u>
	<u>1413</u>	<u>18.02</u>	<u>2161</u>	<u>8.11</u>	<u>1.37</u>	<u>-138.0</u>	<u>1.00</u>	<u>Below 100</u>	<u>300.0</u>	<u>12.0</u>	<u>Clear</u>
<u>7 June 24</u>	<u>0935</u>	<u>12.03</u>	Purged at 5:00 AM Start of Stabilization Purge								
	<u>0940</u>	<u>17.03</u>	<u>1827</u>	<u>8.13</u>	<u>0.96</u>	<u>174.7</u>	<u>5.80</u>	<u>211.53</u>	<u>100.0</u>	<u>.5</u>	<u>Clear</u>
	<u>0950</u>	<u>11.73</u>	<u>1967</u>	<u>8.13</u>	<u>0.23</u>	<u>105.3</u>	<u>18.88</u>	<u>213.71</u>	<u>100.0</u>	<u>1.0</u>	<u>Clear</u>
	<u>1010</u>	<u>11.26</u>	<u>1968</u>	<u>8.13</u>	<u>0.17</u>	<u>-100.7</u>	<u>2.11</u>	<u>214.27</u>	<u>100.0</u>	<u>2.0</u>	<u>Clear</u>
	<u>1015</u>	<u>11.10</u>	<u>1967</u>	<u>8.13</u>	<u>0.18</u>	<u>-95.2</u>	<u>24.8576</u>	<u>214.65</u>	<u>100.0</u>	<u>.5</u>	<u>Clear</u>
	<u>1020</u>	<u>11.09</u>	<u>1967</u>	<u>8.13</u>	<u>0.18</u>	<u>-89.7</u>	<u>5.92</u>	<u>214.92</u>	<u>100.0</u>	<u>.5</u>	<u>Clear</u>

Well Stabilized? YES NO Total Volume Purged: 100.0 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
<u>7 June 24</u>	<u>1020</u>	<u>11.08</u>	<u>1967</u>	<u>8.13</u>	<u>5.92</u>	<u>Clear</u>

Comments: XDBE

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Account #: 7048 **Client:** Minnkota Power Cooperative

Analytical Results

Lab ID: 50936001 **Date Collected:** 06/07/2024 10:20 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 06/07/2024 12:13 **Collector:** MVTL Field Service
Temp @ Receipt (C): 2.0 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: EPA 245.1							
Mercury	<0.0002	mg/L	0.0002	1	06/19/2024 12:25	06/20/2024 09:26	
Method: EPA 6010D							
Cobalt	<0.1	mg/L	0.1	1	06/09/2024 11:52	06/12/2024 12:59	
Lithium	0.0528	mg/L	0.02	1	06/09/2024 11:52	06/20/2024 14:11	
Method: EPA 6020B							
Antimony	<0.001	mg/L	0.001	5	06/09/2024 11:52	07/01/2024 18:54	
Arsenic	<0.002	mg/L	0.002	5	06/09/2024 11:52	07/01/2024 18:54	
Barium	0.1158	mg/L	0.002	5	06/09/2024 11:52	07/01/2024 18:54	
Beryllium	<0.0005	mg/L	0.0005	5	06/09/2024 11:52	07/01/2024 18:54	
Cadmium	<0.0005	mg/L	0.0005	5	06/09/2024 11:52	07/03/2024 09:47	
Chromium	<0.002	mg/L	0.002	5	06/09/2024 11:52	07/01/2024 18:54	
Lead	<0.0005	mg/L	0.0005	5	06/09/2024 11:52	07/01/2024 18:54	
Molybdenum	0.0020	mg/L	0.002	5	06/09/2024 11:52	07/01/2024 18:54	
Selenium	<0.005	mg/L	0.005	5	06/09/2024 11:52	07/01/2024 18:54	
Thallium	<0.0005	mg/L	0.0005	5	06/09/2024 11:52	07/01/2024 18:54	

Analysis Results Comments

Silver, Dissolved

Matrix spike and/or matrix spike duplicate recoveries were low. Low recoveries were due to the amount of spike added and the use of HCl in the metals digestion process. Data was accepted based on the acceptable recoveries of the post digestion spikes and/or LCS.

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #:	50936
Cobalt											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
UPR-CE			0.4		100.0		80	110			
MB											
		<0.1									
FDU/POD	S067000		2		98.2	98.4	75	125	0.1	20	
FDU/POD	S077000		5		82.7	94.2	75	125	1.4	20	
FDU/POD	S087000		20		103.0	103.0	75	125	0.2	20	
MU/MSD	S096000		0.4		89.9	90.4	70	130	0.6	20	
Lithium											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
UPR-CE			0.4		100.0		80	110			
MB											
		<0.04									
MU/MSD	S096000		0.4		94.1	92.5	70	130	1.4	20	
Antimony											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
UPR-MS			0.1		98.4		80	120			
MB											
		<0.001									
SPK	S067000		0.1		108.0		75	125			
SPK	S087000		0.1		113.0		75	125			
SPK	S087001		0.1		105.0		75	125			
MU/MSD	S096000		0.4		105.0	105.0	75	125	0.2	20	
SPK	S096001		0.1		106.0		75	125			
Arsenic											
QC Type	Original Sample ID	Blank Result	Spike Amount	Units: mg/L	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)	
UPR-MS			0.1		97.8		80	120			
MB											
		<0.001									
SPK	S067000		0.1		110.0		75	125			
SPK	S087000		0.1		108.0		75	125			
SPK	S087001		0.1		100.0		75	125			
MU/MSD	S096000		0.4		105.0	105.0	75	125	0.7	20	
SPK	S096001		0.1		108.0		75	125			

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Account #: 7048

Client: Minnkota Power Cooperative

Barium									
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	98.9		80	120		
MS									
		<0.000							
SPK	30876000		0.1	102.0		75	125		
SPK	30876013		0.1	101.0		75	125		
SPK	30876011		0.1	102.0		75	125		
MS/MSD	30916000		0.4	102.0	102.0	75	125	0.4	20
SPK	30916001		0.1	110.0		75	125		

Beryllium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	97.2		80	120		
MS									
		<0.000							
SPK	30876007		0.1	119.0		75	125		
SPK	30876013		0.1	123.0		75	125		
SPK	30876011		0.1	108.0		75	125		
MS/MSD	30916000		0.4	113.0	113.0	75	125	0.9	20
SPK	30916001		0.1	117.0		75	125		

Cadmium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	95.3		80	120		
MS									
		<0.000							
SPK	30876000		0.1	97.4		75	125		
SPK	30876013		0.1	103.0		75	125		
SPK	30876011		0.1	96.9		75	125		
MS/MSD	30916000		0.4	101.0	101.0	75	125	0.9	20
SPK	30916000		0.1	101.0		75	125		

Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB-MS			0.1	96.4		80	120		
MS									
		<0.000							
SPK	30876000		0.1	110.0		75	125		
SPK	30876013		0.1	106.0		75	125		

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**Account #:** 7048**Client:** Minnkota Power Cooperative

Chromium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
SPK	30876011		0.1	104.0		75	125		
Units: mg/L									
MS/MSD	30936000		0.4	110.0	110.0	75	125	0.5	20
SPK	30936001		0.1	100.0		75	125		

Lead									
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		
MS									
SPK	30876002	<0.0005	0.1	96.0		75	125		
SPK	30876013		0.1	96.8		75	125		
SPK	30876011		0.1	98.4		75	125		
MS/MSD	30936000		0.4	96.3	97.7	75	125	1.8	20
SPK	30936001		0.1	101.0		75	125		

Molybdenum									
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	98.0		80	120		
MS									
SPK	30876002	<0.001	0.1	113.0		75	120		
SPK	30876011		0.1	109.0		75	125		
MS/MSD	30936001		0.4	113.0	111.0	75	125	0.0	20
SPK	30936001		0.1	111.0		75	125		

Selenium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
LFB/MS			0.1	94.6		80	120		
MS									
SPK	30876002	<0.001	0.1	107.0		75	120		
SPK	30876013		0.1	100.0		75	125		
SPK	30876011		0.1	98.2		75	125		
MS/MSD	30936000		0.4	99.8	100.0	75	125	0.5	20
SPK	30936001		0.1	104.0		75	125		

Thallium									
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		

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Thallium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.0001							
SP#	30876002		0.1	95.9		75	125		
SP#	30876003		0.1	95.1		75	125		
SP#	30876001		0.1	96.8		75	125		
ML/MSD	30876005		0.4	90.9	92.6	75	125	1.8	20
SP#	30876003		0.1	99.6		75	125		

Mercury									
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	102.0		85	115		
LFB			0.002	100.0		85	115		
LFB		<0.0001							
MB		<0.0001							
ML/MSD	30876009		0.002	96.6	97.2	70	130	0.1	20
ML/MSD	30876018		0.002	101.0	100.8	70	130	0.0	20
ML/MSD	30876000		0.002	105.0	104.8	70	130	0.0	20
ML/MSD	30876006		0.002	103.0	96.4	70	130	0.0	20

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Field Datasheet
Groundwater Assessment

Company: Minnkota - CCWDF
Event:
Sample ID: 2023-1
Sampling Personal: Dakota Kutzall

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: 71 °F Wind: W @ 20-25 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Depth to Top of Pump, Well Volume, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment, Duplicate Sample?, Duplicate Sample ID, Control Settings, Bottle List.

FIELD READINGS

FIELD READINGS table with columns: Purge Date, Time, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment.

Summary table with columns: Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, Appearance or Comment.

Comments: xDBE

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 50937001 **Date Collected:** 06/07/2024 10:20 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 06/07/2024 12:13 **Collector:** MVTL Field Service
Temp @ Receipt (C): 2.0 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: Contracted Result

Radium 226	See Attached			1		07/16/2024 11:26	
Radium 228	See Attached			1		07/16/2024 11:26	

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ANALYTICAL SUMMARY REPORT

July 11, 2024

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

Work Order: C24060434 Quote ID: C15480

Project Name: 50937

Energy Laboratories, Inc. Casper WY received the following 1 sample for Minnesota Valley Testing Laboratories on 6/12/2024 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C24060434-001	50937001, 2023-1	06/07/24 9:20	06/12/24	Groundwater	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.

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories
Project: 50937
Lab ID: C24060434-001
Client Sample ID: 50937001, 2023-1

Report Date: 07/11/24
Collection Date: 06/07/24 09:20
Date Received: 06/12/24
Matrix: Groundwater

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226	0.2	pCi/L	U		E903.0		06/24/24 14:06 / alb
Radium 226 precision (s)	0.1	pCi/L			E903.0		06/24/24 14:06 / alb
Radium 226 MDC	0.2	pCi/L			E903.0		06/24/24 14:06 / alb
Radium 228	-0.3	pCi/L	U		RA-05		06/18/24 13:01 / kdk
Radium 228 precision (s)	0.6	pCi/L			RA-05		06/18/24 13:01 / kdk
Radium 228 MDC	1.1	pCi/L			RA-05		06/18/24 13:01 / kdk
Radium 226 + Radium 228	0.7	pCi/L	U		A7500-RA		06/25/24 16:50 / dmf
Radium 226 + Radium 228 precision (s)	0.7	pCi/L			A7500-RA		06/25/24 16:50 / dmf
Radium 226 + Radium 228 MDC	1.1	pCi/L			A7500-RA		06/25/24 16:50 / dmf

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

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24060434

Report Date: 06/27/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0 Batch: RA226-11346R										
Lab ID: LCS-RA226-11346	3	Laboratory Control Sample								
										Run: TENNELEC-3_240613C 06/24/24 14:06
Radium 226		11	pCi/L	110		70	130			
Radium 226 precision (±)		2.1	pCi/L							
Radium 226 MDC		0.22	pCi/L							
Lab ID: MB-RA226-11346	3	Method Blank								Run: TENNELEC-3_240613C 06/24/24 14:06
Radium 226		0.04	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C24060434-001ADUP	3	Sample Duplicate								Run: TENNELEC-3_240613C 06/24/24 14:06
Radium 226		0.20	pCi/L					9.5	30	
Radium 226 precision (±)		0.14	pCi/L							
Radium 226 MDC		0.20	pCi/L							
- The RER result is 0.09.										

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Minnesota Valley Testing Laboratories

Work Order: C24060434

Report Date: 06/27/24

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05 Batch: RA228-7417										
Lab ID: LCS-228-RA226-11346	3	Laboratory Control Sample								
							Run: TENNELEC-4_240613A			06/18/24 13:01
Radium 228		10	pCi/L	97		70	130			
Radium 228 precision (±)		2.1	pCi/L							
Radium 228 MDC		1.1	pCi/L							
Lab ID: MB-RA226-11346	3	Method Blank					Run: TENNELEC-4_240613A			06/18/24 13:01
Radium 228		-0.2	pCi/L							U
Radium 228 precision (±)		0.7	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C24060434-001ADUP	3	Sample Duplicate					Run: TENNELEC-4_240613A			06/18/24 13:01
Radium 228		-0.78	pCi/L					91	30	UR
Radium 228 precision (±)		0.63	pCi/L							
Radium 228 MDC		1.1	pCi/L							

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.55.

Qualifiers:

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

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Work Order Receipt Checklist

Minnesota Valley Testing Laboratories

C24060434

Login completed by: Cristen C. Smith

Date Received: 6/12/2024

Reviewed by: lcadreau

Received by: AJS

Reviewed Date: 6/19/2024

Carrier name: UPS Ground

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	16.9°C No ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

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 collection time indicated on the container is 10:20 and on the chain of custody it is 9:20. Proceeded with the collection time as indicated on the chain of custody. CS 6/12/24

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Report Date: Tuesday, July 23, 2024 11:06:51 AM



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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 50937 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Sampled By: Dakota Kottwick

Lab Number 001	Sample ID 2023-1	Date 7/24/24	Time 10:20	Sample Type GW	<input type="checkbox"/> 1 Liter Raw <input type="checkbox"/> 500 mL HNO3 <input type="checkbox"/> 500 mL HNO3 (filtered) <input type="checkbox"/> 250 mL H2SO4 <input checked="" type="checkbox"/> 1 Gall Nitric	Field Readings	Analysis Required Radium 226 and 228 Combined
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Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>[Signature]</i>	7/24/24 12:13	log in Walk in #2	ROI 20 TMS62 / TMS805	<i>[Signature]</i>	7/24/24 12:15

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Company: Minnkota - CCWDF
 Event: _____
 Sample ID: 2023-1
 Sampling Personal: Dan Kato, Katsuki

Weather Conditions: Temp: 71 °F Wind: W @ 10-25 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Well Labeled?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Repairs Necessary?	<u>—</u>
Casing Diameter:	<u>2"</u>
Water Level Before Purge:	<u>267.24</u> ft
Depth to Top of Pump:	<u>228.10</u> ft
Well Volume:	<u>17.8</u> liters
Water Level After Sample:	<u>276.50</u> ft
Measurement Method:	<u>Electric Water Level Indicator</u>

SAMPLING INFORMATION		Control Settings:
Purging Method:	<u>Bladder</u>	Purge: <u>7</u> / <u>6</u> Sec.
Sampling Method:	<u>Bladder</u>	Recover: <u>23</u> / <u>24</u> Sec.
Dedicated Equipment?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	PSI: <u>120</u> / <u>110</u>
Duplicate Sample?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
Duplicate Sample ID:	<u>—</u>	
Bottle List:		
1 Liter Raw 1 Gal Nitric		
500ml Nitric		
500ml Nitric (filtered)		
250ml Sulfuric		

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±20	Turbidity (NTU) <5.0 or 10%	Water Level (ft)	Pumping Rate mL/Min	Liters Removed	Appearance or Comment	
Purge Date	Time ±0.5"									clear, slightly turbid, turbid	
<u>6 June 24</u>	<u>1248</u>	Start of Well Purge									
	<u>1333</u>	<u>4.51</u>	<u>2144</u>	<u>8.21</u>	<u>0.03</u>	<u>-177.4</u>	<u>0.30</u>	<u>221.62</u>	<u>300.0</u>	<u>13.5</u>	<u>Clear</u>
	<u>1413</u>	<u>13.02</u>	<u>2161</u>	<u>8.11</u>	<u>1.33</u>	<u>-138.0</u>	<u>1.00</u>	<u>Below MFL</u>	<u>300.0</u>	<u>12.0</u>	<u>Clear</u>
											<u>Purged</u>
<u>7 June 24</u>	<u>0935</u>	<u>12.03</u>	Start of Stabilization Purge								
	<u>0940</u>	<u>17.03</u>	<u>1827</u>	<u>8.13</u>	<u>0.90</u>	<u>174.7</u>	<u>5.80</u>	<u>211.53</u>	<u>100.0</u>	<u>.5</u>	<u>Clear</u>
	<u>0850</u>	<u>11.73</u>	<u>1967</u>	<u>8.15</u>	<u>0.23</u>	<u>103.3</u>	<u>18.88</u>	<u>212.71</u>	<u>100.0</u>	<u>1.0</u>	<u>Clear</u>
	<u>1010</u>	<u>11.26</u>	<u>1948</u>	<u>8.15</u>	<u>0.17</u>	<u>100.7</u>	<u>5.11</u>	<u>214.27</u>	<u>100.0</u>	<u>2.0</u>	<u>Clear</u>
	<u>1015</u>	<u>11.10</u>	<u>1967</u>	<u>8.13</u>	<u>0.18</u>	<u>95.2</u>	<u>5.52</u>	<u>214.65</u>	<u>100.0</u>	<u>.5</u>	<u>Clear</u>
	<u>1020</u>	<u>11.09</u>	<u>1917</u>	<u>8.13</u>	<u>0.18</u>	<u>89.3</u>	<u>5.92</u>	<u>214.92</u>	<u>100.0</u>	<u>.5</u>	<u>Clear</u>
											Total Volume Purged: <u>180.0</u> Liters

Sample Date	Time	Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	Turbidity (NTU)	Appearance or Comment	
<u>7 June 24</u>	<u>1020</u>	<u>11.08</u>	<u>1967</u>	<u>8.13</u>	<u>5.42</u>	<u>2</u>	<u>Clear</u>

Comments: KDBE

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1st Detection Sampling



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Account #: 7048

Client: Minnkota Power Cooperative

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Page 2 of 31

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 53782001 **Date Collected:** 07/03/2024 **Matrix:** Groundwater
Sample ID: Field Blank 1 (FB1) **Date Received:** 07/03/2024 16:44 **Collector:** MVTL Field Service
Temp @ Receipt (C): 6.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	<5	mg/L	5	1		07/10/2024 10:09	
Method: EPA 6010D							
Boron	<0.1	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:41	
Calcium	<1	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:00	
Method: SM4500 H+ B-2011							
pH	6.7	units	0.1	1		07/05/2024 16:03	*
Method: SM4500-Cl-E 2011							
Chloride	<2.0	mg/L	2.0	1		07/09/2024 09:38	
Method: SM4500-F-C-2011							
Fluoride	<0.1	mg/L	0.1	1		07/08/2024 13:53	
Method: USGS I-1750-85							
Total Dissolved Solids	<10	mg/L	10	1		07/05/2024 13:37	

Sample Comments

Time sampled was not supplied by the client.

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Report Date: Thursday, August 1, 2024 11:13:12 AM



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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID:	53782002	Date Collected:	07/03/2024	Matrix:	Groundwater		
Sample ID:	Dup1	Date Received:	07/03/2024 16:44	Collector:	MVTL Field Service		
Temp @ Receipt (C):	6.5	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual

Method: ASTM D516-16

Sulfate	188	mg/L	25	5		07/10/2024 10:10	
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Method: EPA 6010D

Boron	0.46	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:43	
Calcium	2.94	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:01	

Method: SM4500 H+ B-2011

pH	8.4	units	0.1	1		07/05/2024 16:18	*
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Method: SM4500-Cl-E 2011

Chloride	7.6	mg/L	2.0	1		07/09/2024 09:39	
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Method: SM4500-F-C-2011

Fluoride	1.52	mg/L	0.1	1		07/08/2024 14:02	
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Method: USGS I-1750-85

Total Dissolved Solids	1360	mg/L	10	1		07/05/2024 13:37	
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Sample Comments

Time sampled was not supplied by the client.

Analysis Results Comments

pH

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 53782003 **Date Collected:** 07/03/2024 06:45 **Matrix:** Groundwater
Sample ID: 15-01 **Date Received:** 07/03/2024 16:44 **Collector:** MVTL Field Service
Temp @ Receipt (C): 6.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	268	mg/L	25	5		07/10/2024 10:12	
Method: EPA 6010D							
Boron	0.45	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:44	
Calcium	2.24	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:04	
Method: SM4500 H+ B-2011							
pH	8.5	units	0.1	1		07/05/2024 16:36	*
Method: SM4500-CI-E 2011							
Chloride	2.5	mg/L	2.0	1		07/09/2024 09:40	
Method: SM4500-F-C-2011							
Fluoride	2.41	mg/L	0.1	1		07/08/2024 14:15	
Method: USGS I-1750-85							
Total Dissolved Solids	1220	mg/L	10	1		07/05/2024 13:37	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID:	53782004	Date Collected:	07/03/2024 07:38	Matrix:	Groundwater		
Sample ID:	15-02	Date Received:	07/03/2024 16:44	Collector:	MVT L Field Service		
Temp @ Receipt (C):	6.5	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual

Method: ASTM D516-16

Sulfate	249	mg/L	25	5		07/10/2024 10:22	
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Method: EPA 6010D

Boron	0.48	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:44	
Calcium	3.88	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:06	

Method: SM4500 H+ B-2011

pH	8.3	units	0.1	1		07/05/2024 16:55	*
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Method: SM4500-Cl-E 2011

Chloride	2.5	mg/L	2.0	1		07/09/2024 09:41	
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Method: SM4500-F-C-2011

Fluoride	1.77	mg/L	0.1	1		07/08/2024 14:28	
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Method: USGS I-1750-85

Total Dissolved Solids	1310	mg/L	10	1		07/05/2024 13:37	
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Analysis Results Comments

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 53782005 **Date Collected:** 07/03/2024 13:41 **Matrix:** Groundwater
Sample ID: 15-03 **Date Received:** 07/03/2024 16:44 **Collector:** MVTL Field Service
Temp @ Receipt (C): 6.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	77.0	mg/L	5	1		07/10/2024 10:35	
Method: EPA 6010D							
Boron	0.50	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:45	
Calcium	3.44	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:07	
Method: SM4500 H+ B-2011							
pH	8.2	units	0.1	1		07/05/2024 17:14	*
Method: SM4500-Cl-E 2011							
Chloride	5.3	mg/L	2.0	1		07/09/2024 09:43	
Method: SM4500-F-C-2011							
Fluoride	1.84	mg/L	0.1	1		07/08/2024 14:41	
Method: USGS I-1750-85							
Total Dissolved Solids	1460	mg/L	10	1		07/05/2024 13:37	

Analysis Results Comments

Arsenic, Dissolved

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

pH

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 53782006 **Date Collected:** 07/03/2024 11:59 **Matrix:** Groundwater
Sample ID: 15-04 **Date Received:** 07/03/2024 16:44 **Collector:** MVTL Field Service
Temp @ Receipt (C): 6.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	78.9	mg/L	5	1		07/10/2024 10:36	
Method: EPA 6010D							
Boron	0.51	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:46	
Calcium	3.25	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:08	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		07/05/2024 17:31	*
Method: SM4500-Cl-E 2011							
Chloride	5.3	mg/L	2.0	1		07/09/2024 09:44	
Method: SM4500-F-C-2011							
Fluoride	1.92	mg/L	0.1	1		07/08/2024 14:52	
Method: USGS I-1750-85							
Total Dissolved Solids	1400	mg/L	10	1		07/05/2024 13:37	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 53782007 **Date Collected:** 07/03/2024 10:58 **Matrix:** Groundwater
Sample ID: 15-05 **Date Received:** 07/03/2024 16:44 **Collector:** MVTL Field Service
Temp @ Receipt (C): 6.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	336	mg/L	25	5		07/10/2024 10:25	
Method: EPA 6010D							
Boron	0.51	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:47	
Calcium	3.95	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:09	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		07/05/2024 17:50	*
Method: SM4500-CI-E 2011							
Chloride	3.5	mg/L	2.0	1		07/09/2024 09:53	
Method: SM4500-F-C-2011							
Fluoride	1.93	mg/L	0.1	1		07/08/2024 15:05	
Method: USGS I-1750-85							
Total Dissolved Solids	1600	mg/L	10	1		07/05/2024 13:37	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID:	53782008	Date Collected:	07/03/2024 12:12	Matrix:	Groundwater		
Sample ID:	18-01	Date Received:	07/03/2024 16:44	Collector:	MVTL Field Service		
Temp @ Receipt (C):	6.5	Received on Ice:	Yes				
Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual

Method: ASTM D516-16

Sulfate	358	mg/L	25	5		07/10/2024 10:26	
---------	------------	------	----	---	--	------------------	--

Method: EPA 6010D

Boron	0.53	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:47	
Calcium	3.62	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:10	

Method: SM4500 H+ B-2011

pH	8.4	units	0.1	1		07/05/2024 18:09	*
----	------------	-------	-----	---	--	------------------	---

Method: SM4500-Cl-E 2011

Chloride	4.5	mg/L	2.0	1		07/09/2024 09:54	
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Method: SM4500-F-C-2011

Fluoride	1.87	mg/L	0.1	1		07/08/2024 15:19	
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Method: USGS I-1750-85

Total Dissolved Solids	1670	mg/L	10	1		07/05/2024 13:37	
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Analysis Results Comments

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 53782009 **Date Collected:** 07/03/2024 10:01 **Matrix:** Groundwater
Sample ID: 18-02 **Date Received:** 07/03/2024 16:44 **Collector:** MVTL Field Service
Temp @ Receipt (C): 6.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	194	mg/L	25	5		07/10/2024 10:27	
Method: EPA 6010D							
Boron	0.45	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:48	
Calcium	2.83	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:14	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		07/05/2024 18:28	*
Method: SM4500-Cl-E 2011							
Chloride	7.5	mg/L	2.0	1		07/09/2024 09:56	
Method: SM4500-F-C-2011							
Fluoride	1.51	mg/L	0.1	1		07/08/2024 17:10	
Method: USGS I-1750-85							
Total Dissolved Solids	1310	mg/L	10	1		07/05/2024 13:37	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 53782010 **Date Collected:** 07/03/2024 15:06 **Matrix:** Groundwater
Sample ID: 92-3 **Date Received:** 07/03/2024 16:44 **Collector:** MVTL Field Service
Temp @ Receipt (C): 6.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	135	mg/L	5	1		07/31/2024 09:40	
Method: EPA 6010D							
Boron	0.49	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:50	
Calcium	2.61	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:16	
Method: SM4500 H+ B-2011							
pH	8.6	units	0.1	1		07/05/2024 20:49	*
Method: SM4500-Cl-E 2011							
Chloride	5.5	mg/L	2.0	1		07/09/2024 09:57	
Method: SM4500-F-C-2011							
Fluoride	1.58	mg/L	0.1	1		07/08/2024 17:23	
Method: USGS I-1750-85							
Total Dissolved Solids	1180	mg/L	10	1		07/05/2024 13:37	

Sample Comments

All analyses were rechecked and we were unable to determine the cause of the high percent error.

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 53782011 **Date Collected:** 07/03/2024 11:01 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 07/03/2024 16:44 **Collector:** MVTL Field Service
Temp @ Receipt (C): 6.5 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	54.2	mg/L	25	5		07/10/2024 10:29	
Method: EPA 6010D							
Boron	0.52	mg/L	0.1	1	07/05/2024 14:48	07/10/2024 14:53	
Calcium	2.89	mg/L	1	1	07/05/2024 14:48	07/09/2024 12:20	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		07/05/2024 21:08	*
Method: SM4500-Cl-E 2011							
Chloride	15.0	mg/L	2.0	1		07/09/2024 09:58	
Method: SM4500-F-C-2011							
Fluoride	1.81	mg/L	0.1	1		07/08/2024 17:36	
Method: USGS I-1750-85							
Total Dissolved Solids	1390	mg/L	10	1		07/05/2024 13:37	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #:	53782
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	96.6		85	115				
LFB			100	99.9		85	115				
LFB			100	97.2		85	115				
LFB			100	95.7		85	115				
LFB			100	90.9		85	115				
MB		+5									
MB		+5									
MB		+5									
MB		+5									
MB		+5									
MS/MSD	5151001		1000	91.7	92.5	85	115	1.1	20		
MS/MSD	5170201		500	95.1	91.5	85	115	2.4	20		
MS/MSD	5408001		1000	77.6	77.2	85	115	0.3	20		
MS/MSD	5407400		100000	96.7	89.2	85	115	1.6	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	94.2		90	110				
LFB			30	91.1		90	110				
LFB			30	92.0		90	110				
LFB			30	92.9		90	110				
MB		+2.0									
MB		+2.0									
MB		+2.0									
MB		+2.0									
MS/MSD	5176000		30	91.8	91.1	80	120	3.7	20		
MS/MSD	5179701		30	96.5	93.8	80	120	0.8	20		
Boron										Units: mg/L	
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
LFB-C6			0.4	103.0		85	115				

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Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MB		<0.1							
ML/MSD	1176001		0.4	99.9	100.0	70	130	0.9	20
ML/MSD	1176002		0.4	99.9	99.9	70	130	1.1	20

Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
IFBAH			100	110.0		85	115		
MB		<1							
FDU/POD	5261401		100	96.1	95.1	75	125	0.6	20
FDU/POD	5200304		100	100.0	100.0	75	125	0.6	20
FDU/POD	5301301		100	101.0	101.8	75	125	0.1	20
FDU/POD	5301302		100	99.8	100.0	75	125	1.4	20
FDU/POD	5109001		100	95.1	92.0	75	125	1.3	20
FDU/POD	5306002		100	81.0	88.7	75	125	2.0	20
DUP	1176003							4.5	20
FDU/POD	1176005		100	95.7	95.8	75	125	0.2	20
DUP	1176011							1.0	20

pH									
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	99.5		96.33	101.67		
CRM-PH			6	99.5		96.33	101.67		
CRM-PH			6	100.0		96.33	101.67		
DUP	1177001							0.4	20
DUP	1176002							0.2	20

Fluoride									
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			0.06	100.0		81.89	111.11		
IFB-F			0.5	98.0		90	110		
IFB-F			0.5	98.0		90	110		
IFB-F			0.5	98.0		90	110		
MB-F		<0.1							
MB-F		<0.1							

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Account #: 7048

Client: Minnkota Power Cooperative

Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MS F		0.0							
MS/MSD F	33762000		0.0	100.0	100.0	90	110	0.0	20
MS/MSD F	33762000		0.0	100.0	98.0	90	110	1.0	20

Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			750	100.0		90.95	110.05		
MS		0.0							
DUP	33762001							0.0	20
DUP	33762011							0.7	20

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 53782 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Spring 2024 Sampled By: <i>Jeremy Mayan</i>

Lab Number	Sample Information				Sample Containers				Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	Field Blank 1 (FB1)	3 July 24	NA	GW	X	X	X	X	NA	NA	NA	NA	CCWDF CCR Appendix I + CCWDF NDDEQ Parameter List (see attachment)
002	Dup1	3 July 24	NA	GW	X	X	X	X	NA	NA	NA	NA	
003	15-01	3 July 24	0645	GW	X	X	X	X	10.43	1910	8.71	5.01	
004	15-02	3 July 24	0738	GW	X	X	X	X	11.01	1973	8.54	1.64	
005	15-03	3 July 24	1341	GW	X	X	X	X	12.36	2201	8.06	3.26	
006	15-04	3 July 24	1159	GW	X	X	X	X	9.44	2153	8.44	0.40	
007	15-05	3 July 24	1058	GW	X	X	X	X	10.07	2409	8.36	1.11	
—	16-01	3 July 24	1236	GW	X	X	X	X	did not stabilize	see 13	SAMPLE		

Comments: * 3 July 24+

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp	Name	Date/Time
<i>[Signature]</i>	3 July 24 1644	Log In Walk In #2	6.5°C/TM 805 ROCS/N	<i>[Signature]</i>	3 July 24 1644

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories	2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Chain of Custody Record
	Report To: Minnkota Power Cooperative		
Attn: Joseph Grosz		CC:	Event: Spring 2024
Address: 3401 24 th St SW Center, ND 58530			Sampled By: <i>Jeremy Meyer</i>
Phone:			
Email: jgrosz@minnkota.com			

Lab Number	Sample Information				Sample Containers				Field Readings				Analysis Required
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
008	18-01	3 July 24	1212	GW	X	X	X	X	12.41	2561	8.45	0.07	CCWDF CCR Appendix I + CCWDF NDDEQ Parameter List (see attachment)
009	18-02	3 July 24	1001	GW	X	X	X	X	12.06	2031	8.53	0.00	
010	92-3	3 July 24	1506	GW	X	X	X	X	9.51	1822	8.82	0.00	
—	95-4	2 July 24	1612	GW	X	X	X	X	11.00	Stabilize			
011	2023-1	3 July 24	1101	GW	X	X	X	X	13.50	2186	8.74	8.89	

Comments: *3 July 24*

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp	Name	Date/Time
<i>[Signature]</i>	3 July 24 1644	Log In Walk 11#2	6.5 °C/TM B0S ROX/N	<i>[Signature]</i>	3 July 24 1644

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Account #: 7048

Client: Minnkota Power Cooperative

Appendix I to Chapter 33.1-20-08 - Constituents for Detection Monitoring

Common name ¹
Boron <input checked="" type="checkbox"/>
Calcium <input type="checkbox"/>
Chloride <input type="checkbox"/>
Fluoride <input checked="" type="checkbox"/>
pH <input checked="" type="checkbox"/>
Sulfate <input type="checkbox"/>
Total Dissolved Solids (TDS) <input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix II to Chapter 33.1-20-08 - Constituents for Assessment Monitoring

Common name ¹
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium <input checked="" type="checkbox"/>
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined <input checked="" type="checkbox"/>

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

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Account #: 7048

Client: Minnkota Power Cooperative

- 14. All results must be reported in both hard and electronic data deliverable format to Minnkota within 30 days of sample retrieval.
- 15. All transmittals shall be provided separate from other groundwater monitoring locations.

CCWDF NDDH Parameter List		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
✓ Laboratory pH		SM4500 H+ B
✓ Laboratory Specific Conductivity	Umhos/cm	SM2510-B
✓ Total Suspended Solids	mg/l	SM2540-D
✓ Total Alkalinity	mg/l CaCO3	SM2320-B
✓ Phenolphthalein Alk	mg/l CaCO3	SM2320-B
✓ Bicarbonate	mg/l CaCO3	SM2320-B
✓ Carbonate	mg/l CaCO3	SM2320-B
✓ Hydroxide	mg/l CaCO3	SM2320-B
✓ Total Dissolved Solids	mg/l	SM1030-F
✓ Total Hardness as CaCO3	mg/l	SM2340-B
✓ Cation Summation	mg/l	SM1030-F
✓ Anion Summation	mg/l	SM1030-F
✓ Percent Error	%	SM1030-F
✓ Fluoride	mg/l	SM4500-F-C
✓ Sulfate	mg/l	ASTM D516-02
✓ Chloride	mg/l	SM4500-Cl-E
✓ Nitrate-Nitrite as N	mg/l	EPA 353.2
✓ Phosphorous as P-Total	mg/l	EPA 365.1
✓ Mercury - Dissolved	mg/l	EPA 245.1
✓ Calcium-Total	mg/l	6010
✓ Magnesium-Total	mg/l	6010
✓ Sodium-Total	mg/l	6010
✓ Potassium-Total	mg/l	6010
✓ Iron - Dissolved	mg/l	6010
✓ Manganese- Dissolved	mg/l	6010
✓ Boron - Dissolved	mg/l	6010
✓ Arsenic - Dissolved	mg/l	6020
✓ Barium - Dissolved	mg/l	6020
✓ Cadmium - Dissolved	mg/l	6020
✓ Chromium - Dissolved	mg/l	6020
✓ Lead - Dissolved	mg/l	6020
✓ Molybdenum - Dissolved	mg/l	6020
✓ Selenium - Dissolved	mg/l	6020
✓ Silver - Dissolved	mg/l	6020
✓ Beryllium - Dissolved	mg/l	6020

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Report Date: Thursday, August 1, 2024 11:13:12 AM



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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Company: Minnkota - CCWDF
 Event: Spring 2024
 Sample ID: 2015-1
 Sampling Personal: Jeremy May

Weather Conditions: Temp: 55 °F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	145.82 ft
Total Depth of Well:	ft
Well Volume:	28.3 liters
Depth to Top of Pump:	191.75 ft
Water Level After Sample:	169.05 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Control Settings:	
Purge:	B / 24 Sec.
Recover:	52 / 36 Sec.
PSI:	120 / -
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
YES / NO	
Duplicate Sample ID:	
-	

FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
2 July 24	0715	Start of Well Purge									
	0845	9.89	1937	8.57	4.49	163.5	0.27	190.65	300.0	27.0	Clear
	0855	10.24	1959	8.56	5.41	174.0	1.89	Below Pump	300.0	3.0	Clear
		Purged Dry									
3 July 24	0625	5 feet off stabilization purge									
	0630	10.42	1949	8.76	4.65	108.8	1.17	167.01	100.0	0.5	Clear
	0635	10.57	1954	8.70	3.16	95.8	1.13	167.32	100.0	0.5	Clear
	0640	10.45	1926	8.70	2.59	91.6	0.95	167.68	100.0	0.5	Clear
	0645	10.43	1910	8.71	2.89	89.7	5.01	167.92	100.0	0.5	Clear

Well Stabilized? YES NO Total Volume Purged: 52.0 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
3 July 24	0645	10.43	1910	8.71	5.01	Clear

Comments: well was purged on June 25, 2024, but due to a vehicle fire that data was destroyed so the water level may vary from historical data.

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
 Event: Spring 2024
 Sample ID: 2015-2
 Sampling Personal: J. Th

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Weather Conditions: Temp: 55°F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	<u>YES</u>	NO
Well Labeled?	<u>YES</u>	NO
Repairs Necessary?		
Casing Diameter:	<u>2"</u>	
Water Level Before Purge:	<u>132.25</u>	ft
Total Depth of Well:		ft
Well Volume:	<u>42.75</u>	liters
Depth to Top of Pump:	<u>142.35</u>	ft
Water Level After Sample:	<u>140.40</u>	ft
Measurement Method:	<u>Electric Water Level Indicator</u>	

SAMPLING INFORMATION

Purging Method:	<u>Bladder</u>	Control Settings:
Sampling Method:	<u>Bladder</u>	Purge: <u>0</u> / <u>17</u> Sec.
Dedicated Equipment?	<u>YES</u>	NO
		Recover: <u>52</u> / <u>43</u> Sec.
		PSI: <u>120</u> / <u>-</u>
Bottle List:		
1 Liter Raw		
500ml Nitric		
500ml Nitric (Filtered)		
250ml Sulfuric		
Duplicate Sample?		
<u>YES</u> / <u>NO</u>		
Duplicate Sample ID:		

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/min)	Liters Removed	Appearance or Comment	
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0			clear, slightly turbid, turbid	
2 July 24	0700	Start of Well Purge									
	0730	11.19	1912	8.56	2.05	151.3	6.46	138.05	300.0	6.0	Clear
	0730	11.15	1966	8.56	2.45	158.1	5.49	Below Pump	300.0	3.0	Clear
		Purged Dry									
	0713	Start of Stabilization Purge									
3 July 24	0718	10.50	1976	8.50	3.71	123.6	2.07	136.65	100.0	0.5	Clear
	0723	10.63	1976	8.52	2.48	114.3	0.62	138.16	100.0	0.5	Clear
	0728	10.84	1957	8.54	1.86	103.0	0.07	138.76	100.0	0.5	Clear
	0733	10.98	1959	8.54	1.95	104.9	0.31	139.05	100.0	0.5	Clear
	0738	11.01	1973	8.54	2.01	105.5	1.64	139.70	100.0	0.5	Clear
		Well Stabilized?		<u>YES</u>	NO	Total Volume Purged: <u>11.5</u> Liters					

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
3 July 24	0738	11.01	1973	8.54	1.64	Clear

Comments: Well was purged on June 25, 2024, but due to a vehicle fire that data was destroyed so the water level may vary from historical data.

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event: Spring 2024
Sample ID: 2015-3
Sampling Personal: [Signature]

Weather Conditions: Temp: 82 °F Wind: N @ 0-5 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	113.22 ft
Total Depth of Well:	ft
Well Volume:	10.4 liters
Depth to Top of Pump:	130.10 ft
Water Level After Sample:	126.97 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION		Control Settings:	
Purging Method:	Bladder	Purge:	6 Sec.
Sampling Method:	Bladder	Recover:	54 Sec.
Dedicated Equipment?	YES NO	PSI:	120
Bottle List:		Duplicate Sample?	
1 Liter Raw		YES / NO	
500ml Nitric		Duplicate Sample ID:	
500ml Nitric (filtered)			
250ml Sulfuric			

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. (±5%)	pH (±0.1)	DO (mg/L) (±10%)	ORP (mV) (±10)	Turbidity (NTU) (<5.0)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment (Clarity, Color, Odor, Ect.)
Purge Date	Time										
2 July 24	09:44	Start of Well Purge									
	10:14	9.48	2232	8.23	4.80	194.4	0.02	129.90	300.0	9.0	Clear
	10:24	9.33	2234	8.20	5.51	184.6	1.21	Below Pump	300.0	5.0	Clear
		Purged, Stop									
		Start of Stabilization Pump									
35 July 24	13:11							121.43			
	13:21	12.16	2256	8.04	3.75	221.2	18.73	122.96	100.0	5	Clear
	13:26	11.68	2222	8.04	2.64	228.9	76.43	123.41	100.0	5	Clear
	13:51	12.09	2205	8.06	2.51	233.0	0.83	123.89	100.0	5	Clear
	13:56	12.24	2206	8.06	2.48	239.4	1.05	124.61	100.0	5	Clear
	14:11	12.51	2201	8.06	2.71	245.0	3.26	124.96	100.0	5	Clear
Well Stabilized?		YES NO		Total Volume Purged: 121.5 Liters							

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment (Clarity, Color, Odor, Ect.)
3 July 24	13:11	12.36	2201	8.06	3.26	Clear

Comments: Well was purged on Jun 25, 2014, but due to a vehicle fire that date was destroyed. The water level was very brown historical data.

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event: Spring 2024
Sample ID: 2015-4
Sampling Personal: JTB

Weather Conditions: Temp: 70 °F Wind: W @ 0-5 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	120.76 ft
Total Depth of Well:	ft
Well Volume:	7.4 liters
Depth to Top of Pump:	132.80 ft
Water Level After Sample:	Below Pump ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION		Control Settings:
Purging Method:	Bladder	Purge: 5 Sec.
Sampling Method:	Bladder	Recover: 55 Sec.
Dedicated Equipment?	YES NO	PSI: 120
Bottle List:		Duplicate Sample?
1 Liter Raw		YES / NO
500ml Nitric		Duplicate Sample ID:
500ml Nitric (filtered)		
250ml Sulfuric		

FIELD READINGS

Stabilization Parameters		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (mL/Min)	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0	(ft)	mL/Min		Clarity, Color, Odor, Ect.
2 July 24	1207	Start of Well Purge									
	1230	11.21	2131	8.97	0.00	-270.9	0.00	Below Pump	320.0	7.5	Clear
3 July 24	1129	9.55	2156	8.49	0.01	-144.4	1.93	128.07	100.0	1.0	Clear
	1139	9.65	2197	8.49	0.07	-165.5	1.17	128.95	100.0	1.5	Clear
	1147	9.52	2196	8.51	0.00	-188.5	2.11	129.06	100.0	1.5	Clear
	1154	9.38	2147	8.56	0.01	-187.3	0.66	129.07	100.0	1.5	Clear
	1159	9.26	2153	8.44	0.00	-195.5	0.40	131.23	100.0	1.5	Clear
Well Stabilized?		YES	NO	Total Volume Purged: 10.5 Liters							
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
3 July 24	1159	9.26	2153	8.44			0.40				Clear
Comments:											

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Company: Minnkota - CCWDF
 Event: Spring 2024
 Sample ID: 2015-5
 Sampling Personal: J. [Signature]

Weather Conditions: Temp: 70 °F Wind: N @ 0-5 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Well Labeled?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Repairs Necessary?		
Casing Diameter:	<u>2"</u>	
Water Level Before Purge:	<u>150.26</u>	ft
Total Depth of Well:		
Well Volume:	<u>9.7</u>	liters
Depth to Top of Pump:	<u>166.05</u>	ft
Water Level After Sample:	<u>159.35</u>	ft
Measurement Method:	<u>Electric Water Level Indicator</u>	

SAMPLING INFORMATION

Purging Method:	<u>Bladder</u>	Control Settings:
Sampling Method:	<u>Bladder</u>	Purge: <u>7</u> Sec.
Dedicated Equipment?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Recover: <u>3</u> Sec.
		PSI: <u>70</u>
Bottle List:		
<input type="checkbox"/> 1 Liter Raw <input type="checkbox"/> 500ml Nitric <input type="checkbox"/> 500ml Nitric (filtered) <input type="checkbox"/> 250ml Sulfuric		
Duplicate Sample?		
<u>YES / NO</u>		
Duplicate Sample ID:		
<u>✓</u>		

FIELD READINGS

Stabilization Parameters (3 Consecutive) 35 min	Temp. (°C) ±0.5°	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment	
Purge Date	Time										
<u>2 July 24</u>	<u>1240</u>	Start of Well Purge									
	<u>1315</u>	<u>9.87</u>	<u>2522</u>	<u>8.40</u>	<u>0.23</u>	<u>3.4</u>	<u>0.05</u>	<u>156.60</u>	<u>300.0</u>	<u>10.5</u>	<u>Clear</u>
	<u>1350</u>	<u>9.76</u>	<u>2442</u>	<u>8.42</u>	<u>0.22</u>	<u>-14.3</u>	<u>0.53</u>	<u>165.21</u>	<u>300.0</u>	<u>10.5</u>	<u>Clear</u>
	<u>1400</u>	<u>9.60</u>	<u>2499</u>	<u>8.41</u>	<u>0.21</u>	<u>-24.5</u>	<u>0.00</u>	<u>Adapt</u>	<u>300.0</u>	<u>3.0</u>	<u>Clear</u>
		Purged Dry									
<u>3 July 24</u>	<u>0933</u>	Start of Stabilization Purge									
	<u>0943</u>	<u>11.98</u>	<u>2466</u>	<u>8.26</u>	<u>1.62</u>	<u>250.9</u>	<u>7.23</u>	<u>151.83</u>	<u>100.0</u>	<u>1.0</u>	<u>Clear</u>
	<u>0948</u>	<u>12.17</u>	<u>2469</u>	<u>8.27</u>	<u>1.05</u>	<u>249.9</u>	<u>10.51</u>	<u>152.27</u>	<u>100.0</u>	<u>1.0</u>	<u>Clear</u>
	<u>1048</u>	<u>10.62</u>	<u>2395</u>	<u>8.36</u>	<u>0.81</u>	<u>176.5</u>	<u>4.37</u>	<u>157.26</u>	<u>100.0</u>	<u>6.0</u>	<u>Clear</u>
	<u>1053</u>	<u>10.11</u>	<u>2422</u>	<u>8.36</u>	<u>0.63</u>	<u>170.4</u>	<u>1.41</u>	<u>167.83</u>	<u>100.0</u>	<u>5.0</u>	<u>Clear</u>
	<u>1055</u>	<u>10.07</u>	<u>2409</u>	<u>8.34</u>	<u>0.63</u>	<u>170.6</u>	<u>1.11</u>	<u>158.35</u>	<u>100.0</u>	<u>5.0</u>	<u>Clear</u>
		Well Stabilized?	<u>YES</u>	<u>NO</u>	Total Volume Purged: <u>33.0</u> Liters						

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
<u>3 July 24</u>	<u>1058</u>	<u>10.07</u>	<u>2409</u>	<u>8.36</u>	<u>1.11</u>	<u>Clear</u>

Comments: Air tank ran out after 0948 reading, resulting in improper pump rate & readings "restored" 3 purge @ 0.1 sec.

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Company: Minnkota - CCWDF
 Event: Spring 2024
 Sample ID: 206-1
 Sampling Personal: Joh

Weather Conditions: Temp: 73 °F Wind: N @ 0-5 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

Well Locked?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Well Labeled?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Repairs Necessary?		
Casing Diameter:	<u>2"</u>	
Water Level Before Purge:	<u>127.50</u>	ft
Total Depth of Well:		
Well Volume:	<u>12.7</u>	liters
Depth to Top of Pump:	<u>116.18</u>	ft
Water Level After Sample:		
Measurement Method:	<u>Electric Water Level Indicator</u>	

SAMPLING INFORMATION

Purging Method:	<u>Bladder</u>	Control Settings:
Sampling Method:	<u>Bladder</u>	Purge: <u>5</u> Sec.
Dedicated Equipment?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Recover: <u>55</u> Sec.
Bottle List:		PSI: <u>120</u>
1 Liter Raw 500ml Nitric 500ml Nitric (Filtered) 250ml Sulfuric		Duplicate Sample? <u>YES / NO</u>
		Duplicate Sample ID: <u> </u>

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/Min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.	
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0			clear, slightly turbid, turbid	
<u>2 June 24</u>	<u>1030</u>	<u>Start of Well Purge</u>									
	<u>1115</u>	<u>9.35</u>	<u>1800</u>	<u>9.22</u>	<u>0.32</u>	<u>-127.5</u>	<u>2.86</u>	<u>142.05</u>	<u>300.0</u>	<u>13.5</u>	<u>Clear</u>
	<u>1200</u>	<u>9.34</u>	<u>1834</u>	<u>8.99</u>	<u>0.17</u>	<u>-123.5</u>	<u>0.67</u>	<u>Below Pump</u>	<u>300.0</u>	<u>12.5</u>	<u>Clear</u>
		<u>Purge Done</u>									
<u>3 July 24</u>	<u>1221</u>	<u>Start of 2nd Purge</u>									
	<u>1231</u>	<u>4.07</u>	<u>1965</u>	<u>8.49</u>	<u>1.25</u>	<u>159.5</u>	<u>15.8</u>	<u>150.00</u>	<u>100.0</u>	<u>5</u>	<u>Clear</u>
	<u>12314</u>	<u>13.97</u>	<u>1964</u>	<u>8.49</u>	<u>1.25</u>	<u>160.7</u>	<u>15.3</u>	<u>151.53</u>	<u>100.0</u>	<u>5</u>	<u>Clear</u>

Well Stabilized? YES NO Total Volume Purged: _____ Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment Clarity, Color, Odor, Ect.

Comments: Turbidity didn't stabilize, try again at a later time

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Report Date: Thursday, August 1, 2024 11:13:12 AM



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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet
Groundwater Assessment

Company: Minnkota - CCWDF
Event: Spring 2024
Sample ID: 2018-2
Sampling Personal: J. H. J.

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: 55 F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Total Depth of Well, Well Volume, Depth to Top of Pump, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment?, Control Settings, Duplicate Sample?, Duplicate Sample ID.

FIELD READINGS

FIELD READINGS table with columns: Purge Date, Time, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment.

Summary table with columns: Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, Appearance or Comment.

Comments:

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
 Event: Spring 2024
 Sample ID: 2023-1
 Sampling Personal: [Signature]

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Weather Conditions: Temp: 65°F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Well Labeled?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Repairs Necessary?	
Casing Diameter:	<u>2"</u>
Water Level Before Purge:	<u>207.30</u> ft
Total Depth of Well:	
Well Volume:	<u>12.6</u> liters
Depth to Top of Pump:	<u>228.10</u> ft
Water Level After Sample:	<u>214.95</u> ft
Measurement Method:	<u>Electric Water Level Indicator</u>

SAMPLING INFORMATION		Control Settings:
Purging Method:	<u>Bladder</u>	Purge: <u>10</u> / <u>8</u> Sec.
Sampling Method:	<u>Bladder</u>	Recover: <u>50</u> / <u>42</u> Sec.
Dedicated Equipment?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	PSI: <u>120</u> / <u>120</u>
Bottle List:		Duplicate Sample?
1 Liter Raw		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
500ml Nitric		Duplicate Sample ID:
500ml Nitric (Filtered)		
250ml Sulfuric		

FIELD READINGS											
Stabilization Parameters (3 Consecutive) <u>45 min</u>		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate ml/min	Liters Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				
<u>2 July 24</u>	<u>1418</u>	Start of Well Purge									
	<u>1503</u>	<u>9.13</u>	<u>2134</u>	<u>8.46</u>	<u>0.00</u>	<u>-242.1</u>	<u>2.67</u>	<u>220.92</u>	<u>300.0</u>	<u>13.5</u>	<u>Clear</u>
	<u>1548</u>	<u>9.54</u>	<u>2131</u>	<u>8.41</u>	<u>0.03</u>	<u>-179.4</u>	<u>9.13</u>	<u>86.6 Run</u>	<u>300.0</u>	<u>12.0</u>	<u>Clear</u>
		Purged Done									
<u>3 July 24</u>	<u>1046</u>	Start of Stabilization Purge									
	<u>1057</u>	<u>14.21</u>	<u>2135</u>	<u>8.59</u>	<u>1.06</u>	<u>42.7</u>	<u>6.94</u>	<u>210.45</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1056</u>	<u>13.62</u>	<u>2138</u>	<u>8.66</u>	<u>0.54</u>	<u>30.8</u>	<u>5.51</u>	<u>211.65</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1101</u>	<u>13.56</u>	<u>2143</u>	<u>8.71</u>	<u>0.27</u>	<u>-92.2</u>	<u>7.65</u>	<u>212.49</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1106</u>	<u>13.62</u>	<u>2157</u>	<u>8.74</u>	<u>0.16</u>	<u>-98.3</u>	<u>6.02</u>	<u>213.32</u>	<u>100.0</u>	<u>0.5</u>	
	<u>1121</u>	<u>13.50</u>	<u>2186</u>	<u>8.74</u>	<u>0.15</u>	<u>-100.7</u>	<u>3.89</u>	<u>214.20</u>	<u>100.0</u>	<u>0.5</u>	

Well Stabilized?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Total Volume Purged:	<u>28.0</u> Liters
------------------	---	----------------------	--------------------

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment Clarity, Color, Odor, Ect.
<u>3 July 24</u>	<u>1101</u>	<u>13.50</u>	<u>2186</u>	<u>8.74</u>	<u>3.89</u>	<u>Clear</u>

Comments:

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Account #: 7048

Client: Minnkota Power Cooperative

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Page 2 of 6



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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 65432001	Date Collected: 09/24/2024 12:42	Matrix: Groundwater
Sample ID: 2016-1	Date Received: 09/24/2024 18:13	Collector: MVTL Field Service
Temp @ Receipt (C): 4.3	Received on Ice: Yes	

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
-----------	---------	-------	-----	----	----------	----------	------

Method: EPA 6010D

Calcium	2.91	mg/L	1	1	09/25/2024 14:50	09/26/2024 11:29	
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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #:	65432
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 (%)		
UPRAN			100	108.0		95	115				
MB										+1	
FDU/POD	6541000		100	96.6	94.1	75	125	1.2	20		
FDU/POD	6543000		100	93.4	93.9	75	125	0.3	20		
DUP	6543001							3.4	20		
FDU/POD	6543004		100	90.9	92.6	75	125	0.6	20		
FDU/POD	6543008		100	92.2	91.5	75	125	0.3	20		
FDU/POD	6544000		100	93.8	97.9	75	125	1.1	20		
FDU/POD	6540000		100	100.0	99.3	75	125	0.8	20		

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2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Water Level Assessment

Company: Minnkota
Event: _____

Sampling Personal: Long

Weather Conditions: 65 °F Wind: N @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

Well ID	Date	Time	Casing Diameter	Water Level (ft)	Comments
15-01		1022	2"	134.12	
15-02		1024	2"	128.26	
15-03		1100	2"	110.11	
15-04		1054	2"	120.92	
15-05		1051	2"	150.62	
16-01		1057	2"	127.72	
18-01		1048	2"	174.62	
18-02		1034	2"	152.61	
92-3		1105	2"	91.00	
95-4		1103	2"	92.77	
2023-1		1045	2"	207.56	

26 Aug 24

All wells were found to be Locked, Labeled, and in good condition unless noted.

2nd Detection Sampling



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Report Date: Monday, November 11, 2024 9:00:31 AM

Page 2 of 35



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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 68733001 **Date Collected:** 10/22/2024 **Matrix:** Groundwater
Sample ID: Field Blank 1 (FB1) **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service
Temp @ Receipt (C): 1.6 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	<5	mg/L	5	1		10/30/2024 11:57	
Method: EPA 6010D							
Boron	<0.1	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:39	
Calcium	<1	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:20	
Method: SM4500 H+ B-2011							
pH	6.0	units	0.1	1		10/24/2024 17:07	*
Method: SM4500-CI-E 2011							
Chloride	<2.0	mg/L	2.0	1		10/29/2024 09:45	
Method: SM4500-F-C-2011							
Fluoride	<0.1	mg/L	0.1	1		10/25/2024 15:08	
Method: USGS I-1750-85							
Total Dissolved Solids	<10	mg/L	10	1		10/24/2024 15:22	

Sample Comments

Time sampled was not supplied by the client.

Analysis Results Comments

Selenium, Dissolved

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

Total Suspended Solids

Initial analysis within holding time. Reanalysis for confirmation was past holding time.

pH

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 68733002 **Date Collected:** 10/21/2024 **Matrix:** Groundwater
Sample ID: Dup 1 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service
Temp @ Receipt (C): 1.6 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	114	mg/L	10	2		10/30/2024 11:58	
Method: EPA 6010D							
Boron	0.48	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:45	
Calcium	2.38	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:21	
Method: SM4500 H+ B-2011							
pH	8.6	units	0.1	1		10/24/2024 17:17	*
Method: SM4500-Cl-E 2011							
Chloride	5.6	mg/L	2.0	1		10/29/2024 09:47	
Method: SM4500-F-C-2011							
Fluoride	1.08	mg/L	0.1	1		10/25/2024 15:15	
Method: USGS I-1750-85							
Total Dissolved Solids	1150	mg/L	10	1		10/24/2024 15:22	

Sample Comments

Time sampled was not supplied by the client.

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 68733003 **Date Collected:** 10/22/2024 09:08 **Matrix:** Groundwater
Sample ID: 15-01 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service
Temp @ Receipt (C): 1.6 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	263	mg/L	25	5		10/30/2024 11:59	
Method: EPA 6010D							
Boron	0.47	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:47	
Calcium	2.69	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:25	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		10/24/2024 17:36	*
Method: SM4500-Cl-E 2011							
Chloride	2.3	mg/L	2.0	1		10/29/2024 09:48	
Method: SM4500-F-C-2011							
Fluoride	2.40	mg/L	0.1	1		10/25/2024 15:21	
Method: USGS I-1750-85							
Total Dissolved Solids	1240	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 68733004 **Date Collected:** 10/22/2024 09:06 **Matrix:** Groundwater
Sample ID: 15-02 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service
Temp @ Receipt (C): 1.6 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	253	mg/L	25	5		10/30/2024 12:00	
Method: EPA 6010D							
Boron	0.50	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:49	
Calcium	3.89	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:27	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		10/24/2024 17:55	*
Method: SM4500-Cl-E 2011							
Chloride	2.4	mg/L	2.0	1		10/29/2024 09:57	
Method: SM4500-F-C-2011							
Fluoride	1.77	mg/L	0.1	1		10/25/2024 15:27	
Method: USGS I-1750-85							
Total Dissolved Solids	1280	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 68733005 **Date Collected:** 10/22/2024 14:30 **Matrix:** Groundwater
Sample ID: 15-03 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service
Temp @ Receipt (C): 1.6 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	80.6	mg/L	5	1		10/30/2024 12:06	
Method: EPA 6010D							
Boron	0.52	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:51	
Calcium	3.68	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:29	
Method: SM4500 H+ B-2011							
pH	8.3	units	0.1	1		10/24/2024 18:14	*
Method: SM4500-Cl-E 2011							
Chloride	5.3	mg/L	2.0	1		10/29/2024 09:58	
Method: SM4500-F-C-2011							
Fluoride	1.93	mg/L	0.1	1		10/25/2024 15:33	
Method: USGS I-1750-85							
Total Dissolved Solids	1400	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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 www.MVTL.com

**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 68733006 **Date Collected:** 10/22/2024 12:30 **Matrix:** Groundwater
Sample ID: 15-04 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service
Temp @ Receipt (C): 1.6 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	89.4	mg/L	5	1		10/30/2024 12:34	
Method: EPA 6010D							
Boron	0.54	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:53	
Calcium	3.64	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:30	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		10/24/2024 20:32	*
Method: SM4500-CI-E 2011							
Chloride	5.6	mg/L	2.0	1		10/29/2024 10:00	
Method: SM4500-F-C-2011							
Fluoride	1.89	mg/L	0.1	1		10/25/2024 15:38	
Method: USGS I-1750-85							
Total Dissolved Solids	1380	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 68733007 **Date Collected:** 10/22/2024 11:45 **Matrix:** Groundwater
Sample ID: 15-05 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service
Temp @ Receipt (C): 1.6 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	355	mg/L	25	5		10/30/2024 12:14	
Method: EPA 6010D							
Boron	0.51	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:55	
Calcium	4.18	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:32	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		10/24/2024 20:51	*
Method: SM4500-CI-E 2011							
Chloride	3.5	mg/L	2.0	1		10/29/2024 10:01	
Method: SM4500-F-C-2011							
Fluoride	1.91	mg/L	0.1	1		10/25/2024 15:44	
Method: USGS I-1750-85							
Total Dissolved Solids	1590	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 68733008 **Date Collected:** 10/22/2024 13:30 **Matrix:** Groundwater
Sample ID: 16-01 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service
Temp @ Receipt (C): 1.6 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	145	mg/L	10	2		10/30/2024 12:28	
Method: EPA 6010D							
Boron	0.52	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:57	
Calcium	3.07	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:34	
Method: SM4500 H+ B-2011							
pH	8.5	units	0.1	1		10/24/2024 21:10	*
Method: SM4500-Cl-E 2011							
Chloride	4.2	mg/L	2.0	1		10/29/2024 10:02	
Method: SM4500-F-C-2011							
Fluoride	2.19	mg/L	0.1	1		10/25/2024 15:50	
Method: USGS I-1750-85							
Total Dissolved Solids	1180	mg/L	10	1		10/24/2024 15:22	

Task Comments

3472569 - METb/3011

Post digestion spike recovery for sodium was low; the associated laboratory control sample recovery was acceptable.

Analysis Results Comments

pH

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 68733009 **Date Collected:** 10/21/2024 15:32 **Matrix:** Groundwater
Sample ID: 18-01 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service
Temp @ Receipt (C): 2.0 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	373	mg/L	25	5		10/30/2024 12:17	
Method: EPA 6010D							
Boron	0.54	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 10:59	
Calcium	3.93	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:39	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		10/24/2024 21:30	*
Method: SM4500-Cl-E 2011							
Chloride	4.6	mg/L	2.0	1		10/29/2024 10:03	
Method: SM4500-F-C-2011							
Fluoride	1.84	mg/L	0.1	1		10/25/2024 15:56	
Method: USGS I-1750-85							
Total Dissolved Solids	1690	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 68733010 **Date Collected:** 10/22/2024 13:35 **Matrix:** Groundwater
Sample ID: 18-02 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service

Temp @ Receipt (C): 2.0 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	188	mg/L	25	5		10/30/2024 12:18	
Method: EPA 6010D							
Boron	0.48	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 11:00	
Calcium	3.14	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:40	
Method: SM4500 H+ B-2011							
pH	8.5	units	0.1	1		10/24/2024 21:49	*
Method: SM4500-Cl-E 2011							
Chloride	7.9	mg/L	2.0	1		10/29/2024 10:04	
Method: SM4500-F-C-2011							
Fluoride	1.50	mg/L	0.1	1		10/25/2024 16:02	
Method: USGS I-1750-85							
Total Dissolved Solids	1300	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 68733011 **Date Collected:** 10/23/2024 15:50 **Matrix:** Groundwater
Sample ID: 92-3 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service
Temp @ Receipt (C): 2.0 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	108	mg/L	25	5		10/30/2024 12:19	
Method: EPA 6010D							
Boron	0.50	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 11:06	
Calcium	2.67	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:44	
Method: SM4500 H+ B-2011							
pH	8.6	units	0.1	1		10/24/2024 22:07	*
Method: SM4500-Cl-E 2011							
Chloride	5.8	mg/L	2.0	1		10/29/2024 10:06	
Method: SM4500-F-C-2011							
Fluoride	1.56	mg/L	0.1	1		10/25/2024 16:56	
Method: USGS I-1750-85							
Total Dissolved Solids	1180	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments

pH

Sample analyzed beyond holding time.

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**Account #:** 7048**Client:** Minnkota Power Cooperative**Analytical Results**

Lab ID: 68733012 **Date Collected:** 10/21/2024 15:56 **Matrix:** Groundwater
Sample ID: 95-4 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service
Temp @ Receipt (C): 2.0 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	110	mg/L	10	2		10/30/2024 12:20	
Method: EPA 6010D							
Boron	0.48	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 11:18	
Calcium	2.38	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:49	
Method: SM4500 H+ B-2011							
pH	8.6	units	0.1	1		10/24/2024 22:27	*
Method: SM4500-Cl-E 2011							
Chloride	5.7	mg/L	2.0	1		10/29/2024 10:07	
Method: SM4500-F-C-2011							
Fluoride	1.08	mg/L	0.1	1		10/25/2024 17:02	
Method: USGS I-1750-85							
Total Dissolved Solids	1140	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments**pH**

Sample analyzed beyond holding time.

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Account #: 7048

Client: Minnkota Power Cooperative

Analytical Results

Lab ID: 68733013 **Date Collected:** 10/22/2024 10:45 **Matrix:** Groundwater
Sample ID: 2023-1 **Date Received:** 10/24/2024 07:29 **Collector:** MVTL Field Service
Temp @ Receipt (C): 2.0 **Received on Ice:** Yes

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	Qual
Method: ASTM D516-16							
Sulfate	80.2	mg/L	5	1		10/30/2024 12:29	
Method: EPA 6010D							
Boron	0.53	mg/L	0.1	1	10/24/2024 15:45	10/31/2024 11:20	
Calcium	3.13	mg/L	1	1	10/24/2024 15:45	10/30/2024 11:52	
Method: SM4500 H+ B-2011							
pH	8.4	units	0.1	1		10/24/2024 22:45	*
Method: SM4500-Cl-E 2011							
Chloride	16.0	mg/L	2.0	1		10/29/2024 10:08	
Method: SM4500-F-C-2011							
Fluoride	1.81	mg/L	0.1	1		10/25/2024 17:08	
Method: USGS I-1750-85							
Total Dissolved Solids	1380	mg/L	10	1		10/24/2024 15:22	

Analysis Results Comments

Nitrate + Nitrite as N

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

pH

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Account #: 7048

Client: Minnkota Power Cooperative

QC Results Summary										WO #:	68733
Sulfate										Units: mg/L	
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)		
LFB			100	100.0		85	115				
LFB			100	100.0		85	115				
LFB			100	96.6		85	115				
LFB			100	102.0		85	115				
LFB			100	101.0		85	115				
MB		+5									
MB		+5									
MB		+5									
MB		+5									
MB		+5									
MS/MSD	6870201		100	94.0	87.3	85	115	1.6	20		
MS/MSD	6873305		100	96.6	87.5	85	115	0.6	20		
MS/MSD	6879401		100	93.1	89.6	85	115	1.8	20		
MS/MSD	6881304		1000	100.0	97.4	85	115	0.9	20		
MS/MSD	6881002		1000	94.0	96.3	85	115	1.3	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	96.7		90	110				
LFB			30	96.6		90	110				
LFB			30	96.6		90	110				
LFB			30	96.3		90	110				
LFB			30	96.2		90	110				
LFB			30	96.6		90	110				
MB		+2.0									
MB		+2.0									
MB		+2.0									
MB		+2.0									
MB		+2.0									

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Account #: 7048

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Chloride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
MU/MSD	6870201		30	98.4	97.4	80	120	0.7	20
MU/MSD	6873002		30	99.9	103.3	80	120	3.2	20
MU/MSD	6881204		30	94.4	95.5	80	120	0.5	20
MU/MSD	6881203		30	101.2	101.4	80	120	0.8	20
Boron									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
IFB-CE			0.4	101.0		85	115		
IFB-CE			0.4	100.0		85	115		
ME		<0.1							
ME		<0.1							
FDU/MSD	6772002		4	90.0	89.4	75	125	0.4	20
FDU	6780801		20	104.0		75	125		
MU/MSD	6873001		0.4	100.0	103.0	70	130	2.8	20
MU/MSD	6873011		0.4	98.6	96.0	70	130	1.2	20
MU/MSD	6873013		0.4	93.7	96.4	70	130	2.0	20
Calcium									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
IFB-MS			100	111.0		85	115		
IFB-MS			100	112.0		85	115		
ME		<1							
ME		<1							
DUP	6870401							0.1	20
FDU/MSD	6870302		100	105.0	98.5	75	125	2.8	20
DUP	6873300							1.3	20
FDU/MSD	6873008		100	108.0	108.0	75	125	0.6	20
DUP	6873012							1.7	20
FDU/MSD	6881101		100	101.0	108.0	75	125	1.6	20
pH									
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			0	98.5		98.59	101.67		
CRM-PH			0	98.7		98.25	101.67		

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Account #: 7048

Client: Minnkota Power Cooperative

pH									
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			9	98.9		98.33	101.67		
CRM-PH			9	99.3		98.33	101.67		
CRM-PH			9	95.7		98.33	101.67		
DUP	6872001							13.6	20
DUP	6873001							0.6	20
DUP	6873200							0.7	20
DUP	6881001							0.3	20

Fluoride									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM-F			1.06	103.0		81.39	111.31		
UFB-F			0.5	94.0		90	110		
UFB-F			0.5	98.0		90	110		
UFB-F			0.5	100.0		90	110		
UFB-F			0.5	100.0		90	110		
MS-F		<0.1							
MS-F		<0.1							
MS-F		<0.1							
MS-F		<0.1							
MS/MSD	6873008		0.5	100.0	101.0	90	120	0.4	20
MS/MSD	6873012		0.5	98.0	98.0	90	120	0.0	20
MS/MSD	6881005		0.5	91.0	94.0	90	120	6.5	20

Total Dissolved Solids									
QC Type	Original Sample ID	Blank Result	Spike Amount	Spike % Recovery	Spike Duplicate % Recovery	Lower Control Limit (%)	Upper Control Limit (%)	RPD (%)	RPD Limit (%)
CRM			736	90.0		90.35	110.33		
MS		<10							
DUP	6840001							0.7	20
DUP	6870200							0.5	20
DUP	6873012							0.7	20

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Report Date: Monday, November 11, 2024 9:00:31 AM



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 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Minnkota Power Cooperative WO: 68733 	Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF Event: Fall 2024 Sampled By: <i>Ethan Grosz, Jeremy Meyer</i>

Lab Number	Sample ID	Sample Information		Sample Type	Sample Containers				Field Readings				Analysis Required
		Date	Time		1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
001	Field Blank 1 (FB1)	22 Oct 24	NA	GW	X	X	X	X	NA	NA	NA	NA	CCWDF CCR Appendix I + CCWDF NDEQ Parameter List (see attachment)
002	Dup1	21 Oct 24	NA	GW	X	X	X	X	NA	NA	NA	NA	
003	15-01	22 Oct 24	0908	GW	X	X	X	X	7.06	1810	8.58	1.75	
004	15-02	22 Oct 24	0906	GW	X	X	X	X	8.82	1924	8.27	2.03	
005	15-03	22 Oct 24	1130	GW	X	X	X	X	8.86	2037	8.24	1.24	
006	15-04	22 Oct 24	1230	GW	X	X	X	X	8.76	2036	8.47	0.00	
007	15-05	22 Oct 24	1145	GW	X	X	X	X	8.22	2296	8.47	0.00	
008	16-01	22 Oct 24	1330	GW	X	X	X	X	9.04	1754	8.53	10.04	
0													

Comments:

	Relinquished By		Sample Condition		Received By	
	Name	Date/Time	Location	Temp	Name	Date/Time
1	<i>Ethan Grosz</i>	24 Oct 24 0729	Log In Walk In #2	1-6 °C/TM 80- ROI 8/YN	<i>Jeremy Meyer</i>	24 Oct 24 0800
2						

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Account #: 7048

Client: Minnkota Power Cooperative

	Minnesota Valley Testing Laboratories 2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720				Chain of Custody Record
	Report To: Minnkota Power Cooperative Attn: Joseph Grosz Address: 3401 24 th St SW Center, ND 58530 Phone: Email: jgrosz@minnkota.com	CC:	Project Name: Minnkota - CCWDF		Event: Fall 2024

Lab Number	Sample ID	Sample Information		Sample Type	Sample Containers				Field Readings				Analysis Required
		Date	Time		1 Liter Raw	500 mL HNO3	500 mL HNO3 (Filtered)	250 mL H2SO4	Temp (°C)	Spec. Cond.	pH	Turbidity (NTU)	
009	18-01	21 Oct 24	1532	GW	X	X	X	X	7.60	2436	8.33	0.00	CCWDF CCR Appendix I + CCWDF NDEQ Parameter List (see attachment)
010	18-02	22 Oct 24	1335	GW	X	X	X	X	8.62	1713	8.48	0.00	
011	92-3	23 Oct 24	1550	GW	X	X	X	X	10.40	1635	8.54	0.00	
012	95-4	21 Oct 24	1556	GW	X	X	X	X	9.90	1643	8.61	0.39	
013	2023-1	22 Oct 24	1045	GW	X	X	X	X	8.51	2029	8.49	2.97	

Comments:

	Relinquished By		Sample Condition		Received By	
	Name	Date/Time	Location	Temp	Name	Date/Time
1		24 Oct 24 07:29	Log In Walk In #2	7.0 °C/TM RO(Y/N)		24 Oct 24 08:00
2						

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Account #: 7048

Client: Minnkota Power Cooperative

Minnkota – CCR Detection - 2024

CCWDF CCR DETECTION MONITORING PARAMETER LIST A		
Laboratory pH		SM4500 H+ B
Total Dissolved Solids	mg/l	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-Cl-E
Calcium-Total	mg/l	6010
Boron - Total	mg/l	6010
Radium 226/Radium 228	pCi/L	SM7500 Ra-B

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Account #: 7048

Client: Minnkota Power Cooperative

Minnkota – NDDEQ - 2024

CWDF NDDEQ PARAMETER LIST		
Field Temperature	Celsius	
Field pH		SM4500 H+ B
Field Specific Conductivity	Umhos/cm	SM2510-B
Field turbidity	Ntus's	
Laboratory pH		SM4500 H+ B
Laboratory Specific Conductivity	Umhos/cm	SM2510-B
Total Suspended Solids	mg/l	SM2540-D
Total Alkalinity	mg/l CaCO3	SM2320-B
Phenolphthalein Alk	mg/l CaCO3	SM2320-B
Bicarbonate	mg/l CaCO3	SM2320-B
Carbonate	mg/l CaCO3	SM2320-B
Hydroxide	mg/l CaCO3	SM2320-B
Total Dissolved Solids	mg/l	SM1030-F
Total Hardness as CaCO3	mg/l	SM2340-B
Cation Summation	mg/l	SM1030-F
Anion Summation	mg/l	SM1030-F
Percent Error	%	SM1030-F
Fluoride	mg/l	SM4500-F-C
Sulfate	mg/l	ASTM D516-02
Chloride	mg/l	SM4500-CI-E
Nitrate-Nitrite as N	mg/l	EPA 353.2
Phosphorous as P-Total	mg/l	EPA 365.1
Mercury - Dissolved	mg/l	EPA 245.1
Calcium-Total	mg/l	6010
Magnesium-Total	mg/l	6010
Sodium-Total	mg/l	6010
Potassium-Total	mg/l	6010
Iron - Dissolved	mg/l	6010
Manganese- Dissolved	mg/l	6010
Boron - Dissolved	mg/l	6010
Arsenic - Dissolved	mg/l	6020
Barium - Dissolved	mg/l	6020
Cadmium - Dissolved	mg/l	6020
Chromium - Dissolved	mg/l	6020
Lead - Dissolved	mg/l	6020
Molybdenum - Dissolved	mg/l	6020
Selenium - Dissolved	mg/l	6020
Silver - Dissolved	mg/l	6020
Beryllium - Dissolved	mg/l	6020

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2015-1
Sampling Personal: Johan Gress

Weather Conditions: Temp: 50 °F Wind: W @ 15 Precip: Sunny / Partly Cloudy / (Cloudy)

WELL INFORMATION	
Well Locked?	<u>YES</u> NO
Well Labeled?	<u>YES</u> NO
Repairs Necessary?	
Casing Diameter:	<u>2"</u>
Water Level Before Purge:	<u>134.21</u> ft
Depth to Top of Pump:	<u>192.413</u> ft
Well Volume:	<u>45.9</u> liters
Water Level After Sample:	<u>199.75</u> ft
Measurement Method:	<u>Electric Water Level Indicator</u>

SAMPLING INFORMATION	
Purging Method:	<u>Bladder</u>
Sampling Method:	<u>Bladder</u>
Dedicated Equipment?	<u>(YES)</u> NO
Control Settings:	
Purge:	<u>12/18</u> Sec
Recover:	<u>18/42</u> Sec
PSI:	
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	<u>YES / NO</u>
Duplicate Sample ID:	

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment	
Purge Date	Time	+0.5°	+5%	+0.1	+10%	+10	<5.0	(ft)	ml/Min	clear, slightly turbid, turbid	
<u>21 Oct 24</u>	<u>0857</u>	<u>Start of Well Purge</u>									
	<u>0917</u>	<u>8.31</u>	<u>1820</u>	<u>8.46</u>	<u>3.00</u>	<u>123.6</u>	<u>2.11</u>	<u>147.97</u>	<u>300.0</u>	<u>65.0</u>	<u>clear</u>
	<u>0927</u>	<u>8.55</u>	<u>1790</u>	<u>8.53</u>	<u>1.22</u>	<u>123.5</u>	<u>9.26</u>	<u>191.75</u>	<u>300.0</u>	<u>15.0</u>	<u>clear</u>
		<u>Pumping Stop</u>									
<u>22 Oct 24</u>	<u>0838</u>	<u>Start of Stabilization purge</u>									
	<u>0843</u>	<u>9.14</u>	<u>1828</u>	<u>8.53</u>	<u>5.11</u>	<u>129.5</u>	<u>3.80</u>	<u>187.18</u>	<u>100.0</u>	<u>500.0</u>	<u>clear</u>
	<u>0848</u>	<u>9.11</u>	<u>1855</u>	<u>8.54</u>	<u>2.31</u>	<u>127.8</u>	<u>6.21</u>	<u>197.46</u>	<u>100.0</u>	<u>500.0</u>	<u>clear</u>
	<u>0853</u>	<u>9.05</u>	<u>1864</u>	<u>8.58</u>	<u>1.55</u>	<u>111.4</u>	<u>9.27</u>	<u>187.75</u>	<u>100.0</u>	<u>500.0</u>	<u>clear</u>
	<u>0858</u>	<u>9.02</u>	<u>1820</u>	<u>8.59</u>	<u>1.39</u>	<u>109.9</u>	<u>6.10</u>	<u>187.46</u>	<u>100.0</u>	<u>500.0</u>	<u>clear</u>
	<u>0903</u>	<u>9.03</u>	<u>1825</u>	<u>8.59</u>	<u>1.57</u>	<u>113.1</u>	<u>3.87</u>	<u>188.29</u>	<u>100.0</u>	<u>500.0</u>	<u>clear</u>
	<u>0908</u>	<u>9.06</u>	<u>1810</u>	<u>8.58</u>	<u>1.64</u>	<u>112.6</u>	<u>1.75</u>	<u>195.51</u>	<u>100.0</u>	<u>500.0</u>	<u>clear</u>
		Well Stabilized? <u>(YES)</u> NO		Total Volume Purged: <u>24</u> Liters							

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
<u>22 Oct 24</u>	<u>0908</u>	<u>9.06</u>	<u>1810</u>	<u>8.58</u>	<u>1.75</u>	<u>clear</u>

Comments:

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2015-2
Sampling Personal: JLH

Weather Conditions: Temp: 50 °F Wind: N @ 10-15 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	<u>YES</u> NO
Well Labeled?	<u>YES</u> NO
Repairs Necessary?	
Casing Diameter:	<u>2"</u>
Water Level Before Purge:	<u>126.38</u> ft
Depth to Top of Pump:	<u>147.90</u> ft
Well Volume:	<u>12.0</u> liters
Water Level After Sample:	<u>142.55</u> ft
Measurement Method:	<u>Electric Water Level Indicator</u>

SAMPLING INFORMATION	
Purging Method:	<u>Bladder</u>
Sampling Method:	<u>Bladder</u>
Dedicated Equipment?	<u>YES</u> NO
Control Settings:	
Purge:	<u>8</u> / <u>15</u> Sec.
Recover:	<u>22</u> / <u>45</u> Sec.
PSI:	<u>100</u> / <u>-</u>
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
<u>YES</u> / <u>NO</u>	
Duplicate Sample ID:	
<u>-</u>	

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment	
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0	(ft)	ml/Min	clear, slightly turbid, turbid	
21 Oct 24	0853	Start of Well Purge									
	0913	8.45	1672	8.99	1.39	86.5	7.16	139.10	300.0	6.0	Clear
	0933	8.32	1668	8.56	0.72	81.4	1.15	Below Pump	300.0	6.0	Clear
		Purged Dry									
22 Oct 24	0836	Start of Stabilization Purge									
	0841	9.21	1670	8.43	3.38	173.7	1.46	138.32			Clear
	0846	9.03	1681	8.45	2.06	169.0	4.21	139.80	100.0	0.5	Clear
	0851	8.86	1673	8.42	0.69	145.4	1.91	140.85	100.0	0.5	Clear
	0856	8.70	1920	8.38	0.61	132.0	1.39	140.85	100.0	0.5	Clear
	0901	8.78	1918	8.37	0.75	125.7	1.82	141.32	100.0	0.5	Clear
	0906	8.82	1929	8.37	0.91	122.9	2.03	141.46	100.0	0.5	Clear
		Well Stabilized?		<u>YES</u>	NO	Total Volume Purged: <u>15.0</u> Liters					

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
22 Oct 24	0906	8.82	1929	8.37	2.03	Clear

Comments:

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event: Fl 11 2024
Sample ID: 2015-3
Sampling Personal: Ethan Green

Weather Conditions: Temp: 50 °F Wind: NW @ 15 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Well Labeled?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Repairs Necessary?	
Casing Diameter:	<u>2"</u>
Water Level Before Purge:	<u>109.76</u> ft
Depth to Top of Pump:	<u>130.10</u> ft
Well Volume:	<u>12.4</u> liters
Water Level After Sample:	<u>127.45</u> ft
Measurement Method:	<u>Electric Water Level Indicator</u>

SAMPLING INFORMATION	
Purging Method:	<u>Bladder</u>
Sampling Method:	<u>Bladder</u>
Dedicated Equipment?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Control Settings:	
Purge:	<u>2 / 10</u> Sec
Recover:	<u>52 / 50</u> Sec
PSI:	<u>120</u>
Bottle List:	
<u>1 Liter Raw</u>	
<u>500ml Nitric</u>	
<u>500ml Nitric (filtered)</u>	
<u>250ml Sulfuric</u>	
Duplicate Sample?	
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
Duplicate Sample ID:	

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment	
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0	(ft)	ml/Min	clear, slightly turbid, turbid	
<u>21 Oct 24</u>	<u>1212</u>	<u>Start of Well Purge</u>									
	<u>1242</u>	<u>10.07</u>	<u>2103</u>	<u>8.10</u>	<u>0.10</u>	<u>84.2</u>	<u>0.00</u>	<u>118.62</u>	<u>300.0</u>	<u>9.0</u>	<u>Clear</u>
	<u>1252</u>	<u>10.01</u>	<u>2099</u>	<u>8.05</u>	<u>2.04</u>	<u>158.7</u>	<u>0.00</u>	<u>120.89</u>	<u>300.0</u>	<u>3.0</u>	<u>Clear</u>
	<u>1332</u>	<u>10.05</u>	<u>2144</u>	<u>8.11</u>	<u>0.31</u>	<u>108.3</u>	<u>0.01</u>	<u>129.45</u>	<u>300.0</u>	<u>12.0</u>	<u>Clear</u>
	<u>1337</u>	<u>10.04</u>	<u>2076</u>	<u>8.18</u>	<u>0.25</u>	<u>100.2</u>	<u>0.26</u>	<u>before pump</u>	<u>300.0</u>	<u>1.5</u>	<u>Clear</u>
<u>22 Oct 24</u>	<u>1400</u>	<u>Stator Stabilization</u>									
	<u>1405</u>	<u>9.69</u>	<u>2007</u>	<u>8.30</u>	<u>3.13</u>	<u>114.0</u>	<u>1.78</u>	<u>124.01</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1410</u>	<u>9.07</u>	<u>2001</u>	<u>8.27</u>	<u>3.22</u>	<u>124.0</u>	<u>0.98</u>	<u>125.01</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1415</u>	<u>8.82</u>	<u>2015</u>	<u>8.28</u>	<u>2.33</u>	<u>123.6</u>	<u>0.23</u>	<u>125.29</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1420</u>	<u>8.81</u>	<u>2028</u>	<u>8.28</u>	<u>1.83</u>	<u>114.5</u>	<u>1.49</u>	<u>125.58</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
Well Stabilized?		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Total Volume Purged: <u>28.5</u> Liters							

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
<u>22 Oct 24</u>	<u>1430</u>	<u>8.88</u>	<u>2037</u>	<u>8.24</u>	<u>1.24</u>	<u>Clear</u>

Comments: FB collected at 1418

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Report Date: Monday, November 11, 2024 9:00:31 AM



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 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
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 www.MVTL.com



Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Company: Minnkota - CCWDF
 Event: Fall 2024
 Sample ID: 2015-5
 Sampling Personal: Ethan Greiss

Weather Conditions: Temp: 50 °F Wind: W @ 15-20 Precip: Sunny / Partly Cloudy / (Cloudy)

WELL INFORMATION	
Well Locked?	<u>(YES)</u> NO
Well Labeled?	<u>(YES)</u> NO
Repairs Necessary?	
Casing Diameter:	<u>2"</u>
Water Level Before Purge:	<u>150.41</u> ft
Depth to Top of Pump:	<u>166.65</u> ft
Well Volume:	<u>9.6</u> liters
Water Level After Sample:	<u>154.42</u> ft
Measurement Method:	<u>Electric Water Level Indicator</u>

SAMPLING INFORMATION	
Purging Method:	<u>Bladder</u>
Sampling Method:	<u>Bladder</u>
Dedicated Equipment?	<u>(YES)</u> NO
Control Settings:	
Purge:	<u>7 / 15</u> Sec.
Recover:	<u>53 / 45</u> Sec.
PSI:	<u>120</u>
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
<u>YES / NO</u>	
Duplicate Sample ID:	
<u>—</u>	

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond. (+5%)	pH (+0.1)	DO (mg/L) (+10%)	ORP (mV) (+10)	Turbidity (NTU) (<5.0)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment (Clarity, Color, Odor, Ect.)	
Purge Date	Time	Temp. (°C)	Spec. Cond. (+5%)	pH (+0.1)	DO (mg/L) (+10%)	ORP (mV) (+10)	Turbidity (NTU) (<5.0)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment (Clarity, Color, Odor, Ect.)
	10:35	Start of Well Purge									clear, slightly turbid, turbid
<u>21 Oct 24</u>	<u>11:15</u>	<u>9.21</u>	<u>2426</u>	<u>8.28</u>	<u>0.25</u>	<u>57.4</u>	<u>0.19</u>	<u>160.07</u>	<u>300.0</u>	<u>12.0</u>	<u>Clear</u>
	<u>11:25</u>	<u>9.33</u>	<u>2414</u>	<u>8.27</u>	<u>0.27</u>	<u>60.8</u>	<u>0.07</u>	<u>163.80</u>	<u>300.0</u>	<u>6.0</u>	<u>Clear</u>
	<u>11:55</u>	<u>9.43</u>	<u>2386</u>	<u>8.10</u>	<u>0.11</u>	<u>3.8</u>	<u>0.00</u>	<u>160.00</u>	<u>300.0</u>	<u>6.0</u>	<u>Clear</u>
		<u>Pumped dry</u>									
<u>22 Oct 24</u>	<u>11:20</u>	<u>Start of Sample</u>						<u>150.41</u>			
	<u>11:30</u>	<u>8.34</u>	<u>2329</u>	<u>8.37</u>	<u>1.74</u>	<u>73.6</u>	<u>0.10</u>	<u>152.19</u>	<u>100.0</u>	<u>1.0</u>	<u>Clear</u>
	<u>11:35</u>	<u>8.32</u>	<u>2311</u>	<u>8.45</u>	<u>0.76</u>	<u>62.9</u>	<u>0.00</u>	<u>152.54</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>11:40</u>	<u>8.32</u>	<u>2313</u>	<u>8.47</u>	<u>0.82</u>	<u>52.7</u>	<u>0.00</u>	<u>152.89</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>11:45</u>	<u>8.32</u>	<u>2296</u>	<u>8.47</u>	<u>0.76</u>	<u>55.0</u>	<u>0.00</u>	<u>153.51</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
Well Stabilized? <u>(YES)</u> NO											
Total Volume Purged: <u>26.5</u> Liters											

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment (Clarity, Color, Odor, Ect.)
<u>22 Oct 24</u>	<u>11:45</u>	<u>8.32</u>	<u>2296</u>	<u>8.47</u>	<u>0.00</u>	<u>Clear</u>

Comments:

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2016-1
Sampling Personal: JH

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: 50 °F Wind: NW @ 15-2 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	<u>YES</u> NO
Well Labeled?	<u>YES</u> NO
Repairs Necessary?	
Casing Diameter:	<u>2"</u>
Water Level Before Purge:	<u>127.85</u> ft
Depth to Top of Pump:	<u>148.10</u> ft
Well Volume:	<u>12.5</u> liters
Water Level After Sample:	<u>152.24</u> ft
Measurement Method:	<u>Electric Water Level Indicator</u>

SAMPLING INFORMATION		Control Settings:
Purging Method:	<u>Bladder</u>	Purge: <u>10</u> / <u>10</u> Sec.
Sampling Method:	<u>Bladder</u>	Recover: <u>20</u> / <u>50</u> Sec.
Dedicated Equipment?	<u>YES</u> NO	PSI: <u>90</u>

Bottle List:	Duplicate Sample?
1 Liter Raw	<u>YES</u> / <u>NO</u>
500ml Nitric	Duplicate Sample ID:
500ml Nitric (filtered)	
250ml Sulfuric	

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond. (+5%)	pH (+0.1)	DO (mg/L) (+10%)	ORP (mV) (+10)	Turbidity (NTU) (<5.0)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment (Clarity, Color, Odor, Ect.)	
Purge Date	Time										
24 Oct 24	1122	Start of Well Purge									
	1152	9.32	1716	8.54	0.35	-153.2	2.32	142.30	300.0	9.0	Clear
	1212	9.30	1776	8.40	0.49	-113.5	9.12	Below Pump	300.0	9.0	Clear
	1255	Purged Done									
22 Oct 24	1305	9.37	1762	8.49	2.29	110.3	9.05	127.76	100.0	1.0	Clear
	1310	9.29	1759	8.49	2.11	117.1	7.16	129.92	100.0	0.5	Clear
	1315	9.23	1759	8.49	1.92	115.2	9.03	130.33	100.0	0.5	Clear
	1320	9.19	1756	8.50	1.92	116.9	10.90	130.62	100.0	0.5	Clear
	1325	9.08	1752	8.50	1.63	106.7	13.82	130.89	100.0	0.5	Clear
	1330	9.04	1754	8.53	1.54	89.0	10.01	131.02	100.0	0.5	Clear
		Well Stabilized?		<u>YES</u>	NO	Total Volume Purged: <u>216</u> Liters					

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment (Clarity, Color, Odor, Ect.)
22 Oct 24	1330	9.04	1754	8.53	10.04	Clear

Comments:

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet
Groundwater Assessment

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2018-1
Sampling Personal: Ethan Cross

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: 55 F Wind: W @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Depth to Top of Pump, Well Volume, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment?, Control Settings (Purge, Recover, PSI).

Bottle List table with fields: Duplicate Sample?, Duplicate Sample ID.

FIELD READINGS

Table with columns: Purge Date, Time, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment.

Well Stabilized? YES NO Total Volume Purged: 25.5 Liters

Table with columns: Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, Appearance or Comment.

Comments:

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet
Groundwater Assessment

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 2018-2
Sampling Personal: JH

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: 45 F Wind: N @ S-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Depth to Top of Pump, Well Volume, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment?, Control Settings (Purge, Recover, PSI).

Bottle List and Duplicate Sample? table with fields: Bottle List (1 Liter Raw, 500ml Nitric, etc.), Duplicate Sample?, Duplicate Sample ID.

FIELD READINGS

FIELD READINGS table with columns: Stabilization Parameters, Temp, Spec. Cond, pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment.

Table with columns: Sample Date, Time, Temp, Spec. Cond, pH, Turbidity, Appearance or Comment.

Comments:

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 92-3
Sampling Personal: Chas Gross

Weather Conditions: Temp: 60 °F Wind: NW @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	<u>YES</u> NO
Well Labeled?	<u>YES</u> NO
Repairs Necessary?	
Casing Diameter:	<u>2"</u>
Water Level Before Purge:	<u>91.11</u> ft
Depth to Top of Pump:	<u>149.5</u> ft
Well Volume:	<u>36.0</u> liters
Water Level After Sample:	<u>97.54</u> ft
Measurement Method:	<u>Electric Water Level Indicator</u>

SAMPLING INFORMATION	
Purging Method:	<u>Bladder</u>
Sampling Method:	<u>Bladder</u>
Dedicated Equipment?	<u>YES</u> NO
Control Settings:	
Purge:	<u>8/5/8</u> Sec
Recover:	<u>55/55/52</u> Sec
PSI:	<u>100psi / 90</u>
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
<u>YES / NO</u>	
Duplicate Sample ID:	

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate	Liters Removed	Appearance or Comment
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0				clear, slightly turbid, turbid
	<u>1352</u>										
	<u>0930</u>										
	<u>1130</u>	<u>9.00</u>	<u>1638</u>	<u>8.62</u>	<u>0.00</u>	<u>-267.0</u>	<u>0.00</u>	<u>103.02</u>	<u>500.0</u>	<u>36.0</u>	<u>Clear</u>
	<u>1320</u>	<u>9.14</u>	<u>1629</u>	<u>8.60</u>	<u>0.00</u>	<u>-257.1</u>	<u>0.07</u>	<u>104.60</u>	<u>300.0</u>	<u>36.0</u>	<u>Clear</u>
	<u>1530</u>	<u>9.18</u>	<u>1627</u>	<u>8.62</u>	<u>0.00</u>	<u>-249.2</u>	<u>0.00</u>	<u>102.85</u>	<u>300.0</u>	<u>36.0</u>	<u>Clear</u>
	<u>1535</u>	<u>9.04</u>	<u>1625</u>	<u>8.62</u>	<u>0.04</u>	<u>-245.2</u>	<u>0.00</u>	<u>102.18</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1540</u>	<u>10.68</u>	<u>1622</u>	<u>8.61</u>	<u>0.31</u>	<u>-207.8</u>	<u>0.00</u>	<u>102.29</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1645</u>	<u>10.31</u>	<u>1626</u>	<u>8.59</u>	<u>0.32</u>	<u>-204.6</u>	<u>0.00</u>	<u>101.11</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
	<u>1650</u>	<u>10.40</u>	<u>1632</u>	<u>8.59</u>	<u>0.35</u>	<u>-200.2</u>	<u>0.00</u>	<u>100.56</u>	<u>100.0</u>	<u>0.5</u>	<u>Clear</u>
Well Stabilized?		<u>YES</u>	<u>NO</u>	Total Volume Purged: <u>110.0</u> Liters							

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
<u>23Oct24</u>	<u>1550</u>	<u>10.40</u>	<u>1635</u>	<u>8.59</u>	<u>0.00</u>	<u>Clear</u>

Comments: Original start was supposed to be 021024. Due to time it would take we moved it to 23Oct24

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet
Groundwater Assessment

Company: Minnkota - CCWDF
Event: Fall 2024
Sample ID: 94-5-95-4
Sampling Personal: LMB

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Weather Conditions: Temp: 70 F Wind: S @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION table with fields: Well Locked?, Well Labeled?, Repairs Necessary?, Casing Diameter, Water Level Before Purge, Depth to Top of Pump, Well Volume, Water Level After Sample, Measurement Method.

SAMPLING INFORMATION table with fields: Purging Method, Sampling Method, Dedicated Equipment?, Control Settings (Purge, Recover, PSI).

Bottle List and Duplicate Sample? table with fields: Bottle List (1 Liter Raw, 500ml Nitric, etc.), Duplicate Sample?, Duplicate Sample ID.

FIELD READINGS

FIELD READINGS table with columns: Stabilization Parameters, Temp, Spec. Cond., pH, DO, ORP, Turbidity, Water Level, Pumping Rate, Liters Removed, Appearance or Comment.

Well Stabilized? YES NO Total Volume Purged: 62.0 Liters

Sample Date table with columns: Sample Date, Time, Temp, Spec. Cond., pH, Turbidity, Appearance or Comment.

Comments:

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Account #: 7048

Client: Minnkota Power Cooperative



Field Datasheet

Groundwater Assessment

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Company: Minnkota - CCWDF
 Event: Fall 2024
 Sample ID: 2023-1
 Sampling Personal: J. My

Weather Conditions: Temp: 40 °F Wind: 15-20 @ W Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES <u>NO</u>
Well Labeled?	YES <u>NO</u>
Repairs Necessary?	
Casing Diameter:	<u>2"</u>
Water Level Before Purge:	<u>207.58</u> ft
Depth to Top of Pump:	<u>228.10</u> ft
Well Volume:	<u>12.6</u> liters
Water Level After Sample:	<u>214.65</u> ft
Measurement Method:	<u>Electric Water Level Indicator</u>

SAMPLING INFORMATION	
Purging Method:	<u>Bladder</u>
Sampling Method:	<u>Bladder</u>
Dedicated Equipment?	<u>YES</u> NO
Control Settings:	
Purge:	<u>10 / 30</u> Sec
Recover:	<u>20 / 30</u> Sec
PSI:	<u>110</u>
Bottle List:	
1 Liter Raw	
500ml Nitric	
500ml Nitric (filtered)	
250ml Sulfuric	
Duplicate Sample?	
<u>YES / NO</u>	
Duplicate Sample ID:	

FIELD READINGS

Stabilization Parameters (3 Consecutive)	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate (ml/Min)	Liters Removed	Appearance or Comment	
Purge Date	Time	±0.5°	±5%	±0.1	±10%	±10	<5.0	(ft)		clear, slightly turbid, turbid	
21 Oct 24	0946	Start of Well Purge									
	1016	9.26	1498	8.42	0.25	-153.0	3.18	210.00	300.0	9.0	clear
	1036	9.34	1748	8.40	0.23	-157.7	3.19	Below Pump	300.0	9.0	clear
		Purged Dry									
22 Oct 24	1000	Start of Stabilization Purge									
	1005	9.13	2013	8.42	1.93	124.9	2.25	209.62	100.0	0.5	Clear
	1010	8.66	2021	8.45	1.14	106.0	2.62	210.61	100.0	0.5	Clear
	1015	8.65	2020	8.46	0.74	84.0	4.36	211.64	100.0	0.5	Clear
	1020	8.58	2020	8.47	0.74	-14.6	4.39	211.75	100.0	0.5	Clear
	1025	8.45	2028	8.48	0.88	-66.7	3.20	212.09	100.0	0.5	Clear
	1030	8.62	2035	8.48	0.49	-88.4	2.78	212.58	100.0	0.5	Clear
		Well Stabilized? <u>YES</u> NO		Total Volume Purged: <u>22.5</u> Liters							

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment
22 Oct 24	1045	8.51	2029	8.49	2.47	Clear

Comments:

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