2023 Annual Groundwater Monitoring and Corrective Action Report

Nelson Dewey Generating Station Slag Pond
Cassville, Wisconsin

Prepared for:

Alliant Energy

SCS ENGINEERS

25223071.00 | January 31, 2024

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OVERVIEW OF CURRENT STATUS

Nelson Dewey Generating Station, Slag Pond
2023 Annual Report

In accordance with §257.90(e)(6), this section at the beginning of the annual report provides an overview of the current status of groundwater monitoring and corrective action programs for the coal combustion residual (CCR) units. Supporting information is provided in the text of the annual report.

Category	Rule Requirement	Site Status
Monitoring Status – Start of Year	(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;	Detection
Monitoring Status – End of Year	(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;	Detection
Statistically Significant Increases (SSIs)	(iii) If it was determined that there was an SSI over background for one or more constituents listed in Appendix III to this part pursuant to §257.94(e):	
	(A) Identify those constituents listed in Appendix III to this part and the names of the monitoring wells associated with such an increase; and	<u>October 2022</u> Boron: B-11A, B-11B, B-11R, B-31A, B-31R Calcium: B-11R Fluoride: B-11B Field pH: B-11B Sulfate: B-11B, B-11R TDS: B-11B, B-11R <u>April 2023</u> Boron: B-7R, B-11A, B-11B, B-11R, B-31A, B-31R Calcium: B-11R Field pH: B-11B Sulfate: B-11A, B-11B, B-11R, B-31R Total Dissolved Solids (TDS): B-11B, B-11R

Category	Rule Requirement	Site Status
	(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	Alternative Source Demonstrations prepared for October 2022 and April 2023 events during 2023. Assessment monitoring not required.
Statistically Significant Levels (SSL) Above Groundwater Protection Standard (GPS)	(iv) If it was determined that there was an SSL above the GPS for one or more constituents listed in appendix IV to this part pursuant to §257.95(g) include all of the following:	Not applicable In detection monitoring
	(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.	
Selection of Remedy	(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	Not applicable In detection monitoring
Corrective Action	(vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.	Not applicable In detection monitoring

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1.0 INTRODUCTION

This 2023 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the Coal Combustion Residuals (CCR) Rule [40 CFR 257.50-107]. Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.90(e). The applicable sections of the Rule are provided below in *italics*, followed by applicable information relative to the 2023 Annual Groundwater Monitoring and Corrective Action Report for the CCR Unit. The site location is shown on **Figure 1**.

This report covers the period of groundwater monitoring from January 1, 2023, through December 31, 2023.

The groundwater monitoring system for the Nelson Dewey Generating Station (NED) Slag Pond monitors a single CCR unit:

- NED Slag Pond (existing surface impoundment – closed January 2018)

The system is designed to detect monitored constituents at the waste boundary of the Slag Pond as required by 40 CFR 257.91(d). The groundwater monitoring system consists of one background well and six downgradient monitoring wells (**Table 1** and **Figure 3**).

During 2017 and early 2018, the Slag Pond CCR unit was closed by leaving the CCR in place and installing a final cover system, in accordance with §257.102(d). Closure certification was completed on January 31, 2018.

The closed CCR landfill adjacent to the Slag Pond is not subject to regulation under the CCR rule, and is regulated by the Wisconsin Department of Natural Resources. The CCR landfill was initially licensed in 1976 and received fly ash from NED until it was closed in phases between 1996 and 2001.

2.0 BACKGROUND

To provide context for the annual report, the following background information is provided in this section of the report, prior to the annual report requirements sections:

- Geologic and hydrogeologic setting
- CCR Rule monitoring system

2.1 GEOLOGIC AND HYDROGEOLOGIC SETTING

2.1.1 Regional Information

The uppermost geologic formation beneath the NED plant that meets the definition of the "uppermost aquifer," as defined by section 257.53 of the CCR Rule, is the surficial alluvial aquifer. The alluvial aquifer consists of Mississippi River valley sand and gravel deposits. This deposit is prevalent along the edges of the entire Mississippi River valley in southwestern Wisconsin. A map of the regional glacial geology in the area is included in **Appendix A**.

The alluvial aquifer is underlain by dolomitic bedrock of the Prairie du Chien Group. A bedrock geology map of the area is provided in **Appendix A**. The dolomite bedrock is also an aquifer and is likely hydraulically connected to the alluvial aquifer above.

Regionally, groundwater flow is generally to the southwest and discharges to the Mississippi River.

2.1.2 Site Information

Soil boring logs for monitoring wells installed at the site also generally indicate sand and gravel soils within the monitored depths. During drilling of CCR well B-7R, the unconsolidated materials were identified as consisting primarily of poorly graded, medium to coarse grained sand, and silty sand. The boring log for the previously installed background monitoring well B-26 shows silt and poorly graded sand as the primary unconsolidated materials at this location. The boring logs for the CCR monitoring wells are provided in **Appendix B**. All CCR monitoring wells are screened within the unconsolidated glacial aquifer.

The groundwater flow direction in the vicinity of the plant is generally southwest toward the Mississippi River. Historically, infiltration at the former Slag Pond, former fly ash basin, and the former Wisconsin Pollutant Discharge Elimination System (WPDES) ponds caused groundwater mounding to be present around these features; however, these ponds have now all been closed and are no longer sources of infiltration.

Although historic site water level measurements have generally indicated that groundwater flow is toward the Mississippi River, groundwater flow in the Slag Pond area is influenced by variations in river water levels. During periods of high river water levels, the flow temporarily reverses and the river discharges to the shallow sand and gravel aquifer. The water table map for the April 2023 monitoring event (**Figure 4**) shows groundwater flow to the east and north/northeast away from the river. The water table map for the October 2023 monitoring event (**Figure 5**) shows flow to the south and southwest toward the river. The groundwater elevations for the CCR monitoring wells and additional wells in the state monitoring program for the closed CCR landfill are provided in **Table 3.** Calculated horizontal gradients and flow velocities for flow to the north/northwest in April 2023 and south in October 2023 are provided in **Table 4A**. Vertical gradients are provided in **Table 4B**.

2.2 CCR MONITORING SYSTEM

The groundwater monitoring system established in accordance with the CCR Rule consists of one upgradient (background) monitoring well and six downgradient monitoring wells (**Table 1** and **Figure 3**). The background well is B-26. The downgradient wells include B-7R, B-11A, B-11B, B-11R, B-31A, and B-31R. The CCR Rule wells are installed within the surficial alluvium aquifer. Well depths range from approximately 23 to 114 feet, measured from the top of the well casing.

3.0 § 257.90(E) ANNUAL REPORT REQUIREMENTS

Annual groundwater monitoring and corrective action report. *For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater 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 groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater*

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 as required by §257.105(h)(1). At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

3.1 § 257.90(E)(1) SITE MAP

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;

A map showing the site location is provided on **Figure 1**. A map showing site features is provided on **Figure 2**. A map showing the CCR unit and all background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program is provided on **Figure 3**. The Slag Pond CCR unit is closed, and the map shows the post-closure conditions.

3.2 § 257.90(E)(2) MONITORING SYSTEM CHANGES

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;

No new monitoring wells were installed and no wells were decommissioned as part of the groundwater monitoring program for the CCR unit in 2023.

3.3 § 257.90(E)(3) SUMMARY OF SAMPLING EVENTS

In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater 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;

Two groundwater sampling events were completed in 2023 at the NED Slag Pond as part of ongoing detection monitoring.

Groundwater samples collected during the semiannual events, in April and October 2023, were analyzed for the Appendix III constituents. A summary including the number of groundwater 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 program is included in **Table 2**.

The validation and evaluation of the October 2022 monitoring event data was completed and transmitted to WPL on March 6, 2023. The validation and evaluation of the April 2023 monitoring event data was completed and transmitted to WPL on August 9, 2023. The validation and evaluation of the October 2023 monitoring event data was in progress at the end of 2023 and will be transmitted to WPL in 2024; therefore, the October 2023 monitoring results will be included in the 2024 annual report. The October 2023 groundwater elevation data is included in this report.

The sampling results for Appendix III parameters in October 2022 are summarized in **Table 5A**. The sampling results for Appendix III parameters in April 2023 are summarized in **Table 5B**. Field

parameter results for the October 2022 and April 2023 sampling events are provided in Table 6. The analytical laboratory reports for the October 2022 and April 2023 sampling events are provided in Appendix C. Historical results for each monitoring well through April 2023 are summarized in Appendix D.

3.4 § 257.90(E)(4) MONITORING TRANSITION NARRATIVE

A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels);

There was no monitoring program transition in 2023. The NED Slag Pond remained in the detection monitoring program.

In 2023, the monitoring results for the October 2022 and April 2023 monitoring events were evaluated for statistically significant increases (SSIs) in detection monitoring parameters relative to background. The comparison to background was based on a prediction limit approach, comparing the results to interwell upper prediction limits (UPLs) based on background monitoring results from the upgradient well (B-26). The interwell UPLs were updated in July 2023 using background data collected through April 2023. The July 2023 Statistical Analysis is included as Appendix F. The Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act (RCRA) Facilities (U.S. EPA, 2009; Section 5.3.1) recommends periodic updating of background for both intrawell and interwell analyses. For semiannual monitoring, an update interval of 2 to 3 years is recommended.

For the October 2022 and April 2023 events, SSIs were identified at one or more wells for boron, calcium, fluoride, field pH, sulfate, and total dissolved solids (TDS) (Table 5A and Table 5B).

Alternative source demonstrations were completed in 2023 for SSIs identified in the October 2022 and April 2023 events, demonstrating that sources other than the Slag Pond were the likely cause of the observed SSIs. The Alternative Source Demonstration (ASD) reports are provided in Appendix E. Based on the findings of the ASDs, the NED Slag Pond remained in detection monitoring.

3.5 § 257.90(E)(5) OTHER REQUIREMENTS

Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.

Additional potentially applicable requirements for the annual report, and the location of the requirement within the Rule, are provided in the following sections. For each cited section of the Rule, the portion referencing the annual report requirement is provided below in italics, followed by applicable information relative to the 2023 Annual Groundwater Monitoring and Corrective Action Report for the NED Slag Pond CCR unit.

3.5.1 § 257.90(e) General Requirements

For the preceding calendar year, the annual report must document the status of the groundwater 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.

Status of Groundwater Monitoring and Corrective Action Program. The groundwater monitoring and corrective action program was in detection monitoring throughout 2023.

Summary of Key Actions Completed.

- Two semiannual groundwater sampling and analysis events (April and October 2023).
- Statistical evaluation and determination of SSIs for the October 2022 and April 2023 monitoring events.
- ASD reports for the SSIs identified from the October 2022 and April 2023 monitoring events.

Description of Any Problems Encountered. No issues were encountered in 2023.

Discussion of Actions to Resolve the Problems. Not applicable. No issues were encountered in 2023.

Projection of Key Activities for the Upcoming Year (2024).

- Two semiannual groundwater sampling and analysis events (April and October 2024).
- Statistical evaluation and determination of any SSIs for the October 2023 and April 2024 monitoring events.
- If an SSI is determined, then within 90 days either:
  - Complete ASD (if applicable), or
  - Establish an assessment monitoring program.

3.5.2 § 257.94(d) Alternative Detection Monitoring Frequency

The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable. No alternative detection monitoring frequency has been proposed.

3.5.3 § 257.94(e)(2) Alternative Source Demonstration for Detection Monitoring

The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

The ASD reports prepared to address the SSIs observed for the October 2022 and April 2023 sampling events are provided in **Appendix E**. The ASD reports are certified by a qualified professional engineer.

3.5.4 § 257.95(c) Alternative Assessment Monitoring Frequency

The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable. Assessment monitoring has not been initiated.

3.5.5 § 257.95(d)(3) Assessment Monitoring Results and Standards

Include the recorded concentrations required by paragraph (d)(1) of this section, identify the background concentrations established under § 257.94(b), and identify the groundwater protection standards established under paragraph (d)(2) of this section in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable. Assessment monitoring has not been initiated.

3.5.6 § 257.95(g)(3)(ii) Alternative Source Demonstration for Assessment Monitoring

The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not applicable. Assessment monitoring has not been initiated.

3.5.7 § 257.96(a) Extension of Time for Corrective Measures Assessment

The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measure due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not applicable. Corrective measures assessment has not been initiated.

3.6 257.90(E)(6) OVERVIEW

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.

The specific requirements for the overview under §257.90(e)(6) are listed and the information is provided at the beginning of this report, before the Table of Contents.

4.0 REFERENCES

U.S. Environmental Protection Agency (U.S. EPA), 2009, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, EPA 530-R-09-007, March 2009.

Tables

Table 1. Groundwater Monitoring Well Network
Nelson Dewey Closed Ash Disposal Facility / SCS Engineers Project #25223071.00

Monitoring Well	Location in Monitoring Network	Role in Monitoring Network
B-26	Upgradient / Sidegradient	Background
B-7R	Downgradient	Compliance
B-11R	Downgradient	Compliance
B-11A	Downgradient	Compliance
B-11B	Downgradient	Compliance
B-31R	Downgradient	Compliance
B-31A	Downgradient	Compliance

Created by:	RM	Date:	12/14/2020
Last revision by:	NDK	Date:	9/26/2022
Checked by:	NLB	Date:	12/27/2023

Table 2. CCR Rule Groundwater Samples Summary
Nelson Dewey Closed Ash Disposal Facility / SCS Engineers Project #25223071.00

Sample Dates	Downgradient Wells						Upgradient Well
	B-7R	B-11R	B-11A	B-11B	B-31R	B-31A	B-26
4/3-5/2023	D	D	D	D	D	D	D
10/2-3/2023	D	D	D	D	D	D	D
Total Samples	2	2	2	2	2	2	2

Abbreviations:
D = Required by Detection Monitoring Program

Created by: ACW Date: 11/12/2019
Last revision by: NLB Date: 12/27/2023
Checked by: RM Date: 1/3/2024

Table 3. Water Level Summary
Nelson Dewey Closed Ash Disposal Facility / SCS Engineers Project #25223071.00

	Ground Water Elevation in feet above mean sea level (amsl)																								Surface Water Elevation (feet amsl)	
Well Number	**B-7R**	**B-8R**	**B-11R**	**B-11A**	**B-11B**	**B-21R**	**B-26**	**B-26A**	**B-28**	**B-30R**	**B-30AR**	**B-31R**	**B-31A**	**B-32**	**B-32A**	**B-35**	**B-35A**	**B-36**	**B-36A**	**B-37**	**B-37A**	**B-39**	**MW-301**	**MW-302**	**MW-303**	**Barge Gauge (SG-12)^^**	**Pond Gauge (SG-13)**
Top of Casing Elevation (feet amsl)	623.35	627.51	622.62	622.12	621.89	623.31	626.40	626.40	616.81	621.81	622.4	622.42	622.69	614.18	614.4	620.78	621.09	621.11	621.33	614.85	614.85	626.48	619.09	619.21	618.49	622.34	See notes
Screen Length (ft)	10	10	10	5	5	10	10	5	10	10	5	10	5	10	5	10	5	9	4.5	10	5	10	10	10	10		
Total Depth (ft from top of casing)	23.05	27.25	24.15	52.00	113.90	22.78	31.67	45.78	16.70	22.20	46.90	22.82	35.52	14.79	52.00	16.60	47.00			19.95	48.20	26.90	21.11	21.27	20.15		
Top of Well Screen Elevation (ft)	610.30	610.26	608.47	575.12	512.99	610.53	604.73	585.62	610.11	609.61	580.50	609.60	592.17	609.39	567.40	614.18	579.20	609.60	575.50	604.90	571.65	609.58	607.98	607.94	608.34		
Measurement Date																		--	--				--	--	--	--	--
October 5-6, 2011	604.94	606.29	604.57	604.36	604.32	604.43	604.52	604.55	604.61	604.37	605.21	608.37	604.42	604.88	604.82	604.87	604.81	--	--	604.37	604.39		--	--	--	--	--
April 25-26, 2012	606.58	606.30	606.07	606.30	606.28	--	605.89	605.91	--	--	--	608.65	606.31	604.33	--	606.29	#REF!	--	--	606.16	606.17	606.17	--	--	--	--	--
October 17, 2012	604.39	604.16	604.10	603.98	603.98	604.08	604.12	604.14	604.31	603.97	603.98	607.32	604.07	604.33	604.35	--	#REF!	--	--	603.93	603.93	603.93	--	--	--	--	--
April 2, 2013	607.04	608.01	606.15	607.20	607.17	606.30	605.60	605.64	605.90	605.91	605.93	607.13	607.13	606.11	606.14	606.13	606.25	--	--	606.99	607.02		--	--	--	--	--
October 16-17, 2013	604.51	605.89	604.17	603.90	603.87	604.11	604.31	604.32	604.36	604.08	604.06	604.87	604.00	604.53	604.56	604.46	604.44	--	--	604.05	604.04		--	--	--	--	--
April 10, 2014	607.42	608.97	607.45	607.28	607.26	--	607.22	607.23	--	--	--	607.37	607.28	--	--	607.46	607.39	--	--	607.25	607.26		--	--	--	--	--
October 14-15, 2014	605.67	606.82	605.17	604.90	604.91	614.92	605.00	605.01	605.13	604.92	604.92	606.36	605.54	605.41	605.45	605.36	605.33	--	--	604.94	604.99		--	--	--	--	--
April 16, 2015	607.26	608.50	607.11	607.15	607.05	--	606.40	606.41	--	--	--	607.37	607.09	--	--	606.73	606.78	--	--	606.99	606.88		--	--	--	--	--
October 1-2, 2015	605.14	604.66	604.53	604.42	604.38	604.36	604.43	604.50	604.54	604.34	604.32	605.13	604.38	604.76	604.82	604.76	604.75	--	--	604.30	604.39		--	--	--	--	--
December 8, 2015	606.69	--	606.71	606.30	606.26	--	606.80	--	--	--	--	607.40	606.39	--	--	--	--	--	--	--	--	607.54	--	--	--	--	--
April 12, 2016	609.32	609.36	609.32	608.71	608.68	--	609.81	609.72	--	--	--	609.34	609.01	--	--	609.73	609.65	--	--	608.79	608.79	610.23	--	--	--	--	--
July 18-19, 2016	606.54	--	606.14	606.76	606.74	--	606.09	--	--	--	--	606.55	606.73	--	--	--	--	--	--	--	--	606.28	--	--	--	--	--
October 19-20, 2016	608.59	608.46	608.35	608.21	608.19	608.37	608.84	608.76	608.63	608.45	608.46	608.51	608.20	608.69	608.73	608.78	608.74	--	--	608.20	608.18	609.09	--	--	--	--	--
January 11-12, 2017	608.02		607.96	607.83	607.78		608.56					607.90	607.84					--	--			608.92	--	--	--	--	--
April 17, 2017	609.08	608.82	608.34	609.05	608.99	NM	608.59	608.54	609.94	608.57	608.64	607.20	608.98	608.96	608.98	609.00	609.02	--	--	609.02	609.02	610.23	--	--	--	--	--
June 8, 2017	610.74	--	610.42	609.81	610.08	--	611.25	--	--	--	--	609.63	610.50	--	--	--	--	--	--	--	--	611.53	--	--	--	--	--
August 1-2, 2017	607.02	--	606.73	605.57	605.50	--	607.39	--	--	--	--	606.84	605.69	--	--	--	--	--	--	--	--	608.71	--	--	--	--	--
October 9-10, 2017	606.93	606.51	606.25	607.01	606.94	--	606.22	606.13	606.33	606.44	606.45	606.68	606.93	606.57	606.61	606.65	606.71	--	--	--	--	--	--	--	--	--	--
October 19, 2017	609.60	--	609.42	609.58	609.65	--	608.84	--	--	--	--	609.47	609.43	--	--	--	--	--	--	609.40	609.40	608.55	--	--	--	--	--
November 17, 2017	--	--	--	--	--	606.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
December 19, 2017	--	--	--	--	--	604.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
February 7, 2018	605.37	--	605.33	604.96	604.92	--	--	--	616.81	--	--	605.31	605.01	--	--	--	--	--	--	--	--	606.19	605.08	605.05	605.00	--	--
March 16, 2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	604.64	604.6	604.56	--	--
April 203, 2018 **	604.82	606.61	606.27	606.63	606.55	606.52	606.49	606.37	606.39	606.46	606.43	604.44	606.46	606.58	606.66	606.68	606.70	--	--	606.77	606.83	606.19	--	--	--	--	--
May 23, 2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	610.68	610.78	610.61	--	--
October 8-10, 2018	610.76	610.68	610.67	610.28	610.24	610.02	610.34	610.28	610.83	610.09	610.05	610.39	610.27	611.05	610.94	610.72	610.54	--	--	--	--	611.44	--	--	--	--	--
November 11, 2018	--	--	--	--	609.14	--	--	--	--	--	--	609.11	--	--	--	--	--	--	--	--	--	--	--	--	--	608.40	
April 22-23, 2019	615.28	615.66	615.28	615.29	615.28	614.98	615.49	615.31	615.40	615.36	615.35	615.01	615.33	--	--	615.87	615.98	--	--	--	--	615.40	--	--	--	615.17	<615.06
October 14-16, 2019	613.43	613.11	613.06	613.29	613.18	612.47	613.10	613.10	612.71	612.83	612.78	612.50	613.20	613.10	613.00	613.10	613.15	--	--	--	--	613.35	--	--	--	612.33	<615.06
April 13-14, 2020	614.12	613.76	614.39	613.88	613.86	613.22	613.76	613.73	613.68	613.60	613.56	613.80	613.79	--	--	614.04	614.00	--	--	--	--	613.71	--	--	--	612.89	613.10
October 12-13, 2020	605.09	604.88	604.57	604.54	604.44	604.28	604.92	604.83	604.86	604.72	604.72	604.66	604.54	605.07	605.06	605.00	605.08	--	--	--	--	605.06	--	--	--	603.89	DRY
April 19-21, 2021	608.83	608.66	608.57	608.72	608.67	607.93	608.55	608.49	608.27	608.38	608.35	608.66	608.63	608.68	608.74	608.86	608.85	608.40	608.39	608.74	608.75	608.48	--	--	--	608.15	<609.00
October 6-8, 2021	604.05	604.04	603.85	603.79	603.74	603.56	604.21	604.13	604.11	604.00	603.97	603.98	603.84	604.32	604.38	604.35	604.34	603.93	603.92	NM	NM	604.23	--	--	--	602.90	<609.00
April 25-26, 2022	609.84	610.25	609.75	610.00	609.98	609.70	610.12	610.08	609.99	610.11	610.09	610.27	609.95	610.26	610.40	610.44	610.32	609.94	609.90	AB	AB	610.22	--	--	--	NM	609.25
October 18-19, 2022	603.81	603.82	603.59	603.63	603.57	603.39	603.99	603.81	603.84	603.78	603.77	603.69	603.61	604.07	604.09	604.12	604.05	603.64	603.65	AB	AB	603.91	--	--	--	601.29	<609.00
April 3-5, 2023	607.51	607.58	607.83	607.92	607.90	--	607.36	607.34	607.19	607.38	607.41	607.88	607.85	607.40	607.40	607.67	607.71	607.34	607.34	AB	AB	606.92	--	--	--	606.24	<609.00
October 2-3, 2023	604.39	604.06	603.93	603.97	603.91	--	604.20	604.15	604.12	604.07	604.05	603.98	603.95	604.23	604.29	604.34	599.49	603.81	603.86	AB	AB	604.04	--	--	--	603.29	<609.00
Bottom of Well Elevation (ft)	600.30	600.26	598.47	570.12	507.99	600.53	594.73	580.62	600.11	599.61	575.50	599.60	587.17	599.39	562.40	604.18	574.20	600.6	571	594.90	566.65	599.58	597.98	597.94	598.34		

Notes:
-- = not measured
*The PVC casing at B-35A was cut down on June 28, 2018 to allow the protective cover to close. Groundwater elevations prior to 6/28/18 are calculated using the old top of casing (TOC) elevation of 621.20 ft amsl. Groundwater elevations after 6/28/18 are calculated using the new TOC elevation (621.09 ft amsl).
** The PVC casing at B-21R was extended in 2018 following well rehabilitation. The well was resurveyed on April 22, 2019. The old top of casing elevation was 621.03 ft. The new TOC elevation is 623.31 ft.
^ One pond staff gauge was installed on April 22, 2019. The base of the gauge (0 reading) is at 615.056 ft amsl. Two additional gauges were installed on March 24, 2020. These gauge bases are at 609' and 612' amsl.
^^SG-12 reestablished in 2022 following barge slip construction work. Previous elevation (applies to measurements before October 2022) was 616.60. New elevation (top of metal pipe) is 622.34'
#B-21R was found knocked over during the April 2023 sampling event. A replacement well installation plan is in progress.

Created by: MDB Date: 4/1/2013
Last revision by: BS Date: 10/13/2023
Checked by: RM Date: 10/17/2023

Table 4A. Horizontal Gradients and Flow Velocity
Nelson Dewey Generating Station / SCS Engineers Project #25223071.00

	Flowpath - North/Northeast				
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
April 3-5, 2023	607.88	607.00	305	0.0029	0.06

	Flowpath - South				
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
October 2-3, 2023	604.10	603.98	1042	0.00012	0.002

Wells	**K Values (cm/sec)**	**K Values (ft/d)**
Geometric Mean	2.9E-03	8.2

Note: K value derived from averaging previous slug tests

Assumed Porosity, n
0.40

Groundwater flow velocity equation: $V = [K*(\Delta h/\Delta l)] / n$

ft = feet
ft/d = feet per day
K = hydraulic conductivity
n = effective porosity
V = groundwater flow velocity

h1, h2 = point interpreted groundwater elevation at locations 1 and 2
Δl = distance between location 1 and 2
Δh/Δl = hydraulic gradient

Created by:	NDK	Date:	9/26/2022
Last revision by:	RM	Date:	1/3/2024
Checked by:	NLB	Date:	1/3/2024

Table 4B. Summary of Calculated Vertical Hydraulic Gradients
Nelson Dewey Generating Station / SCS Engineers Project #25223071.00

Vertical Hydraulic Gradients	B-11A/B-11B		B-31R/B-31A	
Shallow Well	B-11A		B-31R	
Screen midpoint (feet amsl)	572.62		604.60	
Deep Well	B-11B		B-31A	
Screen midpoint (feet amsl)	510.49		589.67	
Measurement Date	**Distance between midpoints (ft)**	**Vertical Gradient (ft/ft)**	**Distance between midpoints (ft)**	**Vertical Gradient (ft/ft)**
April 3-5, 2023	62.13	-0.00032	14.93	-0.0020
October 2-3, 2023	62.13	-0.00097	14.93	-0.0020

Notes:
A positive vertical gradient indicates upward flow potential, and a negative vertical gradient indicates downward flow potential.

Created by:	NDK	Date:	9/26/2022
Last revision by:	RM	Date:	1/16/2024
Checked by:	NLB	Date:	1/16/2024

Table 5A. Groundwater Analytical Results Summary - October 2022
Nelson Dewey Closed Ash Disposal Facility, Cassville, WI / SCS Engineers Project #25222071.00

Parameter Name	UPL	Background Well	Compliance Wells					
		B-26	B-7R	B-11A	B-11B	B-11R	B-31A	B-31R
		10/18/2022	10/18/2022	10/18/2022	10/18/2022	10/18/2022	10/18/2022	10/18/2022
Groundwater Elevation (ft above msl)		603.99	603.81	603.63	603.57	603.59	603.61	603.69
Appendix III								
Boron, ug/L	72.3	48.8	--	95.2	3,010	3,090	213	327
Calcium, ug/L	108,000	80,300	--	46,000	75,100	116,000	45,300	78,500
Chloride, mg/L	77.6	37.4	--	49.1	32.8	28.8	53.9	35.1
Fluoride, mg/L	0.20	<0.095	--	0.22 J	0.47	0.16 J	0.14 J	0.21 J
Field pH, Std. Units	7.71	7.15	--	7.61	7.74	6.76	7.63	6.83
Sulfate, mg/L	44.0	47.6	--	22.7	429	65.3	23	29.6
Total Dissolved Solids, mg/L	553	472	--	332	920	572	310	386

7.81 Blue shaded cell indicates the compliance well result exceeds the UPL (background) and the Limit of Quantitation (LOQ).

Abbreviations:

UPL = Upper Prediction Limit
SSI = Statistically Significant Increase
DQ = Double Quantification
LOQ = Limit of Quantitation
LOD = Limit of Detection
ug/L = micrograms per liter
mg/L = milligrams per liter

Lab Notes:

J = Estimated concentration at or above the LOD and below the LOQ.
D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0 = Matrix Spike recovery and/or matric spike duplicate recovery was outside laboratory control limits.

Notes:

1. An individual result above the UPL may not constitute an SSI above background. See the accompanying report text for identification of statistically significant results.
2. Interwell UPLs calculated based on results from background well B-26. UPLs are based on a 1-of-2 retesting approach.
3. Interwell UPLs were updated in January 2021 with background well results from December 2015 through October 2020.

Created by:	LMH	Date:	9/26/2022
Last revision by:	NLB	Date:	8/3/2023
Checked by:	RM	Date:	1/3/2024
Proj Mgr QA/QC:	TK	Date:	1/14/2024

Table 5B. Groundwater Analytical Results Summary - April 2023
Nelson Dewey Closed Ash Disposal Facility, Cassville, WI / SCS Engineers Project #25223071.00

Parameter Name	UPL	Background Well	Compliance Wells					
		B-26	B-7R	B-11A	B-11B	B-11R	B-31A	B-31R
		4/4/2023	4/3/2023	4/4/2023	4/4/2023	4/4/2023	4/4/2023	4/4/2023
Groundwater Elevation (ft above msl)		607.36	607.51	607.92	607.90	607.83	607.85	607.88
Appendix III								
Boron, ug/L	70.5	38.6	120	119	4,740	3,110	193	589
Calcium, ug/L	104,000	77,400	48800	51,700	84,400	105,000	46,100	88,300
Chloride, mg/L	72.7	29.1	7.9 J	40.7	25.2	30.7	50.4	24.5
Fluoride, mg/L	0.20	<0.095	<0.48	0.22 J	0.65 J	<0.48	0.18 J	<0.48
Field pH, Std. Units	7.64	7.05	6.18	7.62	7.68	6.81	7.59	6.62
Sulfate, mg/L	47.1	34.3	<2.2	70.8	436	57.0	15.9	50.0
Total Dissolved Solids, mg/L	536	448	224	394	980	554	324	440

7.81 Blue shaded cell indicates the compliance well result exceeds the UPL (background) and the Limit of Quantitation (LOQ).

Abbreviations:
UPL = Upper Prediction Limit
SSI = Statistically Significant Increase
DQ = Double Quantification
LOQ = Limit of Quantitation
LOD = Limit of Detection
ug/L = micrograms per liter
mg/L = milligrams per liter

Lab Notes:
J = Estimated concentration at or above the LOD and below the LOQ.

Notes:
1. An individual result above the UPL may not constitute an SSI above background. See the accompanying report text for identification of statistically significant results.
2. Interwell UPLs calculated based on results from background well B-26. UPLs are based on a 1-of-2 retesting approach.
3. Interwell UPLs were updated in July 2023 with background well results from December 2015 through April 2023.

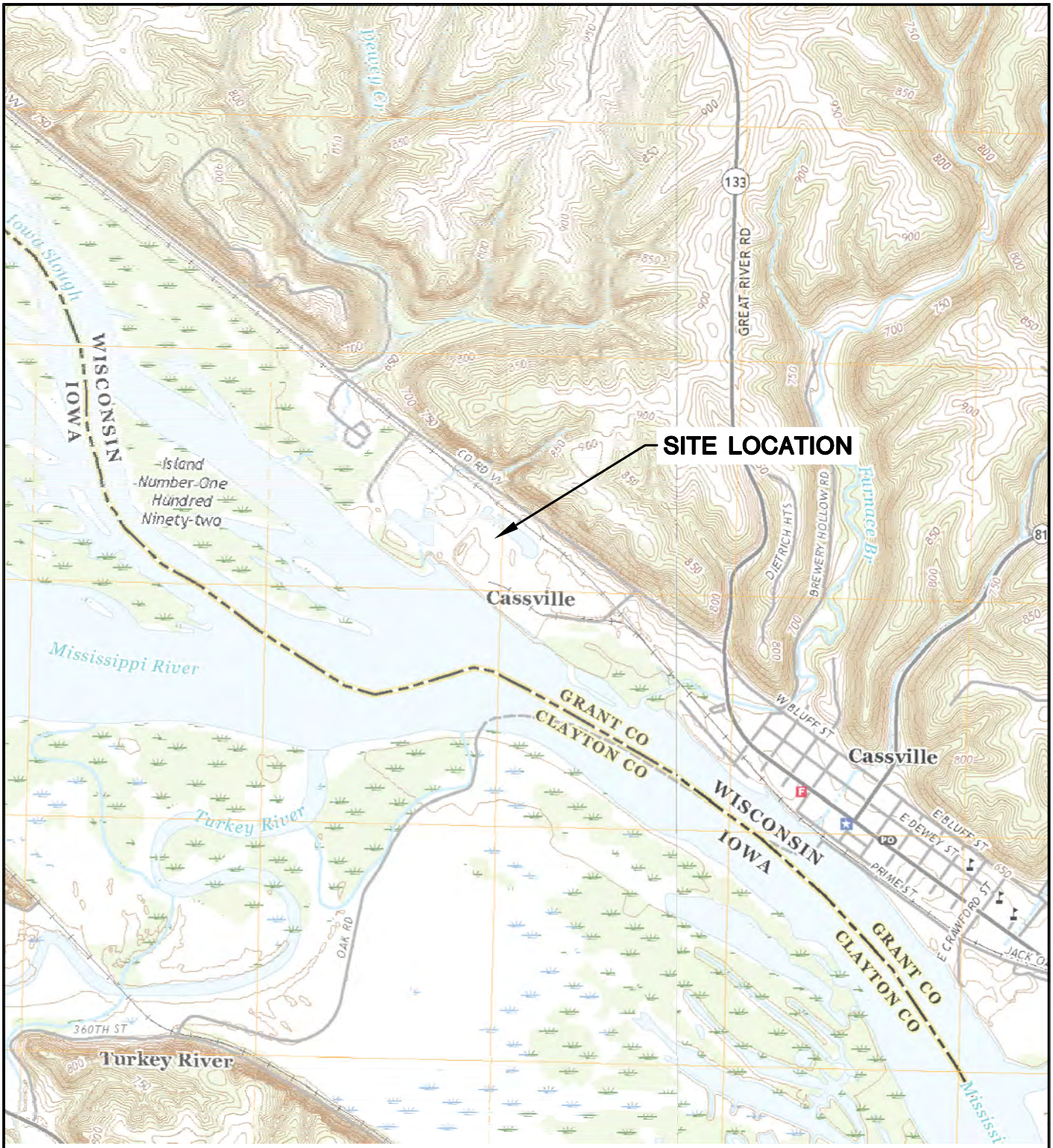
Created by:	LMH	Date:	9/26/2022
Last revision by:	NLB	Date:	8/3/2023
Checked by:	RM	Date:	1/3/2024
Proj Mgr QA/QC:	TK	Date:	1/14/2024

Table 6. 2023 Groundwater Field Data Summary
Nelson Dewey Closed Ash Disposal Facility / SCS Engineers Project #25223071.00

Well	Sample Date	Groundwater Elevation (feet)	Field Temperature (deg C)	Field pH (Std. Units)	Field Specific Conductance (umhos/cm)	Oxygen, Dissolved (mg/L)	Field Oxidation Potential (mV)	Turbidity (NTU)
B-7R	10/18/2022	603.81	--	--	--	--	--	--
	4/3/2023	607.51	9.2	6.18	443	0.16	58	22.0
B-11A	10/18/2022	603.63	13.3	7.61	608	0.12	92	0.72
	4/4/2023	607.92	12.7	7.62	606	0.25	-30	1.23
B-11B	10/18/2022	603.57	13.5	7.74	1395	0.22	104	2.55
	4/4/2023	607.90	12.3	7.68	1395	0.32	129	0.00
B-11R	10/18/2022	603.59	13.3	6.76	1014	0.22	-19	2.22
	4/4/2023	607.83	11.0	6.81	908	0.17	-56	3.14
B-26	10/18/2022	603.99	11.0	7.15	784	9.51	94	0.00
	4/5/2023	607.36	10.9	7.05	750	9.56	142	0.00
B-31A	10/18/2022	603.61	13.2	7.63	558	0.18	32	0.94
	4/6/2023	607.85	12.9	7.59	523	0.36	-68	1.17
B-31R	10/18/2022	603.69	12.7	6.83	711	0.45	-28	1.27
	4/4/2023	607.88	11.9	6.62	698	0.18	95	2.38

Created by: NDK Date: 9/26/2022
Last revision by: NLB Date: 7/31/2023
Checked by: BLR Date: 7/31/2023

Figures



N

CASSVILLE AND TURKEY RIVER QUADRANGLES
WISCONSIN–IOWA
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'

CLIENT	ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	SITE	ALLIANT ENERGY NELSON DEWEY GENERATING STATION CASSVILLE, WISCONSIN

SITE LOCATION MAP

PROJECT NO.	25220071.00	DRAWN BY:	BSS
DRAWN:	11/27/2019	CHECKED BY:	MDB
REVISED:	01/14/2020	APPROVED BY:	TK 04/10/2020

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE
1

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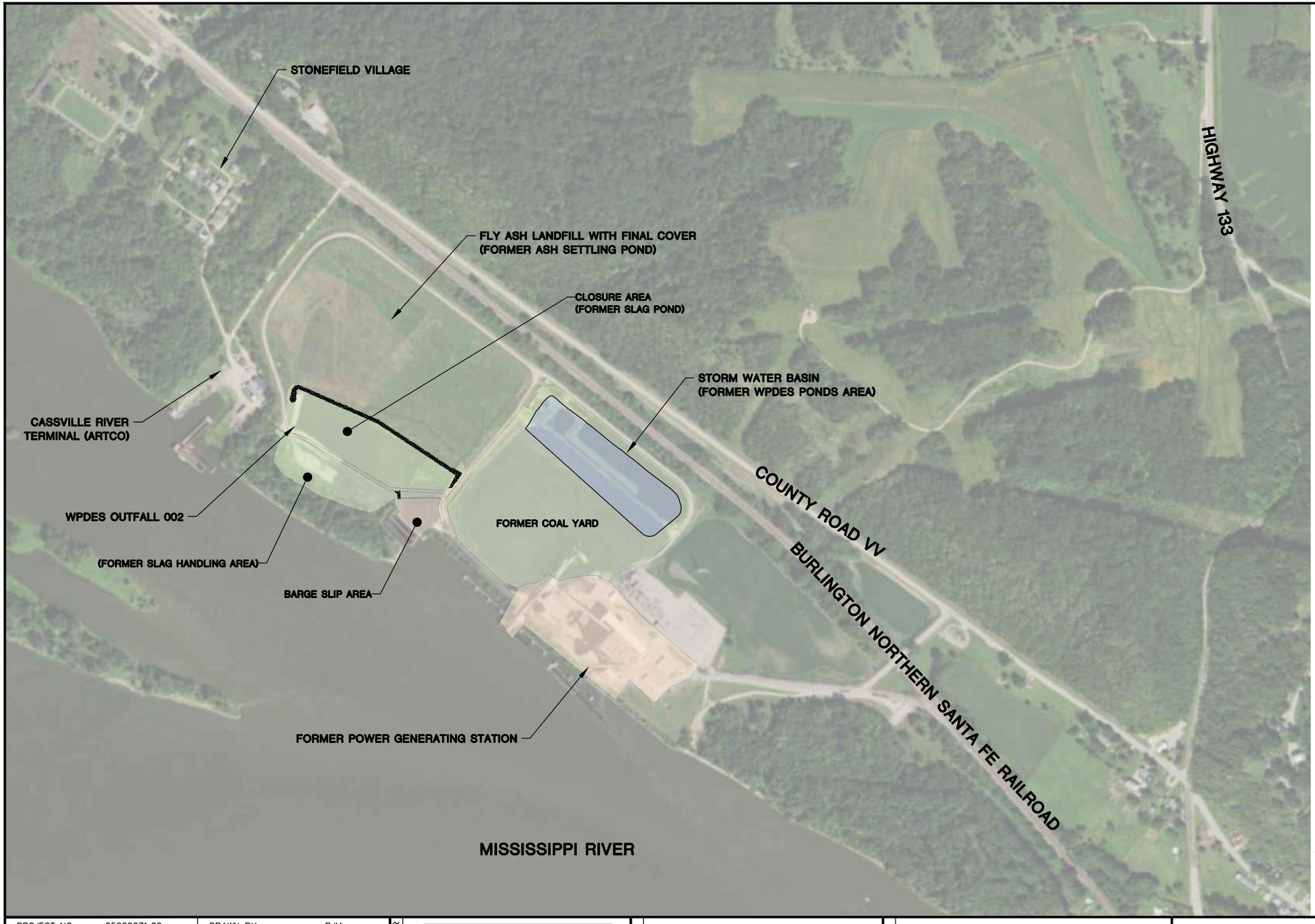

NOTES:

1. AERIAL PHOTOGRAPH FROM THE NATIONAL AGRICULTURE IMAGERY PROGRAM AND PUBLISHED BY THE USDA FSA AERIAL PHOTOGRAPHY FIELD OFFICE. DATE OF IMAGE IS AUGUST 24, 2015.

500 0 500

SCALE: 1" = 500'

PROJECT NO.	25220071.00	DRAWN BY:	BJM
DRAWN:	12/18/13	CHECKED BY:	KAK
REVISED:	01/22/20	APPROVED BY:	TK 04/10/2020

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT: WISCONSIN POWER AND LIGHT CO.
NELSON DEWEY GENERATING STATION
11999 COUNTY HIGHWAY VV
CASSVILLE WI, 53806

SITE: WISCONSIN POWER AND LIGHT
NELSON DEWEY GENERATING STATION
CASSVILLE WISCONSIN

AERIAL VIEW

FIGURE 2

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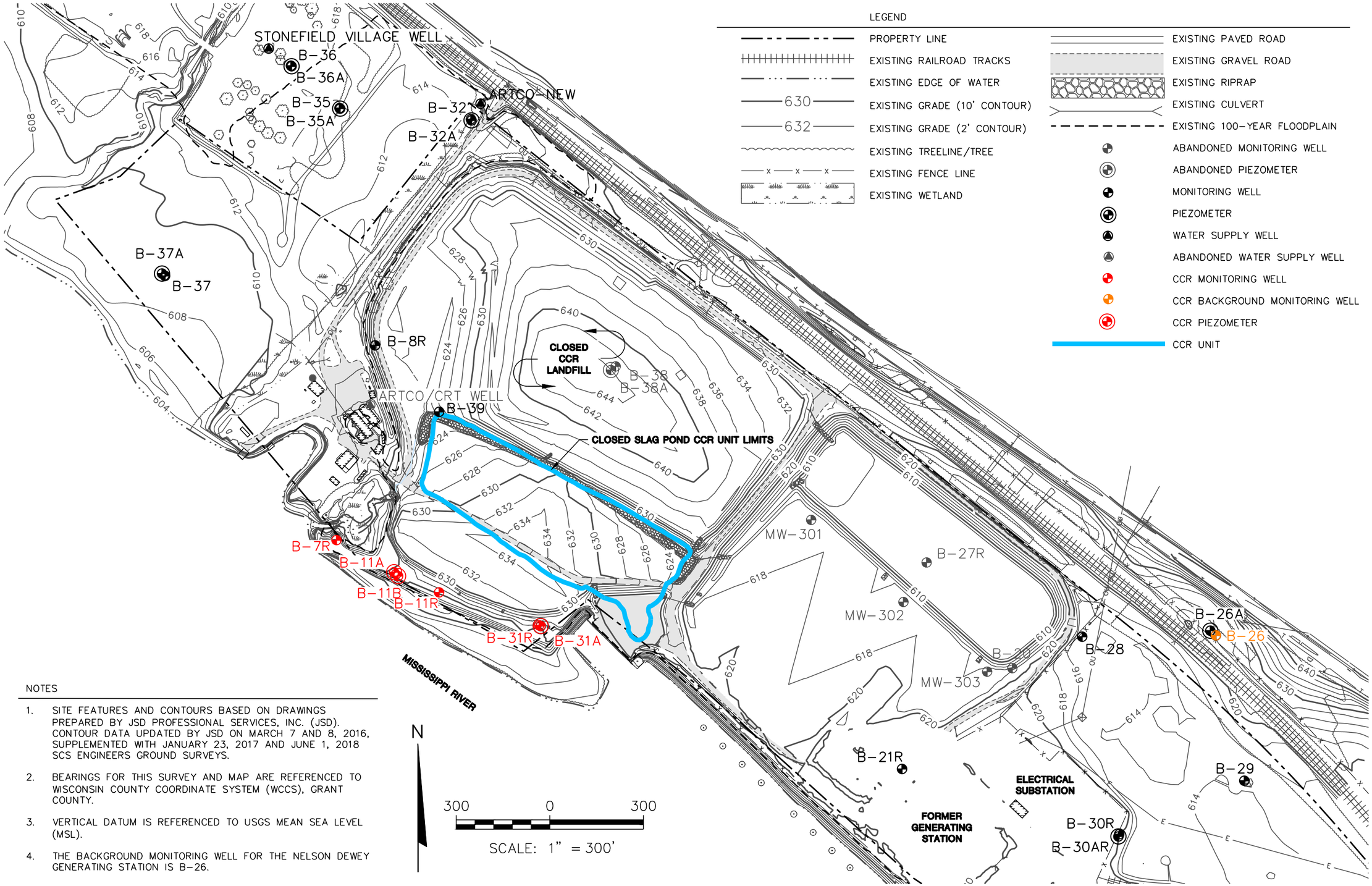


NOTES

1. SITE FEATURES AND CONTOURS BASED ON DRAWINGS PREPARED BY JSD PROFESSIONAL SERVICES, INC. (JSD). CONTOUR DATA UPDATED BY JSD ON MARCH 7 AND 8, 2016, SUPPLEMENTED WITH JANUARY 23, 2017 AND JUNE 1, 2018 SCS ENGINEERS GROUND SURVEYS.
2. BEARINGS FOR THIS SURVEY AND MAP ARE REFERENCED TO WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), GRANT COUNTY.
3. VERTICAL DATUM IS REFERENCED TO USGS MEAN SEA LEVEL (MSL).
4. THE BACKGROUND MONITORING WELL FOR THE NELSON DEWEY GENERATING STATION IS B-26.

SITE

SITE PLAN AND MONITORING WELL LOCATIONS

ALLIANT ENERGY
NELSON DEWEY GENERATING STATION
CASSVILLE, WISCONSIN

CLIENT

ALLIANT ENERGY
4902 N. BILTMORE LANE, #1000
MADISON, WI 53718

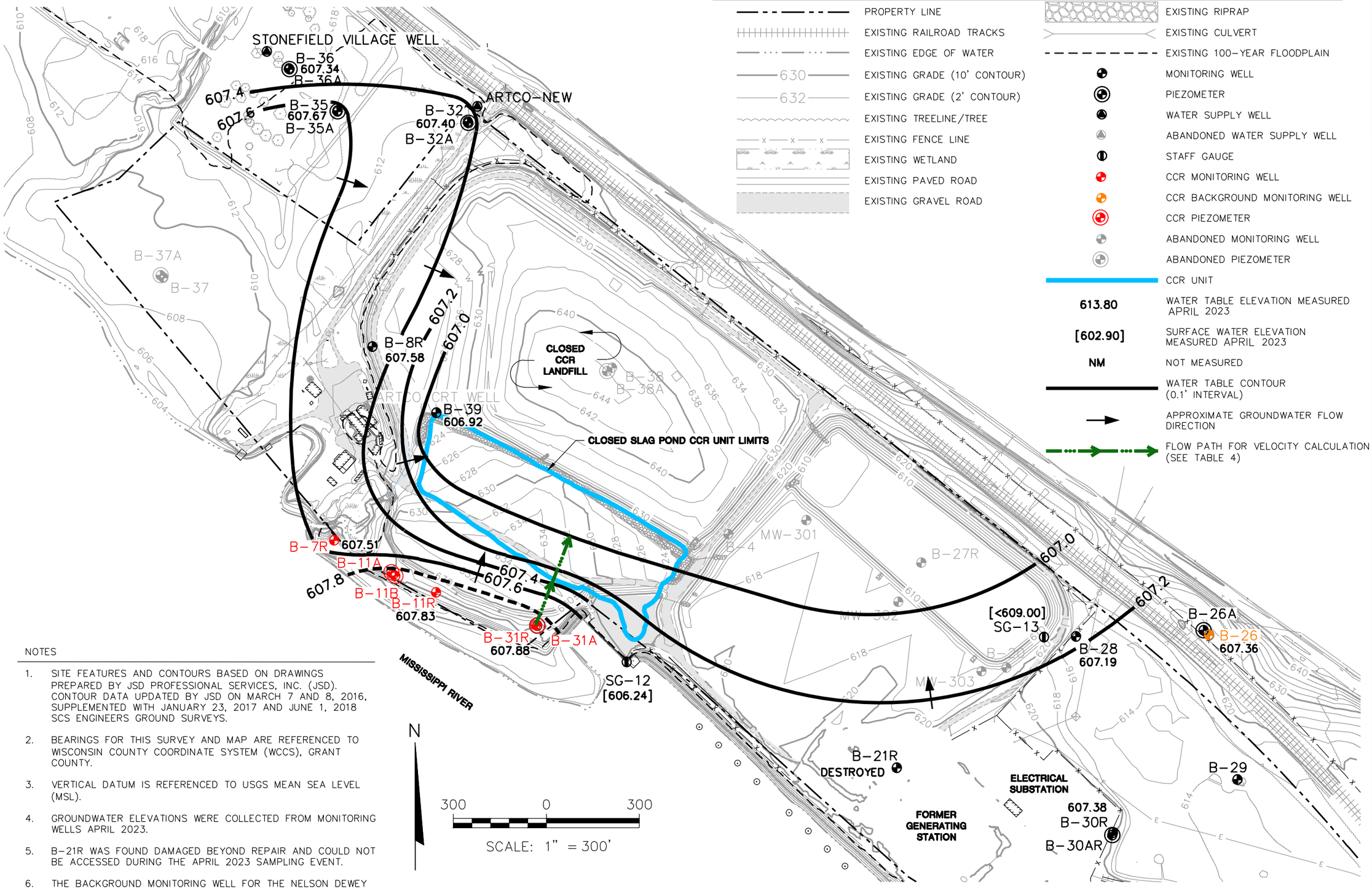
ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

PROJECT NO.	25221071.00
DRAWN:	11/27/2019
REVISED:	01/11/2022
DRAWN BY:	BSS
CHECKED BY:	MDB
APPROVED BY:	MDB 1/11/2022

FIGURE 3

I:\25221071.00\Drawings\Site Plan and Monitoring Well Locations.dwg, 1/11/2022 11:10:49 AM



LEGEND

- PROPERTY LINE
- EXISTING RAILROAD TRACKS
- EXISTING EDGE OF WATER
- EXISTING GRADE (10' CONTOUR)
- EXISTING GRADE (2' CONTOUR)
- EXISTING TREELINE/TREE
- EXISTING FENCE LINE
- EXISTING WETLAND
- EXISTING PAVED ROAD
- EXISTING GRAVEL ROAD
- EXISTING RIPRAP
- EXISTING CULVERT
- EXISTING 100-YEAR FLOODPLAIN
- MONITORING WELL
- PIEZOMETER
- WATER SUPPLY WELL
- ABANDONED WATER SUPPLY WELL
- STAFF GAUGE
- CCR MONITORING WELL
- CCR BACKGROUND MONITORING WELL
- CCR PIEZOMETER
- ABANDONED MONITORING WELL
- ABANDONED PIEZOMETER
- CCR UNIT
- 613.80 — WATER TABLE ELEVATION MEASURED APRIL 2023
- [602.90] — SURFACE WATER ELEVATION MEASURED APRIL 2023
- NM — NOT MEASURED
- WATER TABLE CONTOUR (0.1' INTERVAL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4)

NOTES

1. SITE FEATURES AND CONTOURS BASED ON DRAWINGS PREPARED BY JSD PROFESSIONAL SERVICES, INC. (JSD). CONTOUR DATA UPDATED BY JSD ON MARCH 7 AND 8, 2016, SUPPLEMENTED WITH JANUARY 23, 2017 AND JUNE 1, 2018 SCS ENGINEERS GROUND SURVEYS.
2. BEARINGS FOR THIS SURVEY AND MAP ARE REFERENCED TO WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), GRANT COUNTY.
3. VERTICAL DATUM IS REFERENCED TO USGS MEAN SEA LEVEL (MSL).
4. GROUNDWATER ELEVATIONS WERE COLLECTED FROM MONITORING WELLS APRIL 2023.
5. B-21R WAS FOUND DAMAGED BEYOND REPAIR AND COULD NOT BE ACCESSED DURING THE APRIL 2023 SAMPLING EVENT.
6. THE BACKGROUND MONITORING WELL FOR THE NELSON DEWEY GENERATING STATION IS B-26.

WATER TABLE FLOW MAP
APRIL 2023

FIGURE 4

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

SITE
ALLIANT ENERGY
NELSON DEWEY GENERATING STATION
CASSVILLE, WISCONSIN

CLIENT
ALLIANT ENERGY
4902 N. BILTMORE LANE, #1000
MADISON, WI 53718

PROJECT NO.	25223071.00	DRAWN BY:	KP
DRAWN:	09/07/2023	CHECKED BY:	TK 1/17/2024
REVISED:	01/16/2024	APPROVED BY:	TK 1/17/2024

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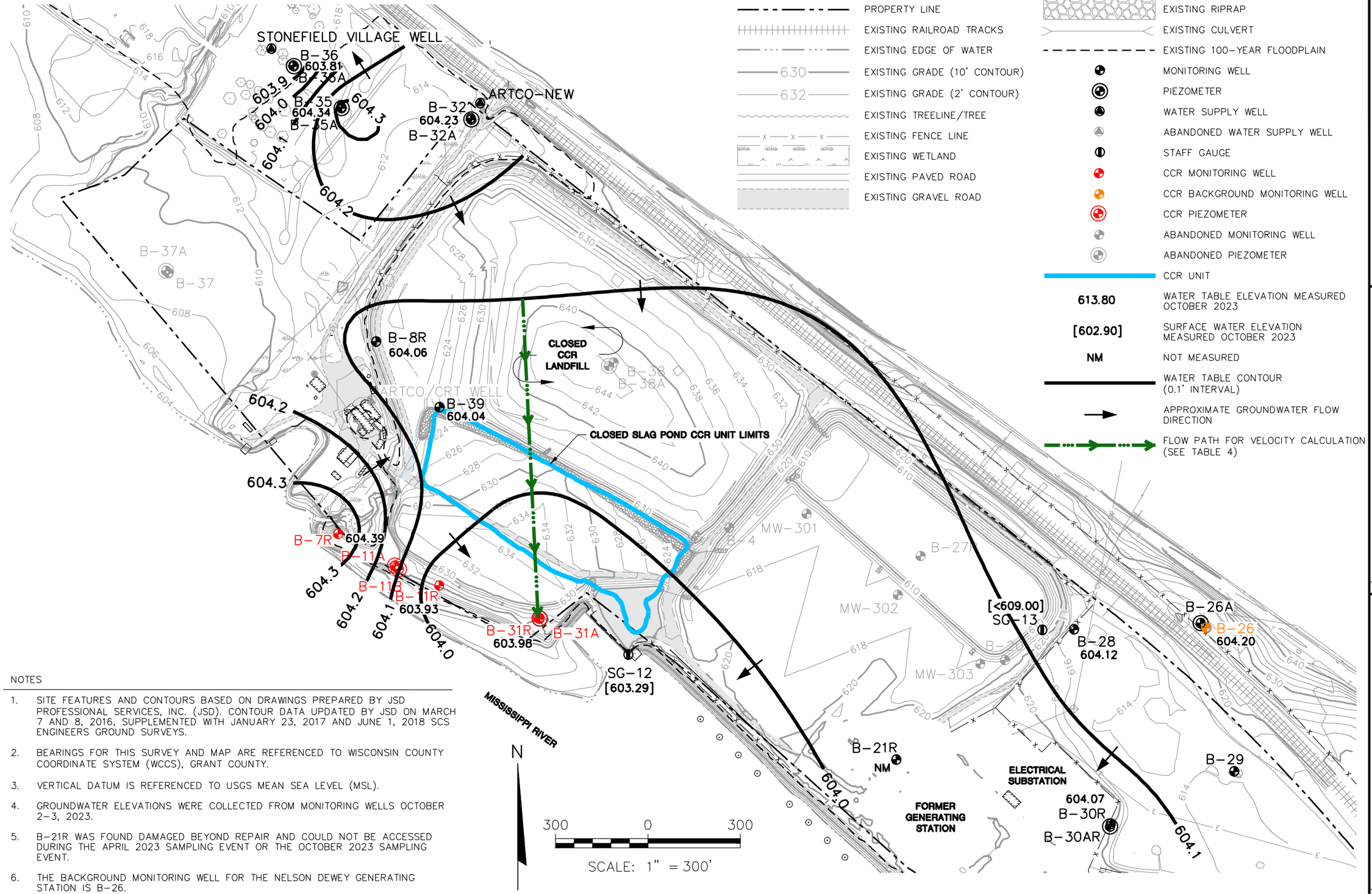

LEGEND

- PROPERTY LINE
- EXISTING RAILROAD TRACKS
- EXISTING EDGE OF WATER
- EXISTING GRADE (10' CONTOUR)
- EXISTING GRADE (2' CONTOUR)
- EXISTING TREELINE/TREE
- EXISTING FENCE LINE
- EXISTING WETLAND
- EXISTING PAVED ROAD
- EXISTING GRAVEL ROAD
- EXISTING RIPRAP
- EXISTING CULVERT
- EXISTING 100-YEAR FLOODPLAIN
- MONITORING WELL
- PIEZOMETER
- WATER SUPPLY WELL
- ABANDONED WATER SUPPLY WELL
- STAFF GAUGE
- CCR MONITORING WELL
- CCR BACKGROUND MONITORING WELL
- CCR PIEZOMETER
- ABANDONED MONITORING WELL
- ABANDONED PIEZOMETER
- CCR UNIT
- **613.80** WATER TABLE ELEVATION MEASURED OCTOBER 2023
- **[602.90]** SURFACE WATER ELEVATION MEASURED OCTOBER 2023
- **NM** NOT MEASURED
- WATER TABLE CONTOUR (0.1' INTERVAL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4)

NOTES

1. SITE FEATURES AND CONTOURS BASED ON DRAWINGS PREPARED BY JSD PROFESSIONAL SERVICES, INC. (JSD). CONTOUR DATA UPDATED BY JSD ON MARCH 7 AND 8, 2016, SUPPLEMENTED WITH JANUARY 23, 2017 AND JUNE 1, 2018 SCS ENGINEERS GROUND SURVEYS.
2. BEARINGS FOR THIS SURVEY AND MAP ARE REFERENCED TO WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), GRANT COUNTY.
3. VERTICAL DATUM IS REFERENCED TO USGS MEAN SEA LEVEL (MSL).
4. GROUNDWATER ELEVATIONS WERE COLLECTED FROM MONITORING WELLS OCTOBER 2-3, 2023.
5. B-21R WAS FOUND DAMAGED BEYOND REPAIR AND COULD NOT BE ACCESSED DURING THE APRIL 2023 SAMPLING EVENT OR THE OCTOBER 2023 SAMPLING EVENT.
6. THE BACKGROUND MONITORING WELL FOR THE NELSON DEWEY GENERATING STATION IS B-26.

WATER TABLE FLOW MAP
OCTOBER 2023

ALLIANT ENERGY
NELSON DEWEY GENERATING STATION
CASSVILLE, WISCONSIN

SITE

FIGURE 5

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

DRAWN BY:	KP	TK 1/17/2024
CHECKED BY:		TK 1/17/2024
APPROVED BY:		
PROJECT NO.	25223071.00	
DRAWN:	12/01/2023	
REVISED:	01/16/2024	

CLIENT
ALLIANT ENERGY
4902 N. BILTMORE LANE, #1000
MADISON, WI 53718

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Appendix A

Summary of Regional Geologic and Hydrogeologic Information

Regional Glacial Geology

Alluvial

al — **Alluvium.** Primarily sand or slightly gravelly sand on modern valley bottoms; most deposited during the last part of the Holocene; overlain by thin peat and thin silty overbank sediment in many places.

ate — **Alluvial sediment of the Elderon-phase terrace.** Sand or gravelly sand, at least a few meters thick up to 15 m thick, deposited by streams carrying meltwater from the margins of the Laurentide Ice Sheet during the Elderon phase of the late Wisconsin glaciation. Occurs as terraces formed during subsequent down-cutting during the latest Wisconsin and Holocene.

ats — **Alluvial sediment of the Savanna terrace.** Sand or gravelly sand, at least a few meters thick up to a15 m thick, deposited by streams carrying meltwater from the margins of the Laurentide Ice Sheet during the late Wisconsin glaciation. Occurs as the Savanna terrace formed during subsequent down-cutting during the latest Wisconsin and Holocene.

atb — **Alluvial sediment of the Bridgeport terrace.** Sand or gravelly sand, at least a few meters thick up to 15 m thick, deposited by streams carrying meltwater from the margins of the Laurentide Ice Sheet during the late Wisconsin glaciation. Occurs as remnants of the Bridgeport terrace; the terrace surface is likely largely underlain by a bedrock strath.

af — **Alluvial fan.** Moderately to well-sorted cobbles, gravel, pebbles, and fine sediment forming fan-shaped deposits on valley floors. Typically forms at the base of steep slopes and particularly at the mouths of steep tributaries.

Colluvial

cc — **Coarse-grained colluvium.** Unsorted slope sediment, derived from erosion of Paleozoic bedrock and windblown silt from upland surfaces moving downslope due to gravity. Typically associated with bedrock incision by major streams, and occurring on relatively steep slopes adjacent to major stream systems and deposits.

ls — **Landslide.** Poorly sorted gravel, boulder, and blocky debris. Forms chaotic, hummocky lobes on valley floors and at bases of slopes; may have associated scarps on adjacent upslope surfaces.

Windblown

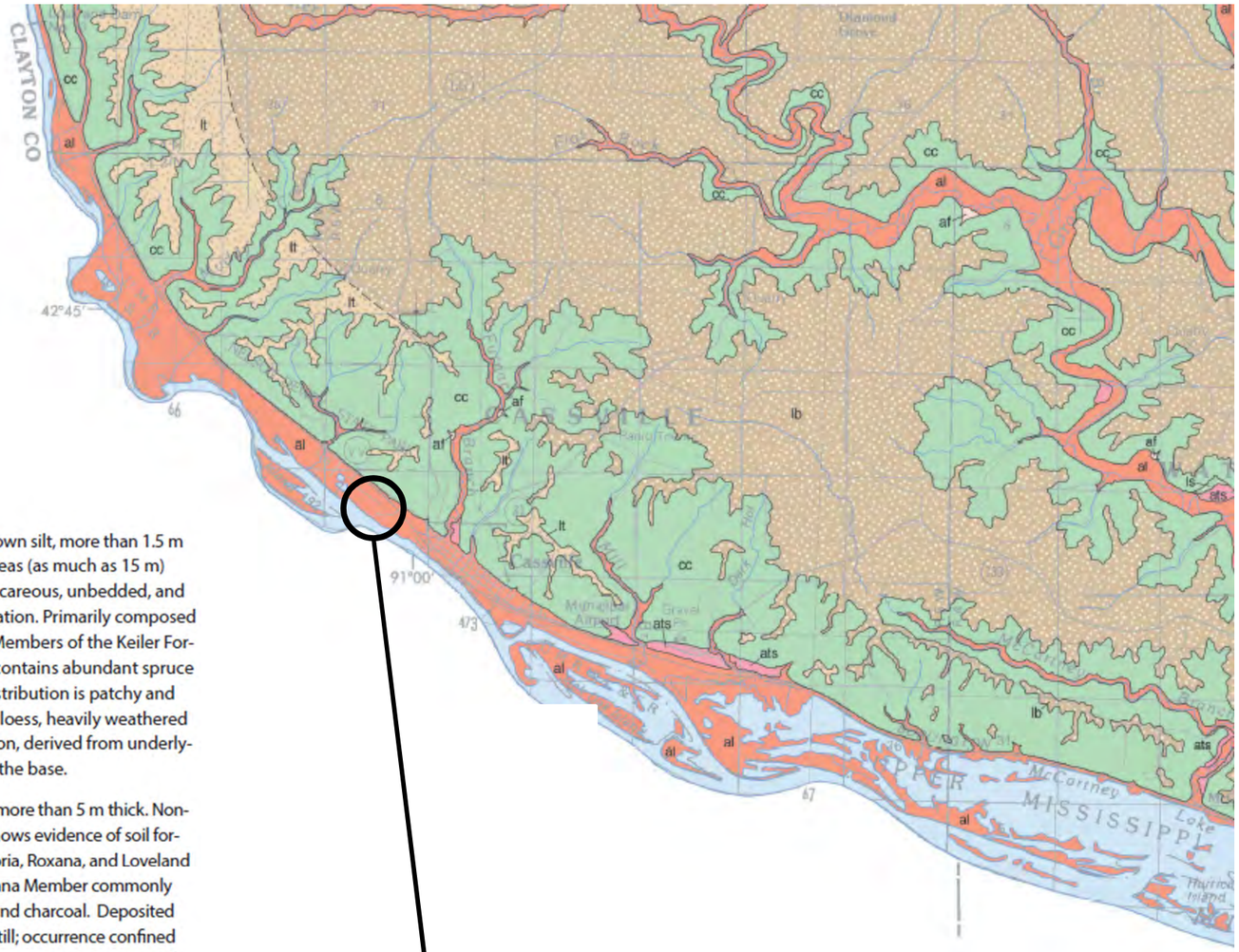
lb — **Loess on Paleozoic bedrock.** Windblown silt, more than 1.5 m thick; generally thickest in western areas (as much as 15 m) and thinning toward the east. Noncalcareous, unbedded, and massive; shows evidence of soil formation. Primarily composed of the Peoria, Roxana, and Loveland Members of the Keiler Formation. Roxana Member commonly contains abundant spruce fragments and charcoal. Although distribution is patchy and uncertain due to the thickness of the loess, heavily weathered residual clay of the Rountree Formation, derived from underlying Paleozoic bedrock, is common at the base.

lt — **Loess on till.** Windblown silt, typically more than 5 m thick. Noncalcareous, unbedded, and massive, shows evidence of soil formation. Primarily composed of the Peoria, Roxana, and Loveland Members of the Keiler Formation. Roxana Member commonly contains abundant spruce fragments and charcoal. Deposited on patchy, discontinuous pre-Illinoian till; occurrence confined to western Grant County, which was the easternmost extent of pre-Illinoian ice flowing from Minnesota and Iowa.

ws — **Windblown sand.** More than about 1.5 m thick; dunes generally no more than a few meters high.

Symbols

Geologic contact. Position shown on map is judged to be generally within 0.2 km of actual position. Dashed where approximate.

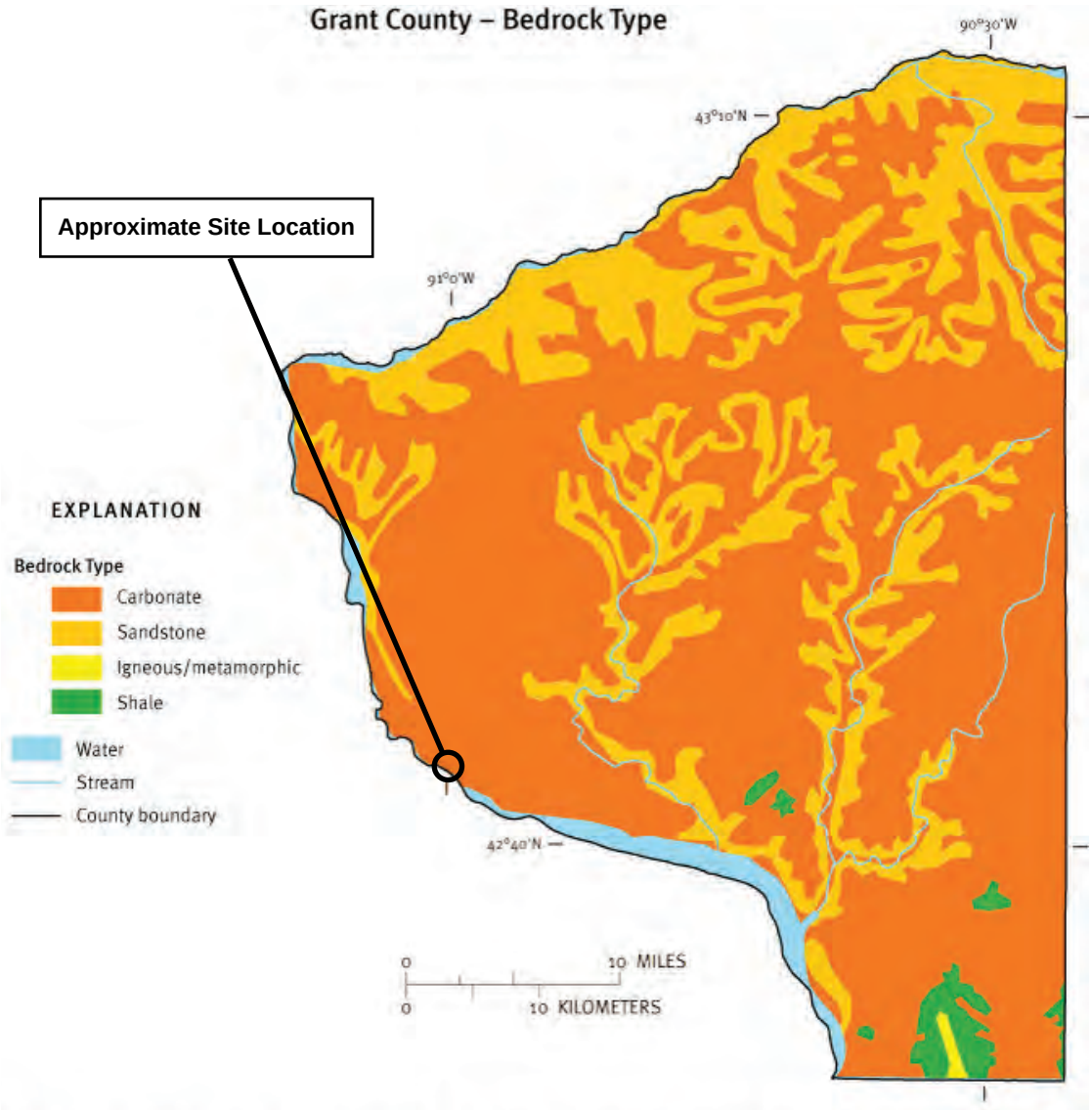


SCALE 1:100,000

1 0 1 2 3 4 5
MILES

1 0 1 2 3 4 5 6 7 8
KILOMETERS

Source: Carson, Eric C., Preliminary Quaternary Geology of Grant County, Wisconsin, Wisconsin Geological and Natural History Survey Open File Report 2012-06.

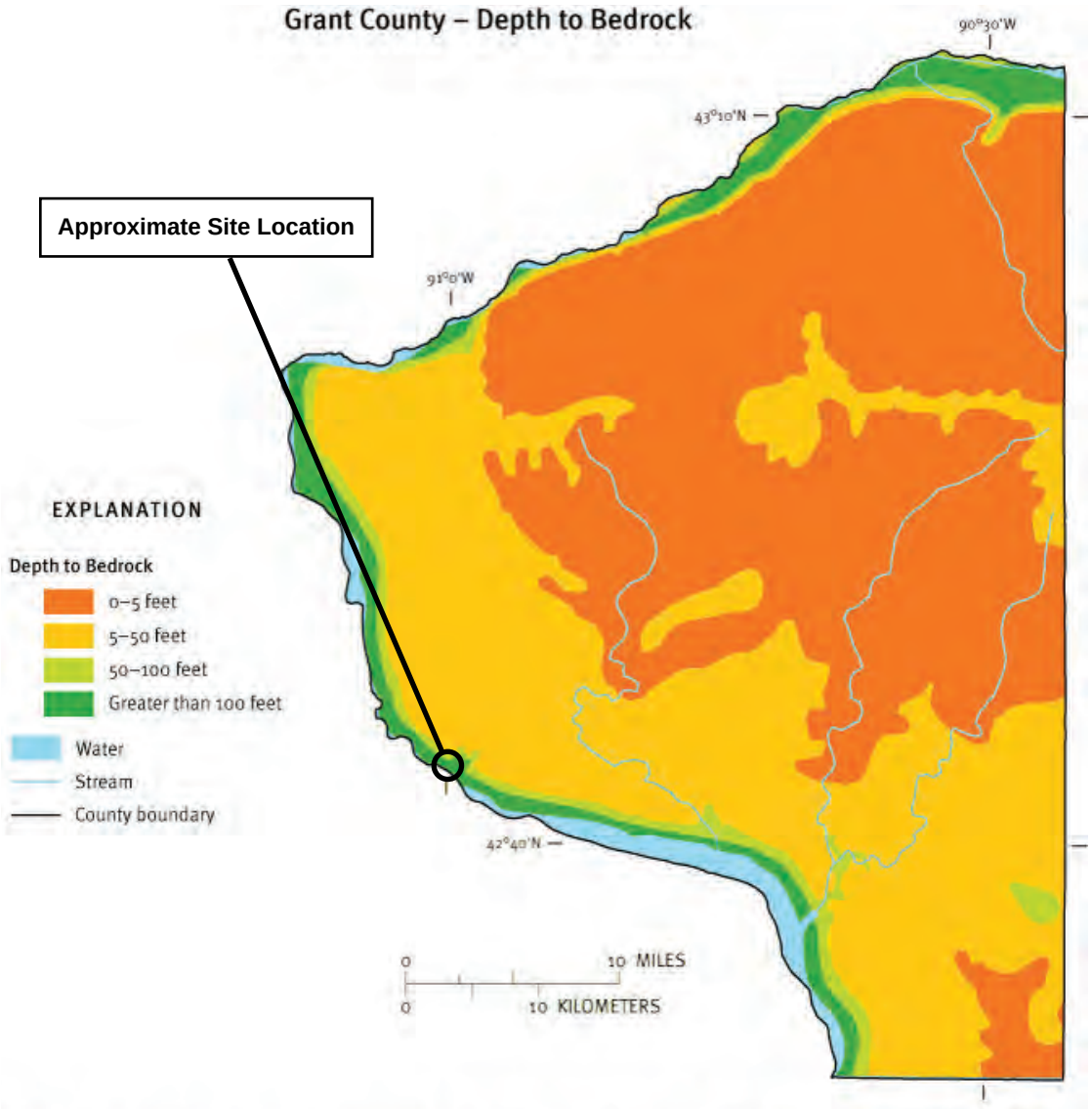


This resource characteristic map was derived from generalized statewide information at small scales, and cannot be used for any site-specific purposes.

Map source: Schmidt, R.R., 1987, Groundwater contamination susceptibility map and evaluation: Wisconsin Department of Natural Resources, Wisconsin's Groundwater Management Plan Report 5, PUBL-WR-177-87, 27 p.

Figure created for the "Protecting Wisconsin's Groundwater Through Comprehensive Planning" web site, 2007, *http://wi.water.usgs.gov/gwcomp/*

When bedrock is less than 50 feet from the land surface and the water table occurs in the bedrock, the type of bedrock is important in determining how easily a contaminant can reach the groundwater. Bedrock types that allow water to pass quickly through them will offer less protection from contaminants. In Wisconsin, these types of bedrock are typically limestone and dolomite which are highly fractured. Igneous and metamorphic rocks (e.g. granite) and sandstone are less fractured and offer some protection from infiltrating water which may contain contaminants. On the other hand, shale bedrock is almost impermeable, and doesn't allow water and accompanying contaminants to pass through it as easily. The bedrock categories used for this project are carbonates, sandstone, igneous/metamorphic/volcanic, and shale.



This resource characteristic map was derived from generalized statewide information at small scales, and cannot be used for any site-specific purposes.

Map source: Schmidt, R.R., 1987, Groundwater contamination susceptibility map and evaluation: Wisconsin Department of Natural Resources, Wisconsin's Groundwater Management Plan Report 5, PUBL-WR-177-87, 27 p.

Figure created for the "Protecting Wisconsin's Groundwater Through Comprehensive Planning" web site, 2007, *http://wi.water.usgs.gov/gwcomp/*

The depth to bedrock indicates the amount of soil and surficial deposits that exist in an area and, therefore how important the type of bedrock is in evaluating pollution potential. Information on the depth to bedrock map is used to determine the relative weight given to the other resource characteristic maps. For example, where the bedrock surface is deep and the water table occurs above the bedrock, the type of bedrock is not considered in determining groundwater contamination susceptibility. Where the depth to bedrock is shallow (less than 50 feet below the land surface), the water table is likely to occur in the bedrock. In that case, the type of bedrock is considered because it could influence a contaminant's ability to reach the groundwater. This map identifies areas where the depth to bedrock is 0-5 feet (in at least 35% of the area), 5-50 feet, 50-100 feet and greater than 100 feet.

Appendix B

Boring Logs, Well Construction, and Well Development Forms

SCS # 25215135.30

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Managemen ☐ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: WPL- Nelson Dewey Generating St.	Local Grid Location of Well: 479422.6 ft. ☒ N. ☐ S. 737324.8 ft. ☒ E. ☐ W.	Well Name: B-39
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.	DNR Well ID No.
Facility ID	St. Plane ft. N, ft. E. S/C/N	Date Well Installed: 10 / 20 / 2015 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: SE 1/4 of NW 1/4 of Sec. 19, T. 3 N, R. 5 ☐ E ☒ W	Well Installed By: Name (first, last) and Firm: Dave Cruise- Badger State Drilling; Kyle Kramer- SCS Engineers
Distance from Waste/Source ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number

A. Protective pipe, top elevation 626.65 ft. MSL
B. Well casing, top elevation 626.48 ft. MSL
C. Land surface elevation 623.58 ft. MSL
D. Surface seal, bottom 623.08 ft. MSL or 0.5 ft.

12. USCS classification of soil near screen:
GP ☒ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

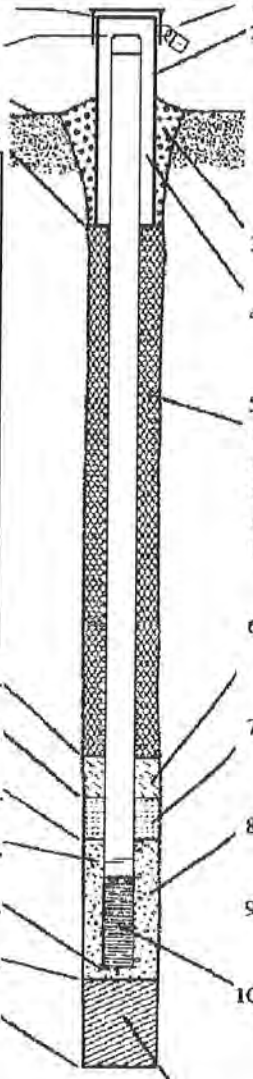
14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe

17. Source of water (attach analysis, if required):

E. Bentonite seal, top 623.08 ft. MSL or 0.5 ft.
F. Fine sand, top 613.58 ft. MSL or 10 ft.
G. Filter pack, top 611.58 ft. MSL or 12 ft.
H. Screen joint, top 609.58 ft. MSL or 14 ft.
I. Well bottom 599.58 ft. MSL or 24 ft.
J. Filter pack, bottom 596.58 ft. MSL or 27 ft.
K. Borehole, bottom 596.58 ft. MSL or 27 ft.
L. Borehole, diameter 8.5 in.
M. O.D. well casing 2.4 in.
N. I.D. well casing 2.04 in.



1. Cap and lock? ☒ Yes ☒ No
2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 4 ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☐ Yes ☐ No
If yes, describe: Bollards
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐
Bentonite
4. Material between well casing and protective pipe: Bentonite ☐ 30; Other ☐
#5 Filter Sand - Ohio
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☑ 32
c. Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. #7 Fine Sand - Ohio ☐
b. Volume added ____ ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. #5 Filter Sand - Ohio ☐
b. Volume added ____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐
10. Screen material: 40 PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
b. Manufacturer Monoflex
c. Slot size: 0.10 in.
d. Slotted length: 10 ft.
11. Backfill material (below filter pack): None ☐ 14; Other ☐
#5 Coarse - Ohio

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature | Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL- Nelson Dewey Generating Station SCS#: 25215135.30		B-39

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Dave Cruise Badger State Drilling	10/20/2015	10/20/2015	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet	623.58 Feet	8.5 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane 479,423 N, 737,325 E S/C/N
NW 1/4 of NW 1/4 of Section 19, T 3 N, R 5 W

Lat ° ' "
Long ° ' "

Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Grant	22	Cassville

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Pocket Penetration (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	TOPSOIL, with medium grained sand, light brown.	TOPSOIL									
			1	POORLY GRADED SLAG, coarse grained, very dark brown (10YR 2/2), fly ash.										
S1	20	20 25 29 33	3		FILL					M				
S2	21	14 32 44 31	7							M				
S3	10	12 10 15 8	11	POORLY GRADED SAND, fine grained, dark gray (10YR4/1).	SP					M				
S4	18	3 4 4 4	13							M				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
Kyle Thauer	SCS Engineers 2830 Dairy Drive Madison, WI 53711	(608) 224-2830 Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number B-39 Use only as an attachment to Form 4400-122. Page 2 of 2

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Pocket Penetration (tsf)	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S5	15	4 5 5 6	16	POORLY GRADED SAND, fine grained, dark gray (10YR 4/1).						M				
S6	16	3 4 4 6	17 18 19		SP					S				Saturation @ 16.5ft bgs
S7	22	4 6 8 11	20	POORLY GRADED GRAVEL WITH SAND, pebble size gravel, dark gray (10YR 4/1).	GP					S				
S8	14	7 4 4 5	21 22	POORLY GRADED SAND, coarse grained, dark gray (10YR 4/1).						S				
S9	6	4 7 8 10	23 24 25		SP					S				
S10	14	4 3 4 21	26	Trace pebbles						S				
			27	EOB @ 27' bgs.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPL - Nelson Dewey Generating Station	02525	B-07R

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Wes Imhoff Layne Christensen, Co.	4/28/2009	4/28/2009	Rotosonic

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VU600	156	B-07R	Feet MSL	620.5 Feet MSL	6.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 265,999 N, 1,695,529 E S/C/N
NW 1/4 of NW 1/4 of Section 19, T 3 N, R 5 W
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
122014530	Grant	22	Cassville

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 CS	60 42		1	**WELL GRADED SAND WITH SILT (SW-SM),** non-plastic, 5YR 4/4 reddish brown, no odor, moist, some siltier layers at 4.5 feet.										
			2											
			3											
			4											
2 CS	60 48		5	Same as above.										
			6		SW-SM									
			7											
			8											
			9	Silty organic sand layer from 9 to 9.5 feet.										
3 CS	60 60		10	Same as above, color change to 7.5YR 4/1 dark gray, moist to wet above clay.										
			11											
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Nate Keller /jo	RMT, Inc. 744 Heartland Trail Madison, WI 53717	Tel: 608-831-4444 Fax: 608-831-3334

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

WDNR_SBL_98 03026W.GPJ WI_DNR98.GDT 8/27/09

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number B-07R Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			13		SW-SM									
			14	**LEAN CLAY WITH SAND (CL),** fine sand, plastic, 7.5YR 3/1 very dark gray, no odor, wet.	CL									
4 CS	60 60		15	**WELL GRADED SAND WITH SILT AND CLAY (SW-SM),** trace gravel, very low plasticity, 5YR 4/3 reddish brown, no odor, wet.										
			16											
			17		SW-SM									
			18											
			19											
			20	**End of boring at 20.0 feet.**										

WDNR_SBL_98 03026W.GPJ WI_DNR98.GDT 8/27/09

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: WPL - Nelson Dewey Generating Station	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: B-07R
Facility License, Permit or Monitoring No.: 02525	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒ Lat. ° ' " Long. ° ' " or St. Plane 265,999 ft. N, 1,695,529 ft. E. S/C/N	Wis. Unique Well No.: VU600 / DNR Well Number: 156
Facility ID: 122014530		Date Well Installed: 04/28/2009
Type of Well: Well Code 11/mw	Section Location of Waste/Source: NW 1/4 of NW 1/4 of Sec. 19, T. 3 N, R. 5 ☐ E ☒ W	Well Installed By: (Person's Name and Firm): Wes Imhoff; Layne Christensen, Co.
Distance from Waste/Source: 350 ft. / Enf. Stds. Apply ☒	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Gov. Lot Number:

A. Protective pipe, top elevation 623.50 ft. MSL

B. Well casing, top elevation 623.35 ft. MSL

C. Land surface elevation 620.5 ft. MSL

D. Surface seal, bottom 618.5 ft. MSL or 2.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☒ SP ☐
SM ☒ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☐ 41 / Rotosonic / Other ☒ __

15. Drilling fluid used: Water ☒ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ____

17. Source of water (attach analysis, if required):
on-site hydrant

E. Bentonite seal, top 618.5 ft. MSL or 2.0 ft.

F. Fine sand, top 612.6 ft. MSL or 7.9 ft.

G. Filter pack, top 612.6 ft. MSL or 7.9 ft.

H. Screen joint, top 610.5 ft. MSL or 10.0 ft.

I. Well bottom 600.5 ft. MSL or 20.0 ft.

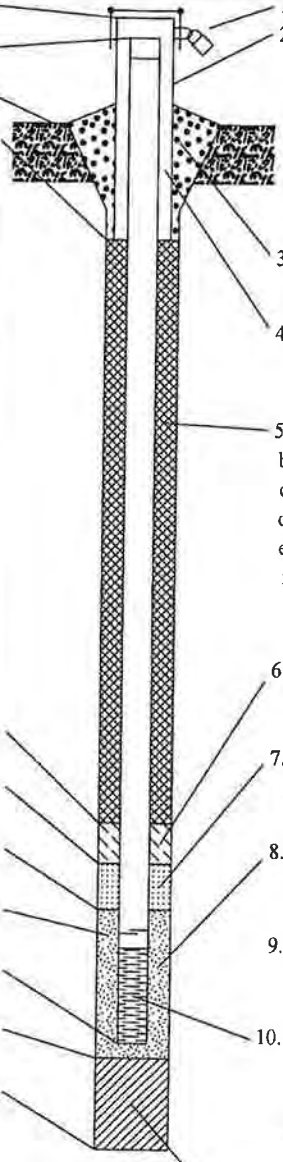
J. Filter pack, bottom 600.5 ft. MSL or 20.0 ft.

K. Borehole, bottom 600.5 ft. MSL or 20.0 ft.

L. Borehole, diameter 6.0 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 2.07 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04 Other ☐ __
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____

3. Surface seal: Bentonite ☒ 30 Concrete ☐ 01 Other ☐ __

4. Material between well casing and protective pipe: Bentonite ☒ 30
Upper Filter Sand/Lower Bentonite Other ☐ __

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. 1.5 Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. ____ Other ☐ __

7. Fine sand material: Manufacturer, product name & mesh size
a. NA
b. Volume added ____ ft³

8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint Filter Sand
b. Volume added 2.1 ft³

9. Well casing: Flush threaded PVC schedule 40 ☒ 23 Flush threaded PVC schedule 80 ☐ 24 Other ☐ __

10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐ __
b. Manufacturer ____
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.

11. Backfill material (below filter pack): None ☒ 14 Other ☐ __

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Nate Keller /jo Firm: RMTINC Tel: Fax:

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County	Well Name
WPL - Nelson Dewey Generating Station	Grant	B-07R

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
02525	22	VU600	156

1. Can this well be purged dry? ☐ Yes ☐ No

2. Well development method:

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed, and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
other surged and pumped with Whaler pump	☒	71

3. Time spent developing well 115 min.

4. Depth of well (from top of well casing) 23.0 ft.

5. Inside diameter of well 2.07 in.

6. Volume of water in filter pack and well casing 1.5 gal.

7. Volume of water removed from well 20.0 gal.

8. Volume of water added (if any) 10.0 gal.

9. Source of water added fire suppression system hydrant

10. Analysis performed on water added? ☒ Yes ☐ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	15.50 ft.	17.85 ft.
Date	b.	4/29/2009	4/29/2009
Time	c.	☒ a.m. 07:55 ☐ p.m.	☒ a.m. 09:50 ☐ p.m.
12. Sediment in well bottom		inches	inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)		dark reddish brown, no odor	light brown, no odor

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids		mg/l	96.7 mg/l
15. COD		mg/l	mg/l

16. Well developed by: Person's Name and Firm
Roy Buckenberger
Layne Christensen, Co.

17. Additional comments on development:

Facility Address or Owner/Responsible Party Address

Name: Nathaniel Sievers
Firm: Nelson Dewey Generating Station
Street: 11999 County Rd VV
City/State/Zip: Cassville, WI 53806

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Nate Keller /go
Print Name: Nathaniel Keller
Firm: RMT, Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.

WDNR WELL DEVELOP 1998 03026W.GPJ WI DNR 2003.GDT 8/27/09

State of Wisconsin
Department of Natural Resources

Route To:
☒ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Soil Boring Log Information
Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WP&L - Nelson Dewey 4293.02	2525	B-11R

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Environmental & Foundation Drilling; Crew Chief: Kevin Hargis	11/17/97	11/17/97	4 1/4 HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
155			Feet MSL	620.4 Feet MSL	8.0 Inches

Boring Location
State Plane N, E
NW 1/4 of WW 1/4 of Section 19 T 3 N,R 5 W
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
265,843 ☒ N 1,695,868 ☒ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Grant	22	Cassville

Sample Number	Sample Length (In) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	Comments
			1–23	Boring B-11R was blind drilled to a depth of 23 ft. See boring log B-11 for geologic description.	SP/SW									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm RMT
744 Heartland Trail, Madison Wisconsin
Tel: 608-831-4444, Fax: 608-831-3334

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

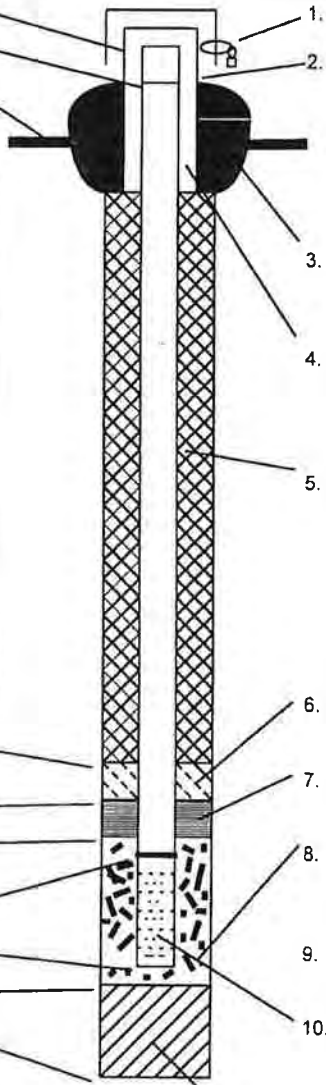
State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☒ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Facility/Project Name WP&L Nelson Dewey 4293.01	Local Grid Location of Well ☐N. ☐E. ____ ft. ☐S. ____ ft. ☐W.	Well Name B-11R
Facility License, Permit or Monitoring Number 2525	Grid Origin Location Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or St. Plane 265,843 ft. N, 1,695,868 ft. E	Wis. Unique Well Number DNR Well Number 155
Distance Well is From Waste/Source Boundary ft.	Section Location of Waste/Source ☐E. NW ¼ of NW ¼ of Sec. 19, T3N, R5 ☒W.	Date Well Installed 11/ 17/ 97 MM DD YY
Type of Well: Water Table Observation Well ☒11 Piezometer ☐12	Location of Well Relative to Waste/Source U ☐Upgradient S ☐Sidegradient D ☒Downgradient N ☐Not Known	Well Installed By: (Person's Name and Firm) Kevin Hargis Environmental and Foundation Drilling Waunakee, Wisconsin
Well A Point of Enforcement Std. Application? ☐Yes ☒No		



ctive pipe, top elevation 622.56 ft. MSL
casing, top elevation 622.62 ft. MSL
surface elevation 620.4 ft. MSL
ce seal, bottom 619.4 ft. MSL or 1.0 ft.

USCS classification of soil near screen:
☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
M ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
edrock ☐

ve analysis attached? Yes ☐ No ☒

ling method used: Rotary ☐50
Hollow Stem Auger ☒41
Other ☐

ling fluid used: Water ☐02 Air ☐01
Drilling Mud ☐03 None ☒99

ling additives used? Yes ☐ No ☒
scribe:

ce of water (attach analysis):

e seal, top 619.4 ft. MSL or 1.0 ft.
d, top 606.4 ft. MSL or 14 ft.
k, top 605.4 ft. MSL or 15 ft.
ent, top 603.4 ft. MSL or 17 ft.
598.4 ft. MSL or 22 ft.
bottom 597.4 ft. MSL or 23 ft.
bottom 597.4 ft. MSL or 23 ft.
meter 8.25 in.
asing 2.38 in.
ng 2.00 in.

1. Cap and lock? ☒Yes ☐No
2. Protective cover pipe:
   a. Inside diameter: 4.0 in.
   b. Length: 7.0 ft.
   c. Material: Steel ☒04
   Other ☐
   d. Additional protection? ☐Yes ☒No
   If yes, describe: _____
3. Surface seal: Bentonite ☒30
   Concrete ☐01
   Other ☐
4. Material between well casing and protective pipe:
   Bentonite ☒30
   Annular space seal ☐
   Other ☐
5. Annular space seal: a. Granular Bentonite ☒33
   b. Lbs/gal mud weight... Bentonite-sand slurry ☐35
   c. Lbs/gal mud weight..... Bentonite slurry ☐31
   d. % Bentonite.....Bentonite-cement grout ☐50
   e. Ft^3 volume added for any of the above
   f. How installed: Tremie ☐01
   Tremie pumped ☐02
   Gravity ☒08
6. Bentonite seal: a. Bentonite granules ☐33
   b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite pellets ☒32
   c. Other ☐
7. Fine sand material: Manufacturer, product name, mesh size
   a. Badger Mining Corp.
   b. Volume added 20 lbs
8. Filter pack material: Manufacturer, product, mesh size
   a. 30 - 50
   b. Volume added 300 lbs
9. Well casing: Flush threaded PVC schedule 40 ☒23
   Flush threaded PVC schedule 80 ☐24
   Other ☐
10. Screen Material: Sch 40 PVC
    a. Screen type: Factory cut ☒11
    Continuous slot ☐01
    Other ☐ b.
    Manufacturer Boart Longyear
    c. Slot size: 0.010 in.
    d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒14
    Other ☐

I certify that the information on this form is true and correct to the best of my knowledge.

Firm
RMT, Inc.

...both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In ...ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file ...result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 4-90

Route to: Solid Waste ☒ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
WP&L Nelson Dewey	Grant	B-11R

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
2525	22	____	155

1. Can this well be purged dry? ☐Yes ☒No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☒ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well: 35 min.

4. Depth of well (from top of well casing): 25.5 ft.

5. Inside diameter of well: 2.0 in.

6. Volume of water in filter pack and well casing: 3.0 gal.

7. Volume of water removed from well: 35 gal.

8. Volume of water added (if any): 0 gal.

9. Source of water added:

10. Analysis performed on water added? ☐Yes ☐No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 17.5 ft	17.5 ft
Date	b. 11/18/97 mm/dd/yy	11/18/97 mm/dd/yy
Time	c. 13:45 ☐ a.m. ☒ p.m.	14:20 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	0.5 inches	0.0 Inches
13. Water clarity	Clear ☐10 Turbid ☒15 (Describe)	Clear ☒20 Turbid ☐25 (Describe)
14. Total suspended solids	____mg/l	110 mg/L
15. COD	____mg/l	____mg/L

Fill in if drilling fluids were used and well is at solid waste facility:

16. Additional comments on development:

Developed by: Person's Name and Firm	I hereby certify that the above information is true and correct to the best of my knowledge.
Name: Kevin Baker	Signature:
Firm: RMT, Inc.	Print Initials: K L B
	Firm:

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

I:\WPMSN\PJT\00-03026\14\B0003026.14A 03/20/98

6

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WP&L Nelson Dewey 3314.01		B11A

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Environmental & Foundation Drilling, Crew Chief: G. Markgraf	12/1/94	12/1/94	DTRC

DNR Facitity Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	620.2 Feet MSL	7.5 Inches

Boring Location
State Plane 265903.10 N, 1727265.86 E
NE 1/4 of NE — 1/4 of Section 19 T 3 N,R 5W
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Grant	22	Cassville

Sample Number	Sample Length (In) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	Comments
			1–20	Boring blind drilled to 50' bgs. See log of B-11A for geologic description.										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
	RMT 744 Heartland Trail, Madison Wisconsin Tel: 608-831-4444, Fax: 608-831-3334

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Boring Number **B11A** Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number	Length (In) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	Comments
			21											
			22											
			23											
			24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											
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			38											
			39											
			40											
			41											
			42											
			43											
			44											
			45											
			46											
			47											
			48											
			49											
			50											
			51											
			52											
			53											

Boring Number **B11A** Use only as an attachment to Form 4400-122.

Sample Number	Sample Length (In) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	Comments
			54	Drill rod to 53'.										
			55											
			56	End of Boring at 56 Ft.										

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐ Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ ____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-

Facility/Project Name WP&L Nelson Dewey 3314.01	Local Grid Location of Well ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name B-11~~B~~A MCM 12/30/94
Facility License, Permit or Monitoring Number	Grid Origin Location Lat. __ __ __ Long. __ __ __ or St. Plane ____ ft. N, ____ ft. E. 265903.10N, 1,727,265.86E	Wis. Unique Well Number ____ DNR Well Number ____
Type of Well: Water Table Observation Well ☐ 11 Piezometer ■ 12	Section Location of Waste/Source NE¼ of NE¼ of Sec. 19, T 3N, R 5 ☐ E. ■ W.	Date Well Installed 1 2 / 0 1 / 9 4 M M D D Y Y
Distance Well is From Waste/Source Boundary Approx. 300' ft.	Location of Well Relative to Waste/Source U ☐ Upgradient S ☐ Sidegradient D ■ Downgradient N ☐ Not Known	Well Installed By: (Persons' Name and Firm) Greg Markgraf, Environmental & Foundation Drilling
Is Well A Point of Enforcement Std. Application? ■ Yes ☐ No		

A. Protective pipe, top elevation 622.20 ft. MSL

B. Well casing, top elevation 622.12 ft. MSL

C. Land surface elevation 620.2 ft. MSL

D. Surface seal, bottom ____ ft. MSL or ____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? Yes ☐ No ■

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☐ 41
Dual tube reverse circulation Other ■

15. Drilling fluid used: Water ☐ 02 Air ■ 01
Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? Yes ☐ No ■

Describe ____

17. Source of water (attach analysis):

E. Bentonite seal, top ____ ft. MSL or 0.0 ft.

F. Fine sand, top ____ ft. MSL or 41.0 ft.

G. Filter pack, top ____ ft. MSL or 43.0 ft.

H. Screen joint, top ____ ft. MSL or 45.0 ft.

I. Well bottom ____ ft. MSL or 50.0 ft.

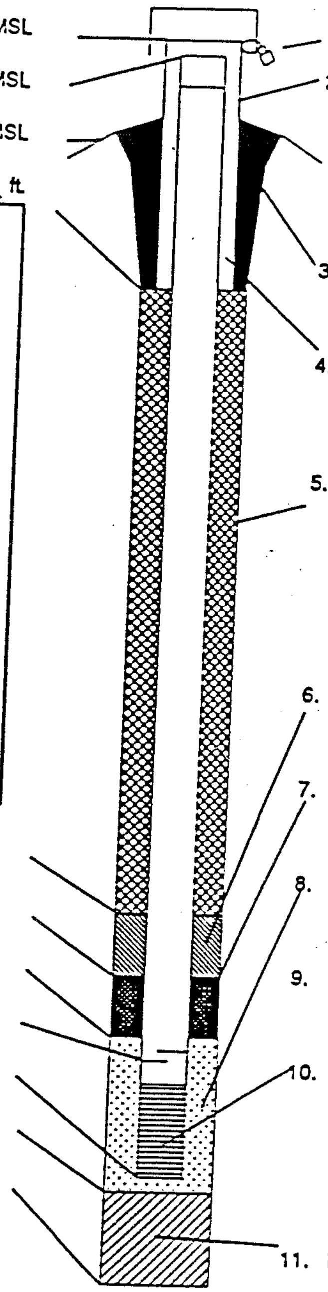
J. Filter pack, bottom ____ ft. MSL or 56.0 ft.

K. Borehole, bottom ____ ft. MSL or 56.0 ft.

L. Borehole, diameter 7.5 in.

M. O.D. well casing 2.2 in.

N. I.D. well casing 2.0 in.



1. Cap and lock? ■ Yes ☐ N

2. Protective cover pipe:
a. Inside diameter: 3.8 i
b. Length: 7.0
c. Material: Steel ■ 04
Other ☐
d. Additional protection? ☐ Yes ☐ No
If yes, describe: ____

3. Surface seal: Bentonite ■ 30
Concrete ☐ 01
Other ☐

4. Material between well casing and protective pipe:
Bentonite ■ 30
Annular space seal ☐
Other ☐

5. Annular space seal: a. Granular Bentonite ☐ 33
b. __ Lbs/gal mud weight.... Bentonite-sand slurry ☐ 35
c. __ Lbs/gal mud weight.......... Bentonite slurry ☐ 31
d. __ % Bentonite.......... Bentonite-cement grout ☐ 50
e. __ lb volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite pellets ■ 32
c. ____ Other ☐

7. Fine sand material: Manufacturer, product name, mesh size
a. Badger Mining 40-60
b. Volume added 1 bag, 50 lbs

8. Filter pack material: Manufacturer, product, mesh size
a. Badger Mining #30
b. Volume added 500 lbs, 10 bags

9. Well casing: Flush threaded PVC schedule 40 ■ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐

10. Screen Material: PVC Schedule 40
a. Screen type: Factory cut ■ 11
Continuous slot ☐ 01
Other ☐
b. Manufacturer Northern Air
c. Slot size: 0.01 in.
d. Slotted length: 5.0 ft.

11. Backfill material (below filter pack): None ■ 14
Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Madeline Gotkowitz 12/21/94	RMT, Inc

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev.

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
WP & L Neslon Dewey/Casseville	Grant	B-11B/A MW 12/94
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
_ _ _ _ _ _ _ _	_ _	_ _ _ _ _ _ / _ _ _

		Before Development	After Development
1. Can this well purged dry?	☐ Yes ■ No		
2. Well development method			
surged with bailer and bailed	☐ 41		
surged with bailer and pumped	■ 61		
surged with block and bailed	☐ 42		
surged with block and pumped	☐ 62		
surged with block, bailed and pumped	☐ 70		
compressed air	☐ 20		
bailed only	☐ 10		
pumped only	☐ 51		
pumped slowly	☐ 50		
Other _____	☐ ▒		
3. Time spent developing well	45 min.		
4. Depth of well (from top of well casing)	52.1 ft.		
5. Inside diameter of well	2.03 in.		
6. Volume of water in filter pack and well casing	2.2 gal./ft.		
7. Volume of water removed from well	1000.0 gal.		
8. Volume of water added (if any)	____.__ gal.		
9. Source of water added _____			
10. Analysis performed on water added? (If yes, attach results)	☐ Yes ☐ No		
11. Depth of Water (from top of well casing)		a. 16.4 ft.	16.45 ft.
Date		b. 12/01/94 mm dd yy	12/01/94 mm dd yy
Time		c. 5:05 ☐ a.m. ■ p.m.	5:45 ☐ a.m. ■ p.m.
12. Sediment in well bottom		0.0 inches	0.0 inches
13. Water Clarity		Clear ☐ 10 Turbid ■ 15 (Describe)	Clear ■ 20 Turbid ☐ 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:			
14. Total suspended solids		____.__ mg/l	____.__ mg/l
15. COD		____.__ mg/l	____.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Charles Markgraf

Firm: Environmental & Foundation Drilling, Inc.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Initials: G D A

Firm: Environmental & Foundation Drilling, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

of Wisconsin
partment of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Soil Boring Log Informatic
Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WP&L Nelson Dewey 3314.01		B11B

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Environmental & Foundation Drilling, Crew Chief: G. Markgraf	11/29/94	11/30/94	DTRC

DNR Facitity Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	619.7 Feet MSL	7.5 Inches

Boring Location
State Plane 265907.89 N, 1727255.90 E
NE 1/4 of NE 1/4 of Section 19 T 3 N,R 5W
Lat ° ' "
Long ° ' "
Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Grant	22	Cassville

Sample Number	Sample Length (In) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	Comments
A			1–5	POORLY GRADED SAND (SP), sand fine grained, yellowish brown 10YR 5/6.	SP					D				
B			10–11	As above, brown 10YR 4/3.						M				
C			15–16	As above, yellowish brown 10YR 5/6.						M				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm RMT
744 Heartland Trail, Madison Wisconsin
Tel: 608-831-4444, Fax: 608-831-3334

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Boring Number **B11B** Use only as an attachment to Form 4400-122.

Sample Number	Sample Length (In) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	Comments
D			21	As above.						W				
			22											
			23											
			24											
E			25	As above.						W				
			26											
			27											
			28											
			29											
F			30	As above, sand medium grained, grains are light yellowish brown, yellowish brown and very dark brown.						W				
			31											
			32											
			33											
			34											
G			35	As above, fine grained, light yellowish brown 10YR 6/4.						W				
			36											
			37											
			38											
			39											
H			40	As above, slightly coarser grained sand than at 35', fine to medium grained.						W				
			41											
			42											
			43											
			44											
I			45	As above.						W				
			46											
			47											
			48											
			49											
J			50	As above.						W				
			51											
			52											
			53											

Boring Number **B11B** Use only as an attachment to Form 4400-122. Page 3 of 4

Sample Number	Sample Length (In) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	Comments
			54											
K			55	As above, sand finer grained than at 50', yellowish brown 10YR 5/4.						W				
			56											
			57											
			58											
			59											
L			60	As above, sand medium grained.						W				
			61											
			62											
			63											
			64											
M			65	As above.						W				
			66											
			67											
			68											
			69											
N			70	As above.						W				
			71											
			72											
			73											
			74											
O			75	As above, 75% medium and 25% coarse grained sand.						W				
			76											
			77											
			78											
			79											
P			80	As above, sand fine grained.						W				
			81											
			82											
			83											
			84											
Q			85	As above, 75% fine grained and 25% medium grained sand.						W				
			86											

Boring Number **B11B** Use only as an attachment to Form 4400-122. Page 4 of 4

Sample Number	Sample Length (In) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plastic Limit	Soil Properties: P 200	Comments
			87											
			88											
			89							W				
R			90	As above.						W				
			91											
			92											
			93											
			94											
S			95	As above, 75% medium and 25% coarse grained sand.						W				
			96											
			97											
			98											
			99											
T			100	As above, 50% medium and 50% coarse sand.						W				
			101											
			102											
			103											
			104											
U			105	As above, 90% medium and 10% coarse sand.						W				
			106											
			107											
			108											
			109											
V			110	As above, 50% medium and 50% coarse sand.						W				
			111											
			112											
			113											
			114											
			115	As above.						W				
			116											
			117	End of Boring at 117 Ft.										

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev.

Facility/Project Name WP&L Nelson Dewey 3314.01	Local Grid Location of Well ______ ft. ☐ N. ☐ S. ______ ft. ☐ E. ☐ W.	Well Name B-11X B MCM 12/30/94
Facility License, Permit or Monitoring Number	Grid Origin Location Lat. ___ Long. ___ or St. Plane ______ ft. N, ______ ft. E. 265907.89 N., 1,727,255.90 E	Wis. Unique Well Number DNR Well Number
Type of Well: Water Table Observation Well ☐ 11 Piezometer ■ 12	Section Location of Waste/Source NE¼ of NE¼ of Sec. 19, T 3N, R 5 ☐ E. ■ W.	Date Well Installed 11 / 30 / 94 M M D D Y Y
Distance Well is From Waste/Source Boundary Approx. 300' ft.	Location of Well Relative to Waste/Source U ☐ Upgradient S ☐ Sidegradient D ■ Downgradient N ☐ Not Known	Well Installed By: (Persons' Name and Firm) Greg Markgraf, Environmental & Foundation Drilling
Is Well A Point of Enforcement Std. Application? ■ Yes ☐ No		

A. Protective pipe, top elevation 622.02 ft. MSL

B. Well casing, top elevation 621.89 ft. MSL

C. Land surface elevation 619.7 ft. MSL

D. Surface seal, bottom ____ ft. MSL or 15.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? Yes ☐ No ■

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☐ 41
Dual-tube reverse circulation Other ■

15. Drilling fluid used: Water ☐ 02 Air ■ 01
Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? Yes ☐ No ■
Describe ______

17. Source of water (attach analysis):

E. Bentonite seal, top ____ ft. MSL or 95.0 ft.

F. Fine sand, top ____ ft. MSL or 101.5 ft.

G. Filter pack, top ____ ft. MSL or 103.5 ft.

H. Screen joint, top ____ ft. MSL or 106.3 ft.

I. Well bottom ____ ft. MSL or 111.3 ft.

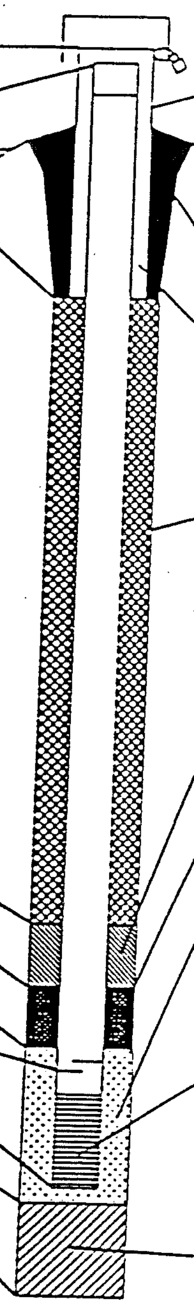
J. Filter pack, bottom ____ ft. MSL or 111.3 ft.

K. Borehole, bottom ____ ft. MSL or 117.0 ft.

L. Borehole, diameter 7.5 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 1.89 in.



1. Cap and lock? ■ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 3.8
b. Length: 7.0
c. Material: Flush Mount Steel ■ Other ☐
d. Additional protection? ☐ Yes ☐ No
If yes, describe: ______

3. Surface seal: Bentonite ■ Concrete ☐ Other ☐
13 bags bentonite chips

4. Material between well casing and protective pipe:
Bentonite ■ Annular space seal ☐ Other ☐

5. Annular space seal: a. Granular Bentonite ☐
b. __ Lbs/gal mud weight.... Bentonite-sand slurry ☐
c. 1.9 Lbs/gal mud weight.......... Bentonite slurry ■
d. __ % Bentonite.......... Bentonite-cement grout ☐
e. 24 lb volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ■ 02 Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite pellets ■ 32
c. ______ Other ☐

7. Fine sand material: Manufacturer, product name, mesh size
a. Unimin silica sand
b. Volume added 50 lbs, 1 bag

8. Filter pack material: Manufacturer, product, mesh size
a. Badger Mining #30
b. Volume added 4 bags, 200 lbs

9. Well casing: Flush threaded PVC schedule 40 ☐ 23
Flush threaded PVC schedule 80 ■ 24
Other ☐

10. Screen Material: PVC Schedule 80
a. Screen type: Factory cut ■ 11 Continuous slot ☐ 01 Other ☐
b. Manufacturer Northern Air
c. Slot size: 0.01 in.
d. Slotted length: 5.0 ft.

11. Backfill material (below filter pack): None ☐ 14 Other ■
Natural material (medium sand)

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] 12/21/94 Firm RMT, Inc.

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

3314.01 0000 RTG

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPM

Form 4400-113B Rev

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
WP & L Nelson Dewey/Cassville	Grant	B-11XB MCM 12/
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number**	**DNR Well Number**
_ _ _ _ _ _ _	_ _	_ _ _ _ _ _ _	_ _ _ _

		Before Development	After Development
1. Can this well purged dry?	☐ Yes ■ No		
2. Well development method			
surged with bailer and bailed	☐ 41		
surged with bailer and pumped	■ 61		
surged with block and bailed	☐ 42		
surged with block and pumped	☐ 62		
surged with block, bailed and pumped	☐ 70		
compressed air	☐ 20		
bailed only	☐ 10		
pumped only	☐ 51		
pumped slowly	☐ 50		
Other _____	☐ ▒▒		
3. Time spent developing well	45 min.		
4. Depth of well (from top of well casing)	113.5 ft.		
5. Inside diameter of well	2.03 in.		
6. Volume of water in filter pack and well casing	2.2 gal./ft		
7. Volume of water removed from well	1350.0 gal.		
8. Volume of water added (if any)	____.__ gal.		
9. Source of water added _____			
10. Analysis performed on water added? (If yes, attach results)	☐ Yes ☐ No		
11. Depth of Water (from top of well casing)		a. 16.4 ft.	15.8 ft.
Date		b. 12/01/94 mm dd yy	12/01/94 mm dd yy
Time		c. 10:00 ■ a.m. ☐ p.m.	10:45 ■ a.m. ☐ p.m.
12. Sediment in well bottom		0.0 inches	0.0 inches
13. Water Clarity		Clear ☐ 10 Turbid ■ 15 (Describe)	Clear ■ 20 Turbid ☐ 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:			
14. Total suspended solids		____.__ mg/l	____.__ mg/l
15. COD		____.__ mg/l	____.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Charles Markgraf

Firm: Environmental & Foundation Drilling, Inc.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Initials: G D A

Firm: Environmental & Foundation Drilling, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

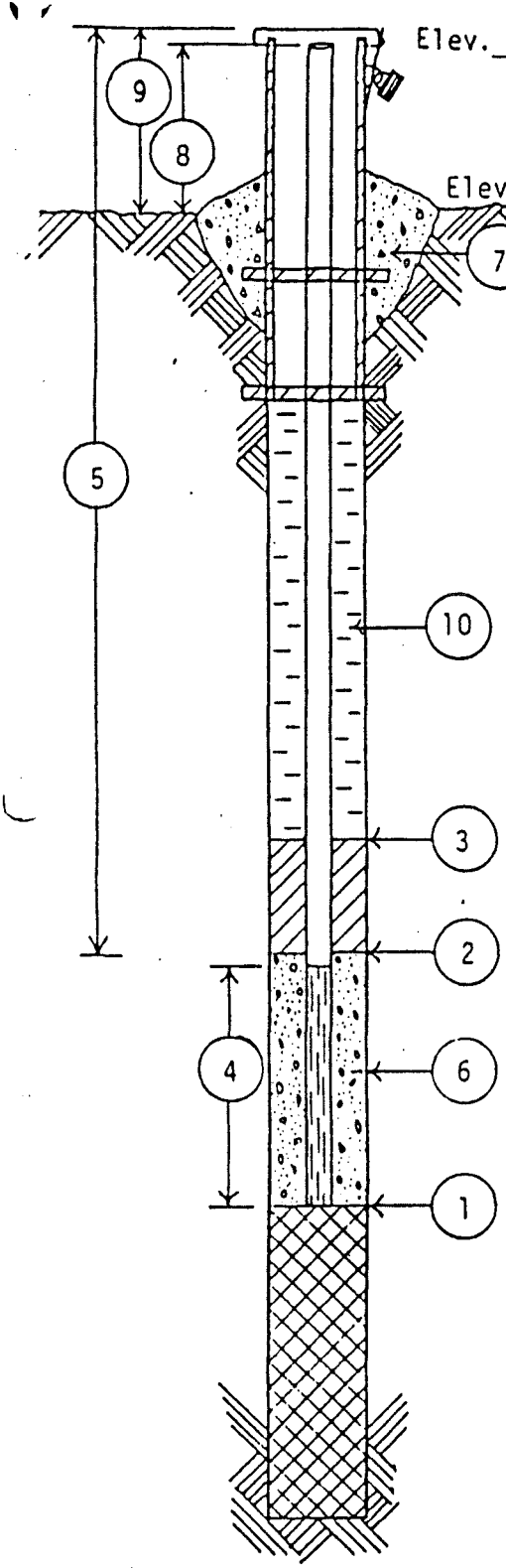
JOB NO. C 9065

BORING NO. B 31A

DATE 2/28/80

CHIEF D. Braun

LOCATION Cassville, Wisconsin



All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

(1) DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 34' FEET.

(2) DEPTH OF BOTTOM OF SEAL (if installed) 28 FEET.

(3) DEPTH TO TOP OF SEAL (if installed) 25 FEET.

(4) LENGTH OF WELL POINT, (PVC WELL SCREEN) OR SLOTTED PIPE 5 FEET. (Circle One)

(5) TOTAL LENGTH OF PIPE 33 FEET @ 2 IN. DIAMETER.

(6) TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Sand.

(7) CONCRETE CAP, YES (NO) (Circle One)

(8) HEIGHT OF WELL CASING ABOVE GROUND 4 FEET.

(9) PROTECTIVE CASING? YES (NO) (Circle One)
HEIGHT ABOVE GROUND -.
LOCKING CAP? YES (NO) (Circle One)

(10) TYPE OF BACKFILL: Soil & Bentonite Mix

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS
31A	2/28/80		10.5'	¼ hour

WARZYN ENGINEERING INC

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Monitoring Well

Location: Cassville, Wisconsin

Boring No. 31

Surface Elevation

Job No. C 9065

Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9638, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture								
No.	Type	↓	↓	N	Depth		qu	W	LL	PL	D
					5						
					10	For Soil Classification See Boring Log 31A					
					15						
					20						
						End Boring at 20'					
						Install 19.5' Observation Well					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling

Upon Completion of Drilling

Time After Drilling

Depth to Water

Depth to Cave In

GENERAL NOTES

Start 2/28/80 Complete 2/28/80

Crew Chief DB Rig Bomb

Drilling Method

w-1

WARZYN

LOG OF TEST BORING

Project WP&L
Nelson Dewey Generating Station
Location Cassville, Wisconsin

Boring No. B-31R
Surface Elevation
Job No. 13758
Sheet 1 of 1

ONE SCIENCE COURT · P.O. BOX 5385, MADISON, WIS. 53705 · TEL.(608) 273-0440

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						TOPSOIL - Brown Silty Sand					
					5	FILL					
					10	Loose, Tan Fine to Medium SAND (SW)					
1		18	W	8	15						
						Medium Dense, Tan Medium to Coarse SAND (SW)					
2		18	W	12	20						
						End Boring at 22.0'					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ Upon Completion of Drilling
Time After Drilling
Depth to Water 14.0' ▽
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 4/25/89 End 4/25/89
Driller E&F Chief GA Rig CME 65
Logger WB Editor AJS
Drill Method HSA 0-22'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Nelson Dewey Generating Station

Location: Cassville, Wisconsin

Boring No. B 31A
Surface Elevation 6200
Job No. C 9065
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

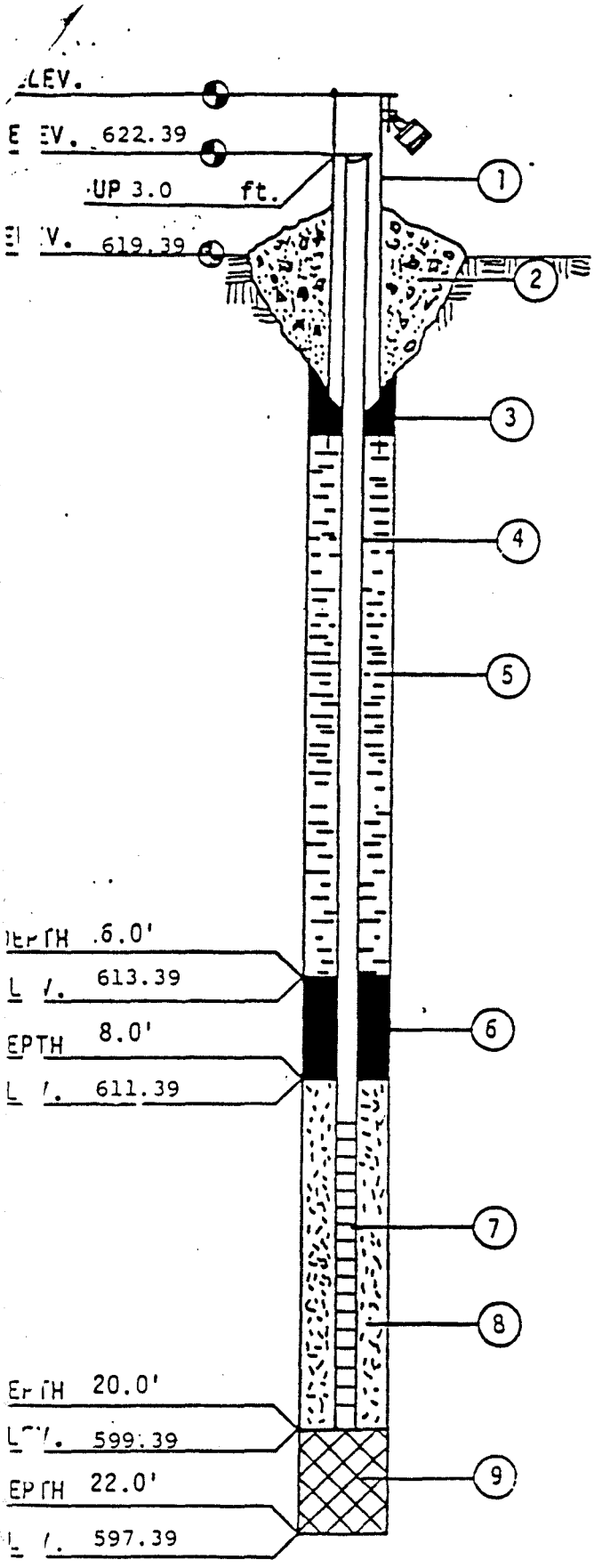
SAMPLE No.	Type	Recovery ↓	Moisture ↓	N	Depth	VISUAL CLASSIFICATION and Remarks	Qu	W	LL	PL	D
						TOPSOIL-Brown Silty SAND					
1	SS	X	M	33							
2	SS	X	M	11	5	FILL					
3	SS	X	W	6							
4	SS	X	W	3	10						
						Tan Fine to Medium SAND					
5	SS	X	W	8	15						
6	SS	X	W	18	20	Tan Medium to Coarse SAND, Trace Gravel					
7	SS	X	W	11	25						
8	SS	NR	W	15	30						
						Very Fine Tan SAND, Little Silt					
9	SS	X	W	27	35	End Boring at 35'					
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling ½ hour
Depth to Water 10.5'
Depth to Cave In

GENERAL NOTES

Start 2/28/80 Complete 2/28/80
Crew Chief DB Rig Bomb
Drilling Method 0-10' Auger
10-35' Wash Bore



MONITORING WELL CONSTRUCTION INFORMATION

JOB NO. 13758

BORING/WELL NO. B-31R

DATE 4/25/89

CHIEF/UNIT Greg Anderson/CME 65

1. PROTECTIVE CASING (YES) NO

   LOCKING (YES) NO

2. CONCRETE SEAL (YES) NO

3. TYPE OF SURFACE SEAL (IF INSTALLED)

   Granular Bentonite

4. SOLID PIPE TYPE PVC

   SOLID PIPE LENGTH 13.0 ft.

   JOINT TYPE SLIP/GLUED (THREADED)

5. TYPE OF BACKFILL Granular Bentonite

   HOW INSTALLED - TREMIE (FROM SURFACE)

6. TYPE OF LOWER SEAL (IF INSTALLED)

   Bentonite Pellets

7. SCREEN TYPE PVC

   SCREEN LENGTH 10.0 ft

   SLOT-SIZE 0.010" LENGTH 10 ft.

   SCREEN DIAMETER 2.0 in.

8. TYPE OF BACKFILL AROUND SCREEN

   #20 Flint Sand

9. TYPE OF BACKFILL Natural Cave-in

10. DRILLING METHOD HSA

11. ADDITIVES USED (IF ANY)

    -

WATER LEVEL 14.0' DATE 4/25/89

*ALL DEPTHS MEASURED FROM GROUND SURFACE.

WELL DETAIL INFORMATION SHEET

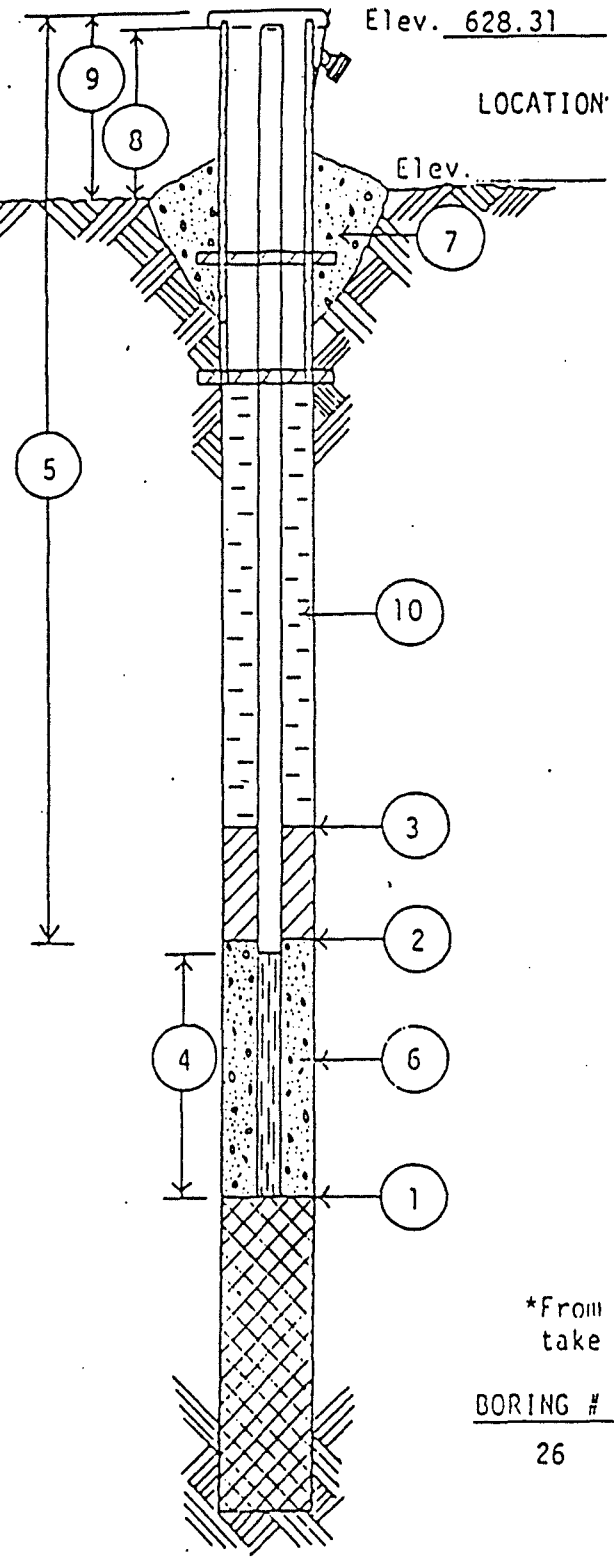
JOB NO. C 9036

BORING NO. 26

DATE 2/28/80

CHIEF D. Braun

LOCATION Nelson Dewey G.S.; Cassville, Wisconsin



* All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

(1) DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 29.5 FEET.

(2) DEPTH OF BOTTOM OF SEAL (if installed) 3 FEET.

(3) DEPTH TO TOP OF SEAL (if installed) 0 FEET.

(4) LENGTH OF WELL POINT, (PVC WELL SCREEN) OR SLOTTED PIPE 10 FEET. (Circle One)

(5) TOTAL LENGTH OF PIPE 23.5 FEET @ 2 IN. DIAMETER.

(6) TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Sand.

(7) CONCRETE CAP, YES (NO) (Circle One)

(8) HEIGHT OF WELL CASING ABOVE GROUND 4 FEET.

(9) PROTECTIVE CASING? YES (NO) (Circle One)
HEIGHT ABOVE GROUND -.
LOCKING CAP? YES (NO) (Circle One)

(10) TYPE OF BACKFILL: Soil & Bentonite Mix

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS
26	2/28/80		17'8"	½ hour

WARZYN ENGINEERING INC

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Nelson Dewey Generating Station
Proposed Slag Disposal Area
Location: Cassville, Wisconsin

Boring No. B 26A
Surface Elevation 624.6
Job No. C 9036
Sheet 1 of 2

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery ↓	Moisture ↓	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES q_u	W	LL	PL	D
						TOPSOIL					
1	SS	X	M	11			4.5				
2	SS	X	M	4	5	Brown SILT, Some Clay, Some Sand (CL-ML) Occasional Sand Lenses					
	SS	X	M	-							
3	SS	X	M	5							
	SS	X	M	-							
4	SS	X	M	6	10				25.4	19.9	
5	SS	X	M	9	15	Tan Coarse to Medium SAND, Some to Trace Gravel, Trace Silt and Clay (SP)					
6	SS	X	W	28	20						
7	SS	X	W	20	25	Tan Medium to Fine SAND, Trace Gravel, Little to Trace Silt and Clay (SP)					
8	SS	X	W	11	30						
9	SS	X	W	19	35						
1	SS	X	W	27	40	Tan Coarse to Medium SAND, Some to Trace Gravel, Trace Silt and Clay (SP)					
	SS	X	W	26	45						
						End Boring at 45'					

(Continued)

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Nelson Dewey Generating Station
Proposed Slag Disposal Area
Location: Cassville, Wisconsin

Boring No. B 26A
Surface Elevation 624.6
Job No. C 9036
Sheet 2 of 2

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture								
No.	Type	↓	↓	N	Depth		q_u	W	LL	PL	D
					50						
					55						
					60						
					65						
					70						
					75						
					80						
					85						

WATER LEVEL OBSERVATIONS

While Drilling 19.5'
Upon Completion of Drilling
Time After Drilling 3/10/80
Depth to Water 23.14
Depth to Cave In

GENERAL NOTES

Start 2/27/80 Complete 2/27/80
Crew Chief DB Rig Bomb
Drilling Method
Auger to 20'
Wash Bore to 45'

W-5

Appendix C

Laboratory Analytical Reports

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

February 22, 2023

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on October 22, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

Revised Report: The field ID's have been corrected for 40253592002-007.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Matt Bizjack, Alliant Energy
Sherren Clark, SCS Engineers
Jenny Coughlin, Alliant Energy
Tom Karwoski, SCS ENGINEERS
Ryan Matzuk, SCS Engineers
Jeff Maxted, ALLIANT ENERGY

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
Texas Certification #: T104704529-21-8
Virginia VELAP Certification ID: 11873
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-21-00008
Federal Fish & Wildlife Permit #: 51774A

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40253592001	**FIELD BLANK**	Water	10/18/22 15:30	10/22/22 09:00
40253592002	**B-11R**	Water	10/18/22 15:30	10/22/22 09:00
40253592003	**B-11A**	Water	10/18/22 11:50	10/22/22 09:00
40253592004	**B-11B**	Water	10/18/22 11:15	10/22/22 09:00
40253592005	**B-26**	Water	10/18/22 11:00	10/22/22 09:00
40253592006	**B-31R**	Water	10/18/22 18:25	10/22/22 09:00
40253592007	**B-31A**	Water	10/18/22 17:25	10/22/22 09:00
40253592008	**B-7R**	Water	10/18/22 00:00	10/22/22 07:26
40253592009	**B-39**	Water	10/19/22 00:00	10/22/22 07:26

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40253592001	**FIELD BLANK**	EPA 6020B	KXS	2
		SM 2540C	SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3
40253592002	**B-11R**	EPA 6020B	KXS	2
			KPR	7
		SM 2540C	SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3
40253592003	**B-11A**	EPA 6020B	KXS	2
			KPR	7
		SM 2540C	SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3
40253592004	**B-11B**	EPA 6020B	KXS	2
			KPR	7
		SM 2540C	SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3
40253592005	**B-26**	EPA 6020B	KXS	2
			KPR	7
		SM 2540C	SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3
40253592006	**B-31R**	EPA 6020B	KXS	2
			KPR	7
		SM 2540C	SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3
40253592007	**B-31A**	EPA 6020B	KXS	2
			KPR	7
		SM 2540C	SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3
40253592008	**B-7R**		KPR	1
40253592009	**B-39**		KPR	1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Lab ID	Sample ID	Method	Analysts	Analytes Reported

PASI-G = Pace Analytical Services - Green Bay

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ANALYTICAL RESULTS

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Sample: FIELD BLANK **Lab ID: 40253592001** Collected: 10/18/22 15:30 Received: 10/22/22 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**<3.0**	ug/L	10.0	3.0	1	11/28/22 06:13	12/02/22 05:23	7440-42-8	
Calcium	**<76.2**	ug/L	254	76.2	1	11/28/22 06:13	12/02/22 05:23	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**<8.7**	mg/L	20.0	8.7	1		10/25/22 09:56		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**5.0**	Std. Units	0.10	0.010	1		10/31/22 09:23		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**<0.43**	mg/L	2.0	0.43	1		11/01/22 14:12	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		11/01/22 14:12	16984-48-8	
Sulfate	**<0.44**	mg/L	2.0	0.44	1		11/01/22 14:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Sample: B-11R **Lab ID: 40253592002** Collected: 10/18/22 15:30 Received: 10/22/22 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**3090**	ug/L	200	60.6	20	11/28/22 06:13	12/03/22 10:52	7440-42-8	
Calcium	**116000**	ug/L	254	76.2	1	11/28/22 06:13	12/02/22 05:31	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**6.76**	Std. Units			1		10/18/22 15:30		
Field Specific Conductance	**1014**	umhos/cm			1		10/18/22 15:30		
Oxygen, Dissolved	**0.22**	mg/L			1		10/18/22 15:30	7782-44-7	
REDOX	**-18.9**	mV			1		10/18/22 15:30		
Turbidity	**2.22**	NTU			1		10/18/22 15:30		
Static Water Level	**603.59**	feet			1		10/18/22 15:30		
Temperature, Water (C)	**13.3**	deg C			1		10/18/22 15:30		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**572**	mg/L	20.0	8.7	1		10/25/22 09:56		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.010	1		10/31/22 09:34		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**28.8**	mg/L	2.0	0.43	1		11/01/22 14:27	16887-00-6	
Fluoride	**0.16J**	mg/L	0.32	0.095	1		11/01/22 14:27	16984-48-8	
Sulfate	**65.3**	mg/L	10.0	2.2	5		11/02/22 16:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Sample: B-11A **Lab ID: 40253592003** Collected: 10/18/22 11:50 Received: 10/22/22 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**95.2**	ug/L	10.0	3.0	1	11/28/22 06:13	12/02/22 05:45	7440-42-8	
Calcium	**46000**	ug/L	254	76.2	1	11/28/22 06:13	12/02/22 05:45	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.61**	Std. Units			1		10/18/22 11:50		
Field Specific Conductance	**608.0**	umhos/cm			1		10/18/22 11:50		
Oxygen, Dissolved	**0.12**	mg/L			1		10/18/22 11:50	7782-44-7	
REDOX	**91.5**	mV			1		10/18/22 11:50		
Turbidity	**0.72**	NTU			1		10/18/22 11:50		
Static Water Level	**603.63**	feet			1		10/18/22 11:50		
Temperature, Water (C)	**13.3**	deg C			1		10/18/22 11:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**332**	mg/L	20.0	8.7	1		10/25/22 09:56		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.9**	Std. Units	0.10	0.010	1		10/31/22 09:41		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**49.1**	mg/L	2.0	0.43	1		11/01/22 15:11	16887-00-6	
Fluoride	**0.22J**	mg/L	0.32	0.095	1		11/01/22 15:11	16984-48-8	
Sulfate	**22.7**	mg/L	2.0	0.44	1		11/01/22 15:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Sample: B-11B **Lab ID: 40253592004** Collected: 10/18/22 11:15 Received: 10/22/22 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**3010**	ug/L	200	60.6	20	11/28/22 06:13	12/03/22 11:07	7440-42-8	
Calcium	**75100**	ug/L	254	76.2	1	11/28/22 06:13	12/02/22 05:53	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.74**	Std. Units			1		10/18/22 11:15		
Field Specific Conductance	**1395**	umhos/cm			1		10/18/22 11:15		
Oxygen, Dissolved	**0.22**	mg/L			1		10/18/22 11:15	7782-44-7	
REDOX	**104.0**	mV			1		10/18/22 11:15		
Turbidity	**2.55**	NTU			1		10/18/22 11:15		
Static Water Level	**603.57**	feet			1		10/18/22 11:15		
Temperature, Water (C)	**13.5**	deg C			1		10/18/22 11:15		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**920**	mg/L	20.0	8.7	1		10/25/22 09:56		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**8.0**	Std. Units	0.10	0.010	1		10/31/22 09:43		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**32.8**	mg/L	2.0	0.43	1		11/01/22 15:26	16887-00-6	
Fluoride	**0.47**	mg/L	0.32	0.095	1		11/01/22 15:26	16984-48-8	
Sulfate	**429**	mg/L	20.0	4.4	10		11/02/22 16:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Sample: B-26 **Lab ID: 40253592005** Collected: 10/18/22 11:00 Received: 10/22/22 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**48.8**	ug/L	10.0	3.0	1	11/28/22 06:13	12/02/22 06:00	7440-42-8	
Calcium	**80300**	ug/L	254	76.2	1	11/28/22 06:13	12/02/22 06:00	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.15**	Std. Units			1		10/18/22 11:00		
Field Specific Conductance	**784**	umhos/cm			1		10/18/22 11:00		
Oxygen, Dissolved	**9.51**	mg/L			1		10/18/22 11:00	7782-44-7	
REDOX	**93.9**	mV			1		10/18/22 11:00		
Turbidity	**0.00**	NTU			1		10/18/22 11:00		
Static Water Level	**603.99**	feet			1		10/18/22 11:00		
Temperature, Water (C)	**11.0**	deg C			1		10/18/22 11:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**472**	mg/L	20.0	8.7	1		10/25/22 09:57		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.6**	Std. Units	0.10	0.010	1		10/31/22 09:47		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**37.4**	mg/L	2.0	0.43	1		11/01/22 15:41	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		11/01/22 15:41	16984-48-8	
Sulfate	**47.6**	mg/L	2.0	0.44	1		11/01/22 15:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Sample: B-31R **Lab ID: 40253592006** Collected: 10/18/22 18:25 Received: 10/22/22 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**327**	ug/L	10.0	3.0	1	11/28/22 06:13	12/02/22 06:07	7440-42-8	
Calcium	**78500**	ug/L	254	76.2	1	11/28/22 06:13	12/02/22 06:07	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**6.83**	Std. Units			1		10/18/22 18:25		
Field Specific Conductance	**711**	umhos/cm			1		10/18/22 18:25		
Oxygen, Dissolved	**0.45**	mg/L			1		10/18/22 18:25	7782-44-7	
REDOX	**-28.4**	mV			1		10/18/22 18:25		
Turbidity	**1.27**	NTU			1		10/18/22 18:25		
Static Water Level	**603.69**	feet			1		10/18/22 18:25		
Temperature, Water (C)	**12.7**	deg C			1		10/18/22 18:25		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**386**	mg/L	20.0	8.7	1		10/25/22 09:57		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.010	1		10/31/22 09:50		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**35.1**	mg/L	2.0	0.43	1		11/01/22 16:40	16887-00-6	
Fluoride	**0.21J**	mg/L	0.32	0.095	1		11/01/22 16:40	16984-48-8	
Sulfate	**29.6**	mg/L	2.0	0.44	1		11/01/22 16:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Sample: B-31A **Lab ID: 40253592007** Collected: 10/18/22 17:25 Received: 10/22/22 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**213**	ug/L	10.0	3.0	1	11/28/22 06:13	12/02/22 06:15	7440-42-8	
Calcium	**45300**	ug/L	254	76.2	1	11/28/22 06:13	12/02/22 06:15	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.63**	Std. Units			1		10/18/22 17:25		
Field Specific Conductance	**558.1**	umhos/cm			1		10/18/22 17:25		
Oxygen, Dissolved	**0.18**	mg/L			1		10/18/22 17:25	7782-44-7	
REDOX	**31.7**	mV			1		10/18/22 17:25		
Turbidity	**0.94**	NTU			1		10/18/22 17:25		
Static Water Level	**603.61**	feet			1		10/18/22 17:25		
Temperature, Water (C)	**13.2**	deg C			1		10/18/22 17:25		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**310**	mg/L	20.0	8.7	1		10/25/22 09:57		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.9**	Std. Units	0.10	0.010	1		10/31/22 09:52		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**53.9**	mg/L	2.0	0.43	1		11/01/22 16:55	16887-00-6	
Fluoride	**0.14J**	mg/L	0.32	0.095	1		11/01/22 16:55	16984-48-8	
Sulfate	**23.0**	mg/L	2.0	0.44	1		11/01/22 16:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Sample: B-7R **Lab ID: 40253592008** Collected: 10/18/22 00:00 Received: 10/22/22 07:26 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Static Water Level	**603.81**	feet			1		10/18/22 00:00		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Sample: B-39 **Lab ID: 40253592009** Collected: 10/19/22 00:00 Received: 10/22/22 07:26 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Static Water Level	**603.91**	feet			1		10/19/22 00:00		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

QC Batch: 432332
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40253592001, 40253592002, 40253592003, 40253592004, 40253592005, 40253592006, 40253592007

METHOD BLANK: 2489575 Matrix: Water
Associated Lab Samples: 40253592001, 40253592002, 40253592003, 40253592004, 40253592005, 40253592006, 40253592007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	<3.0	10.0	12/03/22 09:53	
Calcium	ug/L	<76.2	254	12/02/22 03:40	

LABORATORY CONTROL SAMPLE: 2489576

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	250	214	86	80-120	
Calcium	ug/L	10000	8540	85	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2489577 2489578

Parameter	Units	40253536001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	6.2J	250	250	239	250	93	97	75-125	4	20	
Calcium	ug/L	17900	10000	10000	26200	26000	83	81	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

QC Batch: 429648
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40253592001, 40253592002, 40253592003, 40253592004, 40253592005, 40253592006, 40253592007

METHOD BLANK: 2474525 Matrix: Water
Associated Lab Samples: 40253592001, 40253592002, 40253592003, 40253592004, 40253592005, 40253592006, 40253592007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	10/25/22 09:52	

LABORATORY CONTROL SAMPLE: 2474526

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	585	538	92	80-120	

SAMPLE DUPLICATE: 2474527

Parameter	Units	40253582001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	998	1020	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

QC Batch: 430121
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40253592001, 40253592002, 40253592003, 40253592004, 40253592005, 40253592006, 40253592007

SAMPLE DUPLICATE: 2477262

Parameter	Units	40253592001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	5.0	5.1	1	20	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

QC Batch: 430175
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40253592001, 40253592002, 40253592003, 40253592004, 40253592005, 40253592006, 40253592007

METHOD BLANK: 2477453 Matrix: Water
Associated Lab Samples: 40253592001, 40253592002, 40253592003, 40253592004, 40253592005, 40253592006, 40253592007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.43	2.0	11/01/22 13:27	
Fluoride	mg/L	<0.095	0.32	11/01/22 13:27	
Sulfate	mg/L	<0.44	2.0	11/01/22 13:27	

LABORATORY CONTROL SAMPLE: 2477454

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.6	103	90-110	
Fluoride	mg/L	2	2.0	99	90-110	
Sulfate	mg/L	20	20.5	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2477455 2477456

Parameter	Units	40253592002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	28.8	20	20	47.5	47.5	94	94	90-110	0	15	
Fluoride	mg/L	0.16J	2	2	2.3	2.3	107	108	90-110	1	15	
Sulfate	mg/L	65.3	100	100	168	168	103	103	90-110	0	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H6 Analysis initiated outside of the 15 minute EPA required holding time.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CCR RULE ALLIANT NELSON DEWEY
Pace Project No.: 40253592

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40253592001	**FIELD BLANK**	EPA 3010A	432332	EPA 6020B	432421
40253592002	**B-11R**	EPA 3010A	432332	EPA 6020B	432421
40253592003	**B-11A**	EPA 3010A	432332	EPA 6020B	432421
40253592004	**B-11B**	EPA 3010A	432332	EPA 6020B	432421
40253592005	**B-26**	EPA 3010A	432332	EPA 6020B	432421
40253592006	**B-31R**	EPA 3010A	432332	EPA 6020B	432421
40253592007	**B-31A**	EPA 3010A	432332	EPA 6020B	432421
40253592002	**B-11R**				
40253592003	**B-11A**				
40253592004	**B-11B**				
40253592005	**B-26**				
40253592006	**B-31R**				
40253592007	**B-31A**				
40253592008	**B-7R**				
40253592009	**B-39**				
40253592001	**FIELD BLANK**	SM 2540C	429648		
40253592002	**B-11R**	SM 2540C	429648		
40253592003	**B-11A**	SM 2540C	429648		
40253592004	**B-11B**	SM 2540C	429648		
40253592005	**B-26**	SM 2540C	429648		
40253592006	**B-31R**	SM 2540C	429648		
40253592007	**B-31A**	SM 2540C	429648		
40253592001	**FIELD BLANK**	EPA 9040	430121		
40253592002	**B-11R**	EPA 9040	430121		
40253592003	**B-11A**	EPA 9040	430121		
40253592004	**B-11B**	EPA 9040	430121		
40253592005	**B-26**	EPA 9040	430121		
40253592006	**B-31R**	EPA 9040	430121		
40253592007	**B-31A**	EPA 9040	430121		
40253592001	**FIELD BLANK**	EPA 300.0	430175		
40253592002	**B-11R**	EPA 300.0	430175		
40253592003	**B-11A**	EPA 300.0	430175		
40253592004	**B-11B**	EPA 300.0	430175		
40253592005	**B-26**	EPA 300.0	430175		
40253592006	**B-31R**	EPA 300.0	430175		
40253592007	**B-31A**	EPA 300.0	430175		

CHAIN-OF-CUSTODY / Analytical Request Document

4025592

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: SCS ENGINEERS	Report To: Meghan Blodgett	Attention:
Address: 2830 Dairy Drive	Copy To:	Company Name:
Madison, WI 53718		Address:
Email: mblodgett@scsengineers.com	Purchase Order #:	Pace Quote:
Phone: 608-216-7362 Fax:	Project Name: CCR Rule Alliant Nelson Dewey (25219071)	Pace Project Manager: dan.milewsky@pacelabs.com,
Requested Due Date:	Project #:	Pace Profile #: 3946

Regulatory Agency

State / Location

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): Boron/Calcium	TDS, Cl, F, SO4	pH	Residual Chlorine (Y/N)	
1	FIELD BLANK	WT				10/17/22	1530		3	2		1							x	x	x		001
2	~~B-11R~~ Not Sampled	WT				~~10/18/22~~													x	x	x		
3	B-11R	WT				10/17/22	1530		3	2		1							x	x	x		002
4	B-11A	WT				10/18/22	1150		3	2		1							x	x	x		003
5	B-11B	WT				10/18/22	1115		3	2		1							x	x	x		004
6	B-26	WT				10/19/22	1160		3	2		1							x	x	x		005
7	B-31R	WT				10/18/22	1825												x	x	x		006
8	B-31A	WT				10/18/22	1725		3	2		1							x	x	x		007
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
samples are unfiltered	Adam Walton SCS Eng	10/21/22	845							
	CS Logistics	10/22/22	0900	Sample Courier	10/22	0900	4	Y	N	Y

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:			
SIGNATURE of SAMPLER:	DATE Signed:		

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Container Order #995398

40253592

Addresses

Order By :		Ship To :		Return To:	
Company	SCS ENGINEERS	Company	SCS ENGINEERS	Company	Pace Analytical Green Bay
Contact	Blodgett, Meghan	Contact	Blodgett, Meghan	Contact	Milewsky, Dan
Email	mblodgett@scsengineers.com	Email	mblodgett@scsengineers.com	Email	dan.milewsky@pacelabs.com
Address	2830 Dairy Drive	Address	2830 Dairy Drive	Address	1241 Bellevue Street
Address 2		Address 2		Address 2	Suite 9
City	Madison	City	Madison	City	Green Bay
State	WI Zip 53718	State	WI Zip 53718	State	WI Zip 54302
Phone	608-216-7362	Phone	608-216-7362	Phone	(920)469-2436

Info

Project Name CCR Rule Alliant Nelson Dewey (25219071) **Due Date** 09/26/2022 **Profile** 3946 **Quote**

Project Manager Milewsky, Dan **Return Date** **Carrier** Most Economical **Location**

Trip Blanks

- [ ] Include Trip Blanks

Bottle Labels

- [ ] Blank
- [ ] Pre-Printed No Sample IDs
- [X] Pre-Printed With Sample IDs

Bottles

- [ ] Boxed Cases
- [ ] Individually Wrapped
- [X] Grouped By Sample ID/Matrix

Return Shipping Labels

- [ ] No Shipper
- [ ] With Shipper

COC Options

- [ ] Number of Blanks
- [X] Pre-Printed

Misc

- [ ] Sampling Instructions
- [ ] Custody Seal
- [ ] Temp. Blanks
- [X] Coolers
- [ ] Syringes
- [ ] Extra Bubble Wrap
- [ ] Short Hold/Rush Stickers
- [X] DI Water 1 Liter(s)
- [ ] USDA Regulated Soils

# of Samples	Matrix	Test	Container	Total	# of	Lot #	Notes
9	WT	Boron/Calcium	250mL plastic w/HNO3	9	0	M-2-144-07BB	
9	WT	TDS, Cl, F, SO4	250ml plastic unpreserved	9	0	M-2-173-03BB	
9	WT	pH	250mL Plastic Unpreserved	9	0	M-2-173-03BB	

Hazard Shipping Placard In Place : NA

*Sample receiving hours are typically 8am-5pm, but may differ by location. Please check with your Pace Project Manager.

*Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.

*Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage/disposal.

*Payment term are net 30 days.

*Please include the proposal number on the chain of custody to insure proper billing.

LAB USE:

Ship Date :

Prepared By:

Verified By:

Sample

ALL SAMPLES UNFILTERED

CLIENT USE (Optional):

Date Rec'd:

Received By:

Verified By:

Sample Preservation Receipt Form

Client Name: SLS Engineers Project # 40253592

All containers needing preservation have been checked and noted below: ☐Yes ☐No ☐N/A Initial when completed: 86 Date/ Time:

Lab Lot# of pH paper: 20D0722 Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass							Plastic						Vials						Jars				General				VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN 1	GN 2							
001									2		1																				X		2.5 / 5
002									2		1																				X		2.5 / 5
003									2		1																				X		2.5 / 5
004									2		1																				X		2.5 / 5
005									2		1																				X		2.5 / 5
006									2		1																				X		2.5 / 5
007									2		1																				X		2.5 / 5
008																														10/27/22	X		2.5 / 5
009																																	2.5 / 5
010																																	2.5 / 5
011																																	2.5 / 5
012																																	2.5 / 5
013																																	2.5 / 5
014																																	2.5 / 5
015																																	2.5 / 5
016																																	2.5 / 5
017																																	2.5 / 5
018																																	2.5 / 5
019																																	2.5 / 5
020																																	2.5 / 5

10/27/22 86

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : ☐Yes ☐No ☐N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	
						GN 2	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40253592

40253592

Client Name: SCS Engineers

Courier: ☑ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☐ Client ☐ Pace Other:

Tracking #:

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Thermometer Used SR - 9 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 3.5 /Corr: 4

Temp Blank Present: ☑ yes ☐ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Person examining contents:
Date: 10/25/22 /Initials: SG

Labeled By Initials: MP

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☑No ☐N/A	2. 006 bottle types/preservatives blank 4/25/22 SG
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- DI VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☑No ☐N/A		8.
Correct Containers Used: Correct Type: Pace Green Bay, Pace IR, Non-Pace	☑Yes ☐No	9.
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: W	☑Yes ☐No ☐N/A	12.
Trip Blank Present:	☐Yes ☐No ☑N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logi

Page 2 of 2

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

May 11, 2023

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory between April 07, 2023 and April 12, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

Revised Report: The collection date has been corrected for B-26.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Matt Bizjack, Alliant Energy
Natalie Burris, SCS ENGINEERS
Sherren Clark, SCS Engineers
Jenny Coughlin, Alliant Energy
Tom Karwoski, SCS ENGINEERS
Ryan Matzuk, SCS Engineers
Jeff Maxted, ALLIANT ENERGY

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
Texas Certification #: T104704529-21-8
Virginia VELAP Certification ID: 11873
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-21-00008
Federal Fish & Wildlife Permit #: 51774A

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40260455001	**B-7R**	Water	04/03/23 15:35	04/07/23 14:22
40260455002	**B-11R**	Water	04/04/23 12:10	04/07/23 14:22
40260455003	**B-11A**	Water	04/04/23 10:30	04/07/23 14:22
40260455004	**B-11B**	Water	04/04/23 10:05	04/07/23 14:22
40260455005	**B-26**	Water	04/05/23 09:50	04/07/23 14:22
40260455006	**B-31R**	Water	04/04/23 13:25	04/07/23 14:22
40260455007	**B-31A**	Water	04/04/23 13:20	04/07/23 14:22
40260455008	**FIELD BLANK**	Water	04/04/23 13:25	04/07/23 14:22
40260455009	**B-39**	Water	04/04/23 00:00	04/12/23 00:00

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40260455001	**B-7R**	EPA 6020B	KXS	2
			LB	7
		SM 2540C	SRK	1
		SM 4500-H+B	YER	1
		EPA 300.0	HMB	3
40260455002	**B-11R**	EPA 6020B	KXS	2
			LB	7
		SM 2540C	SRK	1
		SM 4500-H+B	YER	1
		EPA 300.0	HMB	3
40260455003	**B-11A**	EPA 6020B	KXS	2
			LB	7
		SM 2540C	SRK	1
		SM 4500-H+B	YER	1
		EPA 300.0	HMB	3
40260455004	**B-11B**	EPA 6020B	KXS	2
			LB	7
		SM 2540C	SRK	1
		SM 4500-H+B	YER	1
		EPA 300.0	HMB	3
40260455005	**B-26**	EPA 6020B	KXS	2
			LB	7
		SM 2540C	SRK	1
		SM 4500-H+B	YER	1
		EPA 300.0	HMB	3
40260455006	**B-31R**	EPA 6020B	KXS	2
			LB	7
		SM 2540C	SRK	1
		SM 4500-H+B	YER	1
		EPA 300.0	HMB	3
40260455007	**B-31A**	EPA 6020B	KXS	2
			LB	7
		SM 2540C	SRK	1
		SM 4500-H+B	YER	1
		EPA 300.0	HMB	3
40260455008	**FIELD BLANK**	EPA 6020B	KXS	2
		SM 2540C	SRK	1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 4500-H+B	YER	1
		EPA 300.0	HMB	3
40260455009	**B-39**		LB	1

PASI-G = Pace Analytical Services - Green Bay

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40260455001	**B-7R**					
EPA 6020B	Boron	120	ug/L	10.0	04/11/23 06:36	
EPA 6020B	Calcium	48800	ug/L	254	04/11/23 06:36	
	Field pH	6.18	Std. Units		04/03/23 15:35	
	Field Specific Conductance	442.9	umhos/cm		04/03/23 15:35	
	Oxygen, Dissolved	0.16	mg/L		04/03/23 15:35	
	REDOX	57.8	mV		04/03/23 15:35	
	Turbidity	21.98	NTU		04/03/23 15:35	
	Static Water Level	607.51	feet		04/03/23 15:35	
	Temperature, Water (C)	9.2	deg C		04/03/23 15:35	
SM 2540C	Total Dissolved Solids	224	mg/L	20.0	04/10/23 12:11	
SM 4500-H+B	pH at 25 Degrees C	6.6	Std. Units	0.10	04/11/23 08:06	H6
EPA 300.0	Chloride	7.9J	mg/L	10.0	04/21/23 12:55	D3
40260455002	**B-11R**					
EPA 6020B	Boron	3110	ug/L	200	04/11/23 08:22	
EPA 6020B	Calcium	105000	ug/L	254	04/11/23 06:43	
	Field pH	6.81	Std. Units		04/04/23 12:10	
	Field Specific Conductance	908	umhos/cm		04/04/23 12:10	
	Oxygen, Dissolved	0.17	mg/L		04/04/23 12:10	
	REDOX	-55.6	mV		04/04/23 12:10	
	Turbidity	3.14	NTU		04/04/23 12:10	
	Static Water Level	607.83	feet		04/04/23 12:10	
	Temperature, Water (C)	11.0	deg C		04/04/23 12:10	
SM 2540C	Total Dissolved Solids	554	mg/L	20.0	04/10/23 12:11	
SM 4500-H+B	pH at 25 Degrees C	7.0	Std. Units	0.10	04/11/23 08:09	H6
EPA 300.0	Chloride	30.7	mg/L	10.0	04/21/23 13:10	
EPA 300.0	Sulfate	57.0	mg/L	10.0	04/21/23 13:10	
40260455003	**B-11A**					
EPA 6020B	Boron	119	ug/L	10.0	04/11/23 08:30	
EPA 6020B	Calcium	51700	ug/L	254	04/11/23 06:51	
	Field pH	7.62	Std. Units		04/04/23 10:30	
	Field Specific Conductance	605.6	umhos/cm		04/04/23 10:30	
	Oxygen, Dissolved	0.25	mg/L		04/04/23 10:30	
	REDOX	-30.4	mV		04/04/23 10:30	
	Turbidity	1.23	NTU		04/04/23 10:30	
	Static Water Level	607.92	feet		04/04/23 10:30	
	Temperature, Water (C)	12.7	deg C		04/04/23 10:30	
SM 2540C	Total Dissolved Solids	394	mg/L	20.0	04/10/23 12:12	
SM 4500-H+B	pH at 25 Degrees C	7.8	Std. Units	0.10	04/11/23 08:14	H6
EPA 300.0	Chloride	40.7	mg/L	2.0	04/21/23 13:25	
EPA 300.0	Fluoride	0.22J	mg/L	0.32	04/21/23 13:25	
EPA 300.0	Sulfate	70.8	mg/L	10.0	04/24/23 19:14	
40260455004	**B-11B**					
EPA 6020B	Boron	4740	ug/L	200	04/11/23 08:37	
EPA 6020B	Calcium	84400	ug/L	254	04/11/23 06:58	
	Field pH	7.68	Std. Units		04/04/23 10:05	
	Field Specific Conductance	1395	umhos/cm		04/04/23 10:05	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40260455004	**B-11B**					
	Oxygen, Dissolved	0.32	mg/L		04/04/23 10:05	
	REDOX	128.7	mV		04/04/23 10:05	
	Turbidity	0.00	NTU		04/04/23 10:05	
	Static Water Level	607.90	feet		04/04/23 10:05	
	Temperature, Water (C)	12.3	deg C		04/04/23 10:05	
SM 2540C	Total Dissolved Solids	980	mg/L	20.0	04/10/23 12:12	
SM 4500-H+B	pH at 25 Degrees C	7.9	Std. Units	0.10	04/11/23 08:16	H6
EPA 300.0	Chloride	25.2	mg/L	10.0	04/21/23 13:40	
EPA 300.0	Fluoride	0.65J	mg/L	1.6	04/21/23 13:40	D3
EPA 300.0	Sulfate	436	mg/L	40.0	04/24/23 19:29	
40260455005	**B-26**					
EPA 6020B	Boron	38.6	ug/L	10.0	04/11/23 08:59	
EPA 6020B	Calcium	77400	ug/L	254	04/11/23 07:05	
	Field pH	7.05	Std. Units		04/04/23 09:50	
	Field Specific Conductance	750	umhos/cm		04/04/23 09:50	
	Oxygen, Dissolved	9.56	mg/L		04/04/23 09:50	
	REDOX	142.4	mV		04/04/23 09:50	
	Turbidity	0.00	NTU		04/04/23 09:50	
	Static Water Level	607.36	feet		04/04/23 09:50	
	Temperature, Water (C)	10.9	deg C		04/04/23 09:50	
SM 2540C	Total Dissolved Solids	448	mg/L	20.0	04/10/23 12:12	
SM 4500-H+B	pH at 25 Degrees C	7.4	Std. Units	0.10	04/11/23 08:20	H6
EPA 300.0	Chloride	29.1	mg/L	2.0	04/24/23 20:58	
EPA 300.0	Sulfate	34.3	mg/L	2.0	04/24/23 20:58	
40260455006	**B-31R**					
EPA 6020B	Boron	589	ug/L	10.0	04/11/23 07:42	
EPA 6020B	Calcium	88300	ug/L	254	04/11/23 07:42	
	Field pH	6.62	Std. Units		04/04/23 13:25	
	Field Specific Conductance	698	umhos/cm		04/04/23 13:25	
	Oxygen, Dissolved	0.18	mg/L		04/04/23 13:25	
	REDOX	95.0	mV		04/04/23 13:25	
	Turbidity	2.38	NTU		04/04/23 13:25	
	Static Water Level	607.88	feet		04/04/23 13:25	
	Temperature, Water (C)	11.9	deg C		04/04/23 13:25	
SM 2540C	Total Dissolved Solids	440	mg/L	20.0	04/10/23 12:12	
SM 4500-H+B	pH at 25 Degrees C	7.0	Std. Units	0.10	04/11/23 08:23	H6
EPA 300.0	Chloride	24.5	mg/L	10.0	04/24/23 21:58	
EPA 300.0	Sulfate	50.0	mg/L	10.0	04/24/23 21:58	
40260455007	**B-31A**					
EPA 6020B	Boron	193	ug/L	10.0	04/11/23 07:50	
EPA 6020B	Calcium	46100	ug/L	254	04/11/23 07:50	
	Field pH	7.59	Std. Units		04/04/23 13:20	
	Field Specific Conductance	522.6	umhos/cm		04/04/23 13:20	
	Oxygen, Dissolved	0.36	mg/L		04/04/23 13:20	
	REDOX	-68.0	mV		04/04/23 13:20	
	Turbidity	1.17	NTU		04/04/23 13:20	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40260455007	**B-31A**					
	Static Water Level	607.85	feet		04/04/23 13:20	
	Temperature, Water (C)	12.9	deg C		04/04/23 13:20	
SM 2540C	Total Dissolved Solids	324	mg/L	20.0	04/10/23 12:12	
SM 4500-H+B	pH at 25 Degrees C	7.9	Std. Units	0.10	04/11/23 08:28	H6
EPA 300.0	Chloride	50.4	mg/L	2.0	04/24/23 22:13	
EPA 300.0	Fluoride	0.18J	mg/L	0.32	04/24/23 22:13	
EPA 300.0	Sulfate	15.9	mg/L	2.0	04/24/23 22:13	
40260455008	**FIELD BLANK**					
SM 2540C	Total Dissolved Solids	22.0	mg/L	20.0	04/10/23 12:12	
SM 4500-H+B	pH at 25 Degrees C	6.6	Std. Units	0.10	04/11/23 08:40	H6
40260455009	**B-39**					
	Static Water Level	606.92	feet		04/04/23 00:00	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Sample: B-7R **Lab ID: 40260455001** Collected: 04/03/23 15:35 Received: 04/07/23 14:22 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**120**	ug/L	10.0	3.0	1	04/10/23 06:09	04/11/23 06:36	7440-42-8	
Calcium	**48800**	ug/L	254	76.2	1	04/10/23 06:09	04/11/23 06:36	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**6.18**	Std. Units			1		04/03/23 15:35		
Field Specific Conductance	**442.9**	umhos/cm			1		04/03/23 15:35		
Oxygen, Dissolved	**0.16**	mg/L			1		04/03/23 15:35	7782-44-7	
REDOX	**57.8**	mV			1		04/03/23 15:35		
Turbidity	**21.98**	NTU			1		04/03/23 15:35		
Static Water Level	**607.51**	feet			1		04/03/23 15:35		
Temperature, Water (C)	**9.2**	deg C			1		04/03/23 15:35		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**224**	mg/L	20.0	8.7	1		04/10/23 12:11		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**6.6**	Std. Units	0.10	0.010	1		04/11/23 08:06		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**7.9J**	mg/L	10.0	2.2	5		04/21/23 12:55	16887-00-6	D3
Fluoride	**<0.48**	mg/L	1.6	0.48	5		04/21/23 12:55	16984-48-8	D3
Sulfate	**<2.2**	mg/L	10.0	2.2	5		04/21/23 12:55	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Sample: B-11R **Lab ID: 40260455002** Collected: 04/04/23 12:10 Received: 04/07/23 14:22 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**3110**	ug/L	200	60.6	20	04/10/23 06:09	04/11/23 08:22	7440-42-8	
Calcium	**105000**	ug/L	254	76.2	1	04/10/23 06:09	04/11/23 06:43	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**6.81**	Std. Units			1		04/04/23 12:10		
Field Specific Conductance	**908**	umhos/cm			1		04/04/23 12:10		
Oxygen, Dissolved	**0.17**	mg/L			1		04/04/23 12:10	7782-44-7	
REDOX	**-55.6**	mV			1		04/04/23 12:10		
Turbidity	**3.14**	NTU			1		04/04/23 12:10		
Static Water Level	**607.83**	feet			1		04/04/23 12:10		
Temperature, Water (C)	**11.0**	deg C			1		04/04/23 12:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**554**	mg/L	20.0	8.7	1		04/10/23 12:11		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.010	1		04/11/23 08:09		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**30.7**	mg/L	10.0	2.2	5		04/21/23 13:10	16887-00-6	
Fluoride	**<0.48**	mg/L	1.6	0.48	5		04/21/23 13:10	16984-48-8	D3
Sulfate	**57.0**	mg/L	10.0	2.2	5		04/21/23 13:10	14808-79-8	

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ANALYTICAL RESULTS

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Sample: B-11A **Lab ID: 40260455003** Collected: 04/04/23 10:30 Received: 04/07/23 14:22 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**119**	ug/L	10.0	3.0	1	04/10/23 06:09	04/11/23 08:30	7440-42-8	
Calcium	**51700**	ug/L	254	76.2	1	04/10/23 06:09	04/11/23 06:51	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.62**	Std. Units			1		04/04/23 10:30		
Field Specific Conductance	**605.6**	umhos/cm			1		04/04/23 10:30		
Oxygen, Dissolved	**0.25**	mg/L			1		04/04/23 10:30	7782-44-7	
REDOX	**-30.4**	mV			1		04/04/23 10:30		
Turbidity	**1.23**	NTU			1		04/04/23 10:30		
Static Water Level	**607.92**	feet			1		04/04/23 10:30		
Temperature, Water (C)	**12.7**	deg C			1		04/04/23 10:30		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**394**	mg/L	20.0	8.7	1		04/10/23 12:12		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.8**	Std. Units	0.10	0.010	1		04/11/23 08:14		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**40.7**	mg/L	2.0	0.43	1		04/21/23 13:25	16887-00-6	
Fluoride	**0.22J**	mg/L	0.32	0.095	1		04/21/23 13:25	16984-48-8	
Sulfate	**70.8**	mg/L	10.0	2.2	5		04/24/23 19:14	14808-79-8	

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ANALYTICAL RESULTS

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Sample: B-11B **Lab ID: 40260455004** Collected: 04/04/23 10:05 Received: 04/07/23 14:22 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**4740**	ug/L	200	60.6	20	04/10/23 06:09	04/11/23 08:37	7440-42-8	
Calcium	**84400**	ug/L	254	76.2	1	04/10/23 06:09	04/11/23 06:58	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.68**	Std. Units			1		04/04/23 10:05		
Field Specific Conductance	**1395**	umhos/cm			1		04/04/23 10:05		
Oxygen, Dissolved	**0.32**	mg/L			1		04/04/23 10:05	7782-44-7	
REDOX	**128.7**	mV			1		04/04/23 10:05		
Turbidity	**0.00**	NTU			1		04/04/23 10:05		
Static Water Level	**607.90**	feet			1		04/04/23 10:05		
Temperature, Water (C)	**12.3**	deg C			1		04/04/23 10:05		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**980**	mg/L	20.0	8.7	1		04/10/23 12:12		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.9**	Std. Units	0.10	0.010	1		04/11/23 08:16		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**25.2**	mg/L	10.0	2.2	5		04/21/23 13:40	16887-00-6	
Fluoride	**0.65J**	mg/L	1.6	0.48	5		04/21/23 13:40	16984-48-8	D3
Sulfate	**436**	mg/L	40.0	8.9	20		04/24/23 19:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Sample: B-26 **Lab ID: 40260455005** Collected: 04/05/23 09:50 Received: 04/07/23 14:22 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**38.6**	ug/L	10.0	3.0	1	04/10/23 06:09	04/11/23 08:59	7440-42-8	
Calcium	**77400**	ug/L	254	76.2	1	04/10/23 06:09	04/11/23 07:05	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.05**	Std. Units			1		04/04/23 09:50		
Field Specific Conductance	**750**	umhos/cm			1		04/04/23 09:50		
Oxygen, Dissolved	**9.56**	mg/L			1		04/04/23 09:50	7782-44-7	
REDOX	**142.4**	mV			1		04/04/23 09:50		
Turbidity	**0.00**	NTU			1		04/04/23 09:50		
Static Water Level	**607.36**	feet			1		04/04/23 09:50		
Temperature, Water (C)	**10.9**	deg C			1		04/04/23 09:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**448**	mg/L	20.0	8.7	1		04/10/23 12:12		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.4**	Std. Units	0.10	0.010	1		04/11/23 08:20		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**29.1**	mg/L	2.0	0.43	1		04/24/23 20:58	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		04/24/23 20:58	16984-48-8	
Sulfate	**34.3**	mg/L	2.0	0.44	1		04/24/23 20:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Sample: B-31R **Lab ID: 40260455006** Collected: 04/04/23 13:25 Received: 04/07/23 14:22 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**589**	ug/L	10.0	3.0	1	04/10/23 06:09	04/11/23 07:42	7440-42-8	
Calcium	**88300**	ug/L	254	76.2	1	04/10/23 06:09	04/11/23 07:42	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**6.62**	Std. Units			1		04/04/23 13:25		
Field Specific Conductance	**698**	umhos/cm			1		04/04/23 13:25		
Oxygen, Dissolved	**0.18**	mg/L			1		04/04/23 13:25	7782-44-7	
REDOX	**95.0**	mV			1		04/04/23 13:25		
Turbidity	**2.38**	NTU			1		04/04/23 13:25		
Static Water Level	**607.88**	feet			1		04/04/23 13:25		
Temperature, Water (C)	**11.9**	deg C			1		04/04/23 13:25		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**440**	mg/L	20.0	8.7	1		04/10/23 12:12		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.010	1		04/11/23 08:23		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**24.5**	mg/L	10.0	2.2	5		04/24/23 21:58	16887-00-6	
Fluoride	**<0.48**	mg/L	1.6	0.48	5		04/24/23 21:58	16984-48-8	D3
Sulfate	**50.0**	mg/L	10.0	2.2	5		04/24/23 21:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Sample: B-31A **Lab ID: 40260455007** Collected: 04/04/23 13:20 Received: 04/07/23 14:22 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**193**	ug/L	10.0	3.0	1	04/10/23 06:09	04/11/23 07:50	7440-42-8	
Calcium	**46100**	ug/L	254	76.2	1	04/10/23 06:09	04/11/23 07:50	7440-70-2	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.59**	Std. Units			1		04/04/23 13:20		
Field Specific Conductance	**522.6**	umhos/cm			1		04/04/23 13:20		
Oxygen, Dissolved	**0.36**	mg/L			1		04/04/23 13:20	7782-44-7	
REDOX	**-68.0**	mV			1		04/04/23 13:20		
Turbidity	**1.17**	NTU			1		04/04/23 13:20		
Static Water Level	**607.85**	feet			1		04/04/23 13:20		
Temperature, Water (C)	**12.9**	deg C			1		04/04/23 13:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**324**	mg/L	20.0	8.7	1		04/10/23 12:12		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.9**	Std. Units	0.10	0.010	1		04/11/23 08:28		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**50.4**	mg/L	2.0	0.43	1		04/24/23 22:13	16887-00-6	
Fluoride	**0.18J**	mg/L	0.32	0.095	1		04/24/23 22:13	16984-48-8	
Sulfate	**15.9**	mg/L	2.0	0.44	1		04/24/23 22:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Sample: FIELD BLANK **Lab ID: 40260455008** Collected: 04/04/23 13:25 Received: 04/07/23 14:22 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Boron	**<3.0**	ug/L	10.0	3.0	1	04/10/23 06:09	04/11/23 07:27	7440-42-8	
Calcium	**<76.2**	ug/L	254	76.2	1	04/10/23 06:09	04/11/23 07:27	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**22.0**	mg/L	20.0	8.7	1		04/10/23 12:12		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**6.6**	Std. Units	0.10	0.010	1		04/11/23 08:40		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**<0.43**	mg/L	2.0	0.43	1		04/24/23 22:28	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		04/24/23 22:28	16984-48-8	
Sulfate	**<0.44**	mg/L	2.0	0.44	1		04/24/23 22:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Sample: B-39 **Lab ID: 40260455009** Collected: 04/04/23 00:00 Received: 04/12/23 00:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Static Water Level	**606.92**	feet			1		04/04/23 00:00		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

QC Batch: 441899
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40260455001, 40260455002, 40260455003, 40260455004, 40260455005, 40260455006, 40260455007, 40260455008

METHOD BLANK: 2537573 Matrix: Water
Associated Lab Samples: 40260455001, 40260455002, 40260455003, 40260455004, 40260455005, 40260455006, 40260455007, 40260455008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	<3.0	10.0	04/10/23 15:05	
Calcium	ug/L	<76.2	254	04/10/23 15:05	

LABORATORY CONTROL SAMPLE: 2537574

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	250	243	97	80-120	
Calcium	ug/L	10000	10400	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2537575 2537576

Parameter	Units	40260412001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	1390	250	250	1510	1540	47	59	75-125	2	20	P6
Calcium	ug/L	11300	10000	10000	20700	21500	93	102	75-125	4	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

QC Batch: 441949
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40260455001, 40260455002, 40260455003, 40260455004, 40260455005, 40260455006, 40260455007, 40260455008

METHOD BLANK: 2537772 Matrix: Water
Associated Lab Samples: 40260455001, 40260455002, 40260455003, 40260455004, 40260455005, 40260455006, 40260455007, 40260455008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	04/10/23 12:10	

LABORATORY CONTROL SAMPLE: 2537773

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	549	564	103	80-120	

SAMPLE DUPLICATE: 2537774

Parameter	Units	40260409001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1040	1050	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(920)469-2436

QUALITY CONTROL DATA

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

QC Batch: 442032
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40260455001, 40260455002, 40260455003, 40260455004, 40260455005, 40260455006, 40260455007, 40260455008

SAMPLE DUPLICATE: 2537995

Parameter	Units	40260196001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.4	7.4	0	5	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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(920)469-2436

QUALITY CONTROL DATA

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

QC Batch: 442973
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40260455001, 40260455002, 40260455003, 40260455004

METHOD BLANK: 2543351 Matrix: Water
Associated Lab Samples: 40260455001, 40260455002, 40260455003, 40260455004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.43	2.0	04/21/23 11:26	
Fluoride	mg/L	<0.095	0.32	04/21/23 11:26	
Sulfate	mg/L	<0.44	2.0	04/21/23 11:26	

LABORATORY CONTROL SAMPLE: 2543352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.3	102	90-110	
Fluoride	mg/L	2	2.1	106	90-110	
Sulfate	mg/L	20	20.5	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2543353 2543354

Parameter	Units	40261031001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	0.91J	20	20	21.5	22.0	103	106	90-110	3	15	
Fluoride	mg/L	<0.095	2	2	3.0	3.0	148	152	90-110	2	15	M0
Sulfate	mg/L	0.98J	20	20	23.7	24.4	114	117	90-110	3	15	M0

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
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QUALITY CONTROL DATA

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

QC Batch: 443006
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40260455005, 40260455006, 40260455007, 40260455008

METHOD BLANK: 2543661 Matrix: Water
Associated Lab Samples: 40260455005, 40260455006, 40260455007, 40260455008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.43	2.0	04/24/23 19:44	
Fluoride	mg/L	<0.095	0.32	04/24/23 19:44	
Sulfate	mg/L	<0.44	2.0	04/24/23 19:44	

LABORATORY CONTROL SAMPLE: 2543662

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.7	103	90-110	
Fluoride	mg/L	2	2.1	105	90-110	
Sulfate	mg/L	20	20.6	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2543663 2543664

Parameter	Units	40260572001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	473	400	400	876	887	101	103	90-110	1	15	
Fluoride	mg/L	79.4	40	40	107	111	70	78	90-110	3	15	M0
Sulfate	mg/L	17.3J	400	400	429	436	103	105	90-110	2	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

Pace Analytical Services, LLC
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(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25223071 ALLIANT N.D. CCR
Pace Project No.: 40260455

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40260455001	**B-7R**	EPA 3010A	441899	EPA 6020B	441987
40260455002	**B-11R**	EPA 3010A	441899	EPA 6020B	441987
40260455003	**B-11A**	EPA 3010A	441899	EPA 6020B	441987
40260455004	**B-11B**	EPA 3010A	441899	EPA 6020B	441987
40260455005	**B-26**	EPA 3010A	441899	EPA 6020B	441987
40260455006	**B-31R**	EPA 3010A	441899	EPA 6020B	441987
40260455007	**B-31A**	EPA 3010A	441899	EPA 6020B	441987
40260455008	**FIELD BLANK**	EPA 3010A	441899	EPA 6020B	441987
40260455001	**B-7R**				
40260455002	**B-11R**				
40260455003	**B-11A**				
40260455004	**B-11B**				
40260455005	**B-26**				
40260455006	**B-31R**				
40260455007	**B-31A**				
40260455009	**B-39**				
40260455001	**B-7R**	SM 2540C	441949		
40260455002	**B-11R**	SM 2540C	441949		
40260455003	**B-11A**	SM 2540C	441949		
40260455004	**B-11B**	SM 2540C	441949		
40260455005	**B-26**	SM 2540C	441949		
40260455006	**B-31R**	SM 2540C	441949		
40260455007	**B-31A**	SM 2540C	441949		
40260455008	**FIELD BLANK**	SM 2540C	441949		
40260455001	**B-7R**	SM 4500-H+B	442032		
40260455002	**B-11R**	SM 4500-H+B	442032		
40260455003	**B-11A**	SM 4500-H+B	442032		
40260455004	**B-11B**	SM 4500-H+B	442032		
40260455005	**B-26**	SM 4500-H+B	442032		
40260455006	**B-31R**	SM 4500-H+B	442032		
40260455007	**B-31A**	SM 4500-H+B	442032		
40260455008	**FIELD BLANK**	SM 4500-H+B	442032		
40260455001	**B-7R**	EPA 300.0	442973		
40260455002	**B-11R**	EPA 300.0	442973		
40260455003	**B-11A**	EPA 300.0	442973		
40260455004	**B-11B**	EPA 300.0	442973		
40260455005	**B-26**	EPA 300.0	443006		
40260455006	**B-31R**	EPA 300.0	443006		
40260455007	**B-31A**	EPA 300.0	443006		
40260455008	**FIELD BLANK**	EPA 300.0	443006		

REPORT OF LABORATORY ANALYSIS

402660455

Pace

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT All relevant fields must be completed accurately

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company	SCS ENGINEERS	Report To	Meghan Blodgett	Attention	
Address	2830 Dairy Drive	Copy To		Company Name	
Madison, WI 53718				Address	Regulatory Agency
Email	mblodgett@scsengineers.com	Purchase Order #		Pace Quote	
Phone	608-216-7362 Fax	Project Name	25223071 Alliant Nelson Dewey CCR	Pace Project Manager	dan.mlewsky@pacelabs.com, State / Location
Requested Due Date	Standard TAT	Project #	25223071	Pace Profile #:	WI

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total (B, Ca)	Chloride, Fluoride & Sulfate, Total	pH	TDS	Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	Requested Analysis Filtered (Y/N)	N	N	N	N		
1	B-7R	WT		4/3	1535				3	2		1							x	x	x	x		001
2	B-11R	WT		4/4	1210				3	2		1							x	x	x	x		002
3	B-11A	WT		4/4	1030				3	2		1							x	x	x	x		003
4	B-11B	WT		4/4	1005				3	2		1							x	x	x	x		004
5	B-26	WT		4/5	950				3	2		1							x	x	x	x		005
6	B-31R	WT		4/4	1325				3	2		1							x	x	x	x		006
7	B-31A	WT		4/4	1320				3	2		1							x	x	x	x		007
8	Field Blank	WT		4/4	1325				3	2		1							x	x	x	x		008
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Bri Salome / SCS	4/6/23	1100							
		4/7/23	0810		4/7/23	0810	2.2	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Bri Salome

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/6/23

Pace Container Order #1080536

402600455

Addresses

Order By :		Ship To :		Return To:	
Company	SCS ENGINEERS	Company	SCSMADISON	Company	Pace Analytical Green Bay
Contact	Blodgett, Meghan	Contact	Adam Watson	Contact	Milewsky, Dan
Email	mblodgett@scsengineers.com	Email	awatson@scsengineers.com	Email	dan.milewsky@pacelabs.com
Address	2830 Dairy Drive	Address	2830 Dairy Drive	Address	1241 Bellevue Street
Address 2		Address 2		Address 2	Suite 9
City	Madison	City	Madison	City	Green Bay
State	WI Zip 53718	State	WI Zip 53718	State	WI Zip 54302
Phone	608-216-7362	Phone	608-216-7362	Phone	(920)469-2436

Info

Project Name	CCR Rule Alliant Nelson Dewey (25222071)	**Due Date**	03/24/2023	**Profile**	3946	**Quote**	
Project Manager	Milewsky, Dan	**Return Date**		**Carrier**	Most Economical	**Location**	WI

Trip Blanks

- [ ] Include Trip Blanks

Bottle Labels

- [ ] Blank
- [ ] Pre-Printed No Sample IDs
- [X] Pre-Printed With Sample IDs

Bottles

- [ ] Boxed Cases
- [ ] Individually Wrapped
- [X] Grouped By Sample ID/Matrix

Return Shipping Labels

- [ ] No Shipper
- [ ] With Shipper

COC Options

- [ ] Number of Blanks
- [ ] Pre-Printed

Misc

- [ ] Sampling Instructions
- [ ] Custody Seal
- [ ] Temp. Blanks
- [X] Coolers
- [ ] Syringes
- [ ] Extra Bubble Wrap
- [ ] Short Hold/Rush Stickers
- [X] DI Water 1 Liter(s)
- [ ] USDA Regulated Soils

# of Samples	Matrix	Test	Container	Total	# of	Lot #	Notes
9	WT	Metals	250mL plastic w/HNO3	9	0		Boron/calcium
9	WT	TDS, Cl, F, SO4	250ml plastic unpreserved	9	0		
9	WT	pH	250mL Plastic Unpreserved	9	0		

Hazard Shipping Placard In Place : NA

*Sample receiving hours are typically 8am-5pm, but may differ by location. Please check with your Pace Project Manager.

*Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.

*Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage/disposal.

*Payment term are net 30 days.

*Please include the proposal number on the chain of custody to insure proper billing.

LAB USE:

Ship Date :	
Prepared By:	
Verified By:	

Sample

ALL SAMPLES UNFILTERED

CLIENT USE (Optional):

Date Rec'd:	
Received By:	
Verified By:	

Sample Preservation Receipt Form

Client Name: SCS Engineers Project # 40260455

All containers needing preservation have been checked and noted below: ☑Yes ☐No ☐N/A Initial when completed: SG Date/ Time

Lab Lot# of pH paper. 1000702 Lab Std #ID of preservation (if pH adjusted)

Pace Lab #	Glass: AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	Plastic: BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	Vials: VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	JG9U	WGFU	WPFU	General: SP5T	ZPLC	GN 1	GN 2	VOA Vials (>6mm)*	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001									2																							X		2.5 / 5
002									2																							X		2.5 / 5
003									2																							X		2.5 / 5
004									2																							X		2.5 / 5
005									2																							X		2.5 / 5
006									2																							X		2.5 / 5
007									2																							X		2.5 / 5
008									2																							X		2.5 / 5
009																																		2.5 / 5
010																																		2.5 / 5
011																																		2.5 / 5
012																																		2.5 / 5
013																																		2.5 / 5
014																																		2.5 / 5
015																																		2.5 / 5
016																																		2.5 / 5
017																																		2.5 / 5
018																																		2.5 / 5
019																																		2.5 / 5
020																																		2.5 / 5

4/17/2026

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm): ☐Yes ☐No ☑N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	
						GN 2	

Sample Condition Upon Receipt Form (SCUR)

Project #:

Client Name: SCS Engineers

WO# : 40260455

40260455

Courier: ☐ CS Logistics ☐ Fed Ex ☑ Speedee ☐ UPS ☐ Waltco
☐ Client ☐ Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____

Thermometer Used SR - 9 **Type of Ice:** Wet Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 1.0 /Corr. 2.0

Temp Blank Present: ☐ yes ☐ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Person examining contents:
Date: 4/7/23 Initials: SG

Labeled By Initials: RA

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time.	☑Yes ☐No	5.
- DI VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☑No ☐N/A		8.
Correct Containers Used: Correct Type: Pace Green Bay, Pace IR, Non-Pace	☑Yes ☐No	9.
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: W	☑Yes ☐No ☐N/A	12.
Trip Blank Present:	☐Yes ☐No ☑N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logi

Appendix D

Historical Monitoring Results

Single Location

Name: WPL - Nelson Dewey

Location ID: B-7R
Number of Sampling Dates: 20

Parameter Name	Units	12/9/2015	4/13/2016	7/18/2016	10/19/2016	1/12/2017	4/17/2017	6/7/2017	8/1/2017	10/19/2017	4/2/2018	10/9/2018	4/22/2019	10/14/2019	4/13/2020	10/13/2020	4/20/2021	10/7/2021	4/26/2022	10/18/2022	4/3/2023
Boron	ug/L	110	115	164	154	159	129	110	129	159	121	73	93.5	139	96	145	104	--	98.1	--	120
Calcium	ug/L	31700	42300	44400	56600	56700	61400	51600	50400	56200	49200	38500	59400	57700	58700	41900	56100	--	59200	--	48800
Chloride	mg/L	45.2	4.6	7.1	22	19.7	13.1	12.8	8.1	12	10.1	1.9	10.9	11.5	14.3	6.7	9.5	--	12	--	7.9
Fluoride	mg/L	<1	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.1	<0.5	<0.5	<0.48	<0.48	<0.48	--	<0.48	--	<0.48
Field pH	Std. Units	6.74	6.8	6.29	6.55	7.43	6.6	6.65	6.28	6.88	6.57	6.23	6.63	6.62	6.6	6.35	6.54	--	6.43	--	6.18
Sulfate	mg/L	17	2.5	2.4	<5	<5	<5	<5	3.7	<5	<5	3.2	<5	<5	7.5	<2.2	<2.2	--	3.7	--	<2.2
Total Dissolved Solids	mg/L	198	218	220	288	240	278	240	220	242	220	186	254	208	306	208	248	--	318	--	224
Antimony	ug/L	0.28	<0.073	0.25	0.086	0.2	0.18	<0.15	0.33	--	<0.15	--	--	--	--	--	--	--	--	--	--
Arsenic	ug/L	5	2	1.8	5.7	6.6	3.5	2.6	2	--	2.6	--	--	--	--	--	--	--	--	--	--
Barium	ug/L	77.8	67.8	54.5	78.8	98.4	83.3	65.8	54.2	--	89.3	--	--	--	--	--	--	--	--	--	--
Beryllium	ug/L	<0.13	<0.13	<0.13	<0.13	0.16	<0.13	<0.18	<0.18	--	<0.18	--	--	--	--	--	--	--	--	--	--
Cadmium	ug/L	0.17	<0.089	<0.089	0.13	0.16	0.11	<0.081	0.23	--	<0.081	--	--	--	--	--	--	--	--	--	--
Chromium	ug/L	0.5	<0.39	<0.39	<0.39	0.62	0.41	<1	<1	--	<1	--	--	--	--	--	--	--	--	--	--
Cobalt	ug/L	1.3	0.88	0.69	1.8	1.5	1.4	1.1	1.3	--	0.42	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	0.21	0.16	0.078	0.14	0.42	0.26	<0.2	0.29	--	<0.2	--	--	--	--	--	--	--	--	--	--
Lithium	ug/L	0.45	0.14	0.18	0.23	0.35	0.26	<0.14	0.41	--	0.22	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.1	<0.18	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	9.6	1.4	1.4	4.3	3.3	2.1	2.8	1.9	--	0.84	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	0.44	0.24	0.26	0.23	0.47	0.39	<0.32	0.56	--	<0.32	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	0.2	<0.14	<0.14	<0.14	<0.14	0.22	<0.14	0.36	--	<0.14	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	0.933	1.18	0.598	0.118	0.828	0.747	0.181	0.967	--	0.339	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	0.341	0.436	-0.089	-0.243	-0.253	0.345	0.181	0.379	--	0.339	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	0.592	0.746	0.598	0.118	0.828	0.402	-0.057	0.588	--	-0.032	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	367.8	410.9	422.3	583.4	1054	532	303	411.8	480.9	342.5	336	603.7	576.6	623.8	414.4	535	--	614.1	--	442.9
Oxygen, Dissolved	mg/L	4.88	1.29	0.55	0.37	0.1	0.1	0.22	0.47	0.31	0.3	1.24	0.17	0.11	2.18	1.68	0.19	--	0.82	--	0.16
Field Oxidation Potential	mV	-48.2	-46.1	-26.6	137.3	-122.2	-83.3	-12.6	-3	112.8	-74.1	54.5	-100.9	-132.2	-124	142.1	-23.4	--	-86.1	--	57.8
Groundwater Elevation	feet	606.69	609.32	606.54	608.59	604.94	609.08	610.74	607.02	609.6	604.82	610.76	615.28	613.43	614.12	605.09	608.83	604.05	609.84	603.81	607.51
Temperature	deg C	13.9	11.7	15.1	16	11.7	10.9	13.5	16.5	16	9.2	16.3	10.5	15.2	8.2	13.7	9.3	--	8.5	--	9.2
Turbidity	NTU	--	4.8	4.3	2.22	2.69	3.53	3.28	1.31	3	4.17	29.56	17.05	4.25	8.2	54.78	0.99	--	3.56	--	21.98
pH at 25 Degrees C	Std. Units	6.3	6.5	6.4	7.1	6.6	6.8	7.7	6.6	6.6	6.8	6.6	6.6	6.9	6.6	6.4	6.6	--	6.6	--	6.6

Single Location

Name: WPL - Nelson Dewey

Location ID: B-11A
Number of Sampling Dates: 20

Parameter Name	Units	12/9/2015	4/13/2016	7/19/2016	10/19/2016	1/12/2017	4/17/2017	6/8/2017	8/1/2017	10/19/2017	4/2/2018	10/9/2018	4/22/2019	10/14/2019	4/13/2020	10/12/2020	4/19/2021	10/7/2021	4/26/2022	10/18/2022	4/4/2023
Boron	ug/L	124	116	104	112	106	100	102	105	116	91	94.2	93.9	80.7	86.3	99.3	88.1	85.4	88.6	95.2	119
Calcium	ug/L	58800	60100	54000	54600	54500	54800	57800	54500	55000	53300	48600	60400	56600	57500	55600	50600	51400	51600	46000	51700
Chloride	mg/L	40.4	43	46.6	46.5	46.6	45.4	46.9	46.7	49.9	54.7	57.8	83.6	96.6	93.7	65.3	59.1	58.8	58.3	49.1	40.7
Fluoride	mg/L	0.3	0.38	0.35	0.36	0.43	0.36	0.37	0.37	0.32	0.24	0.29	0.29	0.26	0.27	0.28	0.23	0.22	<0.095	0.22	0.22
Field pH	Std. Units	7.7	7.75	7.42	7.47	7.89	7.38	7.78	7.67	7.96	8.04	7.43	7.62	7.66	7.75	7.74	7.65	7.57	7.53	7.61	7.62
Sulfate	mg/L	3.2	3.8	2.7	3	2.3	<1	1.4	2.4	5.1	12.3	6	1.9	<1	1.4	1	2.9	7	8.5	22.7	70.8
Total Dissolved Solids	mg/L	338	362	336	340	322	326	338	326	322	336	332	386	348	394	364	366	356	350	332	394
Antimony	ug/L	0.42	0.14	0.17	0.44	0.22	0.51	<0.15	0.27	--	<0.15	--	--	--	--	--	--	--	--	--	--
Arsenic	ug/L	0.27	0.19	0.18	0.51	0.19	0.4	<0.28	<0.28	--	<0.28	--	--	--	--	--	--	--	--	--	--
Barium	ug/L	202	206	171	181	187	192	194	184	--	170	--	--	--	--	--	--	--	--	--	--
Beryllium	ug/L	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.18	<0.18	--	<0.18	--	--	--	--	--	--	--	--	--	--
Cadmium	ug/L	<0.089	<0.089	<0.089	0.26	<0.089	0.24	<0.081	<0.081	--	<0.081	--	--	--	--	--	--	--	--	--	--
Chromium	ug/L	<0.39	<0.39	<0.39	<0.39	0.46	0.52	<1	<1	--	<1	--	--	--	--	--	--	--	--	--	--
Cobalt	ug/L	1.3	1.4	0.97	1.3	1.2	1.4	1.1	1.3	--	1.1	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	0.083	<0.04	<0.04	0.34	<0.04	0.33	<0.2	<0.2	--	<0.2	--	--	--	--	--	--	--	--	--	--
Lithium	ug/L	5.9	6.1	5.8	5.9	5.9	5.9	6.1	4.9	--	5.1	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.1	<0.18	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	22.7	24.1	22.5	21.8	21.8	22.4	22.2	20	--	18.2	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	<0.21	<0.21	<0.21	0.27	<0.21	0.36	<0.32	<0.32	--	<0.32	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	0.14	<0.14	<0.14	0.5	<0.14	0.46	<0.14	0.15	--	<0.14	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	1.08	1.48	0.937	0.95	0.845	1.4	1.88	0.917	--	0.848	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	0.579	0.148	0.179	0.172	0	0.948	0.454	0.0728	--	0.405	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	0.503	1.33	0.758	0.778	0.845	0.447	1.43	0.844	--	0.443	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	660	658	598.1	631	1049	583.3	407.9	588.8	519.1	481.9	654	721	708	720	674	638	621	633.7	608	605.6
Oxygen, Dissolved	mg/L	0.49	0.03	0.08	0.37	0.19	0.11	0.23	0.1	0.51	0.12	0.08	0.07	0.14	0.19	0.09	0.21	1.27	0.15	0.12	0.25
Field Oxidation Potential	mV	9.8	-31.2	84.2	-76.8	-88.3	-103.6	31.4	-44.1	112.1	-42.1	-47.9	218.3	-59	-31	55.1	135.4	61.4	0.3	91.5	-30.4
Groundwater Elevation	feet	606.3	608.71	606.76	608.21	604.36	609.05	609.81	605.57	609.58	606.63	610.28	615.29	613.29	613.88	604.54	608.72	603.79	610	603.63	607.92
Temperature	deg C	14.8	14.8	14.8	14.9	14.2	14.4	14.3	14.7	14.9	13.9	15	13.8	14.3	13.4	14.2	13.4	13.9	13	13.3	12.7
Turbidity	NTU	--	0.23	0.01	0.15	0.21	0.51	0.39	0.12	0.78	0.5	3.15	0	2.58	0	0	0	0	0	0.72	1.23
pH at 25 Degrees C	Std. Units	7.4	7.5	7.5	7.9	7.7	7.7	7.7	7.7	7.6	7.8	7.7	7.7	7.8	7.6	7.7	7.7	8	7.7	7.9	7.8

Single Location

Name: WPL - Nelson Dewey

Location ID: B-11B
Number of Sampling Dates: 21

Parameter Name	Units	12/9/2015	4/13/2016	7/19/2016	10/20/2016	1/12/2017	4/17/2017	6/8/2017	8/1/2017	10/19/2017	4/2/2018	10/9/2018	11/12/2018	4/22/2019	10/14/2019	4/13/2020	10/12/2020	4/19/2021	10/7/2021	4/26/2022	10/18/2022	4/4/2023
Boron	ug/L	1140	1360	1210	1460	1540	1760	1880	1800	1500	2020	3620	--	6830	4630	5380	3350	4440	2480	2590	3010	4740
Calcium	ug/L	64100	65400	59000	59100	63900	67400	68200	61400	52400	59000	66300	--	83300	91400	115000	91200	93400	100000	97100	75100	84400
Chloride	mg/L	31.2	32.7	33.6	34.3	36.1	36.3	33.9	35.9	36.1	31.3	21.9	--	28.4	32.3	30.9	33.4	28.3	39.6	36.5	32.8	25.2
Fluoride	mg/L	0.44	0.49	0.45	0.53	0.52	0.58	0.59	0.6	0.59	0.65	0.61	--	0.64	0.62	<0.95	<0.095	0.36	<0.95	<0.48	0.47	0.65
Field pH	Std. Units	8.06	8.14	7.77	7.91	8.18	7.83	8.07	7.77	7.77	8.42	7.74	8.05	7.91	7.92	7.89	7.8	8.07	7.81	7.63	7.74	7.68
Sulfate	mg/L	134	148	165	178	182	181	191	179	175	200	197	--	303	339	378	388	379	466	513	429	436
Total Dissolved Solids	mg/L	494	512	520	496	488	502	516	498	510	550	602	594	742	728	872	906	910	884	1000	920	980
Antimony	ug/L	0.32	<0.073	0.097	0.21	0.12	0.098	<0.15	<0.15	--	<0.15	--	--	--	--	--	--	--	--	--	--	--
Arsenic	ug/L	0.67	0.38	0.36	0.52	0.4	0.47	<0.28	<0.28	--	0.29	--	--	--	--	--	--	--	--	--	--	--
Barium	ug/L	147	153	128	130	145	151	151	132	--	128	--	--	--	--	--	--	--	--	--	--	--
Beryllium	ug/L	<0.13	<0.13	<0.13	<0.25	<0.13	<0.13	<0.18	<0.18	--	<0.18	--	--	--	--	--	--	--	--	--	--	--
Cadmium	ug/L	0.23	<0.089	<0.089	0.18	<0.089	<0.089	<0.081	<0.081	--	<0.081	--	--	--	--	--	--	--	--	--	--	--
Chromium	ug/L	0.7	0.74	<0.39	<0.39	<0.39	0.45	<1	<1	--	<1	--	--	--	--	--	--	--	--	--	--	--
Cobalt	ug/L	0.44	0.23	0.21	0.38	0.3	0.29	0.26	0.2	--	0.17	--	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	0.45	<0.04	<0.04	0.36	0.083	0.061	<0.2	<0.2	--	<0.2	--	--	--	--	--	--	--	--	--	--	--
Lithium	ug/L	21.7	21.3	18.4	19.8	20	19.5	19.4	17	--	15.4	--	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.1	<0.18	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	46.2	51.7	48.7	48.1	52.6	53.8	55.1	55.9	--	77.7	--	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	0.46	<0.21	<0.21	0.28	<0.21	<0.21	<0.32	<0.32	--	<0.32	--	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	0.35	<0.14	<0.14	0.32	<0.14	<0.14	0.16	<0.14	--	0.16	--	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	0.862	1.69	0.977	0.534	0.787	0.643	1.05	2.21	--	1.02	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	0.733	0.0581	0.284	-0.487	-0.434	0.193	0.389	0.766	--	0.518	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	0.129	1.63	0.693	0.534	0.787	0.45	0.661	1.44	--	0.505	--	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	631	808	785	807	1342	799	534.3	776	709	671	954	863	1129	1132	1280	1348	1286	1337	1432	1395	1395
Oxygen, Dissolved	mg/L	0.84	0.04	0.08	0.3	0.16	0.09	0.28	0.13	0.22	0.59	0.13	0.16	0.09	0.19	0.24	0.22	0.13	1.29	0.22	0.22	0.32
Field Oxidation Potential	mV	-50.9	-66.9	-69	-114.5	-135.7	-121.3	36.2	-81.1	93.7	116.3	13.2	45.8	207.8	-48.9	-57.9	225	44.7	46.9	45.4	104	128.7
Groundwater Elevation	feet	606.26	608.68	606.74	608.19	604.32	608.99	610.08	605.5	609.65	606.55	610.24	609.14	615.28	613.18	613.86	604.44	608.67	603.74	609.98	603.57	607.9
Temperature	deg C	14.4	14.3	14.6	14.6	14.1	14.2	14.1	14.5	14.8	13.5	14.8	14.1	13.6	14.3	13.5	14.3	13.4	14	13	13.5	12.3
Turbidity	NTU	--	0.21	0.01	0.33	0.38	0.36	0.7	0.07	1.01	0.78	2.98	2.65	0	1.5	0	0	0	0	0	2.55	0
pH at 25 Degrees C	Std. Units	7.7	7.8	7.8	8	7.9	7.9	8.1	7.9	7.7	8.1	7.9	--	7.9	7.8	7.8	7.9	8	8	7.8	8	7.9

Single Location

Name: WPL - Nelson Dewey

Location ID: B-11R
Number of Sampling Dates: 20

Parameter Name	Units	12/9/2015	4/13/2016	7/19/2016	10/20/2016	1/12/2017	4/17/2017	6/7/2017	8/1/2017	10/19/2017	4/2/2018	10/9/2018	4/22/2019	10/14/2019	4/13/2020	10/12/2020	4/19/2021	10/7/2021	4/26/2022	10/18/2022	4/4/2023
Boron	ug/L	4170	3410	3530	4120	3530	3520	3420	2040	3120	3180	576	1360	1440	2140	2870	3010	2940	2330	3090	3110
Calcium	ug/L	126000	141000	130000	128000	126000	123000	128000	139000	117000	124000	49900	82400	66000	117000	120000	115000	119000	114000	116000	105000
Chloride	mg/L	39.2	7	38.9	39.1	42.3	40.2	42	24.7	38.8	36.8	5.9	12.6	13.1	22.5	20.7	27.2	23.1	18	28.8	30.7
Fluoride	mg/L	<1	<0.2	0.22	<0.5	<0.5	<0.5	<0.5	0.25	<0.5	<0.5	0.15	0.2	0.26	<0.48	<0.48	<0.48	<0.48	<0.48	0.16	<0.48
Field pH	Std. Units	7.07	6.78	6.69	6.77	6.98	7.11	6.8	6.7	7.22	7.14	6.55	6.82	6.83	6.8	6.83	7.11	6.86	7.01	6.76	6.81
Sulfate	mg/L	75.4	18.4	115	118	108	108	98.2	126	97.7	88.1	15.1	34.6	40.7	41.9	22.8	61.2	61.8	58.1	65.3	57
Total Dissolved Solids	mg/L	616	682	698	660	616	620	630	738	586	638	266	406	310	570	600	578	576	560	572	554
Antimony	ug/L	<0.073	<0.073	<0.073	0.22	<0.073	<0.073	<0.15	0.42	--	<0.15	--	--	--	--	--	--	--	--	--	--
Arsenic	ug/L	14.8	7	10.6	7.4	7.1	6.9	6.1	7.5	--	9.3	--	--	--	--	--	--	--	--	--	--
Barium	ug/L	204	169	187	159	144	149	152	168	--	144	--	--	--	--	--	--	--	--	--	--
Beryllium	ug/L	<0.13	<0.13	<0.13	0.36	<0.13	<0.13	<0.18	<0.18	--	<0.18	--	--	--	--	--	--	--	--	--	--
Cadmium	ug/L	<0.089	<0.089	<0.089	0.15	<0.089	<0.089	<0.081	0.32	--	<0.081	--	--	--	--	--	--	--	--	--	--
Chromium	ug/L	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	<1	<1	--	<1	--	--	--	--	--	--	--	--	--	--
Cobalt	ug/L	0.36	0.54	0.68	1	1.2	1.3	1.5	1.4	--	0.94	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	0.21	<0.04	0.13	0.19	<0.04	0.12	<0.2	0.39	--	<0.2	--	--	--	--	--	--	--	--	--	--
Lithium	ug/L	2.3	1.5	1.6	2	1.4	1.4	1.3	2	--	1.6	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.1	<0.18	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	15.1	23.2	34.9	43.8	42.8	57.2	53.8	22.7	--	35.6	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	1.2	5	<0.21	0.3	<0.21	<0.21	<0.32	0.78	--	<0.32	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	<0.14	<0.14	<0.14	0.5	<0.14	<0.14	<0.14	0.47	--	<0.14	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	1.45	1.62	0.953	1.51	0.345	1.45	2.1	1.43	--	0.749	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	0.797	0.863	0.19	0.516	0	0.719	0.272	0.602	--	0.254	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	0.653	0.757	0.763	0.997	0.345	0.732	1.83	0.826	--	0.495	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	931	1172	1160	1139	1876	1020	721	1192	870	839	463.2	737	612	993	1125	1003	1029	934	1014	908
Oxygen, Dissolved	mg/L	2.47	0.03	0.08	0.34	0.14	0.11	0.21	0.1	0.19	0.09	0.34	0.37	0.1	0.22	0.14	0.1	1.57	0.07	0.22	0.17
Field Oxidation Potential	mV	-114.2	-91	-94.7	-113.2	-72.9	-53.3	-26.8	-41.3	133.4	-128.6	-49.5	-20.9	-4.7	-75.8	-139.8	-64.5	-42.6	-41.5	-18.9	-55.6
Groundwater Elevation	feet	606.71	609.32	606.14	608.35	604.57	608.34	610.42	606.73	609.42	606.27	610.67	615.28	613.06	614.39	604.57	608.57	603.85	609.75	603.59	607.83
Temperature	deg C	14.5	10.9	14	15.5	12.7	11.7	11.9	14.4	15.1	11.1	16.2	10	14.5	10.1	14.3	10.6	14.6	10.4	13.3	11
Turbidity	NTU	--	3.18	2.11	1.66	2.51	3.85	1.72	1.04	2.5	3.58	10.05	8.88	7.5	8.97	6.58	8.4	10.81	6.7	2.22	3.14
pH at 25 Degrees C	Std. Units	6.9	6.8	6.8	7.3	6.9	7.2	7.1	6.9	6.8	7	6.9	6.9	7	6.8	7	7	7.3	6.9	7	7

Single Location

Name: WPL - Nelson Dewey

Location ID: B-26
Number of Sampling Dates: 20

Parameter Name	Units	12/9/2015	4/12/2016	7/19/2016	10/20/2016	1/12/2017	4/17/2017	6/7/2017	8/2/2017	10/19/2017	4/3/2018	10/8/2018	4/23/2019	10/15/2019	4/14/2020	10/13/2020	4/21/2021	10/8/2021	4/25/2022	10/18/2022	4/5/2023
Boron	ug/L	29.6	33.7	28.6	33	35.2	50.1	45.8	54.6	47.4	48	53.4	41.6	<3	66.1	63.6	63.6	48.4	52.5	48.8	38.6
Calcium	ug/L	81300	86200	82400	82700	89400	89000	105000	98100	102000	88100	78700	75300	<76.2	88500	76500	78700	84900	75900	80300	77400
Chloride	mg/L	45.5	51.3	55.6	52.8	54.5	56	59.6	52.6	79.3	54.4	33.2	40.8	30.5	54.9	35.3	42.6	39.1	45.3	37.4	29.1
Fluoride	mg/L	<0.2	<0.2	<0.2	0.13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.11	<0.095	<0.095	<0.095	<0.48	<0.095	<0.095
Field pH	Std. Units	7.35	7.43	7.14	7.19	7.57	7.54	7.22	7.21	7.5	7.64	7.2	7.1	7.24	7.27	7.34	7.27	7.18	7.19	7.15	7.05
Sulfate	mg/L	37.1	38	36.2	35	35	32.4	31	28.5	25.3	19.1	25.1	26.7	36	30.2	37	35.3	43.8	34.2	47.6	34.3
Total Dissolved Solids	mg/L	424	456	504	466	446	468	538	496	542	464	450	458	404	464	448	470	440	470	472	448
Antimony	ug/L	0.075	<0.073	0.16	0.2	0.24	0.087	<0.15	<0.15	--	<0.15	--	--	--	--	--	--	--	--	--	--
Arsenic	ug/L	0.49	0.54	0.49	0.59	0.6	0.5	0.39	0.5	--	0.36	--	--	--	--	--	--	--	--	--	--
Barium	ug/L	73.7	81.8	77.8	81.2	89.2	91	107	100	--	91.5	--	--	--	--	--	--	--	--	--	--
Beryllium	ug/L	<0.13	<0.13	<0.13	<0.13	0.13	<0.13	<0.18	<0.18	--	<0.18	--	--	--	--	--	--	--	--	--	--
Cadmium	ug/L	<0.089	<0.089	<0.089	0.13	0.15	<0.089	<0.081	<0.081	--	0.085	--	--	--	--	--	--	--	--	--	--
Chromium	ug/L	0.94	4.1	1.1	0.83	1	1.1	<1	<1	--	<1	--	--	--	--	--	--	--	--	--	--
Cobalt	ug/L	0.17	0.13	0.086	0.21	0.25	0.13	<0.085	0.13	--	<0.085	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	0.057	<0.04	<0.04	0.15	0.2	0.079	<0.2	<0.2	--	0.3	--	--	--	--	--	--	--	--	--	--
Lithium	ug/L	2.1	2.1	1.9	2.2	2.5	2.1	2.2	2	--	2.1	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.1	<0.18	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	0.19	0.5	0.15	0.39	0.34	0.2	<0.44	<0.44	--	<0.44	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	0.69	0.67	0.98	1.1	0.99	1.5	1.5	1.4	--	1.4	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	<0.14	<0.14	<0.14	0.27	0.16	<0.14	<0.14	<0.14	--	<0.14	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	1.22	0.773	0.416	0.713	0.672	0.867	0.646	0.681	--	0.449	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	0.404	-0.058	-0.089	0.353	0	0.398	0.124	0.224	--	0.261	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	0.82	0.773	0.416	0.36	0.672	0.469	0.522	0.457	--	0.188	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	567	783	788	823	1394	800	575.9	836	786	655.2	661.9	815	753	852	782	778	788	826	784	750
Oxygen, Dissolved	mg/L	5.88	5.3	4.41	6.25	5.58	7.79	2.92	6.8	8.49	2.68	5.98	8.73	12.17	8.43	7.2	8.74	9.4	10.44	9.51	9.56
Field Oxidation Potential	mV	14.3	130.2	63.2	68.9	59.1	148.4	53.4	155.9	215.6	69.7	109.2	259.9	175.8	160.4	242.6	105.8	122.1	252.4	93.9	142.4
Groundwater Elevation	feet	606.8	609.81	606.09	608.84	604.52	608.59	611.25	607.39	608.84	606.49	610.34	615.49	613.1	613.76	604.92	608.55	604.21	610.12	603.99	607.36
Temperature	deg C	11.1	10.9	10.7	11.3	11.5	11.1	10.9	11.3	11.7	11.3	12	11.4	11.6	11.3	11.9	11	11.4	11	11	10.9
Turbidity	NTU	--	0.27	0.27	0.37	0.14	0.56	0.44	0.15	0.89	0.99	3.44	0	1.5	0	0	0	0	0.3	0	0
pH at 25 Degrees C	Std. Units	7.2	7.4	7.2	7.7	7.6	7.5	7.5	7.3	7.4	7.3	7.3	7.4	7.4	7.2	7.4	7.4	7.7	7.4	7.6	7.4

Single Location

Name: WPL - Nelson Dewey

Location ID: B-31A
Number of Sampling Dates: 20

Parameter Name	Units	12/9/2015	4/13/2016	7/19/2016	10/20/2016	1/12/2017	4/17/2017	6/8/2017	8/1/2017	10/19/2017	4/2/2018	10/9/2018	4/22/2019	10/14/2019	4/13/2020	10/12/2020	4/19/2021	10/7/2021	4/26/2022	10/18/2022	4/4/2023
Boron	ug/L	59	79.2	67.2	63.7	76.4	69.9	58.5	56.3	63.9	74.8	71.8	86.2	98.5	132	127	172	178	198	213	193
Calcium	ug/L	48400	51900	48900	45800	46600	46900	49400	46000	49600	49300	46600	48200	52200	50900	47700	52100	53500	55300	45300	46100
Chloride	mg/L	35.3	35.8	36.4	39	39.9	40.3	40.9	40.8	40.8	42.7	40.2	40.8	47.1	51	57.9	64.8	60.3	56	53.9	50.4
Fluoride	mg/L	<0.2	0.22	<0.2	0.18	0.22	0.19	0.18	0.2	0.16	0.13	0.17	0.22	0.22	0.19	0.18	0.14	0.15	0.22	0.14	0.18
Field pH	Std. Units	7.65	7.63	7.25	7.54	7.82	7.83	7.74	7.56	7.92	8	7.48	7.61	7.69	7.71	7.78	7.9	7.44	7.82	7.63	7.59
Sulfate	mg/L	26.2	22.6	24.2	27.2	29.8	31	31.2	26.6	26.1	27.4	24.8	21.6	22.3	16.6	16.8	15.8	14.9	15.4	23	15.9
Total Dissolved Solids	mg/L	274	302	280	292	284	318	296	284	290	282	278	284	272	298	300	330	294	316	310	324
Antimony	ug/L	<0.073	<0.073	0.14	0.084	<0.073	<0.073	<0.15	<0.15	--	<0.15	--	--	--	--	--	--	--	--	--	--
Arsenic	ug/L	1.6	1.6	1.4	1.5	1.5	1.3	1.3	1.2	--	1.3	--	--	--	--	--	--	--	--	--	--
Barium	ug/L	132	147	130	128	146	146	150	133	--	139	--	--	--	--	--	--	--	--	--	--
Beryllium	ug/L	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.18	<0.18	--	<0.18	--	--	--	--	--	--	--	--	--	--
Cadmium	ug/L	<0.089	<0.089	<0.089	<0.089	<0.089	<0.089	<0.081	<0.081	--	<0.081	--	--	--	--	--	--	--	--	--	--
Chromium	ug/L	<0.39	<0.39	<0.39	<0.39	<0.39	<0.39	9.4	<1	--	<1	--	--	--	--	--	--	--	--	--	--
Cobalt	ug/L	2.2	2.3	1.8	1.8	2	1.9	2.2	1.8	--	1.8	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	0.08	<0.04	<0.04	0.05	<0.04	0.36	<0.2	<0.2	--	<0.2	--	--	--	--	--	--	--	--	--	--
Lithium	ug/L	0.83	0.91	0.77	0.97	0.98	0.97	0.94	0.93	--	0.86	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.1	<0.18	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	25.3	29.8	23.4	22.6	23.9	23.8	22.9	22.9	--	24.8	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.32	<0.32	--	<0.32	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	<0.14	<0.14	<0.14	0.2	<0.14	<0.14	<0.14	<0.14	--	<0.14	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	1.47	0.387	0.492	0.331	0.407	1.18	1.34	1.15	--	0.289	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	0.484	-0.152	-0.097	0	0	0.482	0.594	0.163	--	0.132	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	0.985	0.387	0.492	0.331	0.407	0.696	0.746	0.982	--	0.157	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	405	505.8	487.2	509.7	858	486	334.2	479.5	433.5	398.9	503.8	517	514	556	557.3	563	553	556	558.1	522.6
Oxygen, Dissolved	mg/L	0.88	0.04	0.18	0.34	0.13	0.14	0.25	0.12	0.23	0.14	0.1	0.13	0.12	0.24	0.19	0.18	1.35	0.17	0.18	0.36
Field Oxidation Potential	mV	-84.7	-106.2	-71.1	-113	-98.4	-55.2	-19.8	-77.3	97.1	-111.6	-75.8	-4.5	-60.5	-68.2	-55.9	79.6	23.5	59.6	31.7	-68
Groundwater Elevation	feet	606.39	609.01	606.73	608.2	607.84	608.98	609.63	605.69	609.43	606.46	610.27	615.33	613.2	613.79	604.54	608.63	603.84	609.95	603.61	607.85
Temperature	deg C	15.1	15.4	15.3	15	14.6	14.8	14.7	14.9	14.9	14.4	15	13.9	14.2	13.6	13.9	13.5	13.5	13.2	13.2	12.9
Turbidity	NTU	--	0.36	0.63	0.38	0.21	0.37	0.66	0.17	1.25	0.42	2.83	0	2.66	0.75	1.11	0	0	0	0.94	1.17
pH at 25 Degrees C	Std. Units	7.4	7.3	7.6	7.8	7.3	7.7	7.8	7.6	7.5	7.7	7.7	7.6	7.7	7.7	7.7	7.8	7.9	7.6	7.9	7.9

Single Location

Name: WPL - Nelson Dewey

Location ID: B-31R
Number of Sampling Dates: 21

Parameter Name	Units	12/9/2015	4/13/2016	7/19/2016	10/20/2016	1/12/2017	4/17/2017	6/8/2017	8/1/2017	10/19/2017	4/2/2018	10/9/2018	11/12/2018	4/22/2019	10/14/2019	4/13/2020	10/12/2020	4/19/2021	10/7/2021	4/25/2022	10/18/2022	4/4/2023
Boron	ug/L	851	838	641	1020	749	929	895	1550	645	540	1430	--	906	915	730	702	621	353	454	327	589
Calcium	ug/L	77400	84900	76100	84200	73900	85600	90700	93400	75700	72900	125000	--	105000	110000	93800	95700	91400	79000	81100	78500	88300
Chloride	mg/L	29.9	17.6	30.3	16.4	26	20.4	20.7	3.6	29	32.6	19.7	--	17.8	26	29.9	24.4	23.3	36.5	36	35.1	24.5
Fluoride	mg/L	<0.2	<0.2	<0.2	0.17	0.26	0.12	0.13	0.16	0.14	<0.1	<0.1	--	0.16	0.25	0.28	<0.48	0.19	0.22	<0.095	0.21	<0.48
Field pH	Std. Units	6.79	6.76	6.44	6.53	6.8	6.8	6.67	6.56	7.19	6.76	6.41	6.59	6.62	6.72	6.79	6.89	6.91	6.63	6.77	6.83	6.62
Sulfate	mg/L	28.8	34.1	38.5	49.7	34.9	43	41.1	55.6	19.2	22	186	162	121	146	89.4	49.4	45.3	24.9	60	29.6	50
Total Dissolved Solids	mg/L	374	404	406	452	380	416	426	432	358	374	668	596	516	480	464	462	454	372	428	386	440
Antimony	ug/L	0.47	0.15	0.21	0.24	0.18	0.22	<0.15	0.18	--	0.15	--	--	--	--	--	--	--	--	--	--	--
Arsenic	ug/L	0.47	0.24	0.37	0.37	0.22	0.29	<0.28	<0.28	--	<0.28	--	--	--	--	--	--	--	--	--	--	--
Barium	ug/L	86.2	93.5	85.3	92.6	86.7	91.1	93.9	97.4	--	72.1	--	--	--	--	--	--	--	--	--	--	--
Beryllium	ug/L	<0.13	<0.13	<0.13	<0.25	<0.13	<0.13	<0.18	<0.18	--	<0.18	--	--	--	--	--	--	--	--	--	--	--
Cadmium	ug/L	2.5	2.5	2	3	2.2	3	2.9	3.1	--	2	--	--	--	--	--	--	--	--	--	--	--
Chromium	ug/L	0.43	0.4	<0.39	<0.39	0.41	<0.39	<1	<1	--	<1	--	--	--	--	--	--	--	--	--	--	--
Cobalt	ug/L	3	3.5	5.4	5.2	6.6	3.1	2.3	4.4	--	3.3	--	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	1.8	0.53	0.14	0.37	0.047	0.57	<0.2	<0.2	--	<0.2	--	--	--	--	--	--	--	--	--	--	--
Lithium	ug/L	18.6	18	18.1	22.3	21.4	21.7	21.4	22	--	16.2	--	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.1	<0.18	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	31.4	27.2	23.9	24.4	27.1	26.8	25.4	21.6	--	31.9	--	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	0.69	0.48	<0.21	0.29	0.63	0.96	<0.32	1.4	--	0.93	--	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	2.2	1.9	2	2.3	2.1	2.2	2.2	2	--	1.8	--	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	1.34	1.22	1.16	1.3	1.23	0.613	1.36	1.31	--	0.676	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	0.575	0.661	0.513	0.583	0.92	0.38	0.534	0.612	--	0.132	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	0.769	0.559	0.649	0.717	0.31	0.233	0.827	0.698	--	0.544	--	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	543	674	660	742	1100	637	465.4	697	519.6	476.8	1016	858	827	837	763	826	747	649	728	711	698
Oxygen, Dissolved	mg/L	2.36	0.07	0.09	0.33	0.21	0.16	0.21	0.27	0.21	0.45	0.12	0.19	0.1	0.1	0.14	0.22	0.12	1.81	0.38	0.45	0.18
Field Oxidation Potential	mV	77.6	36.2	-11	5.8	12.3	676	64.7	2.9	153	28	-0.5	1	94.2	20.7	7.3	-60.7	16.3	16.7	-25.3	-28.4	95
Groundwater Elevation	feet	607.4	609.34	606.55	608.51	608.37	607.2	610.5	606.84	609.47	604.44	610.39	609.11	615.01	612.5	613.8	604.66	608.66	603.98	610.27	603.69	607.88
Temperature	deg C	15.8	15	15.1	15.2	14.5	13.8	13.6	14.8	15	13.8	15.9	15	11.8	14.2	12	14	12.1	13.8	11.3	12.7	11.9
Turbidity	NTU	--	1.01	1.5	0.7	0.72	0.62	0.92	1.18	1.53	1.29	3.94	3.83	0	2.81	0.01	0	11.39	0	3.68	1.27	2.38
pH at 25 Degrees C	Std. Units	6.7	6.8	6.6	7.1	6.8	6.8	6.8	6.8	6.8	6.8	6.8	--	6.8	7	6.8	7.1	6.9	7.3	6.9	7.3	7

Appendix E

Alternative Source Demonstration Reports

E1 Alternative Source Demonstration, October 2022 Detection Monitoring

Alternative Source Demonstration
October 2022 Detection Monitoring

Slag Pond
Nelson Dewey Generating Station
Cassville, Wisconsin

Prepared for:

SCS ENGINEERS

25223071.00 | June 2, 2023

2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830

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PE CERTIFICATION

<table>
<tr><td rowspan="5"> 
</td><td>I, Sherren Clark, hereby certify that the information in this alternative source demonstration is accurate and meets the requirements of 40 CFR 257.94(e)(2). This certification is based on my review of the groundwater data and related site information available for the Nelson Dewey Generating Station Slag Pond facility. I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.

June 2, 2023</td></tr>
<tr><td>(signature) (date)</td></tr>
<tr><td>(printed or typed name)

License number _____E-29863_____

My license renewal date is July 31, 2024.

Pages or sheets covered by this seal:

Alternative Source Demonstration, October 2022</td></tr>
<tr><td>Detection Monitoring – Slag Pond</td></tr>
<tr><td>Nelson Dewey Generating Station, Cassville</td></tr>
<tr><td>(Entire Document)</td></tr>
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1.0 INTRODUCTION

This Alternative Source Demonstration (ASD) was prepared to support compliance with the groundwater monitoring requirements of the "Coal Combustion Residuals (CCR) Final Rule" published by the U.S. Environmental Protection Agency (U.S. EPA) in the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, dated April 17, 2015 (U.S. EPA, 2015), and subsequent amendments. Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.94(e)(2). The applicable sections of the Rule are provided below in *italics*.

1.1 §257.94(E)(2) ALTERNATIVE SOURCE DEMONSTRATION REQUIREMENTS

The owner and operator may demonstrate that a source other than the CCR Unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels.

An ASD is completed when there are exceedances of one or more benchmarks established within the groundwater monitoring program to determine if any other sources are likely causes of the identified exceedance(s) of established benchmark(s) at the site. This ASD was performed in response to results indicating a statistically significant increase (SSI) over background levels during detection monitoring under the CCR Rule.

This ASD report evaluates the SSIs observed in the statistical evaluation of the October 2022 detection monitoring event at the Nelson Dewey Generating Station (NED). The first ASD prepared for this facility evaluated the SSIs observed in the statistical evaluation of the October 2017 detection monitoring event (SCS Engineers [SCS], 2018). The October 2017 ASD and subsequent semiannual updates have included several lines of evidence demonstrating that SSIs reported for Appendix III parameters in the downgradient monitoring wells were likely due to man-made sources other than the slag pond CCR Unit and/or naturally occurring constituents in the alluvial aquifer. The conclusions of this ASD are consistent with previous ASDs.

1.2 SITE INFORMATION AND MAP

The NED site is located along the east bank of the Mississippi River, north of the Village of Cassville, in Grant County, Wisconsin (**Figure 1**). The facility includes a decommissioned coal-fired generating plant, a CCR landfill that was closed in 2001, a closed Slag Pond, and a closed wastewater treatment pond. The layout of the site on an aerial photograph base is shown on **Figure 2**. The closed landfill at the NED facility was permitted under Wisconsin Department of Natural Resources (WDNR) License #02525.

The existing CCR Unit evaluated for this ASD is:

- Slag Pond (existing surface impoundment – closed January 2018)

A map showing the CCR Unit and all background (or upgradient) and downgradient monitoring wells with identification numbers for the CCR groundwater monitoring program and the state monitoring program is provided on **Figure 3**.

Operations at the facility began in the late 1950s, and a CCR impoundment that included what is now the Slag Pond closure area was commissioned at that time. The CCR landfill was initially licensed in 1976 and received fly ash from NED until it was closed in phases between 1996 and 2001. The CCR landfill was initially operated as a fly ash sluice basin, then transitioned to dry ash placement prior to closure. The wastewater ponds, now closed, were constructed in 1976 for the purpose of settling CCR from the NED process wastewater streams and sediment from storm water runoff prior to discharge. Both NED generating units were retired on December 31, 2015, and have since been decommissioned. The generating station was demolished in 2017. Closure of the slag pond was completed in January 2018.

1.3 STATISTICALLY SIGNIFICANT INCREASES IDENTIFIED

The statistical evaluation was completed in accordance with 40 CFR 257.93(f)(3) using a prediction interval procedure, in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper prediction limit (UPL). The initial evaluation was based on an interwell comparison. The UPLs were calculated based on a 1-of-2 resampling approach. The UPLs and the analytical results for the October 2022 monitoring event are summarized in the attached **Table 1**.

The initial evaluation indicated that the October 2022 monitoring event results represent an SSI over background for the following parameters and wells:

- Boron: B-11A, B-11B, B-11R, B-31A, B-31R
- Calcium: B-11R
- Fluoride: B-11B
- Field pH: B-11B
- Sulfate: B-11B, B-11R
- Total Dissolved Solids (TDS): B-11B, B-11R

The SSIs are consistent with SSIs identified in previous detection monitoring results. B-7R was not sampled in October 2022 because it had insufficient water for sample collection.

1.4 OVERVIEW OF ALTERNATIVE SOURCE DEMONSTRATION APPROACH

This ASD report includes:

- Background information (**Section 2.0**).
- Evaluation of potential that SSIs are due to methodology or analysis (**Section 3.0**).
- Evaluation of potential that SSIs are due to natural sources or man-made sources other than the CCR Units (**Section 4.0**).
- ASD conclusions (**Section 5.0**).
- Monitoring recommendations (**Section 6.0**).

Historical monitoring results from background and compliance sampling for the CCR Rule constituents with SSIs are provided in **Table 2**. The laboratory report for the October 2022 event will be included in the 2023 Annual Groundwater Monitoring and Corrective Action Report to be completed in January 2024. Complete laboratory reports for the background monitoring events and previous detection monitoring events were included in the previous annual groundwater monitoring and corrective action reports.

2.0 BACKGROUND

To provide context for the ASD evaluation, the following background information is provided in this section of the report, prior to the ASD evaluation sections:

- Geologic and hydrogeologic setting
- CCR Rule monitoring system
- Other monitoring wells

A more detailed discussion of the background information for the site is provided in the ASD for the October 2017 event (SCS, 2018).

2.1 GEOLOGIC AND HYDROGEOLOGIC SETTING

2.1.1 Regional Information

The uppermost geologic formation beneath the NED site is the surficial alluvial aquifer. The alluvial aquifer consists of Mississippi River valley sand and gravel deposits, and is the uppermost aquifer as defined in section 257.53 of the CCR Rule. This deposit is prevalent along the edges of the entire Mississippi River valley in southwestern Wisconsin.

The alluvial aquifer is underlain by dolomitic bedrock of the Prairie du Chien Group. The dolomite bedrock is also an aquifer and is likely hydraulically connected to the alluvial aquifer above.

Regionally, groundwater flow is generally to the southwest and discharges to the Mississippi River.

Additional details on the regional geology were provided in the October 2017 ASD (SCS, 2018).

2.1.2 Site Information

The thickness of the alluvium in the immediate vicinity of the site is over 125 feet, as evidenced by local water supply well logs (SCS, 2018). These logs are also evidence that the alluvial aquifer yields useable quantities of groundwater for supply wells in the area. Soil boring logs for monitoring wells installed at the site also generally indicate sand and gravel soils within the monitored depths.

The groundwater flow direction in the vicinity of the plant is generally southwest toward the Mississippi River. Historically, infiltration at the former Slag Pond, former fly ash basin, and the former Wisconsin Pollutant Discharge Elimination System (WPDES) ponds caused groundwater mounding to be present around these features; however, these ponds have now all been closed and are no longer sources of infiltration.

Site water level measurements generally indicate that groundwater flow is to the southwest, discharging to the Mississippi River. However, during periods of high river water levels, the flow temporarily reverses, and the river discharges to the shallow sand and gravel aquifer. The groundwater flow direction during the October 2022 detection monitoring event was generally to the southwest toward the Mississippi River (**Figure 4**). The groundwater elevations are provided in **Table 3**.

2.2 COAL COMBUSTION RESIDUALS RULE MONITORING SYSTEM

The groundwater monitoring system established in accordance with the CCR Rule consists of one upgradient (background) monitoring well and six downgradient monitoring wells. The background well is B-26. The downgradient wells include B-7R, B-11A, B-11B, B-11R, B-31A, and B-31R. The CCR Rule wells are installed within the surficial alluvium aquifer. Well depths range from approximately 23 to 114 feet, measured from the top of the well casing.

2.3 OTHER MONITORING WELLS

There are several additional groundwater monitoring wells at the NED facility that are part of the monitoring system developed for the state monitoring program. All of the wells included in the CCR monitoring well network were already in use for the state monitoring program. The well locations are shown on Figure 3. The state program monitoring wells and two private wells are used to monitor groundwater conditions at the site under WDNR License Number 2525, which includes the closed CCR landfill and the closed Slag Pond. Monitoring wells for the state monitoring program are installed in the surficial sand and gravel aquifer, which is the uppermost aquifer as defined under 40 CFR 257.53.

3.0 METHODOLOGY AND ANALYSIS REVIEW

To evaluate the potential that an SSI is due to a source other than the regulated CCR Unit, SCS used a two-step evaluation process. First, the sample collection, field and laboratory analysis, and statistical evaluation were reviewed to identify any potential error or analysis that led to an exceedance of the benchmark. Second, potential alternative sources, including natural variation and man-made sources other than the CCR Unit, were evaluated. This section of the report provides the findings of the methodology and analysis review. Section 4.0 of the report addresses the potential alternative sources.

3.1 SAMPLING AND FIELD ANALYSIS REVIEW

Field notes and sampling results were reviewed to determine if any sampling error may have caused or contributed to the observed SSIs. Potential field sampling errors or issues could include mislabeling of samples, improper sample handling, missed holding times, cross contamination during sampling, or other field error. Field blank sample results were also reviewed for any indication of potential contamination from sampling equipment or containers. Based on the review of the field notes and results, SCS did not identify any indication that the SSIs were due to a sampling error.

SCS did not identify any issues with the field sampling for field analysis based on review of the data and field notes. Because boron, calcium, TDS, and sulfate are laboratory parameters, there is little potential for a field analysis error to contribute to an SSI.

3.2 LABORATORY ANALYSIS REVIEW

The laboratory reports for the October 2022 detection monitoring events were reviewed to evaluate whether any laboratory analysis error or issue may have caused or contributed to the observed SSIs. The laboratory report review included reviewing the laboratory quality control flags and narrative, verifying that correct methods were used and desired detection limits were achieved, and checking the field and laboratory blank sample results. Laboratory reports for the background monitoring events were reviewed for the October 2017 ASD. Laboratory reports for subsequent detection monitoring events were reviewed as part of the ASD preparation for each event.

Based on the review of the laboratory reports, SCS did not identify any indication that any SSI was due to a laboratory analysis error. There were no laboratory quality control flags or issues identified in the laboratory reports that affect the usability of the data for detection monitoring. Because field pH is a field parameter, there is little potential for a laboratory error to contribute to an SSI.

Time series plots of the SSI constituent analytical data were also reviewed for any anomalous results that might indicate a possible sampling or laboratory error (e.g., dilution error or incorrect sample labeling). The time series plots are provided in **Appendix A**. None of the time series plots included anomalous results that appeared to indicate a sampling or laboratory error.

3.3 STATISTICAL EVALUATION REVIEW

The review of the statistical results and methods included a quality control check of the following:

- Input analytical data vs. laboratory analytical reports
- Statistical method and process for each SSI

Based on the review of the statistical evaluation, SCS did not identify any errors or issues in the statistical evaluation that caused or contributed to the determination of interwell SSIs at the downgradient monitoring wells.

3.4 SUMMARY OF METHODOLOGY AND ANALYSIS REVIEW FINDINGS

In summary, there were no changes to the SSI determinations for the October 2022 detection monitoring events based on the methodology and analysis review. No errors or issues causing or contributing to the reported SSIs were identified.

4.0 ALTERNATIVE SOURCES

This section of the report discusses the potential alternative sources for the SSI constituents at the downgradient wells, identifies the most likely alternative source(s), and presents the lines of evidence indicating that an alternative source is the most likely cause of the observed SSIs.

4.1 POTENTIAL CAUSES OF STATISTICALLY SIGNIFICANT INCREASES

4.1.1 Natural Variation

The statistical analysis was completed using an interwell approach, comparing the October 2022 detection monitoring results to the UPLs calculated based on sampling of the background well (B-26). If concentrations of a constituent that is naturally present in the aquifer vary spatially, then the potential exists that the downgradient concentrations may be higher than upgradient concentrations due to natural variation.

Although natural variation is present in the shallow aquifer, it does not appear likely that natural variation is the primary source causing the boron, field pH, sulfate, and TDS SSIs. These parameters were detected at higher concentrations than would likely be present naturally.

Natural variation may have caused or contributed to the SSI for calcium at B-11R. As discussed in **Section 2.1.1**, the alluvial aquifer is underlain by dolomitic bedrock of the Prairie du Chien Group. The dolomite aquifer is also present in the bluffs northeast of the site, and groundwater from the

dolomite likely discharges to the alluvial aquifer. Calcium is a typical constituent of groundwater in dolomite aquifers. The calcium concentrations in upgradient well B-26 have exceeded those in at least three of the downgradient wells, suggesting that natural variability may contribute to the calcium concentrations observed in the downgradient monitoring wells.

Based on fluoride data for wells in Grant County, natural variation may also have caused or contributed to the SSI for fluoride at B-11B.

4.1.2 Man-Made Alternative Sources

Man-made alternative sources that could potentially contribute to the boron, calcium, field pH, sulfate, and TDS SSIs could include the closed CCR landfill, the coal storage area, or other plant operations. Based on the groundwater flow directions and on previous investigations at the site, the closed landfill appears to be the most likely man-made cause of the SSIs for the downgradient wells B-11A, B-11B, B-11R, B-31A, and B-31R.

4.2 LINES OF EVIDENCE

The lines of evidence indicating that the SSIs for boron, calcium, field pH, fluoride, sulfate, and TDS in one or more compliance wells relative to the background well are more likely due to the closed landfill and prior fly ash sluicing than to the Slag Pond include:

1. A previous Environmental Contamination Assessment completed for the ash disposal facility indicated that the fly ash sluicing and landfill were the primary source of the groundwater impacts in the area, based on multiple lines of evidence.

2. Sampling performed in preparation for the Slag Pond closure indicated that the slag and the Slag Pond sediment had little potential to cause the SSIs for boron, sulfate, and TDS.

3. Past and current groundwater monitoring performed under the state monitoring program shows that groundwater quality has improved since the 1990s in response to termination of fly ash sluicing and closure and capping of the ash landfill. Recent concentration increases at some wells in the state monitoring program appear to be attributable to the closed CCR landfill source and to changes in groundwater flow at the site in response to closure of the Slag Pond.

The lines of evidence indicating that natural variation may also have caused or contributed to the fluoride SSIs include:

1. Although fluoride was not detected in background well B-26, publicly available data from the WDNR's Groundwater Retrieval Network (GRN) database indicate it is commonly detected in Grant County.

The data supporting these lines of evidence are discussed below. Most of these lines of evidence and the supporting data were discussed in detail in the ASD for the October 2017 detection monitoring event (SCS, 2018), with the exception of the TDS SSI concentrations. For lines of evidence included in previous ASDs, the discussion focuses on any updated information collected since the previous ASD, with references to the previous ASD for additional details.

4.2.1 Previous CCR Pond and Landfill Study

A previous investigation titled *Environmental Contamination Assessment: Nelson Dewey Generating Station Ash Disposal Facility*, completed by RMT in 1994, found that groundwater impacts were

associated with disposal of fly ash in the now-closed CCR landfill located immediately north of the Slag Pond (**Figure 3**). The purpose of the 1994 Environmental Contamination Assessment (ECA) was to investigate the impacts to groundwater at the NED landfill. The ECA was used to evaluate the feasibility of possible remedial alternatives. The remedial alternative that was ultimately selected was to convert the plant to dry fly ash handling.

The primary lines of evidence from the 1994 report that support the current ASD for boron, calcium, field pH, fluoride, sulfate, and TDS include:

- Water leaching tests for ash and slag indicated that boron and sulfate concentrations in the slag leachate were orders of magnitude lower than in the fly ash leachate (**Appendix B**, **Table 5**). Higher pH values were also reported for leach samples of Western coal fly ash in 1990 to 1992 than for the slag samples.

- Surface water samples from the then active fly ash sluice pond and the Slag Pond indicated that boron and sulfate concentrations in the Slag Pond were one or more orders of magnitude lower than in the ash sluice pond. The surface water pH measurement was also higher in the ash sluice pond. The surface water boron and sulfate concentrations in the Slag Pond were higher than leach test results, which was attributed to infiltration of ash sluice pond water through the berm between the ponds into the Slag Pond (**Appendix B**, **Table 6**).

- Groundwater sampling at monitoring wells B-38 and B-38A (now abandoned), which were installed through and screened below the ash disposal area (now closed landfill), indicated that groundwater affected by ash sluicing was characterized by high pH and elevated concentrations of boron, fluoride, sulfate, and TDS (**Appendix B**, **Site Map,** and **Table 8**).

Although calcium was not included in the historical state groundwater monitoring program or evaluated in the 1994 report, hardness was monitored and provides an indication of relative calcium concentrations. Surface water samples from the then active ash sluice pond and the Slag Pond indicated that hardness in the Slag Pond was lower than in the ash sluice pond (**Appendix B**, **Table 6**). These results suggest that if the calcium SSI is not solely due to natural variation, then the closed CCR landfill is the most likely man-made source of calcium.

The results of the 1994 ECA were reported to WDNR on November 1994. The ECA investigation was then used for a feasibility study to determine appropriate ash disposal operation on site. Following the ECA, the plant converted to a dry ash handling system. Dry ash was placed in the CCR landfill through the 1990s, and the landfill was capped and closed in phases in 1996 through 2001. After that time, fly ash was not disposed of at the facility.

4.2.2 Slag Pond Closure Sampling Results

Results of leaching test analysis performed for slag, ash, soil, and sediment were submitted as part of a Low Hazard Exemption Request to the WDNR in March 2017 (SCS, 2017). The Exemption Request was submitted as part of the Closure Plan for the site and requested WDNR approval to consolidate materials from decommissioning activities in the Slag Pond and Slag Handling Area, which would then be capped with a composite final cover system. The sediment and soil samples were collected to characterize the materials that would remain on site under the Closure Plan. Leaching tests were performed using ASTM water leach test methods. The leaching test analytical

results for parameters with SSIs that were included in the leaching test program (boron, fluoride, sulfate, and TDS) are summarized in **Appendix C**.

The sampling results in the Exemption Request indicated that the materials to be consolidated and capped were not likely to cause groundwater standard exceedances for boron, fluoride, sulfate, or TDS. The leach test results for slag, Slag Pond sediment, and soil in the Slag Handling Area were below the state groundwater standards for boron, fluoride, and sulfate. The parameter TDS does not currently have a state standard but the leach test results for slag, Slag Pond sediment, and soil in the Slag Handling Area were all below the calculated TDS UPL for the site (**Table 1** and **Appendix C**). The boron, sulfate, and TDS results were also below the concentrations in the downgradient CCR wells with SSIs, and well below the historical results for former well B-38, which was located within the CCR landfill area, upgradient from the Slag Pond (**Appendix B**, **Table 8**). Fluoride was only detected in one of the leaching test samples, at an estimated concentration below the concentration reported for downgradient well B-11B and below the historical results for former well B-38.

The Low Hazard Exemption was granted by the WDNR based on the sampling results and other information presented.

4.2.3 State Program Groundwater Monitoring Results

Past and current groundwater monitoring performed under the state monitoring program shows that groundwater quality has improved substantially since the 1990s in response to termination of fly ash sluicing, and closure and capping of the ash landfill (SCS, 2018). The long-term trends show that concentrations of boron and sulfate in groundwater have decreased or stabilized since termination of fly ash sluicing and closure of the landfill, in some cases by an order of magnitude or more. The results suggest that current pH levels and boron, sulfate, and TDS concentrations likely represent residual contamination from historical ash disposal in the CCR landfill area. Increases in boron, sulfate, and TDS concentrations at B-11B beginning in 2018 appear to be attributable to the closed CCR landfill and to changes in groundwater flow at the site related to a decrease in the volume of water discharged to the Slag Pond and subsequent closure of the Slag Pond. Concentrations of boron in samples from B-11B transitioned to a decreasing trend as of October 2019. A summary of state analytical groundwater results is provided in **Table 4**.

4.2.4 Grant County Fluoride Data

Natural variation may have caused or contributed to the SSI for fluoride at B-11B. Although fluoride was not detected in background well B-26, publicly available data from the WDNR's GRN database indicates it is commonly detected in Grant County. Out of a total of 431 fluoride analysis results in the GRN database for water supply wells in Grant County, as of December 2019, 89 percent had fluoride detected. The average concentration of fluoride in Grant County well samples with fluoride detections was 0.38 milligrams per liter (mg/L). The fluoride concentration reported for B-11B for October 2022, 0.47 mg/L, is in the range of concentrations in the GRN database for Grant County. The Grant County fluoride data are included in **Appendix D**. As discussed above, there is also a potential that fluoride concentrations in B-11B are associated with impacts from the closed CCR landfill.

5.0 ALTERNATIVE SOURCE DEMONSTRATION CONCLUSIONS

The lines of evidence discussed above regarding the SSIs reported for boron, calcium, field pH, fluoride, sulfate, and TDS results in downgradient monitoring wells demonstrate that the SSIs are likely primarily due to sources other than the closed Slag Pond. The SSIs for boron, calcium, field pH, fluoride, sulfate, and TDS appear to be due to historical ash disposal in the closed CCR landfill, which

is not subject to the requirements of 40 CFR 257.50-107. The landfill is regulated by the WDNR under the solid waste program (License 02525). Natural variation in groundwater quality in the aquifer may also contribute to the SSIs for calcium and fluoride.

6.0 SITE GROUNDWATER MONITORING RECOMMENDATIONS

In accordance with section 257.94(e)(2) of the CCR Rule, the NED Slag Pond site may continue with detection monitoring based on this ASD. The ASD report will be included in the 2023 Annual Report due January 31, 2024.

7.0 REFERENCES

RMT, 1994, Environmental Contamination Assessment: Nelson Dewey Generating Station Ash Disposal Facility, November 1994.

SCS Engineers, 2017, Low Hazard Exemption Request, Nelson Dewey Generating Station, Cassville, WI, March 2017.

SCS Engineers, 2018, 2017 Alternative Source Demonstration, October 2017 Monitoring Event, Nelson Dewey Generating Station, April 2018.

U.S. Environmental Protection Agency (U.S. EPA), 2015, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, April 2015.

Tables

Table 1. Groundwater Analytical Results Summary - October 2022
Nelson Dewey Closed Ash Disposal Facility, Cassville, WI / SCS Engineers Project #25222071.00

Parameter Name	UPL	Background Well	Compliance Wells					
		B-26	B-7R	B-11A	B-11B	B-11R	B-31A	B-31R
		10/18/2022	--*	10/18/2022	10/18/2022	10/18/2022	10/18/2022	10/18/2022
Appendix III								
Boron, ug/L	72.3	48.8	--	95.2	3,010	3,090	213	327
Calcium, ug/L	108,000	80,300	--	46,000	75,100	116,000	45,300	78,500
Chloride, mg/L	77.6	37.4	--	49.1	32.8	28.8	53.9	35.1
Fluoride, mg/L	0.2	<0.095	--	0.22 J	0.47	0.16 J	0.14 J	0.21 J
Field pH, Std. Units	7.71	7.15	--	7.61	7.74	6.76	7.63	6.83
Sulfate, mg/L	44.0	47.6	--	22.7	429	65.3	23.0	29.6
Total Dissolved Solids, mg/L	553	472	--	332	920	572	310	386

7.81 Blue shaded cell indicates the compliance well result exceeds the UPL (background) and the Limit of Quantitation (LOQ).

Abbreviations:
UPL = Upper Prediction Limit
SSI = Statistically Significant Increase
LOQ = Limit of Quantitation
LOD = Limit of Detection
ug/L = micrograms per liter
mg/L = milligrams per liter

Lab Notes:
J = Estimated concentration at or above the LOD and below the LOQ.

Notes:
1. An individual result above the UPL may not constitute an SSI above background. See the accompanying report text for identification of statistically significant results.
2. Interwell UPLs calculated based on results from background well B-26. UPLs are based on a 1-of-2 retesting approach.
3. Interwell UPLs were updated in January 2021 with background well results from December 2015 through October 2020.
*. Monitoring well B-7R could not be sampled during the October 2022 sampling event due to low water levels.

Created by: LMH Date: 9/26/2022
Last revision by: NLB Date: 4/19/2023
Checked by: RM Date: 4/25/2023
Proj Mgr QA/QC: TK Date: 5/15/2023

Table 2. Historical Analytical Results for Parameters with SSIs
Nelson Dewey Generating Station - Cassville, Wisconsin / SCS Engineers Project #25223071.00

Well Group	Well	Collection Date	Boron (µg/L)	Calcium (mg/L)	Field pH (Std. Units)	Fluoride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Background	B-26	12/9/2015	29.6	81,300	7.35	<0.20	37.1	424
		4/12/2016	33.7	86,200	7.43	<0.20	38.0	456
		7/19/2016	28.6	82,400	7.14	<0.20	36.2	504
		10/20/2016	33.0	82,700	7.19	0.13 J	35.0	466
		1/12/2017	35.2	89,400	7.57	<0.10	35.0	446
		4/17/2017	50.1	89,000	7.54	<0.10	32.4	468
		6/7/2017	45.8	105,000	7.22	<0.10	31.0	538
		8/2/2017	54.6	98,100	7.21	<0.10	28.5	496
		10/19/2017	47.4	102,000	7.50	<0.10	25.3	542
		4/2/2018	48.0	88,100	7.64	<0.10	19.1	464
		10/8/2018	53.4	78,700	7.20	<0.10	25.1	450
		4/22/2019	41.6	75,300	7.10	<0.10	26.7	458
		10/15/2019	<3.00	<76.2	7.24	<0.10	36.0	404
		4/14/2020	66.1	88,500	7.27	0.11 J	30.2	464
		10/13/2020	63.6	76,500	7.34	<0.095 M0	37.0	448
		4/21/2021	63.6	78,700	7.27	<0.095	35.3	470
		10/8/2021	48.4	84,900	7.18	<0.095	43.8	440
		4/25/2022	52.5	75,900	7.19	<0.48 D3, M0	34.2	470
		10/18/2022	48.8	80,300	7.15	<0.095	47.6	472
Compliance	B-11A	12/9/2015	124	58,800	7.70	0.30 J	3.20 J	338
		4/13/2016	116	60,100	7.75	0.38 J	3.80 J	362
		7/19/2016	104	54,000	7.42	0.35 J	2.70 J	336
		10/19/2016	112	54,600	7.47	0.36	3.00 J	340
		1/12/2017	106	54,500	7.89	0.43	2.30 J	322
		4/17/2017	100	54,800	7.38	0.36	<1.00	326
		6/8/2017	102	57,800	7.78	0.37	1.40 J	338
		8/1/2017	105	54,500	7.67	0.37	2.40 J	326
		10/19/2017	116	55,000	7.96	0.32	5.10	322
		4/2/2018	91.0	53,300	8.04	0.24 J, M0	12.3 M0	336
		10/9/2018	94.2	48,600	7.43	0.29 J	6.00	332
		4/22/2019	93.9	60,400	7.62	0.29 J	1.90 J	386
		10/14/2019	80.7	56,600	7.66	0.26 J	<1.00	348
		4/13/2020	86.3	57,500	7.75	0.27 J	1.40 J	394
		10/12/2020	99.3	55,600	7.74	0.28 J	1.00 J	364
		4/19/2021	88.1	50,600	7.65	0.23 J	2.9	366
		10/8/2021	85.4	51,400	7.57	0.22 J	7.0	356
		4/26/2022	88.6	51,600	7.53	<0.095	8.5	350
		10/18/2022	95.2	46,000	7.61	0.22 J	22.7	332
	B-11B	12/9/2015	1,140	64,100	8.06	0.44	134	494
		4/13/2016	1,360	65,400	8.14	0.49	148	512
		7/19/2016	1,210	59,000	7.77	0.45	165	520
		10/20/2016	1,460	59,100	7.91	0.53	178	496
		1/12/2017	1,540	63,900	8.18	0.52	182	488
		4/17/2017	1,760	67,400	7.83	0.58	181	502
		6/8/2017	1,880	68,200	8.07	0.59	191	516
		8/1/2017	1,800	61,400	7.77	0.60	179	498
		10/19/2017	1,500	52,400	7.77	0.59	175	510
		4/2/2018	2,020	59,000	8.42	0.65	200	550
		10/9/2018	3,620	66,300	7.74	0.61	197	602
		11/12/2018	--	--	8.05	--	--	594
		4/22/2019	6,830	83,300	7.91	0.64	303	742
		10/14/2019	4,630	91,400	7.92	0.62	339	728
		4/13/2020	5,380	115,000	7.89	<0.95	378	872
		10/12/2020	3,350	91,200	7.80	<0.095	388	906
		4/19/2021	4,440	93,400	8.07	0.36	379 M0	910
		10/8/2021	2,480	100,000	7.81	<0.95 D3	466	884
		4/26/2022	2,590	97,100	7.63	<0.48	513	1000
		10/18/2022	3,010	75,100	7.74	0.47	429	920

Table 2. Historical Analytical Results for Parameters with SSIs
Nelson Dewey Generating Station - Cassville, Wisconsin / SCS Engineers Project #25223071.00

Well Group	Well	Collection Date	Boron (µg/L)	Calcium (mg/L)	Field pH (Std. Units)	Fluoride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Compliance	B-11R	12/9/2015	4,170	126,000	7.07	<10	75.4	616
		4/13/2016	3,410	141,000	6.78	<0.20	18.4	682
		7/19/2016	3,530	130,000	6.69	0.22 J	115	698
		10/20/2016	4,120	128,000	6.77	<0.50	118	660
		1/12/2017	3,530	126,000	6.98	<0.50	108	616
		4/17/2017	3,520	123,000	7.11	<0.50	108	620
		6/7/2017	3,420	128,000	6.80	<0.50	98.2	630
		8/1/2017	2,040	139,000	6.70	0.25 J	126	738
		10/19/2017	3,120	117,000	7.22	<0.50 , D3	97.7	586
		4/2/2018	3,180	124,000	7.14	<0.50 , D3, M0	88.1	638
		10/9/2018	576	49,900	6.55	0.15 J	15.1	266
		4/22/2019	1,360	82,400	6.82	0.20 J	34.6	406
		10/14/2019	1,440	66,000	6.83	0.26 J	40.7	310
		4/13/2020	2,140	117,000	6.80	<0.48	41.9	570
		10/12/2020	2,870	120,000	6.83	<0.48 D3	22.8	600
		4/19/2021	3,010	115,000	7.11	<0.48 D3	61.2	578
		10/8/2021	2,940	119,000	6.86	<0.48 D3	61.8	576
		4/26/2022	2,330	114,000	7.01	<0.48 D3	58.1	560
		10/18/2022	3,090	116,000	6.76	0.16 J	65.3	572
	B-31A	12/9/2015	59.0	48,400	7.65	<0.20	26.2	274
		4/13/2016	79.2	51,900	7.63	0.22 J	22.6	302
		7/19/2016	67.2	48,900	7.25	<0.20	24.2	280
		10/20/2016	63.7	45,800	7.54	0.18 J	27.2	292
		1/12/2017	76.4	46,600	7.82	0.22 J	29.8	284
		4/17/2017	69.9	46,900	7.83	0.19 J	31.0	318
		6/8/2017	58.5	49,400	7.74	0.18 J	31.2	296
		8/1/2017	56.3	46,000	7.56	0.20 J	26.6	284
		10/19/2017	63.9	49,600	7.92	0.16 J	26.1	290
		4/2/2018	74.8	49,300	8.00	0.13 J	27.4	282
		10/9/2018	71.8	46,600	7.48	0.17 J	24.8	278
		4/22/2019	86.2	48,200	7.61	0.22 J	21.6	284
		10/14/2019	98.5	52,200	7.69	0.22 J	22.3	272
		4/13/2020	132	50,900	7.71	0.19 J	16.6	298
		10/13/2020	127	47,700	7.78	0.18 J	16.8	300
		4/19/2021	172	52,100	7.90	0.14 J	15.8	330
		10/8/2021	178	53,500	7.44	0.15 J	14.9	294
		4/26/2022	198	55,300	7.82	0.22 J	15.4	316
		10/18/2022	213	45,300	7.63	0.14 J	23.0	310
	B-31R	12/9/2015	851	77,400	6.79	<0.20	28.8	374
		4/13/2016	838	84,900	6.76	<0.20	34.1	404
		7/19/2016	641	76,100	6.44	<0.20	38.5	406
		10/20/2016	1,020	84,200	6.53	0.17 J	49.7	452
		1/12/2017	749	73,900	6.80	0.26 J	34.9	380
		4/17/2017	929	85,600	6.80	0.12 J	43.0	416
		6/8/2017	895	90,700	6.67	0.13 J	41.1	426
		8/1/2017	1,550	93,400	6.56	0.16 J	55.6	432
		10/19/2017	645	75,700	7.19	0.14 J	19.2	358
		4/2/2018	540	72,900	6.76	<0.10	22.0	374
		10/9/2018	1,430	125,000	6.41	<0.10	186	668
		11/12/2018	--	--	6.59	--	162	596
		4/22/2019	906	105,000	6.62	0.16 J	121	516
		10/14/2019	915	110,000	6.72	0.25 J	146	480
		4/13/2020	730	93,800	6.79	0.28 J	89.4	464
		10/12/2020	702	95,700	6.89	<0.48 D3, M0	49.4	462
		4/19/2021	621	91,400	6.91	0.19 J	45.3	454
		10/8/2021	353	79,000	6.63	0.22 J	24.9	372
		4/25/2022	454	81,100	6.77	<0.095	60.0	428
		10/18/2022	327	78,500	6.83	0.21 J	29.6	386

Table 2. Historical Analytical Results for Parameters with SSIs
Nelson Dewey Generating Station - Cassville, Wisconsin / SCS Engineers Project #25223071.00

Well Group	Well	Collection Date	Boron (µg/L)	Calcium (mg/L)	Field pH (Std. Units)	Fluoride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Compliance	B-7R	12/9/2015	110	31,700	6.74	<1.0	17.0 J	198
		4/13/2016	115	42,300	6.80	<0.20	2.50 J	218
		7/18/2016	164	44,400	6.29	<0.20	2.40 J	220
		10/19/2016	154	56,600	6.55	<0.50	<5.00	288
		1/12/2017	159	56,700	7.43	<0.50	<5.00	240
		4/17/2017	129	61,400	6.60	<0.50	<5.00	278
		6/7/2017	110	51,600	6.65	<0.50	<5.00	240
		8/1/2017	129	50,400	6.28	<0.10	3.70	220
		10/19/2017	159	56,200	6.88	<0.50 , D3	<5.00 , D3	242
		4/2/2018	121	49,200	6.57	<0.50 , D3	<5.00 , D3	220
		10/9/2018	73.0	38,500	6.23	<0.10	3.20	186
		4/22/2019	93.5	59,400	6.63	<0.50 , D3	<5.00 , D3	254
		10/14/2019	139	57,700	6.62	<0.50 , D3	<5.00 , D3	208
		4/13/2020	96.0	58,700	6.60	<0.48 , D3	7.50 J, D3	306
		10/13/2020	145	41,900	6.35	<0.48 , D3	<2.20	208
		4/20/2021	104	56,100	6.54	<0.48 , D3	<2.2 D3	248
		10/8/2021[1]	--	--	--	--	--	--
		4/26/2022	98.1	59200	6.43	<0.48 D3	3.7 J, D3	318
		10/18/2022[2]	--	--	--	--	--	--

Abbreviations:
µg/L = micrograms per liter or parts per billion (ppb)
mg/L = milligrams per liter or parts per million (ppm)
Std. Units = Standard Units

Flags:
J = Estimated concentration at or above the LOD and below the LOQ.
D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0 = Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
-- = Not applicable.

Notes:
(1) B-7R could not be sampled on 10/8/2021 or during an attempted resampling event on 10/28/2021 due to low water levels.
(2) B-7R could not be sampled on 10/18/2022 due to low water levels.

Created by: NDK Date: 3/8/2018
Last revision by: RM Date: 5/22/2023
Checked by: NLB Date: 5/22/2023

Table 3. Groundwater Elevation Summary
Nelson Dewey Closed Ash Disposal Facility / SCS Engineers Project #25223071.00

	Ground Water Elevation in feet above mean sea level (amsl)																									
Well Number	**B-7R**	**B-8R**	**B-11R**	**B-11A**	**B-11B**	**B-21R**	**B-26**	**B-26A**	**B-28**	**B-30R**	**B-30AR**	**B-31R**	**B-31A**	**B-32**	**B-32A**	**B-35**	**B-35A**	**B-36**	**B-36A**	**B-37**	**B-37A**	**B-39**	**MW-301**	**MW-302**	**MW-303**	**Barge Gauge (SG-12)**	**Pond Gauge (SG-13)**
Top of Casing Elevation (feet amsl)	623.35	627.51	622.62	622.12	621.89	623.31	626.40	626.40	616.81	621.81	622.4	622.42	622.69	614.18	614.4	620.78	621.09	621.11	621.33	614.85	614.85	626.48	619.09	619.21	618.49	616.60	See notes
Screen Length (ft)	10	10	10	5	5	10	10	5	10	10	5	10	5	10	5	10	5	9	4.5	10	5	10	10	10	10		
Total Depth (ft from top of casing)	23.05	27.25	24.15	52.00	113.90	22.78	31.67	45.78	16.70	22.20	46.90	22.82	35.52	14.79	52.00	16.60	47.00			19.95	48.20	26.90	21.11	21.27	20.15		
Top of Well Screen Elevation (ft)	610.30	610.26	608.47	575.12	512.99	610.53	604.73	585.62	610.11	609.61	580.50	609.60	592.17	609.39	567.40	614.18	579.20	609.60	575.50	604.90	571.65	609.58	607.98	607.94	608.34		
Measurement Date																		--	--							--	--
October 5-6, 2011	604.94	606.29	604.57	604.36	604.32	604.43	604.52	604.55	604.61	604.37	605.21	608.37	604.42	604.88	604.82	604.87	604.81	--	--	604.37	604.39		--	--	--	--	--
April 25-26, 2012	606.58	606.30	606.07	606.30	606.28	--	605.89	605.91	--	--	--	608.65	606.31	604.33	--	606.29	#REF!	--	--	606.16	606.17	606.17	--	--	--	--	--
October 17, 2012	604.39	604.16	604.10	603.98	603.98	604.08	604.12	604.14	604.31	603.97	603.98	607.32	604.07	604.33	604.35	--	#REF!	--	--	603.93	603.93	603.93	--	--	--	--	--
April 2, 2013	607.04	608.01	606.15	607.20	607.17	606.30	605.60	605.64	605.90	605.91	605.93	607.13	607.13	606.11	606.14	606.13	606.25	--	--	606.99	607.02		--	--	--	--	--
October 16-17, 2013	604.51	605.89	604.17	603.90	603.87	604.11	604.31	604.32	604.36	604.08	604.06	604.87	604.00	604.53	604.56	604.46	604.44	--	--	604.05	604.04		--	--	--	--	--
April 10, 2014	607.42	608.97	607.45	607.28	607.26	--	607.22	607.23	--	--	--	607.37	607.28	--	--	607.46	607.39	--	--	607.25	607.26		--	--	--	--	--
October 14-15, 2014	605.67	606.82	605.17	604.90	604.91	614.92	605.00	605.01	605.13	604.92	604.92	606.36	605.54	605.41	605.45	605.36	605.33	--	--	604.94	604.99		--	--	--	--	--
April 16, 2015	607.26	608.50	607.11	607.15	607.05	--	606.40	606.41	--	--	--	607.37	607.09	--	--	606.73	606.78	--	--	606.99	606.88		--	--	--	--	--
October 1-2, 2015	605.14	604.66	604.53	604.42	604.38	604.36	604.43	604.50	604.54	604.34	604.32	605.13	604.38	604.76	604.82	604.76	604.75	--	--	604.30	604.39		--	--	--	--	--
December 8, 2015	606.69	--	606.71	606.30	606.26	--	606.80	--	--	--	--	607.40	606.39	--	--	--	--	--	--	--	--	607.54	--	--	--	--	--
April 12, 2016	609.32	609.36	609.32	608.71	608.68	--	609.81	609.72	--	--	--	609.34	609.01	--	--	609.73	609.65	--	--	608.79	608.79	610.23	--	--	--	--	--
July 18-19, 2016	606.54	--	606.14	606.76	606.74	--	606.09	--	--	--	--	606.55	606.73	--	--	--	--	--	--	--	--	606.28	--	--	--	--	--
October 19-20, 2016	608.59	608.46	608.35	608.21	608.19	608.37	608.84	608.76	608.63	608.45	608.46	608.51	608.20	608.69	608.73	608.78	608.74	--	--	608.20	608.18	609.09	--	--	--	--	--
January 11-12, 2017	608.02		607.96	607.83	607.78		608.56					607.90	607.84					--	--			608.92	--	--	--	--	--
April 17, 2017	609.08	608.82	608.34	609.05	608.99	NM	608.59	608.54	609.94	608.57	608.64	607.20	608.98	608.96	608.98	609.00	609.02	--	--	609.02	609.02	610.23	--	--	--	--	--
June 8, 2017	610.74	--	610.42	609.81	610.08	--	611.25	--	--	--	--	609.63	610.50	--	--	--	--	--	--	--	--	611.53	--	--	--	--	--
August 1-2, 2017	607.02	--	606.73	605.57	605.50	--	607.39	--	--	--	--	606.84	605.69	--	--	--	--	--	--	--	--	608.71	--	--	--	--	--
October 9-10, 2017	606.93	606.51	606.25	607.01	606.94	--	606.22	606.13	606.33	606.44	606.45	606.68	606.93	606.57	606.61	606.65	606.71	--	--	--	--	--	--	--	--	--	--
October 19, 2017	609.60	--	609.42	609.58	609.65	--	608.84	--	--	--	--	609.47	609.43	--	--	--	--	--	--	609.40	609.40	608.55	--	--	--	--	--
November 17, 2017	--	--	--	--	--	606.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
December 19, 2017	--	--	--	--	--	604.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
February 7, 2018	605.37	--	605.33	604.96	604.92	--	--	--	616.81	--	--	605.31	605.01	--	--	--	--	--	--	--	--	606.19	605.08	605.05	605.00	--	--
March 16, 2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	604.64	604.6	604.56	--	--
April 203, 2018 **	604.82	606.61	606.27	606.63	606.55	606.52	606.49	606.37	606.39	606.46	606.43	604.44	606.46	606.58	606.66	606.68	606.70	--	--	606.77	606.83	606.19	--	--	--	--	--
May 23, 2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	610.68	610.78	610.61	--	--
October 8-10, 2018	610.76	610.68	610.67	610.28	610.24	610.02	610.34	610.28	610.83	610.09	610.05	610.39	610.27	611.05	610.94	610.72	610.54	--	--	--	--	611.44	--	--	--	--	--
November 11, 2018	--	--	--	--	609.14	--	--	--	--	--	--	609.11	--	--	--	--	--	--	--	--	--	--	--	--	--	608.40	
April 22-23, 2019	615.28	615.66	615.28	615.29	615.28	614.98	615.49	615.31	615.40	615.36	615.35	615.01	615.33	--	--	615.87	615.98	--	--	--	--	615.40	--	--	--	615.17	<615.06
October 14-16, 2019	613.43	613.11	613.06	613.29	613.18	612.47	613.10	613.10	612.71	612.83	612.78	612.50	613.20	613.10	613.00	613.10	613.15	--	--	--	--	613.35	--	--	--	612.33	<615.06
April 13-14, 2020	614.12	613.76	614.39	613.88	613.86	613.22	613.76	613.73	613.68	613.60	613.56	613.80	613.79	--	--	614.04	614.00	--	--	--	--	613.71	--	--	--	612.89	613.10
October 12-13, 2020	605.09	604.88	604.57	604.54	604.44	604.28	604.92	604.83	604.86	604.72	604.72	604.66	604.54	605.07	605.06	605.00	605.08	--	--	--	--	605.06	--	--	--	603.89	DRY
April 19-21, 2021	608.83	608.66	608.57	608.72	608.67	607.93	608.55	608.49	608.27	608.38	608.35	608.66	608.63	608.68	608.74	608.86	608.85	608.40	608.39	608.74	608.75	608.48	--	--	--	608.15	<609.00
October 6-8, 2021	604.05	604.04	603.85	603.79	603.74	603.56	604.21	604.13	604.11	604.00	603.97	603.98	603.84	604.32	604.38	604.35	604.34	603.93	603.92	NM	NM	604.23	--	--	--	602.90	<609.00
April 25-26, 2022	609.84	610.25	609.75	610.00	609.98	609.70	610.12	610.08	609.99	610.11	610.09	610.27	609.95	610.26	610.40	610.44	610.32	609.94	609.90	AB	AB	610.22	--	--	--	NM	609.25
October 18-19, 2022	603.81	603.82	603.59	603.63	603.57	603.39	603.99	603.81	603.84	603.78	603.77	603.69	603.61	604.07	604.09	604.12	604.05	603.64	603.65	AB	AB	603.91	--	--	--	601.29	<609.00
Bottom of Well Elevation (ft)	600.30	600.26	598.47	570.12	507.99	600.53	594.73	580.62	600.11	599.61	575.50	599.60	587.17	599.39	562.40	604.18	574.20	600.6	571	594.90	566.65	599.58	597.98	597.94	598.34		

Notes:
-- = not measured
*The PVC casing at B-35A was cut down on June 28, 2018 to allow the protective cover to close. Groundwater elevations prior to 6/28/18 are calculated using the old top of casing (TOC) elevation of 621.20 ft amsl. Groundwater elevations after 6/28/18 are calculated using the new TOC elevation (621.09 ft amsl).
** The PVC casing at B-21R was extended in 2018 following well rehabilitation. The well was resurveyed on April 22, 2019. The old top of casing elevation was 621.03 ft. The new TOC elevation is 623.31 ft.
^ One pond staff gauge was installed on April 22, 2019. The base of the gauge (0 reading) is at 615.056 ft amsl. Two additional gauges were installed on March 24, 2020. These gauge bases are at 609' and 612' amsl.

Created by: MDB Date: 4/1/2013
Last revision by: NLB Date: 4/20/2023
Checked by: RM Date: 4/25/2023

I:\25223071.00\Deliverables\October 2022 ASD NED\Tables\[Table 3 - Groundwater Elevation Summary.xls]levels

Table 4. Analytical Results - State Monitoring Program
Nelson Dewey Generating Station
Cassville, Wisconsin / SCS Engineers Project #25223071.00

WELL ID	SAMPLE MONTH	BORON, DISSOLVED (UG/L)	FLUORIDE, DISSOLVED (MG/L)	SULFATE, DISSOLVED (MG/L)	PH, FIELD (STANDARD UNITS)
B-7R	2016-Apr	110	<0.20	7.40	6.80
	2016-Oct	147	<2.00	<20.0	6.55
	2017-Apr	127	<0.50	<5.00	6.60
	2017-Oct	159	<0.50	<5.00	6.61
	2018-Apr	115	<0.50 D3	<5.00 D3	6.57
	2018-Oct	89.8	<0.10	3.40	6.23
	2019-Apr	95.7	<0.50 D3	<5.00 D3	6.63
	2019-Oct	140	<0.50 D3, M0	<5.00 D3	6.62
	2020-Apr	90.8	<0.48 D3	5.20 J, D3	6.60
	2020-Oct	145	<0.48	<2.20 D3	6.35
	2021-Apr	121	<0.48 D3	<2.20 D3	6.54
	2021-Oct	--	--	--	--
	2022-Apr	93.1	<0.48 D3, M0	5.0 J, D3	6.43
	2022-Oct	--	--	--	--
B-8R	2016-Apr	2,250	0.26 J	30.0	6.64
	2016-Oct	2,130	0.21 J	47.0	6.38
	2017-Apr	1,970	0.16 J	30.5	6.83
	2017-Oct	2,490	0.30 J	32.5	6.87
	2018-Apr	1,700	0.14 J	28.7	7.02
	2018-Oct	1,500	0.25 J	30.6	6.18
	2019-Apr	1,560	0.24 J	39.8	6.65
	2019-Oct	1,110	0.49	23.6	6.85
	2020-Apr	1,340	0.27 J	20.9	6.61
	2020-Oct	1,600	0.36	63.9	6.60
	2021-Apr	1,310	0.28 J	25.0	6.54
	2021-Oct	1,730	0.19 J	42.3	6.48
	2022-Apr	1,320	0.24 J	23.8	6.52
	2022-Oct	1,690	0.15 J	41.4	6.45
B-11A	2016-Apr	110	0.37 J	3.80 J	7.75
	2016-Oct	111	0.28 J	2.80 J	7.47
	2017-Apr	106	0.35	<1.00	7.38
	2017-Oct	97.7	0.34	8.30	7.91
	2018-Apr	89.4	0.30 J	12.70	8.04
	2018-Oct	142	0.16 J	5.30	7.43
	2019-Apr	94.0	0.29 J	1.90 J	7.62
	2019-Oct	82.3	0.27 J	<1.00	7.66
	2020-Apr	83.3	0.17 J	1.50 J	7.75
	2020-Oct	94.3	0.30 J	1.0 J	7.74
	2021-Apr	92.9	0.23 J	3.5	7.65
	2021-Oct	97.6	0.24 J	7.3	7.49
	2022-Apr	87.0	0.23 J	9.1	7.53
	2022-Oct	98.4	0.25 J	24.2	7.61
B-11B	2016-Apr	1,240	0.53	153	8.14
	2016-Oct	1,410	0.54	181	7.91
	2017-Apr	1,720	0.56	186	7.83
	2017-Oct	1,900	0.65	169	7.80
	2018-Apr	2,020	0.68	195	8.42
	2018-Oct	3,910	0.41	195	7.74
	2019-Apr	6,670	0.60	289	7.91
	2019-Oct	4,860	0.64	335	7.92
	2020-Apr	5,080	<0.095	362	7.89
	2020-Oct	3,190	<0.095	422	7.80
	2021-Apr	4,590	<0.095	389	8.07
	2021-Oct	2,480	0.49	468	7.72
	2022-Apr	2,690	0.44	494	7.63
	2022-Oct	3,190	<1.9 D3	446	7.74
B-11R	2016-Apr	3,290	<1.00	93.9	6.98
	2016-Oct	4,070	<0.50	115	6.77
	2017-Apr	3,710	<0.50	111	7.11
	2017-Oct	3,400	<0.50	94.0	6.75
	2018-Apr	2,790	<0.50 D3	78.6	7.14
	2018-Oct	635	0.14 J	15.6	6.55
	2019-Apr	1,310	0.19 J	34.5	6.82
	2019-Oct	1,500	0.28 J	39.2	6.83
	2020-Apr	2,250	<0.48 D3	39.8	6.80
	2020-Oct	2,690	<0.48	23.0	6.83
	2021-Apr	2,890	<0.48 D3	59.9	7.11
	2021-Oct	3,050	<0.48 D3	61.6	6.86
	2022-Apr	2,330	<0.48 D3	58.1	7.01
	2022-Oct	3,250	0.19 J	59.9	6.76

Table 4. Analytical Results - State Monitoring Program
Nelson Dewey Generating Station
Cassville, Wisconsin / SCS Engineers Project #25223071.00

WELL ID	SAMPLE MONTH	BORON, DISSOLVED (UG/L)	FLUORIDE, DISSOLVED (MG/L)	SULFATE, DISSOLVED (MG/L)	PH, FIELD (STANDARD UNITS)
B-26	2016-Apr	37.0	<0.20	40.1	7.43
	2016-Oct	48.7	0.12 J	34.4	7.19
	2017-Apr	37.3	<0.10	32.3	7.54
	2017-Oct	44.5	<0.10	25.0	7.35
	2018-Apr	46.8	<0.10	19.2	7.64
	2018-Oct	55.2	<0.10	24.9	7.20
	2019-Apr	41.8	<0.10	26.4	7.10
	2019-Oct	50.8	0.11 J	37.0	7.24
	2020-Apr	49.2	<0.095	29.1	7.27
	2020-Oct	61.4	<0.095	37.1	7.34
	2021-Apr	67.1	<0.095	35.5	7.27
	2021-Oct	56.0	<0.095	43.0	7.18
	2022-Apr	50.3	0.098 J	33.5	7.19
	2022-Oct	51.5	<0.095	46.1	7.15
B-26A	2016-Apr	33.1	<0.20	40.1	7.06
	2016-Oct	30.5	0.14 J	39.9	7.26
	2017-Apr	52.6	0.47	42.3	7.96
	2017-Oct	28.4	<0.10	38.4	7.44
	2018-Apr	27.6	<0.10	37.0	7.47
	2018-Oct	18.4	<0.10	33.3	7.38
	2019-Apr	27.6	0.11 J	27.0	7.35
	2019-Oct	47.0	0.14 J	35.6	7.31
	2020-Apr	37.7	<0.095	39.2 M0	7.38
	2020-Oct	33.5	<0.095	44.7	7.51
	2021-Apr	42.7	<0.095	45.5	7.26
	2021-Oct	36.4	<0.095	49.7	7.45
	2022-Apr	29.8	0.11 J	53.2	7.39
	2022-Oct	26.3	<0.095	47.1	7.48
B-31A	2016-Apr	69.4	0.22 J	22.8	7.63
	2016-Oct	81.0	0.18 J	27.9	7.54
	2017-Apr	80.3	0.19 J	30.8	7.83
	2017-Oct	61.5	0.21 J	26.2	7.60
	2018-Apr	69.3	0.17 J	28.1	8.00
	2018-Oct	103	0.14 J	26.2	7.48
	2019-Apr	86.0	0.22 J	21.6	7.61
	2019-Oct	112	0.23 J	22.5	7.69
	2020-Apr	121	0.15 J	17.7	7.71
	2020-Oct	146	0.18 J	16.8	7.78
	2021-Apr	168	0.14 J	17.1	7.90
	2021-Oct	188	0.17 J	15.0	7.58
	2022-Apr	179	0.18 J	15.3	7.82
	2022-Oct	202	0.14 J	22.8	7.63
B-31R	2016-Apr	759	<0.20	34.3	6.76
	2016-Oct	956	0.16 J	48.5	6.53
	2017-Apr	910	0.12 J	42.9	6.80
	2017-Oct	618	0.20 J	23.2	6.78
	2018-Apr	520	0.11 J	23.3	6.76
	2018-Oct	1,530	<1.00 D3	179	6.41
	2019-Apr	892	0.17 J, D3	114	6.62
	2019-Oct	1,000	0.26 J	145	6.72
	2020-Apr	765	0.28 J, M0	97.6 M0	6.79
	2020-Oct	696	0.28 J	50.8	6.89
	2021-Apr	597	0.19 J	44.9	6.91
	2021-Oct	356	<0.48	25.1	6.83
	2022-Apr	425	0.24 J	57.4	6.77
	2022-Oct	341	0.22 J	30.2	6.83
B-35	2016-Apr	38.7	<0.20	8.10	6.89
	2016-Oct	46.4	0.10 J	6.50	6.86
	2017-Apr	54.4	0.15 J	7.70	6.68
	2017-Oct	40.8	0.18 J	3.80	7.65
	2018-Apr	28.9	<0.10 M0	4.80 M0	7.01
	2018-Oct	40.0	0.13 J	3.60	6.58
	2019-Apr	33.6	<0.10	4.90	7.26
	2019-Oct	41.0	0.12 J	5.60	7.07
	2020-Apr	27.0	<0.095	4.20	6.87
	2020-Oct	28.1	0.097 J	5.60	6.85
	2021-Apr	23.8	0.12 J	5.90	6.89
	2021-Oct	--	--	--	--
	2022-Apr	22.7	<0.095	7.7	6.95
	2022 Oct	--	--	--	--

Table 4. Analytical Results - State Monitoring Program
Nelson Dewey Generating Station
Cassville, Wisconsin / SCS Engineers Project #25223071.00

WELL ID	SAMPLE MONTH	BORON, DISSOLVED (UG/L)	FLUORIDE, DISSOLVED (MG/L)	SULFATE, DISSOLVED (MG/L)	PH, FIELD (STANDARD UNITS)
B-35A	2016-Apr	21.7	<0.20	26.2	6.96
	2016-Oct	23.4	0.16 J	27.4	7.17
	2017-Apr	29.9	<0.10	25.4	7.27
	2017-Oct	51.4	0.26 J	4.00	7.44
	2018-Apr	28.9	<0.10 M0	23.1	7.45
	2018-Oct	59.8	<0.50 D3	6.00 J, D3	6.95
	2019-Apr	30.3	0.12 J	16.7	7.30
	2019-Oct	33.7	0.13 J	18.9	7.30
	2020-Apr	32.1	0.12 J	20.2	7.29
	2020-Oct	70.7	<0.095	17.8	7.39
	2021-Apr	46.8	<0.095	18.9	7.26
	2021-Oct	52.7	<0.095	18.7	7.27
	2022-Apr	46.5	0.11 J	16.2	7.17
	2022-Oct	55.6	<0.095	5.6	7.23
B-36	2021-Oct	24.7	0.13 J	2.80	7.34
	2022-Apr	27.2	0.14 J	3.2	7.23
	2022-Oct	28.3	0.15 J	3.1	6.71
B-36A	2021-Oct	20.7	<0.095	17.6	7.43
	2022-Apr	29.5	0.13 J	13.7	7.26
	2022-Oct	33.1	<0.095	16.7	7.18

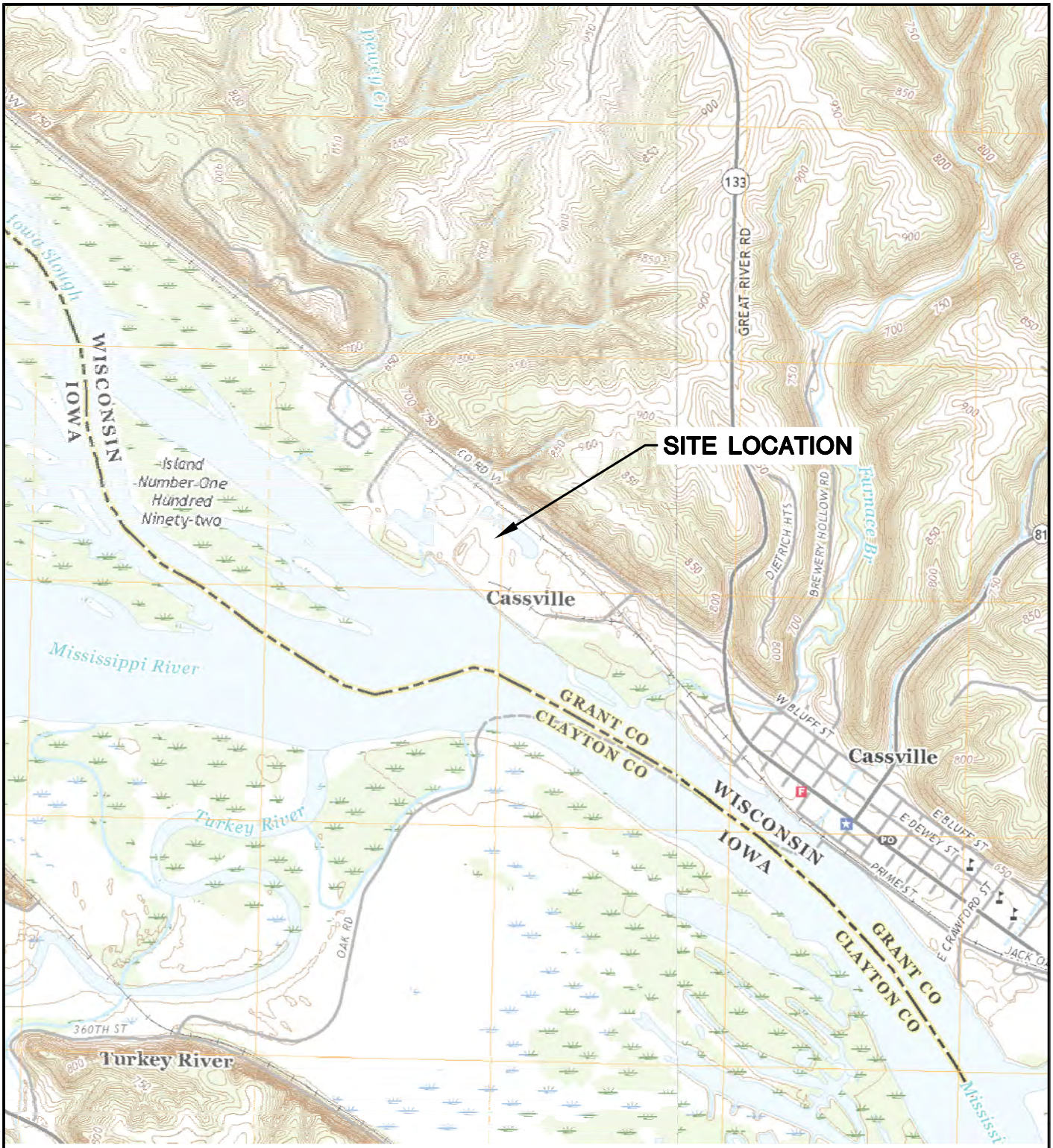
Abbreviations:
J: Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

Notes:
(1) B-7R and B-35 were dry during October sampling event.
(2) B-37 and B-37A were abandoned 12/6/2022. B-36 and B-36A were added prior to the October 2021 Sampling event.

Created by: JSN Date: 12/29/2017
Last revision by: NLB Date: 4/24/2023
Checked by: RM Date: 5/22/2023

I:\25223071.00\Deliverables\October 2022 ASD NED\Tables\[Table 4 - Analytical Results - State Monitoring NED.xlsx]4. State Analytical

Figures



N

CASSVILLE AND TURKEY RIVER QUADRANGLES
WISCONSIN–IOWA
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'

CLIENT	ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	SITE	ALLIANT ENERGY NELSON DEWEY GENERATING STATION CASSVILLE, WISCONSIN

SITE LOCATION MAP

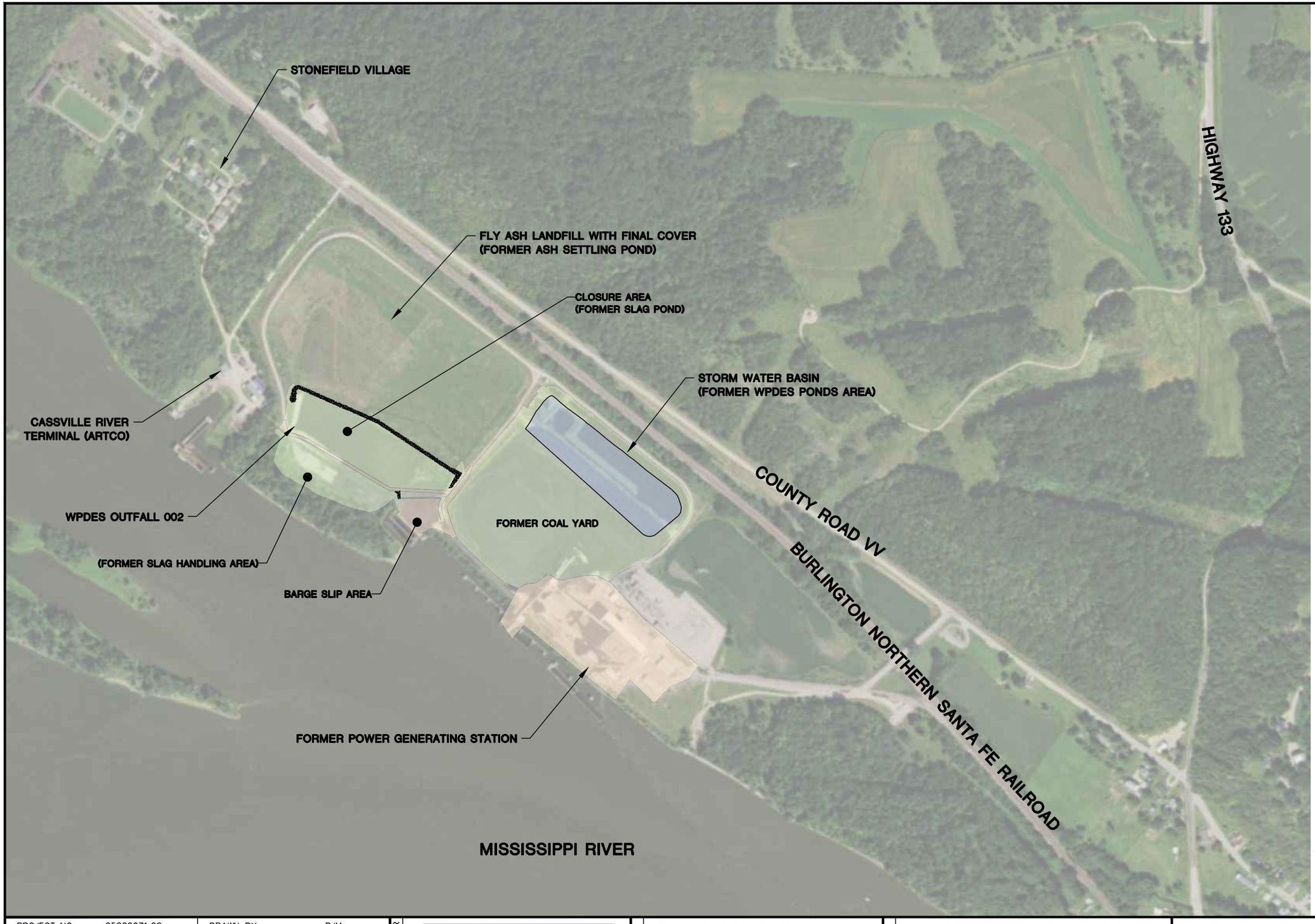
PROJECT NO.	25220071.00	DRAWN BY:	BSS
DRAWN:	11/27/2019	CHECKED BY:	MDB
REVISED:	01/14/2020	APPROVED BY:	TK 04/10/2020

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE
1

I:\25220071.00\Drawings\ASD\Site Location Map.dwg, 4/12/2020 7:11:31 PM



N

NOTES:

1. AERIAL PHOTOGRAPH FROM THE NATIONAL AGRICULTURE IMAGERY PROGRAM AND PUBLISHED BY THE USDA FSA AERIAL PHOTOGRAPHY FIELD OFFICE. DATE OF IMAGE IS AUGUST 24, 2015.

500 0 500

SCALE: 1" = 500'

PROJECT NO.	25220071.00	DRAWN BY:	BJM
DRAWN:	12/18/13	CHECKED BY:	KAK
REVISED:	01/22/20	APPROVED BY:	TK 04/10/2020

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

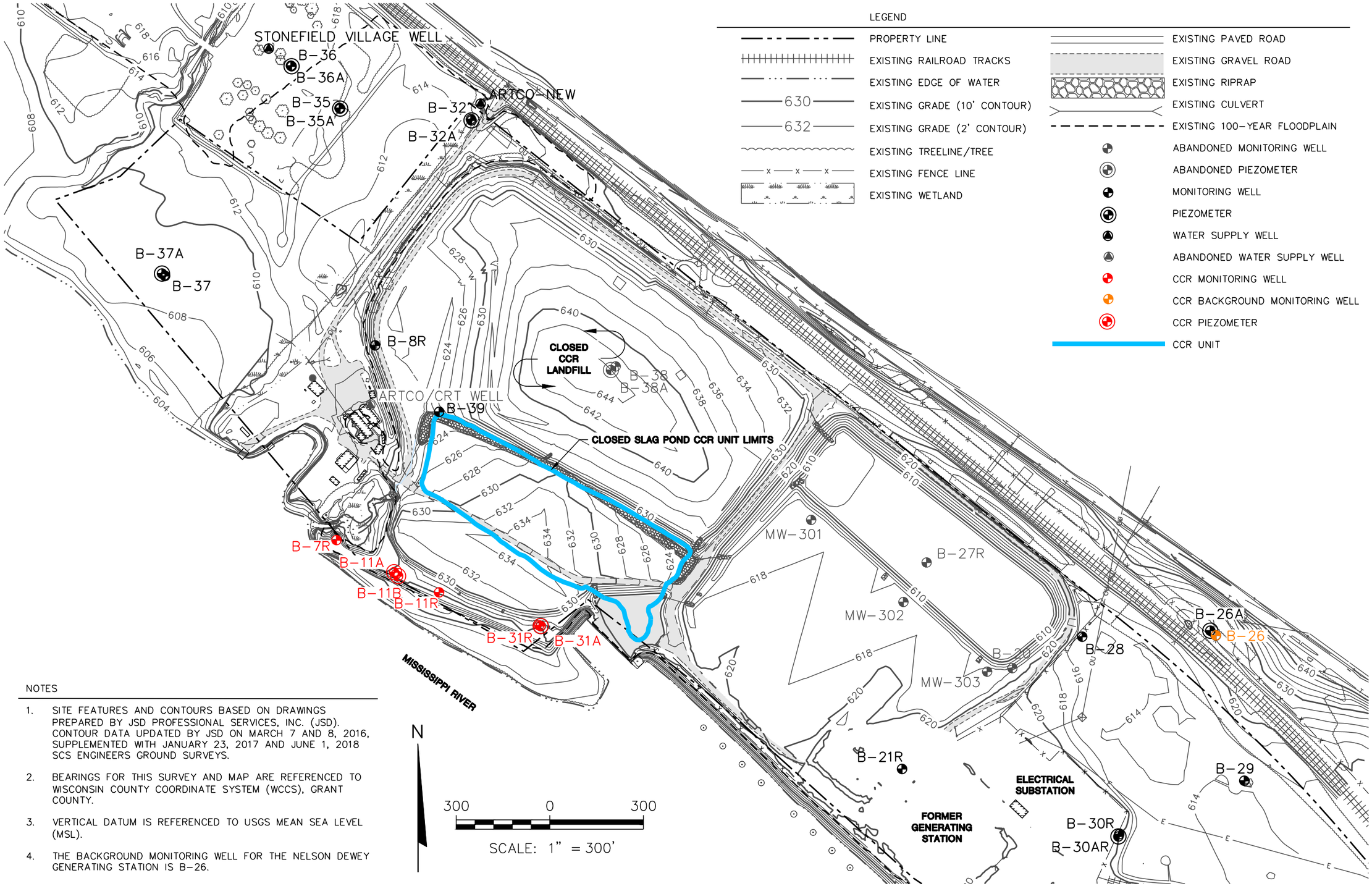
CLIENT: WISCONSIN POWER AND LIGHT CO.
NELSON DEWEY GENERATING STATION
11999 COUNTY HIGHWAY VV
CASSVILLE WI, 53806

SITE: WISCONSIN POWER AND LIGHT
NELSON DEWEY GENERATING STATION
CASSVILLE WISCONSIN

AERIAL VIEW

FIGURE 2

I:\25220071.00\Drawings\ASD\Site Aerial.dwg, 4/12/2020 7:18:26 PM



NOTES

1. SITE FEATURES AND CONTOURS BASED ON DRAWINGS PREPARED BY JSD PROFESSIONAL SERVICES, INC. (JSD). CONTOUR DATA UPDATED BY JSD ON MARCH 7 AND 8, 2016, SUPPLEMENTED WITH JANUARY 23, 2017 AND JUNE 1, 2018 SCS ENGINEERS GROUND SURVEYS.
2. BEARINGS FOR THIS SURVEY AND MAP ARE REFERENCED TO WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), GRANT COUNTY.
3. VERTICAL DATUM IS REFERENCED TO USGS MEAN SEA LEVEL (MSL).
4. THE BACKGROUND MONITORING WELL FOR THE NELSON DEWEY GENERATING STATION IS B-26.

SITE
SITE PLAN AND MONITORING WELL LOCATIONS
ALLIANT ENERGY
NELSON DEWEY GENERATING STATION
CASSVILLE, WISCONSIN

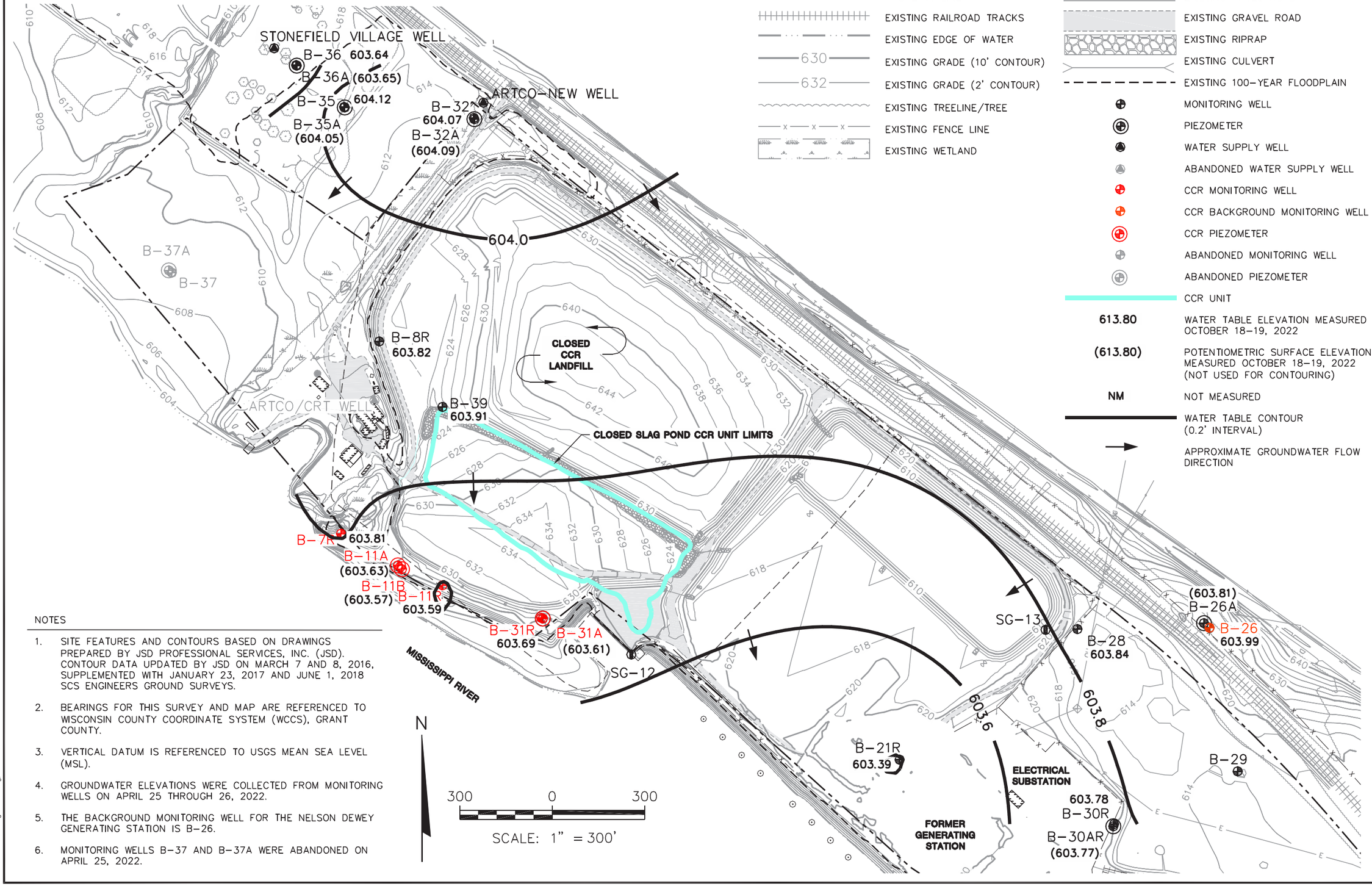
CLIENT
ALLIANT ENERGY
4902 N. BILTMORE LANE, #1000
MADISON, WI 53718

ENGINEER
SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

PROJECT NO.	25221071.00
DRAWN:	11/27/2019
REVISED:	01/11/2022
DRAWN BY:	BSS
CHECKED BY:	MDB
APPROVED BY:	TK 3/23/2022

FIGURE 3

I:\25221071.00\Drawings\Site Plan and Monitoring Well Locations.dwg, 1/11/2022 11:10:49 AM



LEGEND

- PROPERTY LINE
- EXISTING RAILROAD TRACKS
- EXISTING EDGE OF WATER
- EXISTING GRADE (10' CONTOUR)
- EXISTING GRADE (2' CONTOUR)
- EXISTING TREELINE/TREE
- EXISTING FENCE LINE
- EXISTING WETLAND
- EXISTING PAVED ROAD
- EXISTING GRAVEL ROAD
- EXISTING RIPRAP
- EXISTING CULVERT
- EXISTING 100-YEAR FLOODPLAIN
- MONITORING WELL
- PIEZOMETER
- WATER SUPPLY WELL
- ABANDONED WATER SUPPLY WELL
- CCR MONITORING WELL
- CCR BACKGROUND MONITORING WELL
- CCR PIEZOMETER
- ABANDONED MONITORING WELL
- ABANDONED PIEZOMETER
- CCR UNIT
- 613.80 — WATER TABLE ELEVATION MEASURED OCTOBER 18-19, 2022
- (613.80) — POTENTIOMETRIC SURFACE ELEVATION MEASURED OCTOBER 18-19, 2022 (NOT USED FOR CONTOURING)
- NM — NOT MEASURED
- WATER TABLE CONTOUR (0.2' INTERVAL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES

1. SITE FEATURES AND CONTOURS BASED ON DRAWINGS PREPARED BY JSD PROFESSIONAL SERVICES, INC. (JSD). CONTOUR DATA UPDATED BY JSD ON MARCH 7 AND 8, 2016, SUPPLEMENTED WITH JANUARY 23, 2017 AND JUNE 1, 2018 SCS ENGINEERS GROUND SURVEYS.
2. BEARINGS FOR THIS SURVEY AND MAP ARE REFERENCED TO WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), GRANT COUNTY.
3. VERTICAL DATUM IS REFERENCED TO USGS MEAN SEA LEVEL (MSL).
4. GROUNDWATER ELEVATIONS WERE COLLECTED FROM MONITORING WELLS ON APRIL 25 THROUGH 26, 2022.
5. THE BACKGROUND MONITORING WELL FOR THE NELSON DEWEY GENERATING STATION IS B-26.
6. MONITORING WELLS B-37 AND B-37A WERE ABANDONED ON APRIL 25, 2022.

WATER TABLE FLOW MAP
OCTOBER 2022

SITE
ALLIANT ENERGY
NELSON DEWEY GENERATING STATION
CASSVILLE, WISCONSIN

CLIENT
ALLIANT ENERGY
4902 N. BILTMORE LANE, #1000
MADISON, WI 53718

FIGURE 4

ENGINEER
SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

DRAWN BY:	KP	
CHECKED BY:	RM	
APPROVED BY:	TK 5/15/2023	
PROJECT NO.	25222071.00	
DRAWN:	10/28/2022	
REVISED:	10/28/2022	

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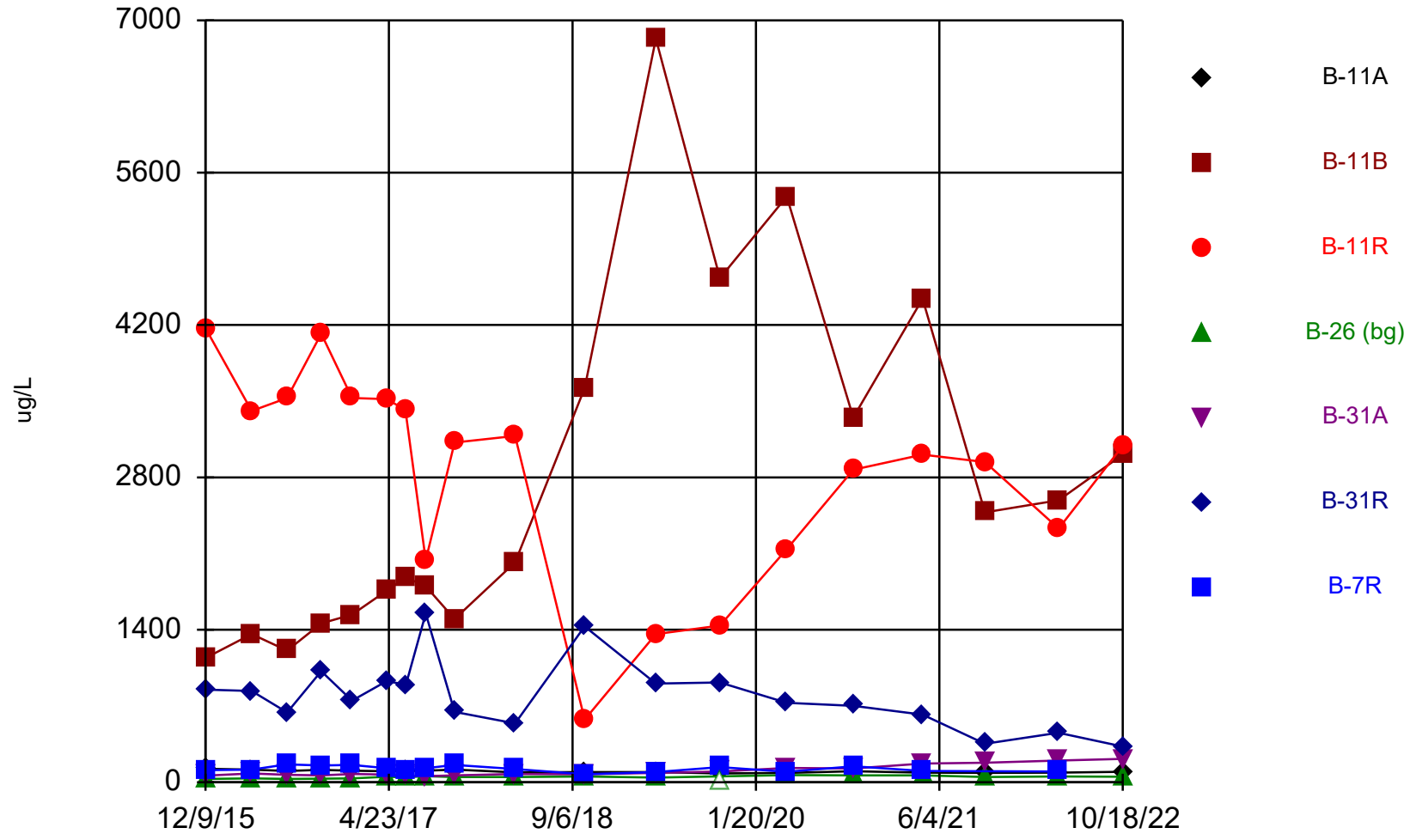
Appendix A

CCR Well Trend Plots

Hollow symbols indicate censored values.

Boron



Time Series Analysis Run 4/24/2023 4:48 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

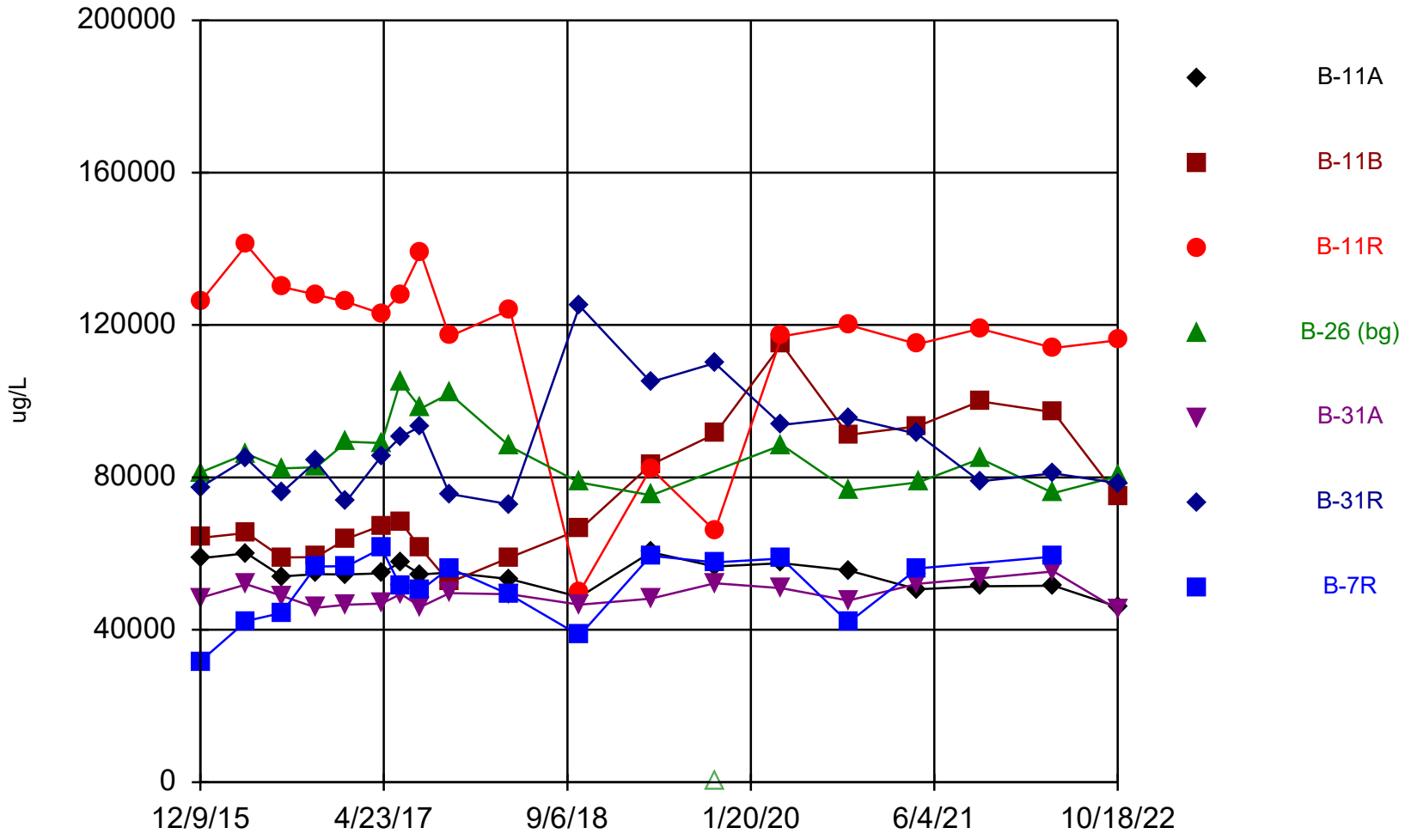
Constituent: Boron (ug/L) Analysis Run 4/24/2023 4:50 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	124	1140	4170	29.6	59	851	110
4/12/2016				33.7			
4/13/2016	116	1360	3410		79.2	838	115
7/18/2016							164
7/19/2016	104	1210	3530	28.6	67.2	641	
10/19/2016	112						154
10/20/2016		1460	4120	33	63.7	1020	
1/12/2017	106	1540	3530	35.2	76.4	749	159
4/17/2017	100	1760	3520	50.1	69.9	929	129
6/7/2017			3420	45.8			110
6/8/2017	102	1880			58.5	895	
8/1/2017	105	1800	2040		56.3	1550	129
8/2/2017				54.6			
10/19/2017	116	1500	3120	47.4	63.9	645	159
4/2/2018	91	2020	3180		74.8	540	121
4/3/2018				48			
10/8/2018				53.4			
10/9/2018	94.2	3620	576		71.8	1430	73
4/22/2019	93.9	6830	1360		86.2	906	93.5
4/23/2019				41.6			
10/14/2019	80.7	4630	1440		98.5	915	139
10/15/2019				<3 (UX)			
4/13/2020	86.3	5380	2140		132	730	96
4/14/2020				66.1			
10/12/2020	99.3	3350	2870		127	702	
10/13/2020				63.6			145
4/19/2021	88.1	4440	3010		172	621	
4/20/2021							104
4/21/2021				63.6			
10/7/2021	85.4	2480	2940		178	353	
10/8/2021				48.4			
4/25/2022				52.5		454	
4/26/2022	88.6	2590	2330		198		98.1
10/18/2022	95.2	3010	3090	48.8	213	327	

Hollow symbols indicate censored values.

Calcium



Time Series Analysis Run 4/24/2023 4:48 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

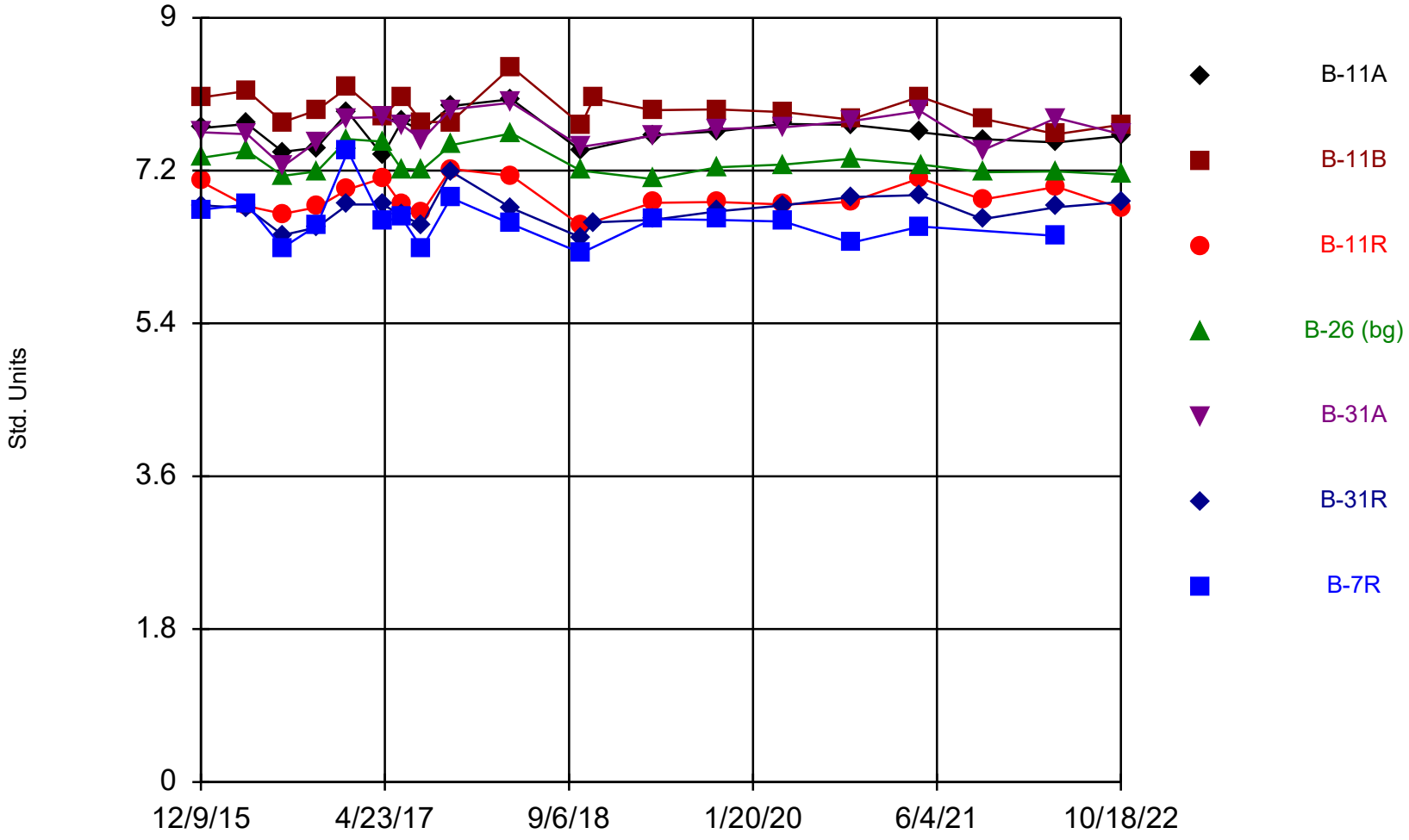
Time Series

Constituent: Calcium (ug/L) Analysis Run 4/24/2023 4:50 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	58800	64100	126000	81300	48400	77400	31700
4/12/2016				86200			
4/13/2016	60100	65400	141000		51900	84900	42300
7/18/2016							44400
7/19/2016	54000	59000	130000	82400	48900	76100	
10/19/2016	54600						56600
10/20/2016		59100	128000	82700	45800	84200	
1/12/2017	54500	63900	126000	89400	46600	73900	56700
4/17/2017	54800	67400	123000	89000	46900	85600	61400
6/7/2017			128000	105000			51600
6/8/2017	57800	68200			49400	90700	
8/1/2017	54500	61400	139000		46000	93400	50400
8/2/2017				98100			
10/19/2017	55000	52400	117000	102000	49600	75700	56200
4/2/2018	53300	59000	124000		49300	72900	49200
4/3/2018				88100			
10/8/2018				78700			
10/9/2018	48600	66300	49900		46600	125000	38500
4/22/2019	60400	83300	82400		48200	105000	59400
4/23/2019				75300			
10/14/2019	56600	91400	66000		52200	110000	57700
10/15/2019				<76.2 (UX)			
4/13/2020	57500	115000	117000		50900	93800	58700
4/14/2020				88500			
10/12/2020	55600	91200	120000		47700	95700	
10/13/2020				76500			41900
4/19/2021	50600	93400	115000		52100	91400	
4/20/2021							56100
4/21/2021				78700			
10/7/2021	51400	100000	119000		53500	79000	
10/8/2021				84900			
4/25/2022				75900		81100	
4/26/2022	51600	97100	114000		55300		59200
10/18/2022	46000	75100	116000	80300	45300	78500	

Field pH



Time Series Analysis Run 4/24/2023 4:48 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

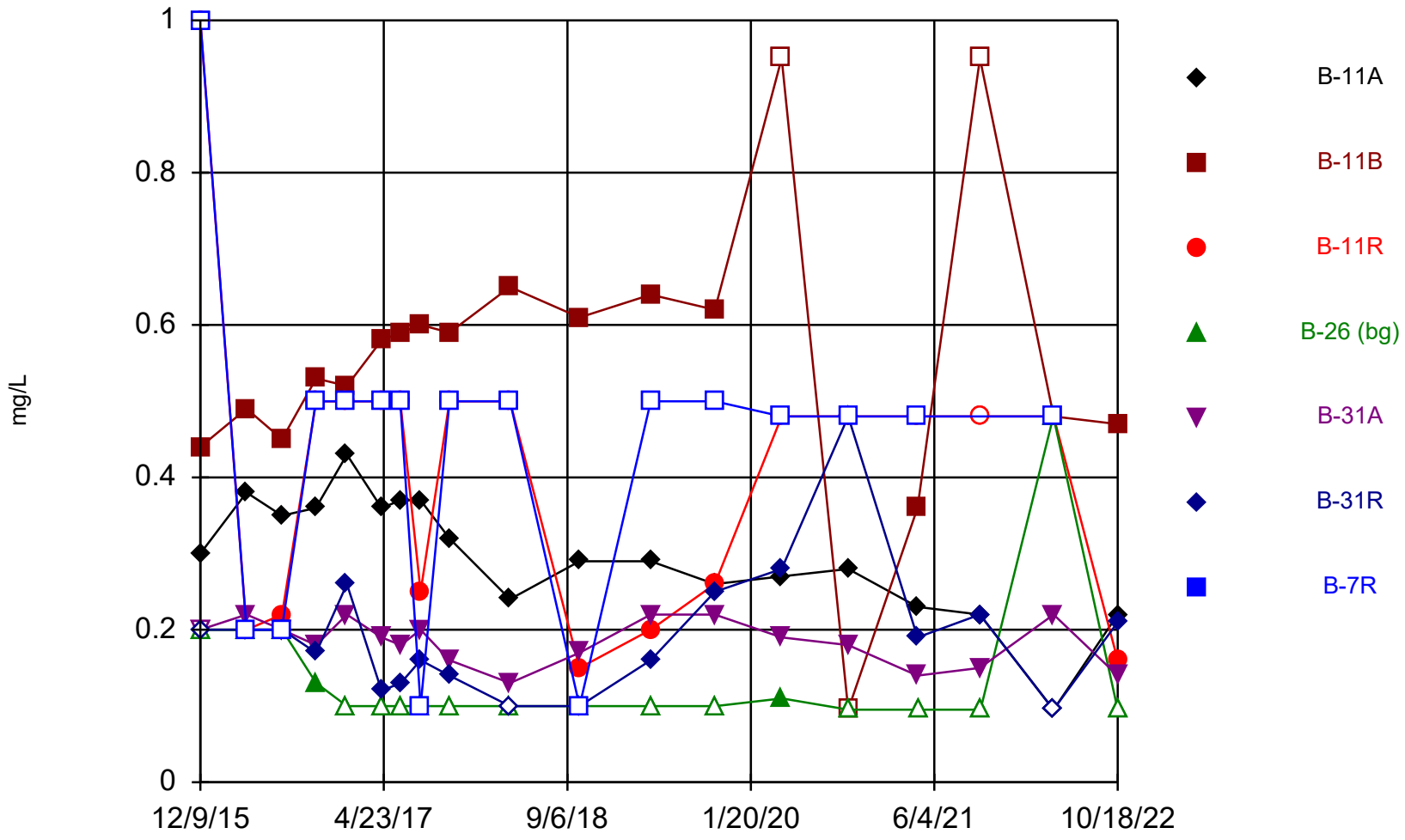
Constituent: Field pH (Std. Units) Analysis Run 4/24/2023 4:50 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	7.7	8.06	7.07	7.35	7.65	6.79	6.74
4/12/2016				7.43			
4/13/2016	7.75	8.14	6.78		7.63	6.76	6.8
7/18/2016							6.29
7/19/2016	7.42	7.77	6.69	7.14	7.25	6.44	
10/19/2016	7.47						6.55
10/20/2016		7.91	6.77	7.19	7.54	6.53	
1/12/2017	7.89	8.18	6.98	7.57	7.82	6.8	7.43
4/17/2017	7.38	7.83	7.11	7.54	7.83	6.8	6.6
6/7/2017			6.8	7.22			6.65
6/8/2017	7.78	8.07			7.74	6.67	
8/1/2017	7.67	7.77	6.7		7.56	6.56	6.28
8/2/2017				7.21			
10/19/2017	7.96	7.77	7.22	7.5	7.92	7.19	6.88
4/2/2018	8.04	8.42	7.14		8	6.76	6.57
4/3/2018				7.64			
10/8/2018				7.2			
10/9/2018	7.43	7.74	6.55		7.48	6.41	6.23
11/12/2018		8.05				6.59	
4/22/2019	7.62	7.91	6.82		7.61	6.62	6.63
4/23/2019				7.1			
10/14/2019	7.66	7.92	6.83		7.69	6.72	6.62
10/15/2019				7.24			
4/13/2020	7.75	7.89	6.8		7.71	6.79	6.6
4/14/2020				7.27			
10/12/2020	7.74	7.8	6.83		7.78	6.89	
10/13/2020				7.34			6.35
4/19/2021	7.65	8.07	7.11		7.9	6.91	
4/20/2021							6.54
4/21/2021				7.27			
10/7/2021	7.57	7.81	6.86		7.44	6.63	
10/8/2021				7.18			
4/25/2022				7.19		6.77	
4/26/2022	7.53	7.63	7.01		7.82		6.43
10/18/2022	7.61	7.74	6.76	7.15	7.63	6.83	

Hollow symbols indicate censored values.

Fluoride



Time Series Analysis Run 4/24/2023 4:48 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

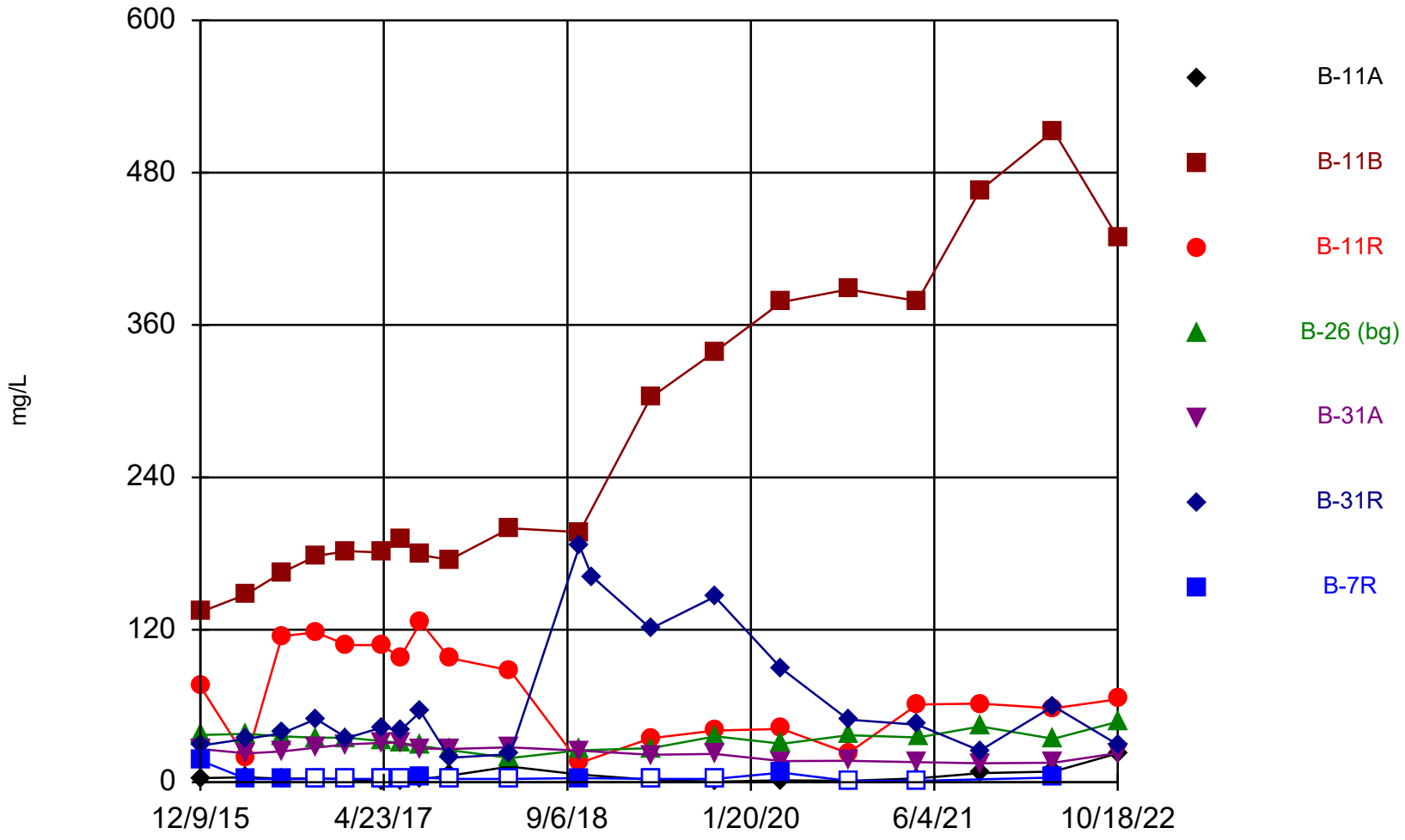
Constituent: Fluoride (mg/L) Analysis Run 4/24/2023 4:50 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	0.3 (J)	0.44	<1 (U)	<0.2 (U)	<0.2 (U)	<0.2 (U)	<1 (U)
4/12/2016				<0.2 (U)			
4/13/2016	0.38 (J)	0.49	<0.2 (U)		0.22 (J)	<0.2 (U)	<0.2 (U)
7/18/2016							<0.2 (U)
7/19/2016	0.35 (J)	0.45	0.22 (J)	<0.2 (U)	<0.2 (U)	<0.2 (U)	
10/19/2016	0.36						<0.5 (U)
10/20/2016		0.53	<0.5 (U)	0.13 (J)	0.18 (J)	0.17 (J)	
1/12/2017	0.43	0.52	<0.5 (U)	<0.1 (U)	0.22 (J)	0.26 (J)	<0.5 (U)
4/17/2017	0.36	0.58	<0.5 (U)	<0.1 (U)	0.19 (J)	0.12 (J)	<0.5 (U)
6/7/2017			<0.5 (U)	<0.1 (U)			<0.5 (U)
6/8/2017	0.37	0.59			0.18 (J)	0.13 (J)	
8/1/2017	0.37	0.6	0.25 (J)		0.2 (J)	0.16 (J)	<0.1 (U)
8/2/2017				<0.1 (U)			
10/19/2017	0.32	0.59	<0.5 (U)	<0.1 (U)	0.16 (J)	0.14 (J)	<0.5 (U)
4/2/2018	0.24 (J)	0.65	<0.5 (U)		0.13 (J)	<0.1 (U)	<0.5 (U)
4/3/2018				<0.1 (U)			
10/8/2018				<0.1 (U)			
10/9/2018	0.29 (J)	0.61	0.15 (J)		0.17 (J)	<0.1 (U)	<0.1 (U)
4/22/2019	0.29 (J)	0.64	0.2 (J)		0.22 (J)	0.16 (J)	<0.5 (U)
4/23/2019				<0.1 (U)			
10/14/2019	0.26 (J)	0.62	0.26 (J)		0.22 (J)	0.25 (J)	<0.5 (U)
10/15/2019				<0.1 (U)			
4/13/2020	0.27 (J)	<0.95 (U)	<0.48 (U)		0.19 (J)	0.28 (J)	<0.48 (U)
4/14/2020				0.11 (J)			
10/12/2020	0.28 (J)	<0.095 (U)	<0.48 (U)		0.18 (J)	<0.48 (U)	
10/13/2020				<0.095 (U)			<0.48 (U)
4/19/2021	0.23 (J)	0.36	<0.48		0.14 (J)	0.19 (J)	
4/20/2021							<0.48
4/21/2021				<0.095			
10/7/2021	0.22 (J)	<0.95 (U)	<0.48 (U)		0.15 (J)	0.22 (J)	
10/8/2021				<0.095 (U)			
4/25/2022				<0.48 (U)		<0.095 (U)	
4/26/2022	<0.095 (U)	<0.48 (U)	<0.48 (U)		0.22 (J)		<0.48 (U)
10/18/2022	0.22 (J)	0.47	0.16 (J)	<0.095 (U)	0.14 (J)	0.21 (J)	

Hollow symbols indicate censored values.

Sulfate



Time Series Analysis Run 4/24/2023 4:48 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

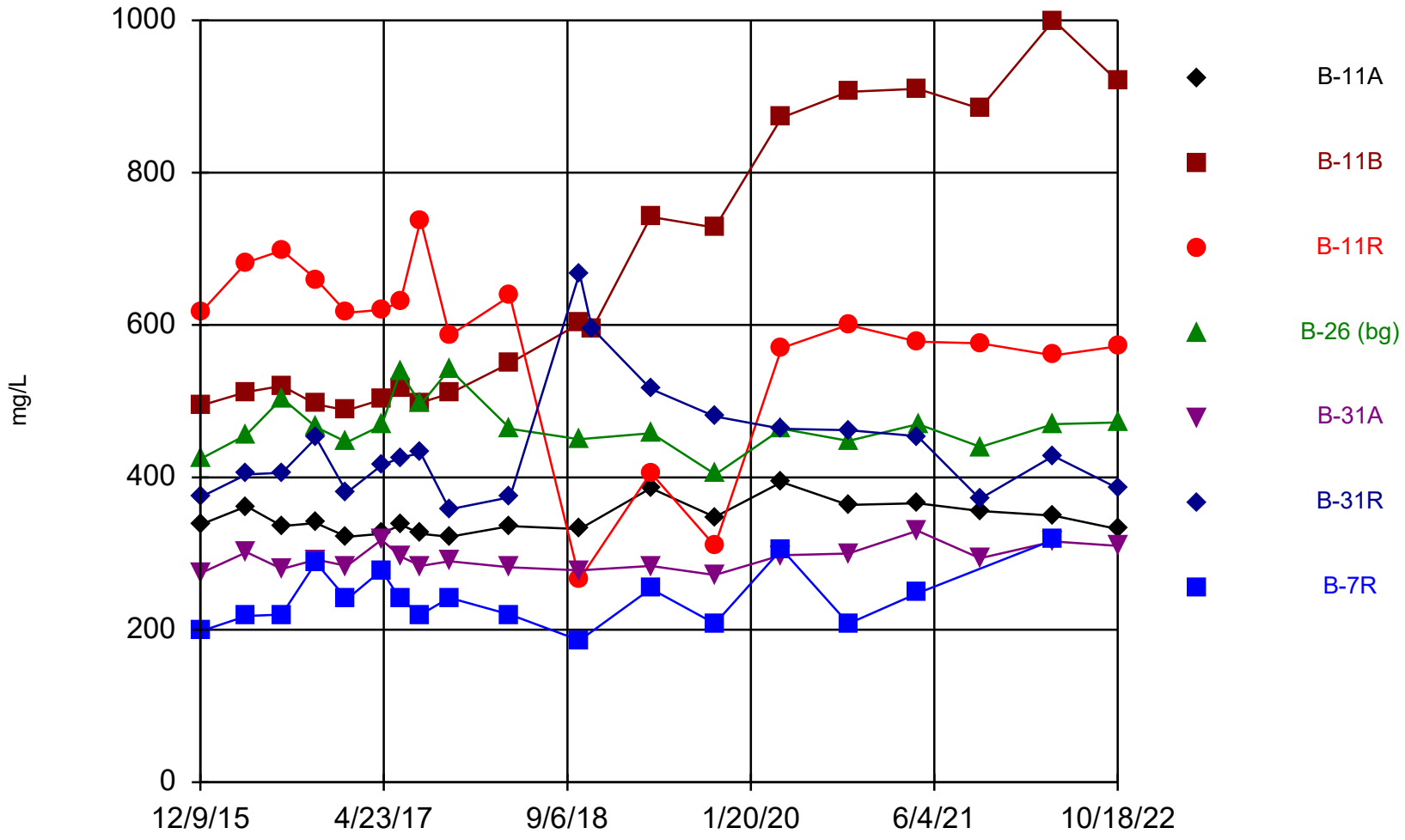
Time Series

Constituent: Sulfate (mg/L) Analysis Run 4/24/2023 4:50 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	3.2 (J)	134	75.4	37.1	26.2	28.8	17 (J)
4/12/2016				38			
4/13/2016	3.8 (J)	148	18.4		22.6	34.1	2.5 (J)
7/18/2016							2.4 (J)
7/19/2016	2.7 (J)	165	115	36.2	24.2	38.5	
10/19/2016	3 (J)						<5 (U)
10/20/2016		178	118	35	27.2	49.7	
1/12/2017	2.3 (J)	182	108	35	29.8	34.9	<5 (U)
4/17/2017	<1 (U)	181	108	32.4	31	43	<5 (U)
6/7/2017			98.2	31			<5 (U)
6/8/2017	1.4 (J)	191			31.2	41.1	
8/1/2017	2.4 (J)	179	126		26.6	55.6	3.7
8/2/2017				28.5			
10/19/2017	5.1	175	97.7	25.3	26.1	19.2	<5 (U)
4/2/2018	12.3	200	88.1		27.4	22	<5 (U)
4/3/2018				19.1			
10/8/2018				25.1			
10/9/2018	6	197	15.1		24.8	186	3.2
11/12/2018						162	
4/22/2019	1.9 (J)	303	34.6		21.6	121	<5 (U)
4/23/2019				26.7			
10/14/2019	<1 (U)	339	40.7		22.3	146	<5 (U)
10/15/2019				36			
4/13/2020	1.4 (J)	378	41.9		16.6	89.4	7.5 (J)
4/14/2020				30.2			
10/12/2020	1 (J)	388	22.8		16.8	49.4	
10/13/2020				37			<2.2 (U)
4/19/2021	2.9	379	61.2		15.8	45.3	
4/20/2021							<2.2
4/21/2021				35.3			
10/7/2021	7	466	61.8		14.9	24.9	
10/8/2021				43.8			
4/25/2022				34.2		60	
4/26/2022	8.5	513	58.1		15.4		3.7 (J)
10/18/2022	22.7	429	65.3	47.6	23	29.6	

Total Dissolved Solids



Time Series Analysis Run 4/24/2023 4:48 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

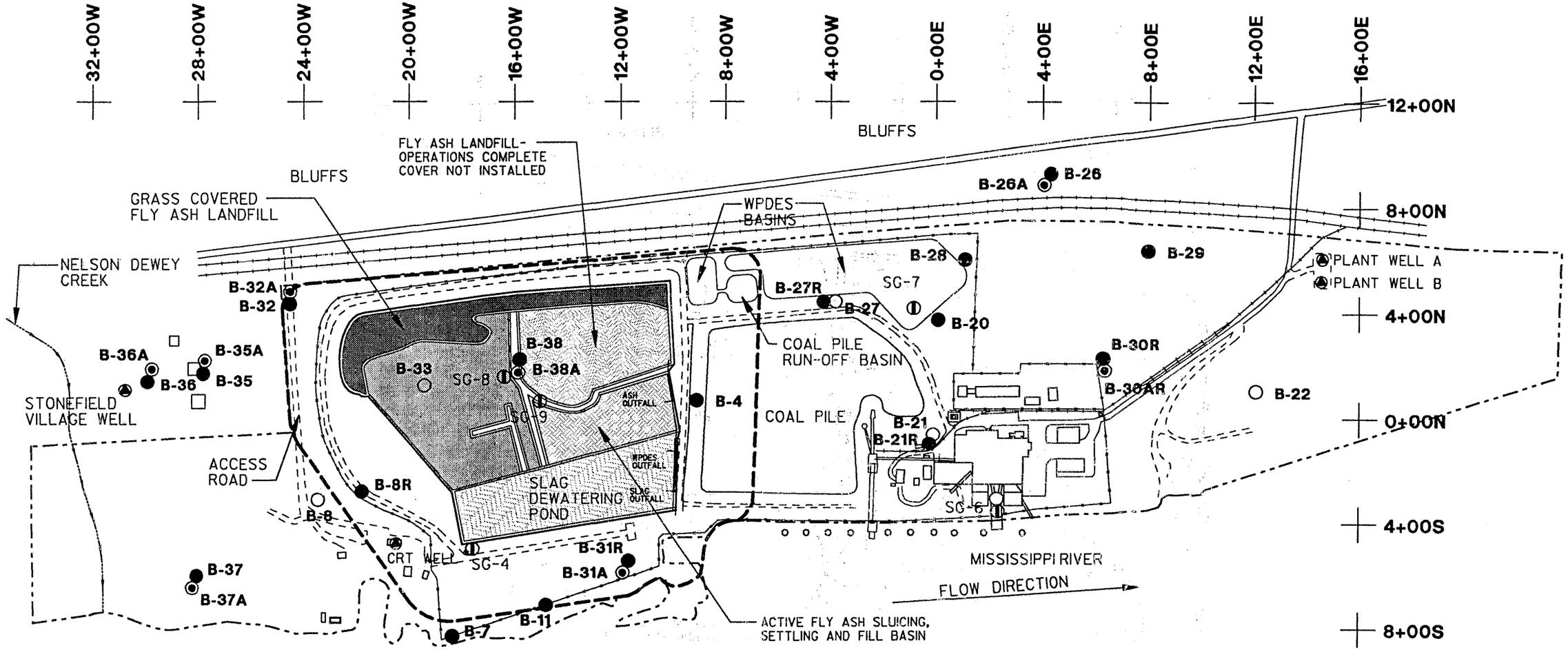
Constituent: Total Dissolved Solids (mg/L) Analysis Run 4/24/2023 4:50 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	338	494	616	424	274	374	198
4/12/2016				456			
4/13/2016	362	512	682		302	404	218
7/18/2016							220
7/19/2016	336	520	698	504	280	406	
10/19/2016	340						288
10/20/2016		496	660	466	292	452	
1/12/2017	322	488	616	446	284	380	240
4/17/2017	326	502	620	468	318	416	278
6/7/2017			630	538			240
6/8/2017	338	516			296	426	
8/1/2017	326	498	738		284	432	220
8/2/2017				496			
10/19/2017	322	510	586	542	290	358	242
4/2/2018	336	550	638		282	374	220
4/3/2018				464			
10/8/2018				450			
10/9/2018	332	602	266		278	668	186
11/12/2018		594				596	
4/22/2019	386	742	406		284	516	254
4/23/2019				458			
10/14/2019	348	728	310		272	480	208
10/15/2019				404			
4/13/2020	394	872	570		298	464	306
4/14/2020				464			
10/12/2020	364	906	600		300	462	
10/13/2020				448			208
4/19/2021	366	910	578		330	454	
4/20/2021							248
4/21/2021				470			
10/7/2021	356	884	576		294	372	
10/8/2021				440			
4/25/2022				470		428	
4/26/2022	350	1000	560		316		318
10/18/2022	332	920	572	472	310	386	

Appendix B

1994 RMT Environmental Contamination Assessment Information



LEGEND

● B-28	WATER TABLE OBSERVATION WELL
◉ B-28A	PIEZOMETER
○ B-33	ABANDONED WELL
▲ CRT WELL	WATER SUPPLY WELL
◐ SG-4	STAFF GAUGE
———	APPROXIMATE LIMITS OF LICENSED LANDFILL
——+——+——	RAILROAD TRACK
====	ROAD
— - — - —	PROPERTY LINE
— — — —	DESIGN MANAGEMENT ZONE
+ 8+00S	LOCAL GRID
□	BUILDINGS
o	PILINGS

NOTES

1. BASE MAP WELLHEAD LOCATIONS SURVEYED BY SCHMITT ENGINEERING IN OCTOBER 1993.
2. OTHER SITE INFORMATION PROVIDED BY WP&L.

TRUE

0 400 800

SCALE: 1"=400'

WISCONSIN POWER & LIGHT
NELSON DEWEY GENERATING STATION
EXISTING CONDITIONS
OCTOBER 1993

RMT, INC.

Dwn.By:	CDH
Approved By:	ELM
Date:	OCTOBER 1994
Proj.#:	2767.03
File #:	2767030LDGN

Plot File = P:\MSPC\2767030\DGN\2767030LDGN
Plot Date = Fri Oct 21 08:28:28 1994
Pen Table =DEFAULT.TBL

OCT 31 1994

FIGURE 4

TABLE 5

SUMMARY OF LEACHING TEST RESULTS

	Fly Ash		Slag
Year	1983	1990 to 1992	1987 to 1992
Coal Type	Eastern (and Western)	Western (and Eastern)	Western (and Eastern) [1]
Water:Solid Ratio	2:1	4:1	4:1
Extraction Time	24 hours	48 hours	48 hours
Number of Samples	1	3	6
Arsenic (mg/L)	< 0.001	0.05 to 2.02	< 0.002 to 0.081
Selenium (mg/L)	NA	0.42 to 160	< 0.002 to 0.045
Boron (mg/L)	420	4.63 to 37.34	< 0.010 to 1.05
Iron (mg/L)	NA	NA	< 0.02 to 0.98
Sulfate (mg/L)	13,070	2,000 to 16,700	2.0 to < 5.0
pH (SU)	6.6	10.3 to 12.5	5.6 to 9.9

NOTES:

1. 1983 fly ash leaching data from RMT (1984); remaining leaching data provided by WP&L.
2. NA = Not Analyzed.

PROJECT NUMBER: 1831.28
BEGINNING DATE: 01-JUN-93
ENDING DATE: 07-SEP-93

TABLE 6
SLAG AND ASH BASIN CHEMISTRY

PARAMETER	UNITS	FLY ASH BASIN 07-SEP-93 3302-011		SLAG BASIN 07-SEP-93 3302-010	
COLOR, FIELD		CLEAR		CLEAR	
CONDUCTANCE, SPECIFIC	UMHOS/CM	5190		400	
ODOR, FIELD		NONE		NONE	
PH, FIELD	SU	8.1		7.4	
TEMPERATURE	DEG C	17		18	
TURBIDITY, FIELD		SLIGHT		SLIGHT	
ALKALINITY AS CACO3	MG/L	230		160	
HARDNESS AS CACO3	MG/L	930		200	
SOLIDS, TOTAL DISSOLVED	MG/L	410		300	
SULFATE	MG/L	3300		50	
ARSENIC, TOTAL	UG/L	60		8.0	
BARIUM, TOTAL	UG/L	270		150	
BORON, TOTAL	UG/L	2300		210	
CADMIUM, TOTAL	UG/L	5.4		< 0.30	
CHROMIUM, TOTAL	UG/L	11		< 10	
IRON, TOTAL	UG/L	1600		2000	
LEAD, TOTAL	UG/L	< 3.0		< 3.0	
MERCURY, TOTAL	UG/L	< 0.20		< 0.20	
SELENIUM, TOTAL	UG/L	36	I	2.1	L
SILVER, TOTAL	UG/L	< 1.0		< 1.0	

wpvalid:SWI.BJC

18-OCT-94

PROJECT NUMBER: 1831.28
BEGINNING DATE: 01-JUN-93
ENDING DATE: 29-OCT-93

TABLE 8
GROUNDWATER CHEMISTRY

PARAMETER	UNITS	B-04 01-JUN-93 1670-015	B-04 07-SEP-93 3293-010	B-07 ND 01-JUN-93 1670-020	B-07 ND 07-SEP-93 3302-004	B-08 01-JUN-93 1670-001	B-08R 07-SEP-93 3293-009
COLOR, FIELD		CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	1160	1240	460	550	670	1160
DEPTH TO WATER	FEET	9.90	12.75	12.83	16.12	5.68	20.13
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	7.3	7.5	7.0	6.9	7.1	6.8
TEMPERATURE	DEG C	15	10	14	12	15	7
TURBIDITY, FIELD		NONE	SLIGHT	NONE	SLIGHT	NONE	MODERATE
WATER ELEVATION	FEET	610.68	607.83	610.97	607.68	610.51	
ALKALINITY AS CACO3	MG/L	72	92	160	190	220	440
CHLORIDE	MG/L	18	23	17	15	9.4	2.8
COD	MG/L						
FLUORIDE	MG/L	0.58	5.5	0.26	0.32	< 0.10	0.12
HARDNESS AS CACO3	MG/L	220	120	210	250	370	620
NITROGEN, NITRATE + NITRITE	MG/L	0.15	0.33	< 0.050	< 0.050	< 0.050	4.2
SOLIDS, TOTAL DISSOLVED	MG/L	900	940	300	360	460	770
SULFATE	MG/L	500	560	74	100	180	180
ARSENIC, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
BARIUM, DISSOLVED	UG/L	68	< 50	61	73	63	50
BORON, DISSOLVED	UG/L	1900	4200	230	< 200	2200	9400
CADMIUM, DISSOLVED	UG/L	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	0.38
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
COPPER, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20
IRON, DISSOLVED	UG/L	720	890	2800	4100	< 100	< 100
LEAD, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MANGANESE, DISSOLVED	UG/L	1200	720	970	1500	17	3400
MERCURY, DISSOLVED	UG/L	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
SELENIUM, DISSOLVED	UG/L	6.9	3.2	< 1.0 L	< 1.0 L	< 1.0 L	34
SILVER, DISSOLVED	UG/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
ZINC, DISSOLVED	UG/L	1000	100	22	< 20	220	< 20

18-OCT-94

wpvalid:MWI.BJC

PROJECT NUMBER: 1831.28
BEGINNING DATE: 01-JUN-93
ENDING DATE: 29-OCT-93

TABLE 8
GROUNDWATER CHEMISTRY

PARAMETER	UNITS	B-11 07-SEP-93 X0001	B-11 29-OCT-93 3485-001	B-20 07-SEP-93 X0002	B-26 01-JUN-93 1670-022	B-26 07-SEP-93 3302-005	B-26A 01-JUN-93 1670-023
COLOR, FIELD					CLEAR	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	1500		310	610	670	660
DEPTH TO WATER	FEET	15.91		10.81	16.22	18.85	16.20
ODOR, FIELD					NONE	NONE	NONE
PH, FIELD	SU				7.1	7.2	7.0
TEMPERATURE	DEG C	13	13	14	14	11	15
TURBIDITY, FIELD					NONE	SLIGHT	NONE
WATER ELEVATION	FEET				610.18	607.55	610.19
ALKALINITY AS CACO3	MG/L		470		320	300	340
CHLORIDE	MG/L				21	43	33
COD	MG/L						
FLUORIDE	MG/L				< 0.10	0.15	< 0.10
HARDNESS AS CACO3	MG/L		810		390	410	400
NITROGEN, NITRATE + NITRITE	MG/L				2.6	4.9	2.0
SOLIDS, TOTAL DISSOLVED	MG/L		520		440	450	450
SULFATE	MG/L		360		34	34	33
ARSENIC, DISSOLVED	UG/L		8.4		< 3.0	< 3.0	< 3.0
BARIUM, DISSOLVED	UG/L		100		62	68	96
BORON, DISSOLVED	UG/L		5100		< 200	< 200	< 200
CADMIUM, DISSOLVED	UG/L		< 0.30		< 0.30	< 0.30	< 0.30
CHROMIUM, DISSOLVED	UG/L		< 10		< 10	< 10	< 10
COPPER, DISSOLVED	UG/L				< 20	< 20	< 20
IRON, DISSOLVED	UG/L		55000		< 100	< 100	< 100
LEAD, DISSOLVED	UG/L		< 3.0		< 3.0	< 3.0	< 3.0
MANGANESE, DISSOLVED	UG/L				< 5.0	< 5.0	< 5.0
MERCURY, DISSOLVED	UG/L		< 0.20		< 0.20	< 0.20	< 0.20
SELENIUM, DISSOLVED	UG/L		< 1.0 LNP		< 1.0 L	< 1.0 L	< 1.0 L
SILVER, DISSOLVED	UG/L		< 10		< 1.0	< 1.0	< 1.0
ZINC, DISSOLVED	UG/L				< 20	< 20	< 20

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PARAMETER	UNITS	B-26A 07-SEP-93 3302-006	B-27R 07-SEP-93 X0003	B-28 01-JUN-93 1670-014	B-28 07-SEP-93 3302-003	B-29 07-SEP-93 X0004	B-30AR 01-JUN-93 1670-013
COLOR, FIELD		CLEAR		CLEAR	CLEAR		CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	440	370	190	230	360	220
DEPTH TO WATER	FEET	18.84	14.67	6.40	9.08	9.57	12.33
ODOR, FIELD		NONE		NONE	NONE		NONE
PH, FIELD	SU	7.2		6.1	6.0		7.2
TEMPERATURE	DEG C	11	14	17	15	15	17
TURBIDITY, FIELD		NONE		SLIGHT	MODERATE		NONE
WATER ELEVATION	FEET	607.55		610.46	607.74	607.26	610.11
ALKALINITY AS CACO3	MG/L	340		26	54		200
CHLORIDE	MG/L	25		4.6	11		13
COD	MG/L						7.3
FLUORIDE	MG/L	0.15		< 0.10	< 0.10		0.10
HARDNESS AS CACO3	MG/L	410		82	110		220
NITROGEN, NITRATE + NITRITE	MG/L	1.8		2.7	0.60		< 0.050
SOLIDS, TOTAL DISSOLVED	MG/L	440		140	160		280
SULFATE	MG/L	38		45	42		27
ARSENIC, DISSOLVED	UG/L	< 3.0		< 3.0	< 3.0		< 3.0
BARIUM, DISSOLVED	UG/L	86		< 50	52		< 50
BORON, DISSOLVED	UG/L	< 200		< 200	< 200		< 200
CADMIUM, DISSOLVED	UG/L	< 0.30		< 0.30	< 0.30		< 0.30
CHROMIUM, DISSOLVED	UG/L	< 10		< 10	< 10		< 10
COPPER, DISSOLVED	UG/L	< 20		< 20	< 20		< 20
IRON, DISSOLVED	UG/L	< 100		210	< 100		< 100
LEAD, DISSOLVED	UG/L	< 3.0		< 3.0	< 3.0		< 3.0
MANGANESE, DISSOLVED	UG/L	< 5.0		8.6	< 5.0		< 5.0
MERCURY, DISSOLVED	UG/L	< 0.20		< 0.20	< 0.20		< 0.20
SELENIUM, DISSOLVED	UG/L	< 1.0 LN		< 1.0 L	< 1.0 L		< 1.0 L
SILVER, DISSOLVED	UG/L	< 1.0		< 1.0	< 1.0		< 1.0
ZINC, DISSOLVED	UG/L	< 20		< 20	< 20		< 20

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TABLE 8
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PARAMETER	UNITS	B-30AR 07-SEP-93 3302-002	B-30R 01-JUN-93 1670-012	B-30R 07-SEP-93 3302-001	B-31A 01-JUN-93 1670-019	B-31A 07-SEP-93 3293-011	B-31R 01-JUN-93 1670-018
COLOR, FIELD		CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	410	420	360	700	800	640
DEPTH TO WATER	FEET	15.37	12.25	15.17	12.21	15.93	11.56
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	7.3	7.0	6.8	6.9	7.3	6.8
TEMPERATURE	DEG C	12	16	14	17	14	17
TURBIDITY, FIELD		NONE	MODERATE	MODERATE	NONE	SLIGHT	SLIGHT
WATER ELEVATION	FEET	607.07	610.10	607.18	610.46	606.74	610.85
ALKALINITY AS CACO3	MG/L	190	160	140	170	160	240
CHLORIDE	MG/L	14	13	6.6	16	17	11
COD	MG/L		9.7				
FLUORIDE	MG/L	0.16	< 0.10	< 0.10	0.39	0.43	< 0.10
HARDNESS AS CACO3	MG/L	230	210	210	120	160	330
NITROGEN, NITRATE + NITRITE	MG/L	< 0.050	8.5	8.8	< 0.050	< 0.050	< 0.050
SOLIDS, TOTAL DISSOLVED	MG/L	280	280	230	510	570	510
SULFATE	MG/L	25	25	26	250	250	150
ARSENIC, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
BARIUM, DISSOLVED	UG/L	< 50	< 50	< 50	54	66	110
BORON, DISSOLVED	UG/L	< 200	< 200	< 200	2900	2100	2900
CADMIUM, DISSOLVED	UG/L	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	2.7
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
COPPER, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	110
IRON, DISSOLVED	UG/L	< 100	< 100	< 100	210	300	450
LEAD, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MANGANESE, DISSOLVED	UG/L	< 5.0	< 5.0	< 5.0	4600	6000	440
MERCURY, DISSOLVED	UG/L	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
SELENIUM, DISSOLVED	UG/L	< 1.0 L	1.3 L	3.2	< 1.0 L	< 1.0 L	1.2 L
SILVER, DISSOLVED	UG/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
ZINC, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	27

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PARAMETER	UNITS	B-31R 07-SEP-93 3293-012	B-32 01-JUN-93 1670-002	B-32 07-SEP-93 3293-016	B-32A 01-JUN-93 1670-003	B-32A 07-SEP-93 3293-017	B-35 01-JUN-93 1670-004
COLOR, FIELD		CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	L YLW/BN
CONDUCTANCE, SPECIFIC	UMHOS/CM	480	300	330	610	1320	1070
DEPTH TO WATER	FEET	14.44	3.37	6.22	3.59	6.46	10.10
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	7.0	6.3	5.6	7.0	6.8	6.3
TEMPERATURE	DEG C	15	13	14	13	14	12
TURBIDITY, FIELD		MODERATE	SLIGHT	MODERATE	NONE	SLIGHT	SLIGHT
WATER ELEVATION	FEET	607.97	610.80	607.95	610.81	607.94	610.66
ALKALINITY AS CACO3	MG/L	190	140	140	330	320	190
CHLORIDE	MG/L	11	6.7	6.9	7.0	7.6	110
COD	MG/L						
FLUORIDE	MG/L	0.18	< 0.10	0.12	0.12	0.19	< 0.10
HARDNESS AS CACO3	MG/L	240	160	180	350	390	260
NITROGEN, NITRATE + NITRITE	MG/L	< 0.050	0.68	1.2	1.1	1.3	36
SOLIDS, TOTAL DISSOLVED	MG/L	340	200	240	380	420	800
SULFATE	MG/L	71	11	16	29	30	35
ARSENIC, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	7.4
BARIUM, DISSOLVED	UG/L	81	100	120	98	91	100
BORON, DISSOLVED	UG/L	1100	< 200	< 200	< 200	< 200	210
CADMIUM, DISSOLVED	UG/L	1.1	< 0.30	0.38	< 0.30	0.35	< 0.30
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
COPPER, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	21
IRON, DISSOLVED	UG/L	210	< 100	< 100	< 100	< 100	< 100
LEAD, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MANGANESE, DISSOLVED	UG/L	360	< 5.0	280	6.9	33	< 5.0
MERCURY, DISSOLVED	UG/L	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
SELENIUM, DISSOLVED	UG/L	< 1.0 L	< 1.0 L	< 1.0 L	< 1.0 L	< 1.0 L	< 1.0 L
SILVER, DISSOLVED	UG/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
ZINC, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20

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PARAMETER	UNITS	B-35 07-SEP-93 3293-002	B-35A 01-JUN-93 1670-005	B-35A 07-SEP-93 3293-003	B-36 01-JUN-93 1670-007	B-36 07-SEP-93 3293-004	B-36A 01-JUN-93 1670-006
COLOR, FIELD		YELLOW	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	1050	620	680	430	500	620
DEPTH TO WATER	FEET	13.13	10.55	13.57	10.86	13.97	11.11
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	6.8	7.0	7.1	6.3	7.0	7.1
TEMPERATURE	DEG C	14	13	12	12	13	13
TURBIDITY, FIELD		SLIGHT	NONE	NONE	SLIGHT	MODERATE	NONE
WATER ELEVATION	FEET	607.63	610.63	607.61	610.60	607.49	610.35
ALKALINITY AS CACO3	MG/L	210	330	320	230	210	330
CHLORIDE	MG/L	80	26	24	4.4	25	12
COD	MG/L						
FLUORIDE	MG/L	0.19	< 0.10	0.13	< 0.10	0.14	< 0.10
HARDNESS AS CACO3	MG/L	290	380	400	240	280	350
NITROGEN, NITRATE + NITRITE	MG/L	39	1.7	2.0	< 0.050	1.4	0.83
SOLIDS, TOTAL DISSOLVED	MG/L	770	480	460	280	350	400
SULFATE	MG/L	43	33	37	15	18	36
ARSENIC, DISSOLVED	UG/L	3.6	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
BARIUM, DISSOLVED	UG/L	120	< 50	54	110	120	68
BORON, DISSOLVED	UG/L	220	< 200	< 200	< 200	< 200	< 200
CADMIUM, DISSOLVED	UG/L	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
COPPER, DISSOLVED	UG/L	24	< 20	< 20	< 20	< 20	< 20
IRON, DISSOLVED	UG/L	< 100	< 100	< 100	< 100	< 100	< 100
LEAD, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MANGANESE, DISSOLVED	UG/L	< 5.0	< 5.0	< 5.0	< 5.0	55	< 5.0
MERCURY, DISSOLVED	UG/L	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
SELENIUM, DISSOLVED	UG/L	< 1.0 L	< 1.0 L	< 1.0 L	1.0 L	2.6 L	< 1.0 L
SILVER, DISSOLVED	UG/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
ZINC, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20

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PARAMETER	UNITS	B-36A 07-SEP-93 3293-005	B-37 07-SEP-93 3302-007	B-37A 07-SEP-93 3302-008	B-38 01-JUN-93 1670-016	B-38 07-SEP-93 3293-006	B-38A 01-JUN-93 1670-017
COLOR, FIELD		CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	620	510	770	3630	2830	2760
DEPTH TO WATER	FEET	14.18	8.13	8.14	18.53	20.19	24.87
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	7.1	7.3	7.3	8.3	9.9	7.7
TEMPERATURE	DEG C	11	13	11	20	20	15
TURBIDITY, FIELD		NONE	SLIGHT	NONE	NONE	SLIGHT	NONE
WATER ELEVATION	FEET	607.51	606.69	606.69	617.29	615.63	610.96
ALKALINITY AS CACO3	MG/L	330	200	190	100	420	80
CHLORIDE	MG/L	13	6.8	11	26	24	23
COD	MG/L						
FLUORIDE	MG/L	0.14	< 0.10	< 0.10	1.8	2.6	1.1
HARDNESS AS CACO3	MG/L	390	290	410	620	21	500
NITROGEN, NITRATE + NITRITE	MG/L	0.85	1.2	< 0.050	1.7	0.29	1.6
SOLIDS, TOTAL DISSOLVED	MG/L	420	380	590	3000	2200	2300
SULFATE	MG/L	36	100	240	2600	1200	2000
ARSENIC, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	180	90	38
BARIUM, DISSOLVED	UG/L	68	< 50	< 50	110	< 50	58
BORON, DISSOLVED	UG/L	< 200	3100	7400	2500	2600	2200
CADMIUM, DISSOLVED	UG/L	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	68	< 10	52
COPPER, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20
IRON, DISSOLVED	UG/L	< 100	< 100	< 100	< 100	< 100	< 100
LEAD, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MANGANESE, DISSOLVED	UG/L	< 5.0	< 5.0	55	< 5.0	< 5.0	< 5.0
MERCURY, DISSOLVED	UG/L	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
SELENIUM, DISSOLVED	UG/L	< 1.0 L	< 1.0 L	< 1.0 L	57	320	22
SILVER, DISSOLVED	UG/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
ZINC, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20

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TABLE 8
GROUNDWATER CHEMISTRY

PARAMETER	UNITS		B-38A 07-SEP-93 3293-007
COLOR, FIELD			CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM		3280
DEPTH TO WATER	FEET		27.59
ODOR, FIELD			NONE
PH, FIELD	SU		9.0
TEMPERATURE	DEG C		16
TURBIDITY, FIELD			NONE
WATER ELEVATION	FEET		608.24
ALKALINITY AS CACO3	MG/L		90
CHLORIDE	MG/L		21
COD	MG/L		
FLUORIDE	MG/L		3.4
HARDNESS AS CACO3	MG/L		390
NITROGEN, NITRATE + NITRITE	MG/L		0.59
SOLIDS, TOTAL DISSOLVED	MG/L		2600
SULFATE	MG/L		1800
ARSENIC, DISSOLVED	UG/L		51
BARIUM, DISSOLVED	UG/L		54
BORON, DISSOLVED	UG/L		3300
CADMIUM, DISSOLVED	UG/L	<	0.30
CHROMIUM, DISSOLVED	UG/L		11
COPPER, DISSOLVED	UG/L	<	20
IRON, DISSOLVED	UG/L	<	100
LEAD, DISSOLVED	UG/L	<	3.0
MANGANESE, DISSOLVED	UG/L	<	5.0
MERCURY, DISSOLVED	UG/L	<	0.20
SELENIUM, DISSOLVED	UG/L		57
SILVER, DISSOLVED	UG/L	<	1.0
ZINC, DISSOLVED	UG/L	<	20

wpvalid:MWI.BJC

Appendix C

2016 Low-Hazard Waste Exemption Leaching Test Results – Slag and Ash

Sediment and Soil Analytical Results - Water Leach Test Results
WPL Nelson Dewey

Sample	Date	Depth (feet)	Material Type	Lab Notes	Boron (ug/L)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
WPDES POND									
SED-1	8/3/2016	0-1.3	Fly Ash	--	240	4.3	<1.0	4.4	54
SED-2	8/3/2016	0-1.0	Fly Ash	--	200	4.3	<1.0	11.5	60
QC-3 (SED-2)	8/3/2016	0-1	Fly Ash	--	240	3.5 J	<1.0	6.1	52
SED-3	7/20/2016	0-4.5	Slag	--	130	2.7 J	<1.0	5	28
	7/20/2016	4.5-5.5	SP	--	<50	2.5 J	<0.20	<2.0	14 J
SED-4	7/19/2016	0-4.8	ML	--	510	10.5 J	<10.0	11.9 J	86
	7/19/2016	4.8-5.5		--	74 J	NA	NA	NA	NA
GP-19	8/4/2016	8-12	SM	--	62 J	2.4 J	<1.0	2 J	16 J
SLAG POND									
SED-5	7/20/2016	0-1.6	ML-OL	--	54 J	3.2 J	<1.0	33.3	90
SED-6	7/20/2016	0-1.0	ML	--	60 J	3.7 J	0.36 J	59.1	130
SED-7	8/4/2016	0-3.0	Fly Ash	--	88 J	4	<1.0	10.5	76
SED-8	8/4/2016	1.0-1.5	Fly Ash	--	82 J	3.7 J	<1.0	12.1	74
COAL YARD									
TP-CY-1	7/19/2016	0-0.5	Coal	--	140	<20.0	<2.0	<20.0	32
	7/19/2016	3.0-3.5	SM	--	100 J	2.8 J	<1.0	<2.0	20
TP-CY-3	7/20/2016	1.9-2.1	GM	--	<50	3.9 J	<0.20	2.8 J	50
	7/20/2016	4.8-5.5	SM	--	NA	NA	NA	NA	NA
TP-CY-4	7/19/2016	0-2.8	Coal	--	190	<20.0	<2.0	<20.0	38
	7/19/2016	2.8-3.2	GP & SM	--	<50	<10.0	<1.0	<10.0	34
	7/19/2016	3.6-4.8	Slag	--	<50	<20.0	<2.0	<20.0	10 J
	7/19/2016	4.8-5.0		--	NA	NA	NA	NA	NA
TP-CY-6	7/19/2016	0-0.5	Coal	--	190	<20.0	<2.0	<20.0	54
	7/19/2016	0.7-1.0	SP	--	<50	2.5 J	<0.20	2.3 J	30
TP-CY-10	7/19/2016	0-0.5	Coal	--	120	2.4 J	<1.0	11.6	48
	7/19/2016	1.0-2.0	SM	--	<50	2.2 J	<1.0	2.3 J	28
TP-CY-12	7/20/2016	0-0.3	Coal	--	160	<20.0	<2.0	<20.0	44
	7/20/2016	0.3-2.0	SP	--	<50	2.2 J	<0.20	2.2 J	24
	7/20/2016	2.0-2.7	SP	--	<50	2.3 J	<0.20	27.5	50
QC-1 (TP-CY-12)	7/20/2016	0.3-2.0	SP	--	<50	2.6 J	<0.20	2.5 J	24
SLAG HANDLING AREA									
GP-5	8/3/2016	12.5-15	Fly Ash	--	100	<2.0	<1.0	3.0 J	22
	8/3/2016	18-24	ML & SM	--	99 J	3.3 J	<1.0	<2.0	24
GP-7	8/3/2016	7.5-18	Slag	--	<50	2.2 J	<1.0	<2.0	<8.7
QC-2 (GP-7)	8/3/2016	7.5-18	Slag	--	<50	2.2 J	<1.0	<2.0	10 J
GP-14	8/4/2016	12.5-15	Fly Ash	--	120	<2.0	<1.0	13.4	96
SLAG SAMPLES[1]									
Slag 01 [2]	6/3/2013	--	Slag	--	NA	NA	NA	NA	NA
Slag 01	12/23/2013	--	Slag	--	12.5 AB	0.277 B	NA	0.218	NA
NED Slag Composite 2014	7/1/2014	--	Slag	--	11.7 AB*^	< 0.142	NA	0.457 B	98 H
Slag Sample	4/14/2015	--	Slag	--	< 1020 A	0.751	NA	0.427	NA

Sediment and Soil Analytical Results - Water Leach Test Results
WPL Nelson Dewey

Sample	Date	Depth (feet)	Material Type	Lab Notes	Boron (ug/L)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
FLY ASH SAMPLES[1]									
NED Flyash Composite [2]	2/14/2014	--	Fly Ash	--	NA	NA	NA	6,530 B	NA
Week of 062815 [2]	7/3/2015	--	Fly Ash	--	NA	NA	NA	6,260	NA
Week of 010916	1/4/2016	--	Fly Ash	--	NA	NA	NA	NA	NA
NR 140 Preventative Action Limits (PALs)					200	125	0.8	125	NE
NR 140 Enforcement Standards (ESs)					1000	250	4	250	NE
40 CFR Part 141.62 Maximum Contaminant Levels (MCL)					NE	NE	4	NE	NE
NR 538 Table 1A Standards					190	125	0.8	125	NE
NR 538 Table 2A Standards					1900	1,250	8	1,250	NE

Abbreviations:
mg/L = micrograms per liter
NE = No Standard Established
NA = Not Analyzed
GM = Silty Gravel
ML = Silt
ML-CL = Silty Clay
SM = Silty Sand
GP = Poorly Graded Gravel
ML-OL = Silty Organic Clay
SP = Poorly Graded Sand
ML-OL = Silty Organic Clay
TDS = Total Dissolved Solids

Notes:
1. Slag and Fly Ash samples were collected by the plant as part of permit requirements.
2. Sample was analyzed using the SPLP Leach Method rather than the ASTM Water Leach Method for tested parameters except for Sulfate.
NR 140 ESs - Wisconsin Administrative Code (WAC), Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.
NR 140 PALs - WAC, Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.

Laboratory Notes/Qualifiers:
J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
A = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B = Compound was found in the blank and sample.
F1 = MS and/or MSD Recovery is outside acceptance limits.
H = Sample was prepped or analyzed beyond the specified holding time.
^ = ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
* = LCS or LCSD is outside acceptance limits.

Created by: RJG Date: 3/14/2016
Last revision by: RJG Date: 10/24/2016
Checked by: BSS Date: 10/24/2016
Original table prepared for Slag Pond Closure Low Hazard Waste Exemption Request (SCS Project #25216054.00).
Reformatted for the Alternative Source Demonstration to include only the parameters with SSIs that were included in the leach testing by NDK, 9/14/2020; SCC 10/1/2021.

I:\25221071.00\Deliverables\2021 April ASD NED\Appendix C 2016 leachate results slag and ash\[Table 4. Sediment_Soil_Water Leach Results-Updated.xlsx]Leach Test - SSI Parameters

Appendix D

Grant County Fluoride Data

Fluoride Data in WDNR's Groundwater Retrieval Network (GRN) Database for Water Supply Wells
Grant County, Wisconsin
Summary of Fluoride Detections

Row Labels	Count of Result amount
FLUORIDE TOTAL	**431**
DETECT BETWEEN LOD & LOQ	101
NON-DETECT	46
NORMAL QUANTIFIED RESULT	284
(blank)	
(blank)	
Grand Total	**431**

Percent With Fluoride Detected	**89%**

Data downloaded by NDK on 3/24/2020 (Data collected through 12/31/2019)

Fluoride Data in WDNR's Groundwater Retrieval Network (GRN) Database for Water Supply Wells
Grant County, Wisconsin
Average Detected Concentration of Fluoride, Sorted by Concentration

Result qualifier description (Multiple Items)

Unique Well ID	Sample Count	Average Result
BF853	9	2.63
BF867	1	2.50
BF880	12	2.18
BF852	7	1.94
BF860	1	0.99
BF878	6	0.98
SJ588	1	0.91
BF879	8	0.84
BN874	2	0.53
BF851	4	0.52
BF857	5	0.51
BF882	9	0.51
CG483	8	0.40
BF859	5	0.37
AX751	9	0.37
BF858	5	0.36
BF868	7	0.29
BN872	2	0.28
NZ649	7	0.27
QL936	1	0.27
QL937	1	0.27
BF865	6	0.27
BF850	8	0.27
BF854	2	0.26
AU060	6	0.26
TG838	1	0.25
XV599	5	0.23
BF872	5	0.22
HK787	1	0.22
NS770	1	0.22
MK761	2	0.22
BF884	10	0.22
AK037	5	0.21
OK550	1	0.19
OJ246	1	0.19
BN901	9	0.18
BN869	3	0.18
QX207	1	0.18
AQ147	1	0.18
BV955	1	0.18

Fluoride Data in WDNR's Groundwater Retrieval Network (GRN) Database for Water Supply Wells
Grant County, Wisconsin
Average Detected Concentration of Fluoride, Sorted by Concentration

Result qualifier description (Multiple Items)

Unique Well ID	Sample Count	Average Result
LM589	1	0.18
HQ513	1	0.18
BN865	4	0.18
BN908	4	0.18
KW598	8	0.17
FS460	1	0.17
UX756	1	0.17
EG571	4	0.17
BN873	2	0.17
KA785	1	0.16
LB136	1	0.16
BF877	9	0.15
LU673	1	0.15
FQ608	1	0.15
HI076	1	0.15
YN518	1	0.15
BF848	8	0.14
TN825	1	0.14
WQ163	2	0.14
BN890	9	0.14
BF887	8	0.14
BF881	1	0.14
BF862	7	0.13
BE506	9	0.13
AA984	8	0.13
RP170	5	0.13
DM678	1	0.13
UR678	1	0.13
HD743	1	0.13
HB056	1	0.13
ZU710	1	0.13
NS475	1	0.13
VJ219	1	0.13
OK579	1	0.13
GC413	1	0.13
FQ612	1	0.13
BF870	7	0.13
SY844	5	0.13
BN870	2	0.13
OJ232	2	0.13

Fluoride Data in WDNR's Groundwater Retrieval Network (GRN) Database for Water Supply Wells
Grant County, Wisconsin
Average Detected Concentration of Fluoride, Sorted by Concentration

Result qualifier description	(Multiple Items)

Unique Well ID	Sample Count	Average Result
JD260	3	0.12
RQ362	1	0.12
BF849	6	0.12
OJ139	2	0.11
BN889	1	0.11
SB757	3	0.11
YE608	4	0.11
BN867	4	0.11
BF886	10	0.10
KA547	1	0.10
BF873	8	0.09
OE466	6	0.09
DR430	3	0.09
SJ604	1	0.09
RX881	2	0.09
CX863	1	0.09
TO277	1	0.09
BF876	4	0.09
BN864	2	0.09
BF864	2	0.08
UD453	1	0.08
EG575	3	0.08
LE533	1	0.08
QX202	2	0.08
HB215	1	0.08
LE524	1	0.08
HB164	1	0.07
TY797	1	0.07
BF875	3	0.07
UE663	1	0.04
KA154	1	0.04
Grand Total	**385**	**0.38**

Data downloaded by NDK on 3/24/2020 (Data collected through 12/31/2019)

E2 Alternative Source Demonstration, April 2023 Detection Monitoring

Alternative Source Demonstration
April 2023 Detection Monitoring

Slag Pond
Nelson Dewey Generating Station
Cassville, Wisconsin

Prepared for:

SCS ENGINEERS

25223071.00 | November 7, 2023

2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830

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Tables

Figures

Appendices

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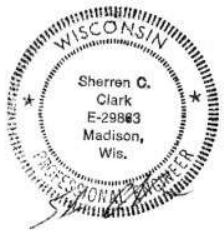
PE CERTIFICATION



I, Sherren Clark, hereby certify that the information in this alternative source demonstration is accurate and meets the requirements of 40 CFR 257.94(e)(2). This certification is based on my review of the groundwater data and related site information available for the Nelson Dewey Generating Station Slag Pond facility. I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.

11/7/2023

(signature) (date)

Sherren Clark, PE

(printed or typed name)

License number E-29863

My license renewal date is July 31, 2024.

Pages or sheets covered by this seal:

Alternative Source Demonstration, April 2023

Detection Monitoring – Slag Pond

Nelson Dewey Generating Station, Cassville

(Entire Document)

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1.0 INTRODUCTION

This Alternative Source Demonstration (ASD) was prepared to support compliance with the groundwater monitoring requirements of the "Coal Combustion Residuals (CCR) Final Rule" published by the U.S. Environmental Protection Agency (U.S. EPA) in the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, dated April 17, 2015 (U.S. EPA, 2015), and subsequent amendments. Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.94(e)(2). The applicable sections of the Rule are provided below in *italics*.

1.1 §257.94(E)(2) ALTERNATIVE SOURCE DEMONSTRATION REQUIREMENTS

The owner and operator may demonstrate that a source other than the CCR Unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels.

An ASD is completed when there are exceedances of one or more benchmarks established within the groundwater monitoring program to determine if any other sources are likely causes of the identified exceedance(s) of established benchmark(s) at the site. This ASD was performed in response to results indicating a statistically significant increase (SSI) over background levels during detection monitoring under the CCR Rule.

This ASD report evaluates the SSIs observed in the statistical evaluation of the April 2023 detection monitoring event at the Nelson Dewey Generating Station (NED). The first ASD prepared for this facility evaluated the SSIs observed in the statistical evaluation of the October 2017 detection monitoring event (SCS Engineers [SCS], 2018). The October 2017 ASD and subsequent semiannual updates have included several lines of evidence demonstrating that SSIs reported for Appendix III parameters in the downgradient monitoring wells were likely due to man-made sources other than the slag pond CCR Unit and/or naturally occurring constituents in the alluvial aquifer. The conclusions of this ASD are consistent with previous ASDs.

1.2 SITE INFORMATION AND MAP

The NED site is located along the east bank of the Mississippi River, north of the Village of Cassville, in Grant County, Wisconsin (**Figure 1**). The facility includes a decommissioned coal-fired generating plant, a CCR landfill that was closed in 2001, a closed Slag Pond, and a closed wastewater treatment pond. The layout of the site on an aerial photograph base is shown on **Figure 2**. The closed landfill at the NED facility was permitted under Wisconsin Department of Natural Resources (WDNR) License #02525.

The existing CCR Unit evaluated for this ASD is:

- Slag Pond (existing surface impoundment – closed January 2018)

A map showing the CCR Unit and all background (or upgradient) and downgradient monitoring wells with identification numbers for the CCR groundwater monitoring program and the state monitoring program is provided on **Figure 3**.

Operations at the facility began in the late 1950s, and a CCR impoundment that included what is now the Slag Pond closure area was commissioned at that time. The CCR landfill was initially licensed in 1976 and received fly ash from NED until it was closed in phases between 1996 and 2001. The CCR landfill was initially operated as a fly ash sluice basin, then transitioned to dry ash placement prior to closure. The wastewater ponds, now closed, were constructed in 1976 for the purpose of settling CCR from the NED process wastewater streams and sediment from storm water runoff prior to discharge. Both NED generating units were retired on December 31, 2015, and have since been decommissioned. The generating station was demolished in 2017. Closure of the slag pond was completed in January 2018.

1.3 STATISTICALLY SIGNIFICANT INCREASES IDENTIFIED

The statistical evaluation was completed in accordance with 40 CFR 257.93(f)(3) using a prediction interval procedure, in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper prediction limit (UPL). The initial evaluation was based on an interwell comparison. The UPLs were calculated based on a 1-of-2 resampling approach. The UPLs and the analytical results for the April 2023 monitoring event are summarized in the attached **Table 1**.

The initial evaluation indicated that the April 2023 monitoring event results represent an SSI over background for the following parameters and wells:

- Boron: B-7R, B-11A, B-11B, B-11R, B-31A, B-31R
- Calcium: B-11R
- Field pH: B-11B
- Sulfate: B-11A, B-11B, B-11R, B-31R
- Total Dissolved Solids (TDS): B-11B, B-11R

The SSIs are consistent with SSIs identified in previous detection monitoring results.

1.4 OVERVIEW OF ALTERNATIVE SOURCE DEMONSTRATION APPROACH

This ASD report includes:

- Background information (**Section 2.0**).
- Evaluation of potential that SSIs are due to methodology or analysis (**Section 3.0**).
- Evaluation of potential that SSIs are due to natural sources or man-made sources other than the CCR Units (**Section 4.0**).
- ASD conclusions (**Section 5.0**).
- Monitoring recommendations (**Section 6.0**).

Historical monitoring results from background and compliance sampling for the CCR Rule constituents with SSIs are provided in **Table 2**. The laboratory report for the April 2023 event will be included in the 2023 Annual Groundwater Monitoring and Corrective Action Report to be completed in January 2024. Complete laboratory reports for the background monitoring events and previous detection monitoring events were included in the previous annual groundwater monitoring and corrective action reports.

2.0 BACKGROUND

To provide context for the ASD evaluation, the following background information is provided in this section of the report, prior to the ASD evaluation sections:

- Geologic and hydrogeologic setting
- CCR Rule monitoring system
- Other monitoring wells

A more detailed discussion of the background information for the site is provided in the ASD for the October 2017 event (SCS, 2018).

2.1 GEOLOGIC AND HYDROGEOLOGIC SETTING

2.1.1 Regional Information

The uppermost geologic formation beneath the NED site is the surficial alluvial aquifer. The alluvial aquifer consists of Mississippi River valley sand and gravel deposits, and is the uppermost aquifer as defined in section 257.53 of the CCR Rule. This deposit is prevalent along the edges of the entire Mississippi River valley in southwestern Wisconsin.

The alluvial aquifer is underlain by dolomitic bedrock of the Prairie du Chien Group. The dolomite bedrock is also an aquifer and is likely hydraulically connected to the alluvial aquifer above.

Regionally, groundwater flow is generally to the southwest and discharges to the Mississippi River.

Additional details on the regional geology were provided in the October 2017 ASD (SCS, 2018).

2.1.2 Site Information

The thickness of the alluvium in the immediate vicinity of the site is over 125 feet, as evidenced by local water supply well logs (SCS, 2018). These logs are also evidence that the alluvial aquifer yields useable quantities of groundwater for supply wells in the area. Soil boring logs for monitoring wells installed at the site also generally indicate sand and gravel soils within the monitored depths.

The groundwater flow direction in the vicinity of the plant is generally southwest toward the Mississippi River. Historically, infiltration at the former Slag Pond, former fly ash basin, and the former Wisconsin Pollutant Discharge Elimination System (WPDES) ponds caused groundwater mounding to be present around these features; however, these ponds have now all been closed and are no longer sources of infiltration.

Site water level measurements generally indicate that groundwater flow is to the southwest, discharging to the Mississippi River. However, during periods of high river water levels, the flow temporarily reverses, and the river discharges to the shallow sand and gravel aquifer. The groundwater flow direction during the April 2023 detection monitoring event was generally to the northeast, away from the Mississippi River (**Figure 4**). The groundwater elevations are provided in **Table 3**.

2.2 COAL COMBUSTION RESIDUALS RULE MONITORING SYSTEM

The groundwater monitoring system established in accordance with the CCR Rule consists of one upgradient (background) monitoring well and six downgradient monitoring wells. The background well is B-26. The downgradient wells include B-7R, B-11A, B-11B, B-11R, B-31A, and B-31R. The CCR Rule wells are installed within the surficial alluvium aquifer. Well depths range from approximately 23 to 114 feet, measured from the top of the well casing.

2.3 OTHER MONITORING WELLS

There are several additional groundwater monitoring wells at the NED facility that are part of the monitoring system developed for the state monitoring program. All of the wells included in the CCR monitoring well network were already in use for the state monitoring program. The well locations are shown on Figure 3. The state program monitoring wells and two private wells are used to monitor groundwater conditions at the site under WDNR License Number 2525, which includes the closed CCR landfill and the closed Slag Pond. Monitoring wells for the state monitoring program are installed in the surficial sand and gravel aquifer, which is the uppermost aquifer as defined under 40 CFR 257.53.

3.0 METHODOLOGY AND ANALYSIS REVIEW

To evaluate the potential that an SSI is due to a source other than the regulated CCR Unit, SCS used a two-step evaluation process. First, the sample collection, field and laboratory analysis, and statistical evaluation were reviewed to identify any potential error or analysis that led to an exceedance of the benchmark. Second, potential alternative sources, including natural variation and man-made sources other than the CCR Unit, were evaluated. This section of the report provides the findings of the methodology and analysis review. Section 4.0 of the report addresses the potential alternative sources.

3.1 SAMPLING AND FIELD ANALYSIS REVIEW

Field notes and sampling results were reviewed to determine if any sampling error may have caused or contributed to the observed SSIs. Potential field sampling errors or issues could include mislabeling of samples, improper sample handling, missed holding times, cross contamination during sampling, or other field error. Field blank sample results were also reviewed for any indication of potential contamination from sampling equipment or containers. Based on the review of the field notes and results, SCS did not identify any indication that the SSIs were due to a sampling error.

SCS did not identify any issues with the field sampling for field analysis based on review of the data and field notes. Because boron, calcium, TDS, and sulfate are laboratory parameters, there is little potential for a field analysis error to contribute to an SSI.

3.2 LABORATORY ANALYSIS REVIEW

The laboratory reports for the April 2023 detection monitoring events were reviewed to evaluate whether any laboratory analysis error or issue may have caused or contributed to the observed SSIs. The laboratory report review included reviewing the laboratory quality control flags and narrative, verifying that correct methods were used and desired detection limits were achieved, and checking the field and laboratory blank sample results. Laboratory reports for the background monitoring events were reviewed for the October 2017 ASD. Laboratory reports for subsequent detection monitoring events were reviewed as part of the ASD preparation for each event.

Based on the review of the laboratory reports, SCS did not identify any indication that any SSI was due to a laboratory analysis error. There were no laboratory quality control flags or issues identified in the laboratory reports that affect the usability of the data for detection monitoring. Because field pH is a field parameter, there is little potential for a laboratory error to contribute to an SSI.

Time series plots of the SSI constituent analytical data were also reviewed for any anomalous results that might indicate a possible sampling or laboratory error (e.g., dilution error or incorrect sample labeling). The time series plots are provided in Appendix A. None of the time series plots included anomalous results that appeared to indicate a sampling or laboratory error.

3.3 STATISTICAL EVALUATION REVIEW

The review of the statistical results and methods included a quality control check of the following:

- Input analytical data vs. laboratory analytical reports
- Statistical method and process for each SSI

Based on the review of the statistical evaluation, SCS did not identify any errors or issues in the statistical evaluation that caused or contributed to the determination of interwell SSIs at the downgradient monitoring wells.

3.4 SUMMARY OF METHODOLOGY AND ANALYSIS REVIEW FINDINGS

In summary, there were no changes to the SSI determinations for the April 2023 detection monitoring events based on the methodology and analysis review. No errors or issues causing or contributing to the reported SSIs were identified.

4.0 ALTERNATIVE SOURCES

This section of the report discusses the potential alternative sources for the SSI constituents at the downgradient wells, identifies the most likely alternative source(s), and presents the lines of evidence indicating that an alternative source is the most likely cause of the observed SSIs.

4.1 POTENTIAL CAUSES OF STATISTICALLY SIGNIFICANT INCREASES

4.1.1 Natural Variation

The statistical analysis was completed using an interwell approach, comparing the April 2023 detection monitoring results to the UPLs calculated based on sampling of the background well (B-26). If concentrations of a constituent that is naturally present in the aquifer vary spatially, then the potential exists that the downgradient concentrations may be higher than upgradient concentrations due to natural variation.

Although natural variation is present in the shallow aquifer, it does not appear likely that natural variation is the primary source causing the boron, field pH, sulfate, and TDS SSIs. These parameters were detected at higher concentrations than would likely be present naturally.

Natural variation may have caused or contributed to the SSI for calcium at B-11R. As discussed in Section 2.1.1, the alluvial aquifer is underlain by dolomitic bedrock of the Prairie du Chien Group. The dolomite aquifer is also present in the bluffs northeast of the site, and groundwater from the

dolomite likely discharges to the alluvial aquifer. Calcium is a typical constituent of groundwater in dolomite aquifers. The calcium concentrations in upgradient well B-26 have exceeded those in at least three of the downgradient wells, suggesting that natural variability may contribute to the calcium concentrations observed in the downgradient monitoring wells.

4.1.2 Man-Made Alternative Sources

Man-made alternative sources that could potentially contribute to the boron, calcium, field pH, sulfate, and TDS SSIs could include the closed CCR landfill, the coal storage area, or other plant operations. Based on the groundwater flow directions and on previous investigations at the site, the closed landfill appears to be the most likely man-made cause of the SSIs for the downgradient wells B-7R, B-11A, B-11B, B-11R, B-31A, and B-31R.

4.2 LINES OF EVIDENCE

The lines of evidence indicating that the SSIs for boron, calcium, field pH, sulfate, and TDS in one or more compliance wells relative to the background well are more likely due to the closed landfill and prior fly ash sluicing than to the Slag Pond include:

1. A previous Environmental Contamination Assessment completed for the ash disposal facility indicated that the fly ash sluicing and landfill were the primary source of the groundwater impacts in the area, based on multiple lines of evidence.

2. Sampling performed in preparation for the Slag Pond closure indicated that the slag and the Slag Pond sediment had little potential to cause the SSIs for boron, sulfate, and TDS.

3. Past and current groundwater monitoring performed under the state monitoring program shows that groundwater quality has improved since the 1990s in response to termination of fly ash sluicing and closure and capping of the ash landfill. Recent concentration increases at some wells in the state monitoring program appear to be attributable to the closed CCR landfill source and to changes in groundwater flow at the site in response to closure of the Slag Pond.

The data supporting these lines of evidence are discussed below. Most of these lines of evidence and the supporting data were discussed in detail in the ASD for the October 2017 detection monitoring event (SCS, 2018), with the exception of the TDS SSI concentrations. For lines of evidence included in previous ASDs, the discussion focuses on any updated information collected since the previous ASD, with references to the previous ASD for additional details.

4.2.1 Previous CCR Pond and Landfill Study

A previous investigation titled *Environmental Contamination Assessment: Nelson Dewey Generating Station Ash Disposal Facility*, completed by RMT in 1994, found that groundwater impacts were associated with disposal of fly ash in the now-closed CCR landfill located immediately north of the Slag Pond (**Figure 3**). The purpose of the 1994 Environmental Contamination Assessment (ECA) was to investigate the impacts to groundwater at the NED landfill. The ECA was used to evaluate the feasibility of possible remedial alternatives. The remedial alternative that was ultimately selected was to convert the plant to dry fly ash handling.

The primary lines of evidence from the 1994 report that support the current ASD for boron, calcium, field pH, sulfate, and TDS include:

- Water leaching tests for ash and slag indicated that boron and sulfate concentrations in the slag leachate were orders of magnitude lower than in the fly ash leachate (**Appendix B**, **Table 5**). Higher pH values were also reported for leach samples of Western coal fly ash in 1990 to 1992 than for the slag samples.

- Surface water samples from the then active fly ash sluice pond and the Slag Pond indicated that boron and sulfate concentrations in the Slag Pond were one or more orders of magnitude lower than in the ash sluice pond. The surface water pH measurement was also higher in the ash sluice pond. The surface water boron and sulfate concentrations in the Slag Pond were higher than leach test results, which was attributed to infiltration of ash sluice pond water through the berm between the ponds into the Slag Pond (**Appendix B**, **Table 6**).

- Groundwater sampling at monitoring wells B-38 and B-38A (now abandoned), which were installed through and screened below the ash disposal area (now closed landfill), indicated that groundwater affected by ash sluicing was characterized by high pH and elevated concentrations of boron, sulfate, and TDS (**Appendix B**, **Site Map,** and **Table 8**).

Although calcium was not included in the historical state groundwater monitoring program or evaluated in the 1994 report, hardness was monitored and provides an indication of relative calcium concentrations. Surface water samples from the then active ash sluice pond and the Slag Pond indicated that hardness in the Slag Pond was lower than in the ash sluice pond (**Appendix B**, **Table 6**). These results suggest that if the calcium SSI is not solely due to natural variation, then the closed CCR landfill is the most likely man-made source of calcium.

The results of the 1994 ECA were reported to WDNR in November 1994. The ECA investigation was then used for a feasibility study to determine appropriate ash disposal operation on site. Following the ECA, the plant converted to a dry ash handling system. Dry ash was placed in the CCR landfill through the 1990s, and the landfill was capped and closed in phases in 1996 through 2001. After that time, fly ash was not disposed of at the facility.

4.2.2 Slag Pond Closure Sampling Results

Results of leaching test analysis performed for slag, ash, soil, and sediment were submitted as part of a Low Hazard Exemption Request to the WDNR in March 2017 (SCS, 2017). The Exemption Request was submitted as part of the Closure Plan for the site and requested WDNR approval to consolidate materials from decommissioning activities in the Slag Pond and Slag Handling Area, which would then be capped with a composite final cover system. The sediment and soil samples were collected to characterize the materials that would remain on site under the Closure Plan. Leaching tests were performed using ASTM water leach test methods. The leaching test analytical results for parameters with SSIs that were included in the leaching test program (boron, sulfate, and TDS) are summarized in **Appendix C**.

The sampling results in the Exemption Request indicated that the materials to be consolidated and capped were not likely to cause groundwater standard exceedances for boron, sulfate, or TDS. The leach test results for slag, Slag Pond sediment, and soil in the Slag Handling Area were below the state groundwater standards for boron and sulfate. The parameter TDS does not currently have a state standard but the leach test results for slag, Slag Pond sediment, and soil in the Slag Handling Area were all below the calculated TDS UPL for the site (**Table 1** and **Appendix C**). The boron, sulfate, and TDS results were also below the concentrations in the downgradient CCR wells with SSIs, and

well below the historical results for former well B-38, which was located within the CCR landfill area, upgradient from the Slag Pond (**Appendix B**, **Table 8**).

The Low Hazard Exemption was granted by the WDNR based on the sampling results and other information presented.

4.2.3 State Program Groundwater Monitoring Results

Past and current groundwater monitoring performed under the state monitoring program shows that groundwater quality has improved substantially since the 1990s in response to termination of fly ash sluicing, and closure and capping of the ash landfill (SCS, 2018). The long-term trends show that concentrations of boron and sulfate in groundwater have decreased or stabilized since termination of fly ash sluicing and closure of the landfill, in some cases by an order of magnitude or more. The results suggest that current pH levels and boron, sulfate, and TDS concentrations likely represent residual contamination from historical ash disposal in the CCR landfill area. Increases in boron, sulfate, and TDS concentrations at B-11B beginning in 2018 appear to be attributable to the closed CCR landfill and to changes in groundwater flow at the site related to a decrease in the volume of water discharged to the Slag Pond and subsequent closure of the Slag Pond. Concentrations of boron in samples from B-11B increased to a peak in October 2019 and have been lower since that event. A summary of state analytical groundwater results is provided in **Table 4**.

5.0 ALTERNATIVE SOURCE DEMONSTRATION CONCLUSIONS

The lines of evidence discussed above regarding the SSIs reported for boron, calcium, field pH, sulfate, and TDS results in downgradient monitoring wells demonstrate that the SSIs are likely primarily due to sources other than the closed Slag Pond. The SSIs for boron, calcium, field pH, sulfate, and TDS appear to be due to historical ash disposal in the closed CCR landfill, which is not subject to the requirements of 40 CFR 257.50-107. The landfill is regulated by the WDNR under the solid waste program (License 02525). Natural variation in groundwater quality in the aquifer may also contribute to the SSI for calcium.

6.0 SITE GROUNDWATER MONITORING RECOMMENDATIONS

In accordance with section 257.94(e)(2) of the CCR Rule, the NED Slag Pond site may continue with detection monitoring based on this ASD. The ASD report will be included in the 2023 Annual Report due January 31, 2024.

7.0 REFERENCES

RMT, 1994, Environmental Contamination Assessment: Nelson Dewey Generating Station Ash Disposal Facility, November 1994.

SCS Engineers, 2017, Low Hazard Exemption Request, Nelson Dewey Generating Station, Cassville, WI, March 2017.

SCS Engineers, 2018, 2017 Alternative Source Demonstration, October 2017 Monitoring Event, Nelson Dewey Generating Station, April 2018.

U.S. Environmental Protection Agency (U.S. EPA), 2015, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, April 2015.

Tables

Table 1. Groundwater Analytical Results Summary
Nelson Dewey Slag Pond, Cassville, WI / SCS Engineers Project #25222071.00

Parameter Name	UPL	Background Well	Compliance Wells					
		B-26	B-7R	B-11A	B-11B	B-11R	B-31A	B-31R
		4/5/2023	4/3/2023	4/4/2023	4/4/2023	4/4/2023	4/4/2023	4/4/2023
Groundwater Elevation, ft amsl		607.36	607.51	607.92	607.90	607.83	607.85	607.88
Appendix III								
Boron, ug/L	70.5	38.6	120	119	4,740	3,110	193	589
Calcium, ug/L	104,000	77,400	48,800	51,700	84,400	105,000	46,100	88,300
Chloride, mg/L	72.7	29.1	7.9 J, D3	40.7	25.2	30.7	50.4	24.5
Fluoride, mg/L	0.2	<0.095	<0.48 D3	0.22 J	0.65 J,D3	<0.48 D3	0.18 J	<0.48 D3
Field pH, Std. Units	7.64	7.05	6.18	7.62	7.68	6.81	7.59	6.62
Sulfate, mg/L	47.1	34.3	<2.2 D3	70.8	436	57	15.9	50.0
Total Dissolved Solids, mg/L	536	448	224	394	980	554	324	440

7.81 Blue shaded cell indicates the compliance well result exceeds the UPL (background) and the Limit of Quantitation (LOQ).

Abbreviations:
UPL = Upper Prediction Limit
SSI = Statistically Significant Increase
LOQ = Limit of Quantitation
ug/L = micrograms per liter
mg/L = milligrams per liter
LOQ = Limit of Quantitation

Lab Notes:
J = Estimated concentration at or above the LOD and below the LOQ.

Notes:
1. An individual result above the UPL may not constitute an SSI above background. See the accompanying letter text for identification of statistically significant results.
2. Interwell UPLs calculated based on results from background well B-26. UPLs are based on a 1-of-2 retesting approach.
3. Interwell UPLs updated July 2023 based on background well results from December 2015 through April 2023.

Created by:	NDK	Date:	12/6/2022
Last revision by:	SCC	Date:	7/28/2023
Checked by:	RM	Date:	7/31/2023
Proj Mgr QA/QC/Scientist:	TK	Date:	7/31/2023

I:\25223071.00\Deliverables\April 2023 ASD NED\Tables\[Table 1 - 2304_NED_CCR GW Screening Summary.xlsx]Current Event - Updated UPL

Table 2. Historical Analytical Results for Parameters with SSIs
Nelson Dewey Generating Station - Cassville, Wisconsin / SCS Engineers Project #25223071.00

Well Group	Well	Collection Date	Boron (µg/L)	Calcium (mg/L)	Field pH (Std. Units)	Fluoride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Background	B-26	12/9/2015	29.6	81,300	7.35	<0.20	37.1	424
		4/12/2016	33.7	86,200	7.43	<0.20	38.0	456
		7/19/2016	28.6	82,400	7.14	<0.20	36.2	504
		10/20/2016	33.0	82,700	7.19	0.13 J	35.0	466
		1/12/2017	35.2	89,400	7.57	<0.10	35.0	446
		4/17/2017	50.1	89,000	7.54	<0.10	32.4	468
		6/7/2017	45.8	105,000	7.22	<0.10	31.0	538
		8/2/2017	54.6	98,100	7.21	<0.10	28.5	496
		10/19/2017	47.4	102,000	7.50	<0.10	25.3	542
		4/2/2018	48.0	88,100	7.64	<0.10	19.1	464
		10/8/2018	53.4	78,700	7.20	<0.10	25.1	450
		4/22/2019	41.6	75,300	7.10	<0.10	26.7	458
		10/15/2019	<3.00	<76.2	7.24	<0.10	36.0	404
		4/14/2020	66.1	88,500	7.27	0.11 J	30.2	464
		10/13/2020	63.6	76,500	7.34	<0.095 M0	37.0	448
		4/21/2021	63.6	78,700	7.27	<0.095	35.3	470
		10/8/2021	48.4	84,900	7.18	<0.095	43.8	440
		4/25/2022	52.5	75,900	7.19	<0.48 D3, M0	34.2	470
		10/18/2022	48.8	80,300	7.15	<0.095	47.6	472
		4/5/2023	38.6	77,400	7.05	<0.095	34.3	448
Compliance	B-11A	12/9/2015	124	58,800	7.70	0.30 J	3.20 J	338
		4/13/2016	116	60,100	7.75	0.38 J	3.80 J	362
		7/19/2016	104	54,000	7.42	0.35 J	2.70 J	336
		10/19/2016	112	54,600	7.47	0.36	3.00 J	340
		1/12/2017	106	54,500	7.89	0.43	2.30 J	322
		4/17/2017	100	54,800	7.38	0.36	<1.00	326
		6/8/2017	102	57,800	7.78	0.37	1.40 J	338
		8/1/2017	105	54,500	7.67	0.37	2.40 J	326
		10/19/2017	116	55,000	7.96	0.32	5.10	322
		4/2/2018	91.0	53,300	8.04	0.24 J, M0	12.3 M0	336
		10/9/2018	94.2	48,600	7.43	0.29 J	6.00	332
		4/22/2019	93.9	60,400	7.62	0.29 J	1.90 J	386
		10/14/2019	80.7	56,600	7.66	0.26 J	<1.00	348
		4/13/2020	86.3	57,500	7.75	0.27 J	1.40 J	394
		10/12/2020	99.3	55,600	7.74	0.28 J	1.00 J	364
		4/19/2021	88.1	50,600	7.65	0.23 J	2.9	366
		10/8/2021	85.4	51,400	7.57	0.22 J	7.0	356
		4/26/2022	88.6	51,600	7.53	<0.095	8.5	350
		10/18/2022	95.2	46,000	7.61	0.22 J	22.7	332
		4/4/2023	119.0	51,700	7.62	0.22 J	70.8	394
	B-11B	12/9/2015	1,140	64,100	8.06	0.44	134	494
		4/13/2016	1,360	65,400	8.14	0.49	148	512
		7/19/2016	1,210	59,000	7.77	0.45	165	520
		10/20/2016	1,460	59,100	7.91	0.53	178	496
		1/12/2017	1,540	63,900	8.18	0.52	182	488
		4/17/2017	1,760	67,400	7.83	0.58	181	502
		6/8/2017	1,880	68,200	8.07	0.59	191	516
		8/1/2017	1,800	61,400	7.77	0.60	179	498
		10/19/2017	1,500	52,400	7.77	0.59	175	510
		4/2/2018	2,020	59,000	8.42	0.65	200	550
		10/9/2018	3,620	66,300	7.74	0.61	197	602
		11/12/2018	--	--	8.05	--	--	594
		4/22/2019	6,830	83,300	7.91	0.64	303	742
		10/14/2019	4,630	91,400	7.92	0.62	339	728
		4/13/2020	5,380	115,000	7.89	<0.95	378	872
		10/12/2020	3,350	91,200	7.80	<0.095	388	906
		4/19/2021	4,440	93,400	8.07	0.36	379 M0	910
		10/8/2021	2,480	100,000	7.81	<0.95 D3	466	884
		4/26/2022	2,590	97,100	7.63	<0.48	513	1000
		10/18/2022	3,010	75,100	7.74	0.47	429	920
		4/4/2023	4,740	84,400	7.68	0.65 J	436	980

Table 2. Historical Analytical Results for Parameters with SSIs
Nelson Dewey Generating Station - Cassville, Wisconsin / SCS Engineers Project #25223071.00

Well Group	Well	Collection Date	Boron (µg/L)	Calcium (mg/L)	Field pH (Std. Units)	Fluoride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Compliance	B-11R	12/9/2015	4,170	126,000	7.07	<10	75.4	616
		4/13/2016	3,410	141,000	6.78	<0.20	18.4	682
		7/19/2016	3,530	130,000	6.69	0.22 J	115	698
		10/20/2016	4,120	128,000	6.77	<0.50	118	660
		1/12/2017	3,530	126,000	6.98	<0.50	108	616
		4/17/2017	3,520	123,000	7.11	<0.50	108	620
		6/7/2017	3,420	128,000	6.80	<0.50	98.2	630
		8/1/2017	2,040	139,000	6.70	0.25 J	126	738
		10/19/2017	3,120	117,000	7.22	<0.50 D3	97.7	586
		4/2/2018	3,180	124,000	7.14	<0.50 D3, M0	88.1	638
		10/9/2018	576	49,900	6.55	0.15 J	15.1	266
		4/22/2019	1,360	82,400	6.82	0.20 J	34.6	406
		10/14/2019	1,440	66,000	6.83	0.26 J	40.7	310
		4/13/2020	2,140	117,000	6.80	<0.48	41.9	570
		10/12/2020	2,870	120,000	6.83	<0.48 D3	22.8	600
		4/19/2021	3,010	115,000	7.11	<0.48 D3	61.2	578
		10/8/2021	2,940	119,000	6.86	<0.48 D3	61.8	576
		4/26/2022	2,330	114,000	7.01	<0.48 D3	58.1	560
		10/18/2022	3,090	116,000	6.76	0.16 J	65.3	572
		4/4/2023	3,110	105,000	6.81	<0.48 D3	57.0	554
	B-31A	12/9/2015	59.0	48,400	7.65	<0.20	26.2	274
		4/13/2016	79.2	51,900	7.63	0.22 J	22.6	302
		7/19/2016	67.2	48,900	7.25	<0.20	24.2	280
		10/20/2016	63.7	45,800	7.54	0.18 J	27.2	292
		1/12/2017	76.4	46,600	7.82	0.22 J	29.8	284
		4/17/2017	69.9	46,900	7.83	0.19 J	31.0	318
		6/8/2017	58.5	49,400	7.74	0.18 J	31.2	296
		8/1/2017	56.3	46,000	7.56	0.20 J	26.6	284
		10/19/2017	63.9	49,600	7.92	0.16 J	26.1	290
		4/2/2018	74.8	49,300	8.00	0.13 J	27.4	282
		10/9/2018	71.8	46,600	7.48	0.17 J	24.8	278
		4/22/2019	86.2	48,200	7.61	0.22 J	21.6	284
		10/14/2019	98.5	52,200	7.69	0.22 J	22.3	272
		4/13/2020	132	50,900	7.71	0.19 J	16.6	298
		10/13/2020	127	47,700	7.78	0.18 J	16.8	300
		4/19/2021	172	52,100	7.90	0.14 J	15.8	330
		10/8/2021	178	53,500	7.44	0.15 J	14.9	294
		4/26/2022	198	55,300	7.82	0.22 J	15.4	316
		10/18/2022	213	45,300	7.63	0.14 J	23.0	310
		4/4/2023	193	46,100	7.59	0.18 J	15.9	324
	B-31R	12/9/2015	851	77,400	6.79	<0.20	28.8	374
		4/13/2016	838	84,900	6.76	<0.20	34.1	404
		7/19/2016	641	76,100	6.44	<0.20	38.5	406
		10/20/2016	1,020	84,200	6.53	0.17 J	49.7	452
		1/12/2017	749	73,900	6.80	0.26 J	34.9	380
		4/17/2017	929	85,600	6.80	0.12 J	43.0	416
		6/8/2017	895	90,700	6.67	0.13 J	41.1	426
		8/1/2017	1,550	93,400	6.56	0.16 J	55.6	432
		10/19/2017	645	75,700	7.19	0.14 J	19.2	358
		4/2/2018	540	72,900	6.76	<0.10	22.0	374
		10/9/2018	1,430	125,000	6.41	<0.10	186	668
		11/12/2018	--	--	6.59	--	162	596
		4/22/2019	906	105,000	6.62	0.16 J	121	516
		10/14/2019	915	110,000	6.72	0.25 J	146	480
		4/13/2020	730	93,800	6.79	0.28 J	89.4	464
		10/12/2020	702	95,700	6.89	<0.48 D3, M0	49.4	462
		4/19/2021	621	91,400	6.91	0.19 J	45.3	454
		10/8/2021	353	79,000	6.63	0.22 J	24.9	372
		4/25/2022	454	81,100	6.77	<0.095	60.0	428
		10/18/2022	327	78,500	6.83	0.21 J	29.6	386
		4/4/2023	589	88,300	6.62	<0.48 D3	50.0	440

Table 2. Historical Analytical Results for Parameters with SSIs
Nelson Dewey Generating Station - Cassville, Wisconsin / SCS Engineers Project #25223071.00

Well Group	Well	Collection Date	Boron (µg/L)	Calcium (mg/L)	Field pH (Std. Units)	Fluoride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Compliance	B-7R	12/9/2015	110	31,700	6.74	<1.0	17.0 J	198
		4/13/2016	115	42,300	6.80	<0.20	2.50 J	218
		7/18/2016	164	44,400	6.29	<0.20	2.40 J	220
		10/19/2016	154	56,600	6.55	<0.50	<5.00	288
		1/12/2017	159	56,700	7.43	<0.50	<5.00	240
		4/17/2017	129	61,400	6.60	<0.50	<5.00	278
		6/7/2017	110	51,600	6.65	<0.50	<5.00	240
		8/1/2017	129	50,400	6.28	<0.10	3.70	220
		10/19/2017	159	56,200	6.88	<0.50 D3	<5.00 D3	242
		4/2/2018	121	49,200	6.57	<0.50 D3	<5.00 D3	220
		10/9/2018	73.0	38,500	6.23	<0.10	3.20	186
		4/22/2019	93.5	59,400	6.63	<0.50 D3	<5.00 D3	254
		10/14/2019	139	57,700	6.62	<0.50 D3	<5.00 D3	208
		4/13/2020	96.0	58,700	6.60	<0.48 D3	7.50 J, D3	306
		10/13/2020	145	41,900	6.35	<0.48 D3	<2.20	208
		4/20/2021	104	56,100	6.54	<0.48 D3	<2.2 D3	248
		10/8/2021[1]	--	--	--	--	--	--
		4/26/2022	98.1	59200	6.43	<0.48 D3	3.7 J, D3	318
		10/18/2022[2]	--	--	--	--	--	--
		4/3/2023	120	48800	6.18	<0.48 D3	<2.2 D3	224

Abbreviations:
µg/L = micrograms per liter or parts per billion (ppb)
mg/L = milligrams per liter or parts per million (ppm)
Std. Units = Standard Units

Flags:
J = Estimated concentration at or above the LOD and below the LOQ.
D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0 = Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
-- = Not applicable.

Notes:
(1) B-7R could not be sampled on 10/8/2021 or during an attempted resampling event on 10/28/2021 due to low water levels.
(2) B-7R could not be sampled on 10/18/2022 due to low water levels.

Created by: RM Date: 9/19/2023
Last revision by: RM Date: 9/19/2023
Checked by: NLB Date: 9/20/2023

Table 3. Groundwater Elevation Summary
Nelson Dewey Closed Ash Disposal Facility / SCS Engineers Project #25223071.00

	Ground Water Elevation in feet above mean sea level (amsl)																										
Well Number	**B-7R**	**B-8R**	**B-11R**	**B-11A**	**B-11B**	**B-21R**	**B-26**	**B-26A**	**B-28**	**B-30R**	**B-30AR**	**B-31R**	**B-31A**	**B-32**	**B-32A**	**B-35**	**B-35A**	**B-36**	**B-36A**	**B-37**	**B-37A**	**B-39**	**MW-301**	**MW-302**	**MW-303**	**Barge Gauge (SG-12)^^**	**Pond Gauge (SG-13)**
Top of Casing Elevation (feet amsl)	623.35	627.51	622.62	622.12	621.89	623.31	626.40	626.40	616.81	621.81	622.4	622.42	622.69	614.18	614.4	620.78	621.09	621.11	621.33	614.85	614.85	626.48	619.09	619.21	618.49	622.34	See notes
Screen Length (ft)	10	10	10	5	5	10	10	5	10	10	5	10	5	10	5	10	5	9	4.5	10	5	10	10	10	10		
Total Depth (ft from top of casing)	23.05	27.25	24.15	52.00	113.90	22.78	31.67	45.78	16.70	22.20	46.90	22.82	35.52	14.79	52.00	16.60	47.00			19.95	48.20	26.90	21.11	21.27	20.15		
Top of Well Screen Elevation (ft)	610.30	610.26	608.47	575.12	512.99	610.53	604.73	585.62	610.11	609.61	580.50	609.60	592.17	609.39	567.40	614.18	579.20	609.60	575.50	604.90	571.65	609.58	607.98	607.94	608.34		
Measurement Date																		--	--							--	--
October 5-6, 2011	604.94	606.29	604.57	604.36	604.32	604.43	604.52	604.55	604.61	604.37	605.21	608.37	604.42	604.88	604.82	604.87	604.81	--	--	604.37	604.39		--	--	--	--	--
April 25-26, 2012	606.58	606.30	606.07	606.30	606.28	--	605.89	605.91	--	--	--	608.65	606.31	604.33	--	606.29	#REF!	--	--	606.16	606.17	606.17	--	--	--	--	--
October 17, 2012	604.39	604.16	604.10	603.98	603.98	604.08	604.12	604.14	604.31	603.97	603.98	607.32	604.07	604.33	604.35	--	#REF!	--	--	603.93	603.93	603.93	--	--	--	--	--
April 2, 2013	607.04	608.01	606.15	607.20	607.17	606.30	605.60	605.64	605.90	605.91	605.93	607.13	607.13	606.11	606.14	606.13	606.25	--	--	606.99	607.02		--	--	--	--	--
October 16-17, 2013	604.51	605.89	604.17	603.90	603.87	604.11	604.31	604.32	604.36	604.08	604.06	604.87	604.00	604.53	604.56	604.46	604.44	--	--	604.05	604.04		--	--	--	--	--
April 10, 2014	607.42	608.97	607.45	607.28	607.26	--	607.22	607.23	--	--	--	607.37	607.28	--	--	607.46	607.39	--	--	607.25	607.26		--	--	--	--	--
October 14-15, 2014	605.67	606.82	605.17	604.90	604.91	614.92	605.00	605.01	605.13	604.92	604.92	606.36	605.54	605.41	605.45	605.36	605.33	--	--	604.94	604.99		--	--	--	--	--
April 16, 2015	607.26	608.50	607.11	607.15	607.05	--	606.40	606.41	--	--	--	607.37	607.09	--	--	606.73	606.78	--	--	606.99	606.88		--	--	--	--	--
October 1-2, 2015	605.14	604.66	604.53	604.42	604.38	604.36	604.43	604.50	604.54	604.34	604.32	605.13	604.38	604.76	604.82	604.76	604.75	--	--	604.30	604.39		--	--	--	--	--
December 8, 2015	606.69	--	606.71	606.30	606.26	--	606.80	--	--	--	--	607.40	606.39	--	--	--	--	--	--	--	--	607.54	--	--	--	--	--
April 12, 2016	609.32	609.36	609.32	608.71	608.68	--	609.81	609.72	--	--	--	609.34	609.01	--	--	609.73	609.65	--	--	608.79	608.79	610.23	--	--	--	--	--
July 18-19, 2016	606.54	--	606.14	606.76	606.74	--	606.09	--	--	--	--	606.55	606.73	--	--	--	--	--	--	--	--	606.28	--	--	--	--	--
October 19-20, 2016	608.59	608.46	608.35	608.21	608.19	608.37	608.84	608.76	608.63	608.45	608.46	608.51	608.20	608.69	608.73	608.78	608.74	--	--	608.20	608.18	609.09	--	--	--	--	--
January 11-12, 2017	608.02		607.96	607.83	607.78		608.56					607.90	607.84					--	--			608.92	--	--	--	--	--
April 17, 2017	609.08	608.82	608.34	609.05	608.99	NM	608.59	608.54	609.94	608.57	608.64	607.20	608.98	608.96	608.98	609.00	609.02	--	--	609.02	609.02	610.23	--	--	--	--	--
June 8, 2017	610.74	--	610.42	609.81	610.08	--	611.25	--	--	--	--	609.63	610.50	--	--	--	--	--	--	--	--	611.53	--	--	--	--	--
August 1-2, 2017	607.02	--	606.73	605.57	605.50	--	607.39	--	--	--	--	606.84	605.69	--	--	--	--	--	--	--	--	608.71	--	--	--	--	--
October 9-10, 2017	606.93	606.51	606.25	607.01	606.94	--	606.22	606.13	606.33	606.44	606.45	606.68	606.93	606.57	606.61	606.65	606.71	--	--	--	--	--	--	--	--	--	--
October 19, 2017	609.60	--	609.42	609.58	609.65	--	608.84	--	--	--	--	609.47	609.43	--	--	--	--	--	--	609.40	609.40	608.55	--	--	--	--	--
November 17, 2017	--	--	--	--	--	606.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
December 19, 2017	--	--	--	--	--	604.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
February 7, 2018	605.37	--	605.33	604.96	604.92	--	--	--	616.81	--	--	605.31	605.01	--	--	--	--	--	--	--	--	606.19	605.08	605.05	605.00	--	--
March 16, 2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	604.64	604.6	604.56	--	--
April 203, 2018 **	604.82	606.61	606.27	606.63	606.55	606.52	606.49	606.37	606.39	606.46	606.43	604.44	606.46	606.58	606.66	606.68	606.70	--	--	606.77	606.83	606.19	--	--	--	--	--
May 23, 2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	610.68	610.78	610.61	--	--
October 8-10, 2018	610.76	610.68	610.67	610.28	610.24	610.02	610.34	610.28	610.83	610.09	610.05	610.39	610.27	611.05	610.94	610.72	610.54	--	--	--	--	611.44	--	--	--	--	--
November 11, 2018	--	--	--	--	609.14	--	--	--	--	--	--	609.11	--	--	--	--	--	--	--	--	--	--	--	--	--	608.40	
April 22-23, 2019	615.28	615.66	615.28	615.29	615.28	614.98	615.49	615.31	615.40	615.36	615.35	615.01	615.33	--	--	615.87	615.98	--	--	--	--	615.40	--	--	--	615.17	<615.06
October 14-16, 2019	613.43	613.11	613.06	613.29	613.18	612.47	613.10	613.10	612.71	612.83	612.78	612.50	613.20	613.10	613.00	613.10	613.15	--	--	--	--	613.35	--	--	--	612.33	<615.06
April 13-14, 2020	614.12	613.76	614.39	613.88	613.86	613.22	613.76	613.73	613.68	613.60	613.56	613.80	613.79	--	--	614.04	614.00	--	--	--	--	613.71	--	--	--	612.89	613.10
October 12-13, 2020	605.09	604.88	604.57	604.54	604.44	604.28	604.92	604.83	604.86	604.72	604.72	604.66	604.54	605.07	605.06	605.00	605.08	--	--	--	--	605.06	--	--	--	603.89	DRY
April 19-21, 2021	608.83	608.66	608.57	608.72	608.67	607.93	608.55	608.49	608.27	608.38	608.35	608.66	608.63	608.68	608.74	608.86	608.85	608.40	608.39	608.74	608.75	608.48	--	--	--	608.15	<609.00
October 6-8, 2021	604.05	604.04	603.85	603.79	603.74	603.56	604.21	604.13	604.11	604.00	603.97	603.98	603.84	604.32	604.38	604.35	604.34	603.93	603.92	NM	NM	604.23	--	--	--	602.90	<609.00
April 25-26, 2022	609.84	610.25	609.75	610.00	609.98	609.70	610.12	610.08	609.99	610.11	610.09	610.27	609.95	610.26	610.40	610.44	610.32	609.94	609.90	AB	AB	610.22	--	--	--	NM	609.25
October 18-19, 2022	603.81	603.82	603.59	603.63	603.57	603.39	603.99	603.81	603.84	603.78	603.77	603.69	603.61	604.07	604.09	604.12	604.05	603.64	603.65	AB	AB	603.91	--	--	--	601.29	<609.00
April 3-5, 2023	607.51	607.58	607.83	607.92	607.90	--[#]	607.36	607.34	607.19	607.38	607.41	607.88	607.85	607.40	607.40	607.67	607.71	607.34	607.34	AB	AB	606.92	--	--	--	606.24	<609.00
Bottom of Well Elevation (ft)	600.30	600.26	598.47	570.12	507.99	600.53	594.73	580.62	600.11	599.61	575.50	599.60	587.17	599.39	562.40	604.18	574.20	600.6	571	594.90	566.65	599.58	597.98	597.94	598.34		

Notes:
-- = not measured
*The PVC casing at B-35A was cut down on June 28, 2018 to allow the protective cover to close. Groundwater elevations prior to 6/28/18 are calculated using the old top of casing (TOC) elevation of 621.20 ft amsl. Groundwater elevations after 6/28/18 are calculated using the new TOC elevation (621.09 ft amsl).
** The PVC casing at B-21R was extended in 2018 following well rehabilitation. The well was resurveyed on April 22, 2019. The old top of casing elevation was 621.03 ft. The new TOC elevation is 623.31 ft.
^ One pond staff gauge was installed on April 22, 2019. The base of the gauge (0 reading) is at 615.056 ft amsl. Two additional gauges were installed on March 24, 2020. These gauge bases are at 609' and 612' amsl.
^^SG-12 reestablished in 2022 following barge slip construction work. Previous elevation (applies to measurements before October 2022) was 616.60. New elevation (top of metal pipe) is 622.34'
[#]B-21R was found knocked over during the April 2023 sampling event.

Created by: MDB Date: 4/1/2013
Last revision by: BS Date: 4/6/2023
Checked by: RM Date: 4/11/2023

I:\25223071.00\Deliverables\April 2023 ASD NED\Tables\[Table 3 - Groundwater Elevation Summary.xls]levels

Table 4. Analytical Results - State Monitoring Program
Nelson Dewey Generating Station
Cassville, Wisconsin / SCS Engineers Project #25223071.00

WELL ID	SAMPLE MONTH	BORON, DISSOLVED (UG/L)	SULFATE, DISSOLVED (MG/L)	PH, FIELD (STANDARD UNITS)
B-7R	2016-Apr	110	7.40	6.80
	2016-Oct	147	<20.0	6.55
	2017-Apr	127	<5.00	6.60
	2017-Oct	159	<5.00	6.61
	2018-Apr	115	<5.00 D3	6.57
	2018-Oct	89.8	3.40	6.23
	2019-Apr	95.7	<5.00 D3	6.63
	2019-Oct	140	<5.00 D3	6.62
	2020-Apr	90.8	5.20 J, D3	6.60
	2020-Oct	145	<2.20 D3	6.35
	2021-Apr	121	<2.20 D3	6.54
	2021-Oct	--	--	--
	2022-Apr	93.1	5.0 J, D3	6.43
	2022-Oct	--	--	--
	2023-Apr	120	2.3 J, D3	6.18
B-8R	2016-Apr	2,250	30.0	6.64
	2016-Oct	2,130	47.0	6.38
	2017-Apr	1,970	30.5	6.83
	2017-Oct	2,490	32.5	6.87
	2018-Apr	1,700	28.7	7.02
	2018-Oct	1,500	30.6	6.18
	2019-Apr	1,560	39.8	6.65
	2019-Oct	1,110	23.6	6.85
	2020-Apr	1,340	20.9	6.61
	2020-Oct	1,600	63.9	6.60
	2021-Apr	1,310	25.0	6.54
	2021-Oct	1,730	42.3	6.48
	2022-Apr	1,320	23.8	6.52
	2022-Oct	1,690	41.4	6.45
	2023-Apr	1,290	20.0	6.43
B-11A	2016-Apr	110	3.80 J	7.75
	2016-Oct	111	2.80 J	7.47
	2017-Apr	106	<1.00	7.38
	2017-Oct	97.7	8.30	7.91
	2018-Apr	89.4	12.70	8.04
	2018-Oct	142	5.30	7.43
	2019-Apr	94.0	1.90 J	7.62
	2019-Oct	82.3	<1.00	7.66
	2020-Apr	83.3	1.50 J	7.75
	2020-Oct	94.3	1.0 J	7.74
	2021-Apr	92.9	3.5	7.65
	2021-Oct	97.6	7.3	7.49
	2022-Apr	87.0	9.1	7.53
	2022-Oct	98.4	24.2	7.61
	2023-Apr	119	72.0	7.62

Table 4. Analytical Results - State Monitoring Program
Nelson Dewey Generating Station
Cassville, Wisconsin / SCS Engineers Project #25223071.00

WELL ID	SAMPLE MONTH	BORON, DISSOLVED (UG/L)	SULFATE, DISSOLVED (MG/L)	PH, FIELD (STANDARD UNITS)
B-11B	2016-Apr	1,240	153	8.14
	2016-Oct	1,410	181	7.91
	2017-Apr	1,720	186	7.83
	2017-Oct	1,900	169	7.80
	2018-Apr	2,020	195	8.42
	2018-Oct	3,910	195	7.74
	2019-Apr	6,670	289	7.91
	2019-Oct	4,860	335	7.92
	2020-Apr	5,080	362	7.89
	2020-Oct	3,190	422	7.80
	2021-Apr	4,590	389	8.07
	2021-Oct	2,480	468	7.72
	2022-Apr	2,690	494	7.63
	2022-Oct	3,190	446	7.74
	2023-Apr	4,320	459	7.68
B-11R	2016-Apr	3,290	93.9	6.98
	2016-Oct	4,070	115	6.77
	2017-Apr	3,710	111	7.11
	2017-Oct	3,400	94.0	6.75
	2018-Apr	2,790	78.6	7.14
	2018-Oct	635	15.6	6.55
	2019-Apr	1,310	34.5	6.82
	2019-Oct	1,500	39.2	6.83
	2020-Apr	2,250	39.8	6.80
	2020-Oct	2,690	23.0	6.83
	2021-Apr	2,890	59.9	7.11
	2021-Oct	3,050	61.6	6.86
	2022-Apr	2,330	58.1	7.01
	2022-Oct	3,250	59.9	6.76
	2023-Apr	3,010	62.7	6.81
B-26	2016-Apr	37.0	40.1	7.43
	2016-Oct	48.7	34.4	7.19
	2017-Apr	37.3	32.3	7.54
	2017-Oct	44.5	25.0	7.35
	2018-Apr	46.8	19.2	7.64
	2018-Oct	55.2	24.9	7.20
	2019-Apr	41.8	26.4	7.10
	2019-Oct	50.8	37.0	7.24
	2020-Apr	49.2	29.1	7.27
	2020-Oct	61.4	37.1	7.34
	2021-Apr	67.1	35.5	7.27
	2021-Oct	56.0	43.0	7.18
	2022-Apr	50.3	33.5	7.19
	2022-Oct	51.5	46.1	7.15
	2023-Apr	48.3	34.4	7.05

Table 4. Analytical Results - State Monitoring Program
Nelson Dewey Generating Station
Cassville, Wisconsin / SCS Engineers Project #25223071.00

WELL ID	SAMPLE MONTH	BORON, DISSOLVED (UG/L)	SULFATE, DISSOLVED (MG/L)	PH, FIELD (STANDARD UNITS)
B-26A	2016-Apr	33.1	40.1	7.06
	2016-Oct	30.5	39.9	7.26
	2017-Apr	52.6	42.3	7.96
	2017-Oct	28.4	38.4	7.44
	2018-Apr	27.6	37.0	7.47
	2018-Oct	18.4	33.3	7.38
	2019-Apr	27.6	27.0	7.35
	2019-Oct	47.0	35.6	7.31
	2020-Apr	37.7	39.2 M0	7.38
	2020-Oct	33.5	44.7	7.51
	2021-Apr	42.7	45.5	7.26
	2021-Oct	36.4	49.7	7.45
	2022-Apr	29.8	53.2	7.39
	2022-Oct	26.3	47.1	7.48
	2023-Apr	31.0	47.0	7.15
B-31A	2016-Apr	69.4	22.8	7.63
	2016-Oct	81.0	27.9	7.54
	2017-Apr	80.3	30.8	7.83
	2017-Oct	61.5	26.2	7.60
	2018-Apr	69.3	28.1	8.00
	2018-Oct	103	26.2	7.48
	2019-Apr	86.0	21.6	7.61
	2019-Oct	112	22.5	7.69
	2020-Apr	121	17.7	7.71
	2020-Oct	146	16.8	7.78
	2021-Apr	168	17.1	7.90
	2021-Oct	188	15.0	7.58
	2022-Apr	179	15.3	7.82
	2022-Oct	202	22.8	7.63
	2023-Apr	196	16.1	7.59
B-31R	2016-Apr	759	34.3	6.76
	2016-Oct	956	48.5	6.53
	2017-Apr	910	42.9	6.80
	2017-Oct	618	23.2	6.78
	2018-Apr	520	23.3	6.76
	2018-Oct	1,530	179	6.41
	2019-Apr	892	114	6.62
	2019-Oct	1,000	145	6.72
	2020-Apr	765	97.6 M0	6.79
	2020-Oct	696	50.8	6.89
	2021-Apr	597	44.9	6.91
	2021-Oct	356	25.1	6.83
	2022-Apr	425	57.4	6.77
	2022-Oct	341	30.2	6.83
	2023-Apr	553	50.5	6.62

Table 4. Analytical Results - State Monitoring Program
Nelson Dewey Generating Station
Cassville, Wisconsin / SCS Engineers Project #25223071.00

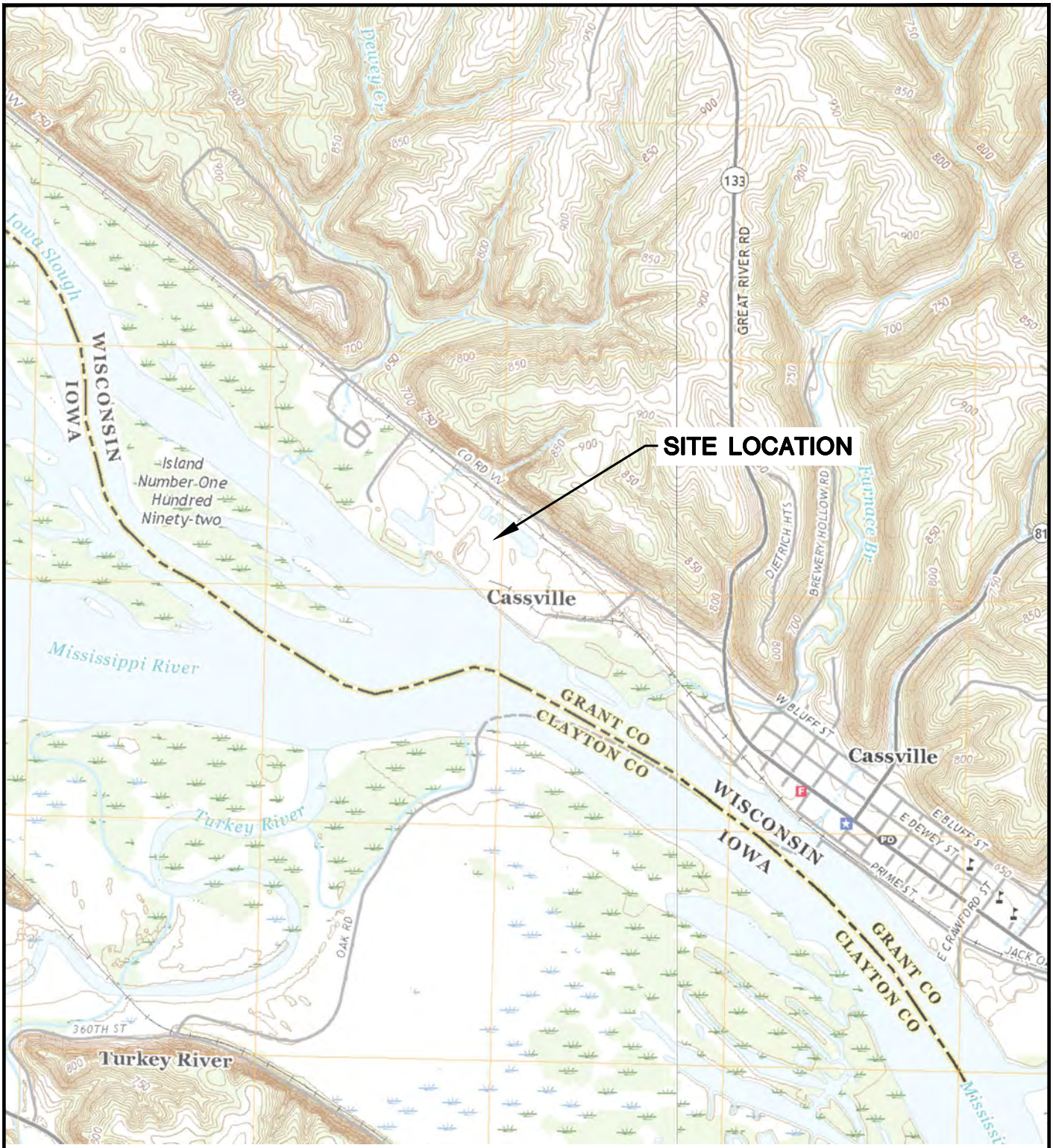
WELL ID	SAMPLE MONTH	BORON, DISSOLVED (UG/L)	SULFATE, DISSOLVED (MG/L)	PH, FIELD (STANDARD UNITS)
B-35	2016-Apr	38.7	8.10	6.89
	2016-Oct	46.4	6.50	6.86
	2017-Apr	54.4	7.70	6.68
	2017-Oct	40.8	3.80	7.65
	2018-Apr	28.9	4.80 M0	7.01
	2018-Oct	40.0	3.60	6.58
	2019-Apr	33.6	4.90	7.26
	2019-Oct	41.0	5.60	7.07
	2020-Apr	27.0	4.20	6.87
	2020-Oct	28.1	5.60	6.85
	2021-Apr	23.8	5.90	6.89
	2021-Oct	--	--	--
	2022-Apr	22.7	7.7	6.95
	2022-Oct	--	--	--
	2023-Apr	20.6	4.5	6.74
B-35A	2016-Apr	21.7	26.2	6.96
	2016-Oct	23.4	27.4	7.17
	2017-Apr	29.9	25.4	7.27
	2017-Oct	51.4	4.00	7.44
	2018-Apr	28.9	23.1	7.45
	2018-Oct	59.8	6.00 J, D3	6.95
	2019-Apr	30.3	16.7	7.30
	2019-Oct	33.7	18.9	7.30
	2020-Apr	32.1	20.2	7.29
	2020-Oct	70.7	17.8	7.39
	2021-Apr	46.8	18.9	7.26
	2021-Oct	52.7	18.7	7.27
	2022-Apr	46.5	16.2	7.17
	2022-Oct	55.6	5.6	7.23
	2023-Apr	47.2	5.4	7.04
B-36	2021-Oct	24.7	2.80	7.34
	2022-Apr	27.2	3.2	7.23
	2022-Oct	28.3	3.1	6.71
	2023-Apr	25.1	3.1	6.88
B-36A	2021-Oct	20.7	17.6	7.43
	2022-Apr	29.5	13.7	7.26
	2022-Oct	33.1	16.7	7.18
	2023-Apr	35.7	8.1	7.28

Abbreviations:
J: Estimated concentration above the adjusted method detection limit and below the adjusted reporting
D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix
M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

Notes:
(1) B-7R and B-35 were dry during October sampling event.
(2) B-37 and B-37A were abandoned 12/6/2022. B-36 and B-36A were installed prior to the October 2021 sampling event.

Created by:	RM	9/19/2023
Last revision by:	RM	9/19/2023
Checked by:	NLB	9/20/2023

Figures



N

CASSVILLE AND TURKEY RIVER QUADRANGLES
WISCONSIN–IOWA
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'

CLIENT	ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	SITE	ALLIANT ENERGY NELSON DEWEY GENERATING STATION CASSVILLE, WISCONSIN

SITE LOCATION MAP

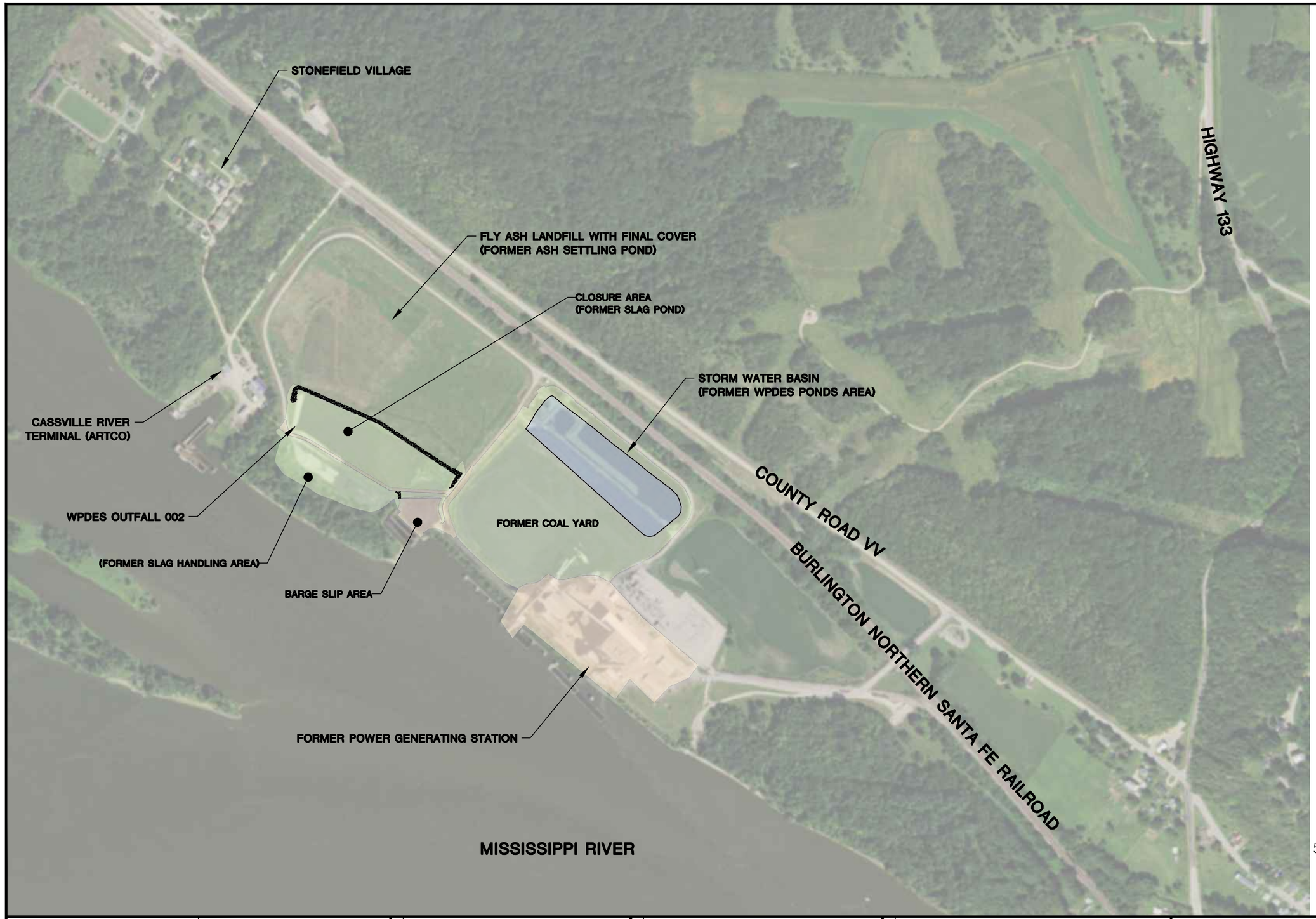
PROJECT NO.	25223071.00	DRAWN BY:	BSS
DRAWN:	11/27/2019	CHECKED BY:	MDB
REVISED:	01/14/2020	APPROVED BY:	TK 10/24/2023

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE
1

I:\25223071.00\Drawings\Site Location Map.dwg, 10/24/2023 11:20:21 AM



N

NOTES:

1. AERIAL PHOTOGRAPH FROM THE NATIONAL AGRICULTURE IMAGERY PROGRAM AND PUBLISHED BY THE USDA FSA AERIAL PHOTOGRAPHY FIELD OFFICE. DATE OF IMAGE IS AUGUST 24, 2015.

500 0 500

SCALE: 1" = 500'

PROJECT NO.	25223071.00	DRAWN BY:	BJM
DRAWN:	12/18/2013	CHECKED BY:	KAK
REVISED:	10/24/2023	APPROVED BY:	TK 10/24/2023

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

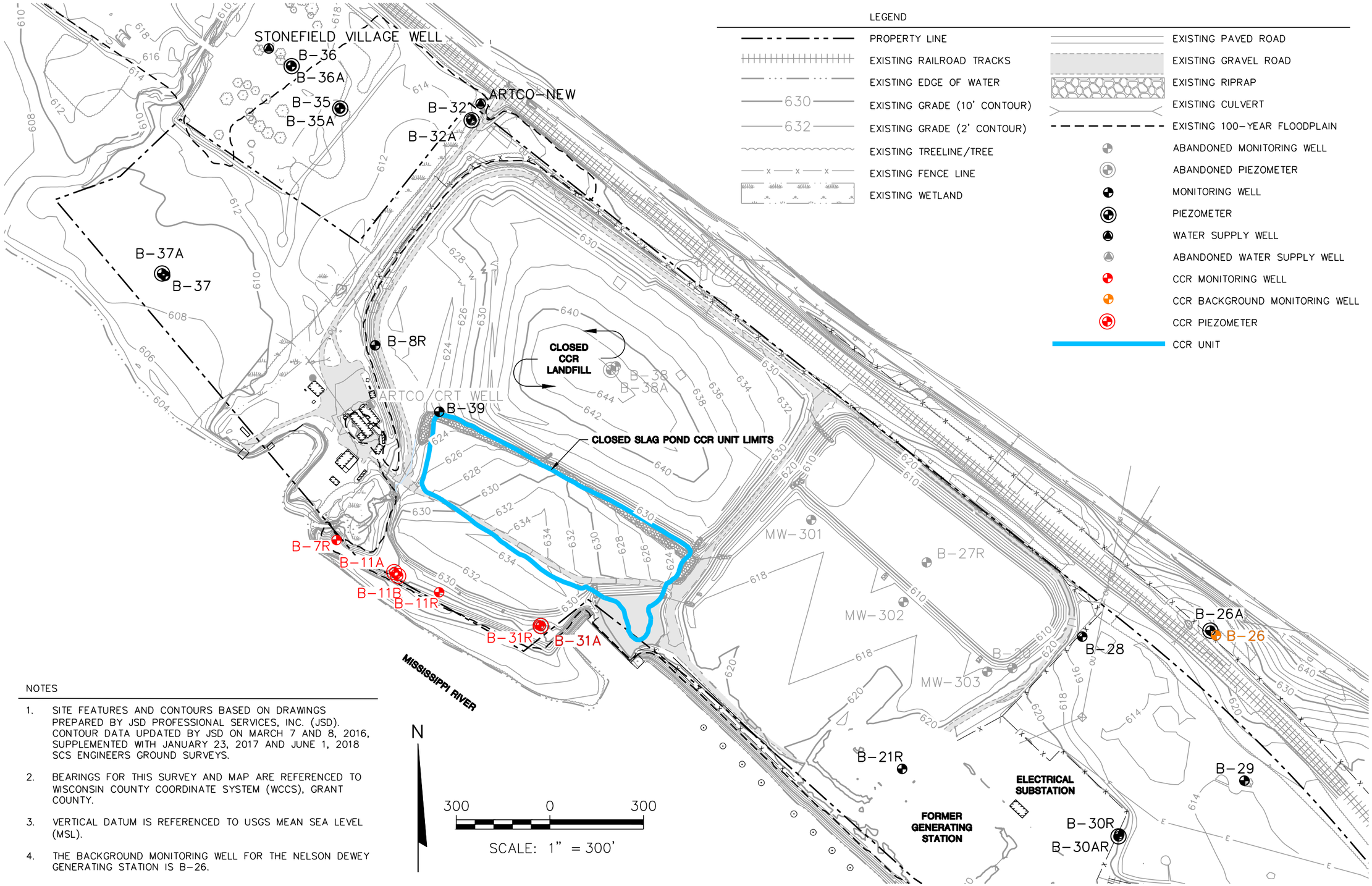
CLIENT: ALLIANT ENERGY
4902 N. BILTMORE LANE, #1000
MADISON, WI 53718

SITE: ALLIANT ENERGY
NELSON DEWEY GENERATING STATION
CASSVILLE, WISCONSIN

AERIAL VIEW

FIGURE 2

I:\25223071.00\Drawings\Site Aerial.dwg, 10/24/2023 11:24:05 AM



LEGEND

- PROPERTY LINE
- EXISTING RAILROAD TRACKS
- EXISTING EDGE OF WATER
- EXISTING GRADE (10' CONTOUR)
- EXISTING GRADE (2' CONTOUR)
- EXISTING TREELINE/TREE
- EXISTING FENCE LINE
- EXISTING WETLAND
- EXISTING PAVED ROAD
- EXISTING GRAVEL ROAD
- EXISTING RIPRAP
- EXISTING CULVERT
- EXISTING 100-YEAR FLOODPLAIN
- ABANDONED MONITORING WELL
- ABANDONED PIEZOMETER
- MONITORING WELL
- PIEZOMETER
- WATER SUPPLY WELL
- ABANDONED WATER SUPPLY WELL
- CCR MONITORING WELL
- CCR BACKGROUND MONITORING WELL
- CCR PIEZOMETER
- CCR UNIT

NOTES

1. SITE FEATURES AND CONTOURS BASED ON DRAWINGS PREPARED BY JSD PROFESSIONAL SERVICES, INC. (JSD). CONTOUR DATA UPDATED BY JSD ON MARCH 7 AND 8, 2016, SUPPLEMENTED WITH JANUARY 23, 2017 AND JUNE 1, 2018 SCS ENGINEERS GROUND SURVEYS.
2. BEARINGS FOR THIS SURVEY AND MAP ARE REFERENCED TO WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), GRANT COUNTY.
3. VERTICAL DATUM IS REFERENCED TO USGS MEAN SEA LEVEL (MSL).
4. THE BACKGROUND MONITORING WELL FOR THE NELSON DEWEY GENERATING STATION IS B-26.

SITE PLAN AND MONITORING WELL LOCATIONS

ALLIANT ENERGY
NELSON DEWEY GENERATING STATION
CASSVILLE, WISCONSIN

FIGURE 3

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

DRAWN BY:	BSS
CHECKED BY:	MDB
APPROVED BY:	TK 10/24/2023

PROJECT NO.	25223071.00
DRAWN:	11/27/2019
REVISED:	01/11/2022

SITE

CLIENT
ALLIANT ENERGY
4902 N. BILTMORE LANE, #1000
MADISON, WI 53718

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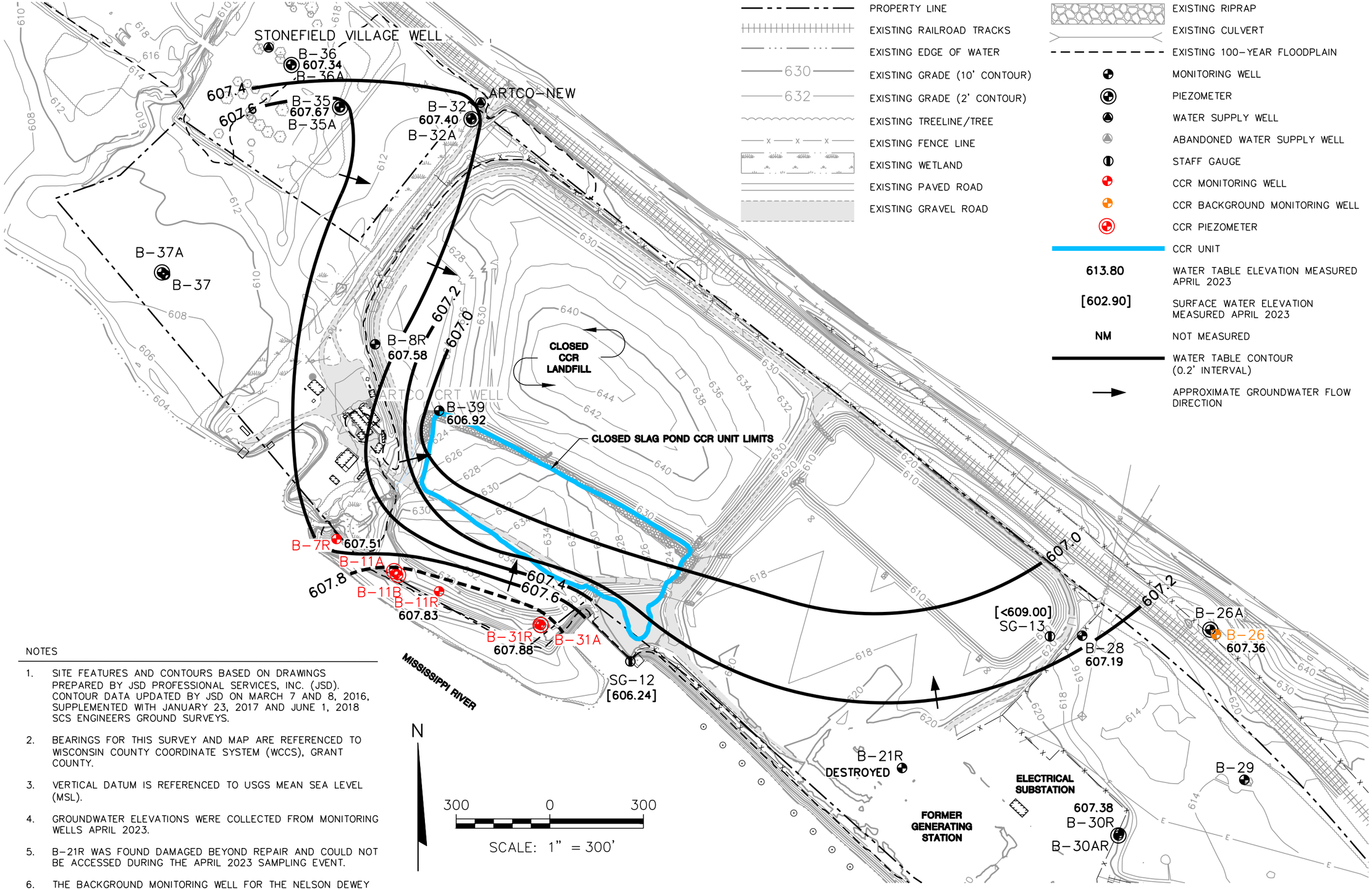


LEGEND

- PROPERTY LINE
- EXISTING RAILROAD TRACKS
- EXISTING EDGE OF WATER
- EXISTING GRADE (10' CONTOUR)
- EXISTING GRADE (2' CONTOUR)
- EXISTING TREELINE/TREE
- EXISTING FENCE LINE
- EXISTING WETLAND
- EXISTING PAVED ROAD
- EXISTING GRAVEL ROAD
- EXISTING RIPRAP
- EXISTING CULVERT
- EXISTING 100-YEAR FLOODPLAIN
- MONITORING WELL
- PIEZOMETER
- WATER SUPPLY WELL
- ABANDONED WATER SUPPLY WELL
- STAFF GAUGE
- CCR MONITORING WELL
- CCR BACKGROUND MONITORING WELL
- CCR PIEZOMETER
- CCR UNIT
- 613.80 — WATER TABLE ELEVATION MEASURED APRIL 2023
- [602.90] — SURFACE WATER ELEVATION MEASURED APRIL 2023
- NM — NOT MEASURED
- WATER TABLE CONTOUR (0.2' INTERVAL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES

1. SITE FEATURES AND CONTOURS BASED ON DRAWINGS PREPARED BY JSD PROFESSIONAL SERVICES, INC. (JSD). CONTOUR DATA UPDATED BY JSD ON MARCH 7 AND 8, 2016, SUPPLEMENTED WITH JANUARY 23, 2017 AND JUNE 1, 2018 SCS ENGINEERS GROUND SURVEYS.
2. BEARINGS FOR THIS SURVEY AND MAP ARE REFERENCED TO WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), GRANT COUNTY.
3. VERTICAL DATUM IS REFERENCED TO USGS MEAN SEA LEVEL (MSL).
4. GROUNDWATER ELEVATIONS WERE COLLECTED FROM MONITORING WELLS APRIL 2023.
5. B-21R WAS FOUND DAMAGED BEYOND REPAIR AND COULD NOT BE ACCESSED DURING THE APRIL 2023 SAMPLING EVENT.
6. THE BACKGROUND MONITORING WELL FOR THE NELSON DEWEY GENERATING STATION IS B-26.

WATER TABLE FLOW MAP
APRIL 2023

SITE

ALLIANT ENERGY
NELSON DEWEY GENERATING STATION
CASSVILLE, WISCONSIN

CLIENT

ALLIANT ENERGY
4902 N. BILTMORE LANE, #1000
MADISON, WI 53718

FIGURE 4

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

PROJECT NO.	25223071.00
DRAWN:	09/07/2023
REVISED:	10/24/2023
DRAWN BY:	KP
CHECKED BY:	NLB
APPROVED BY:	TK 10/24/2023

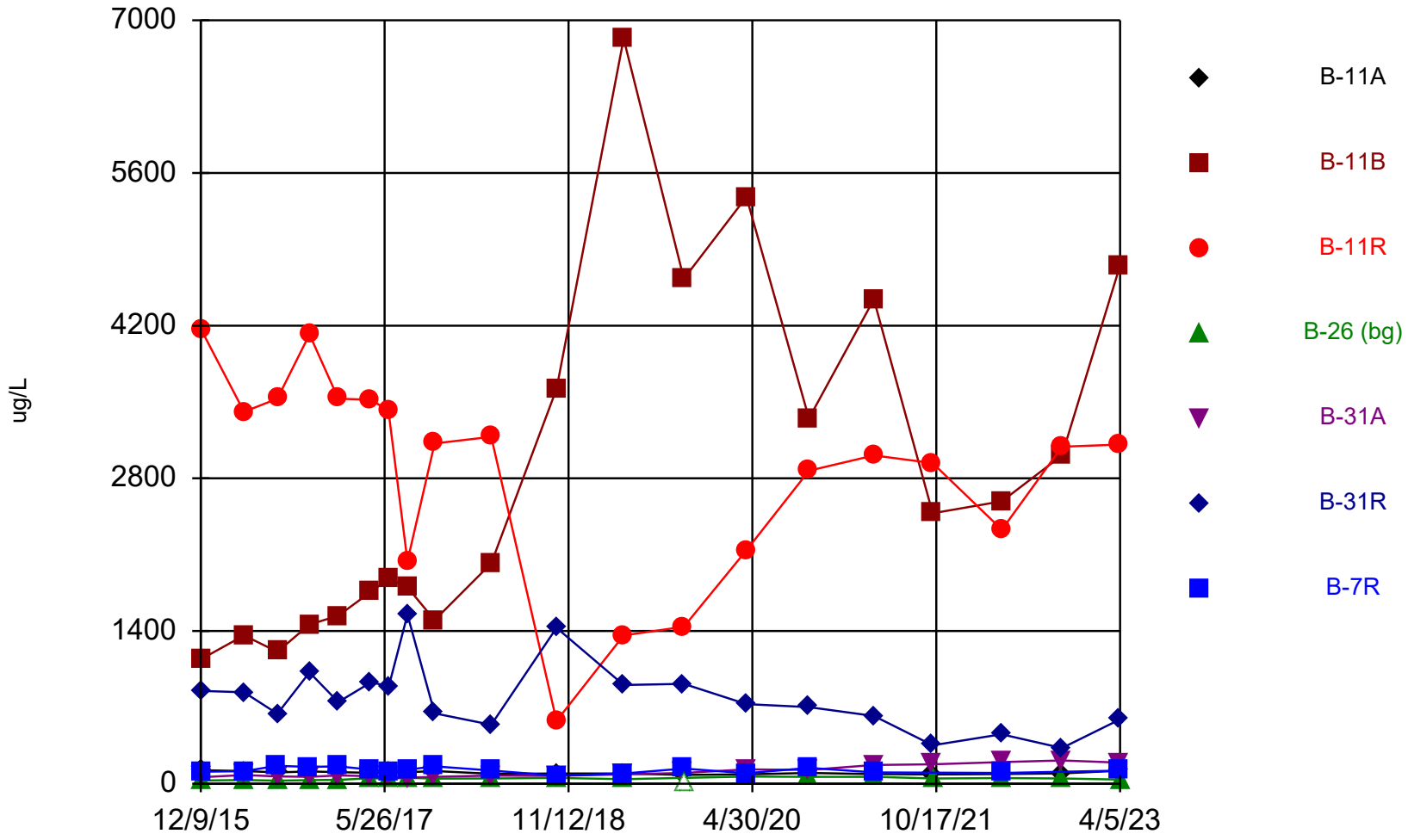
I:\25223071.00\Drawings\WTBL.dwg, 10/24/2023 11:42:05 AM

Appendix A

CCR Well Trend Plots

Hollow symbols indicate censored values.

Boron



Time Series Analysis Run 9/19/2023 2:40 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

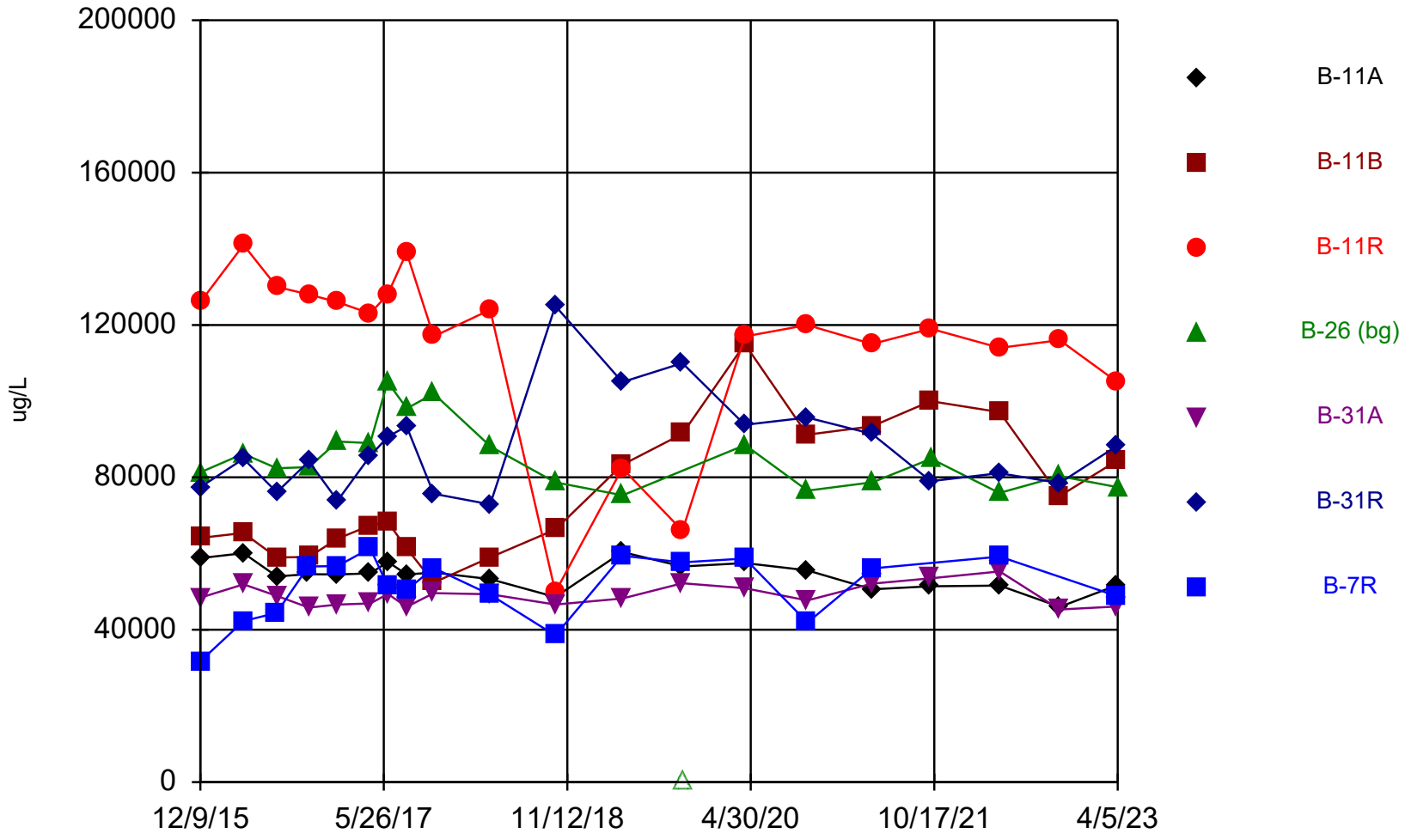
Constituent: Boron (ug/L) Analysis Run 9/19/2023 2:47 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	124	1140	4170	29.6	59	851	110
4/12/2016				33.7			
4/13/2016	116	1360	3410		79.2	838	115
7/18/2016							164
7/19/2016	104	1210	3530	28.6	67.2	641	
10/19/2016	112						154
10/20/2016		1460	4120	33	63.7	1020	
1/12/2017	106	1540	3530	35.2	76.4	749	159
4/17/2017	100	1760	3520	50.1	69.9	929	129
6/7/2017			3420	45.8			110
6/8/2017	102	1880			58.5	895	
8/1/2017	105	1800	2040		56.3	1550	129
8/2/2017				54.6			
10/19/2017	116	1500	3120	47.4	63.9	645	159
4/2/2018	91	2020	3180		74.8	540	121
4/3/2018				48			
10/8/2018				53.4			
10/9/2018	94.2	3620	576		71.8	1430	73
4/22/2019	93.9	6830	1360		86.2	906	93.5
4/23/2019				41.6			
10/14/2019	80.7	4630	1440		98.5	915	139
10/15/2019				<3 (UX)			
4/13/2020	86.3	5380	2140		132	730	96
4/14/2020				66.1			
10/12/2020	99.3	3350	2870		127	702	
10/13/2020				63.6			145
4/19/2021	88.1	4440	3010		172	621	
4/20/2021							104
4/21/2021				63.6			
10/7/2021	85.4	2480	2940		178	353	
10/8/2021				48.4			
4/25/2022				52.5		454	
4/26/2022	88.6	2590	2330		198		98.1
10/18/2022	95.2	3010	3090	48.8	213	327	
4/3/2023							120
4/4/2023	119	4740	3110		193	589	
4/5/2023				38.6			

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Calcium



Time Series Analysis Run 9/19/2023 2:40 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

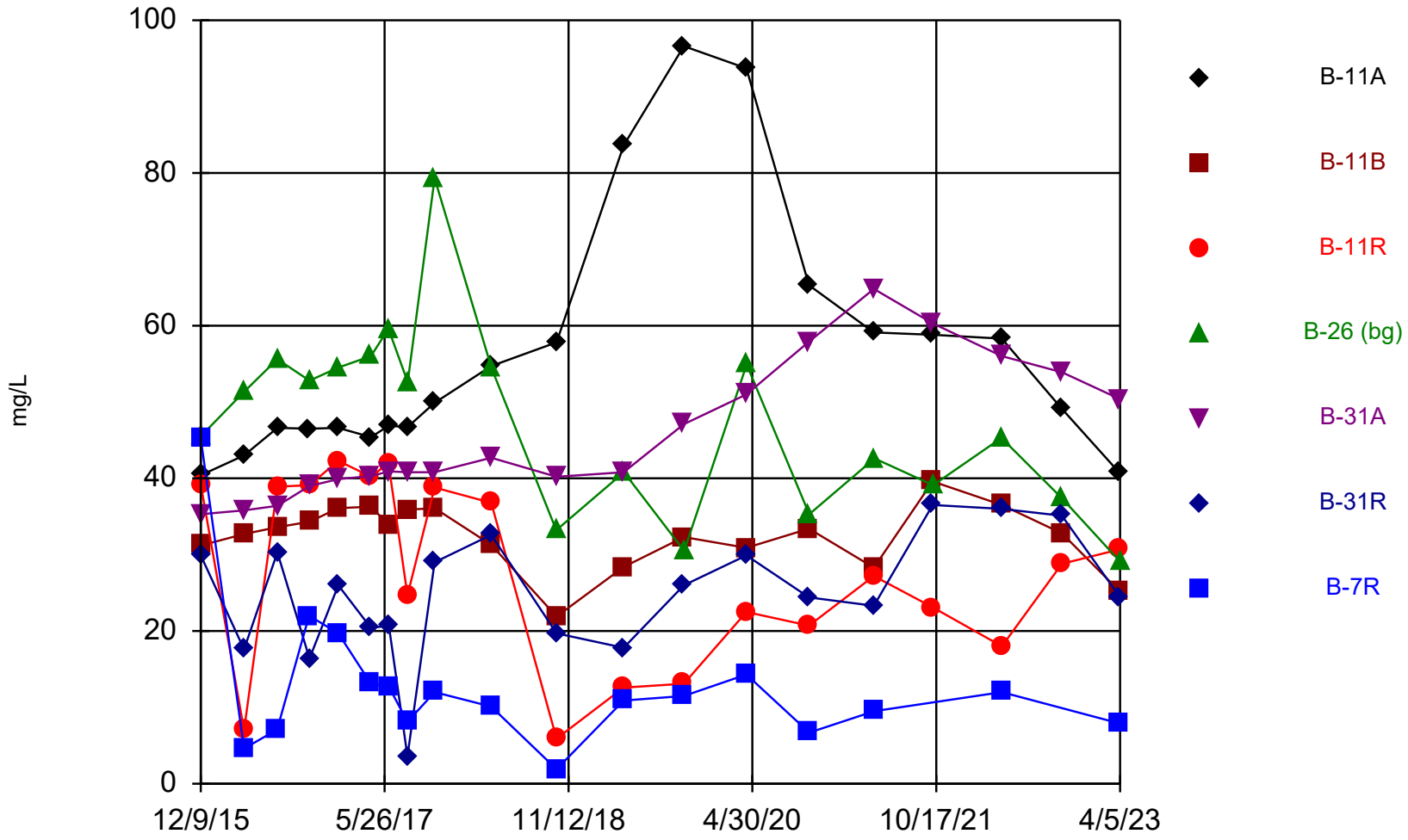
Time Series

Constituent: Calcium (ug/L) Analysis Run 9/19/2023 2:47 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	58800	64100	126000	81300	48400	77400	31700
4/12/2016				86200			
4/13/2016	60100	65400	141000		51900	84900	42300
7/18/2016							44400
7/19/2016	54000	59000	130000	82400	48900	76100	
10/19/2016	54600						56600
10/20/2016		59100	128000	82700	45800	84200	
1/12/2017	54500	63900	126000	89400	46600	73900	56700
4/17/2017	54800	67400	123000	89000	46900	85600	61400
6/7/2017			128000	105000			51600
6/8/2017	57800	68200			49400	90700	
8/1/2017	54500	61400	139000		46000	93400	50400
8/2/2017				98100			
10/19/2017	55000	52400	117000	102000	49600	75700	56200
4/2/2018	53300	59000	124000		49300	72900	49200
4/3/2018				88100			
10/8/2018				78700			
10/9/2018	48600	66300	49900		46600	125000	38500
4/22/2019	60400	83300	82400		48200	105000	59400
4/23/2019				75300			
10/14/2019	56600	91400	66000		52200	110000	57700
10/15/2019				<76.2 (UX)			
4/13/2020	57500	115000	117000		50900	93800	58700
4/14/2020				88500			
10/12/2020	55600	91200	120000		47700	95700	
10/13/2020				76500			41900
4/19/2021	50600	93400	115000		52100	91400	
4/20/2021							56100
4/21/2021				78700			
10/7/2021	51400	100000	119000		53500	79000	
10/8/2021				84900			
4/25/2022				75900		81100	
4/26/2022	51600	97100	114000		55300		59200
10/18/2022	46000	75100	116000	80300	45300	78500	
4/3/2023							48800
4/4/2023	51700	84400	105000		46100	88300	
4/5/2023				77400			

Chloride



Time Series Analysis Run 9/19/2023 2:40 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

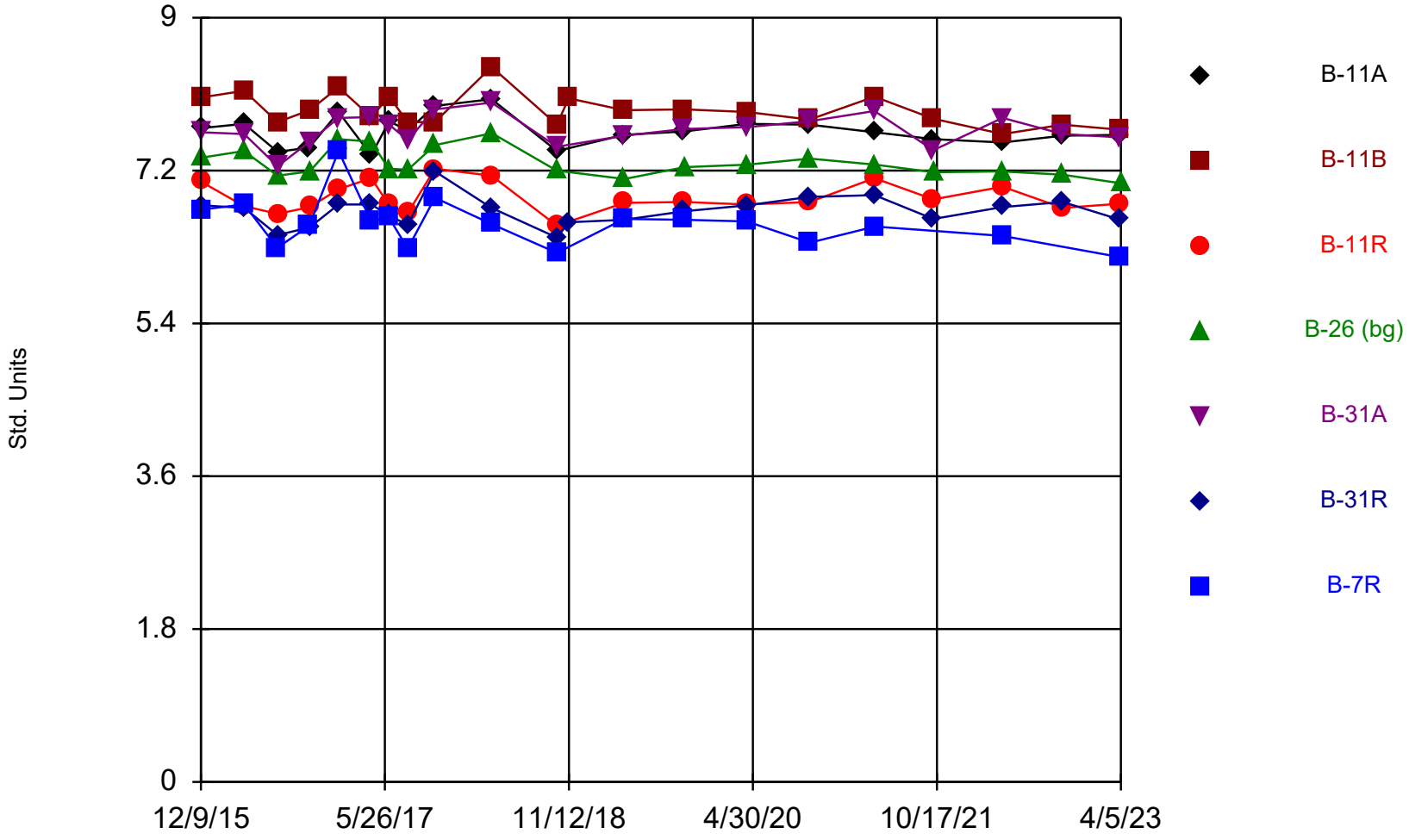
Time Series

Constituent: Chloride (mg/L) Analysis Run 9/19/2023 2:47 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	40.4	31.2	39.2	45.5	35.3	29.9	45.2
4/12/2016				51.3			
4/13/2016	43	32.7	7		35.8	17.6	4.6
7/18/2016							7.1
7/19/2016	46.6	33.6	38.9	55.6	36.4	30.3	
10/19/2016	46.5						22
10/20/2016		34.3	39.1	52.8	39	16.4	
1/12/2017	46.6	36.1	42.3	54.5	39.9	26	19.7
4/17/2017	45.4	36.3	40.2	56	40.3	20.4	13.1
6/7/2017			42	59.6			12.8
6/8/2017	46.9	33.9			40.9	20.7	
8/1/2017	46.7	35.9	24.7		40.8	3.6	8.1
8/2/2017				52.6			
10/19/2017	49.9	36.1	38.8	79.3	40.8	29	12
4/2/2018	54.7	31.3	36.8		42.7	32.6	10.1
4/3/2018				54.4			
10/8/2018				33.2			
10/9/2018	57.8	21.9	5.9		40.2	19.7	1.9 (J)
4/22/2019	83.6	28.4	12.6		40.8	17.8	10.9
4/23/2019				40.8			
10/14/2019	96.6	32.3	13.1		47.1	26	11.5
10/15/2019				30.5			
4/13/2020	93.7	30.9	22.5		51	29.9	14.3
4/14/2020				54.9			
10/12/2020	65.3	33.4	20.7		57.9	24.4	
10/13/2020				35.3			6.7 (J)
4/19/2021	59.1	28.3	27.2		64.8	23.3	
4/20/2021							9.5 (J)
4/21/2021				42.6			
10/7/2021	58.8	39.6	23.1		60.3	36.5	
10/8/2021				39.1			
4/25/2022				45.3		36	
4/26/2022	58.3	36.5	18		56		12
10/18/2022	49.1	32.8	28.8	37.4	53.9	35.1	
4/3/2023							7.9 (J)
4/4/2023	40.7	25.2	30.7		50.4	24.5	
4/5/2023				29.1			

Field pH



Time Series Analysis Run 9/19/2023 2:40 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

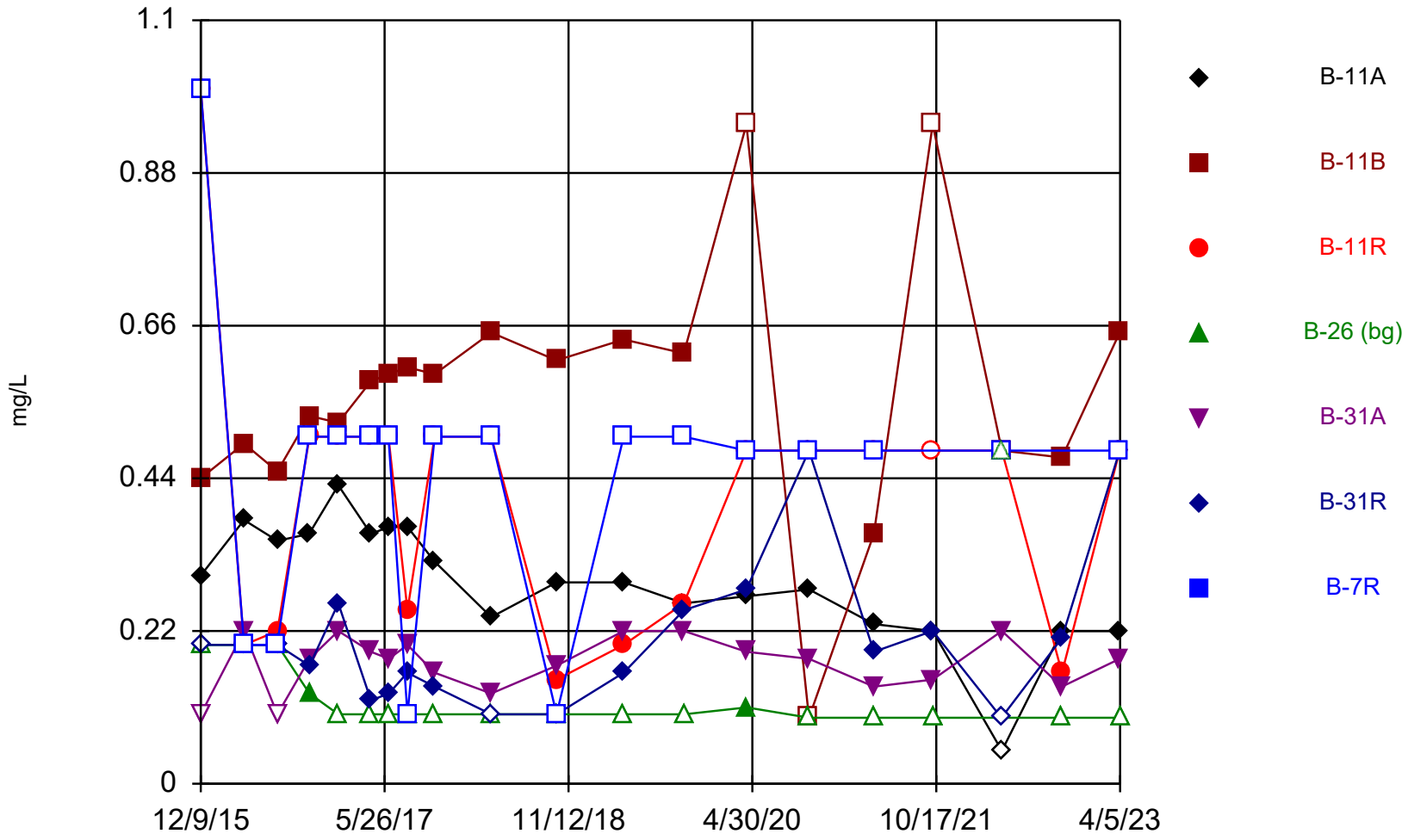
Constituent: Field pH (Std. Units) Analysis Run 9/19/2023 2:47 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	7.7	8.06	7.07	7.35	7.65	6.79	6.74
4/12/2016				7.43			
4/13/2016	7.75	8.14	6.78		7.63	6.76	6.8
7/18/2016							6.29
7/19/2016	7.42	7.77	6.69	7.14	7.25	6.44	
10/19/2016	7.47						6.55
10/20/2016		7.91	6.77	7.19	7.54	6.53	
1/12/2017	7.89	8.18	6.98	7.57	7.82	6.8	7.43
4/17/2017	7.38	7.83	7.11	7.54	7.83	6.8	6.6
6/7/2017			6.8	7.22			6.65
6/8/2017	7.78	8.07			7.74	6.67	
8/1/2017	7.67	7.77	6.7		7.56	6.56	6.28
8/2/2017				7.21			
10/19/2017	7.96	7.77	7.22	7.5	7.92	7.19	6.88
4/2/2018	8.04	8.42	7.14		8	6.76	6.57
4/3/2018				7.64			
10/8/2018				7.2			
10/9/2018	7.43	7.74	6.55		7.48	6.41	6.23
11/12/2018		8.05				6.59	
4/22/2019	7.62	7.91	6.82		7.61	6.62	6.63
4/23/2019				7.1			
10/14/2019	7.66	7.92	6.83		7.69	6.72	6.62
10/15/2019				7.24			
4/13/2020	7.75	7.89	6.8		7.71	6.79	6.6
4/14/2020				7.27			
10/12/2020	7.74	7.8	6.83		7.78	6.89	
10/13/2020				7.34			6.35
4/19/2021	7.65	8.07	7.11		7.9	6.91	
4/20/2021							6.54
4/21/2021				7.27			
10/7/2021	7.57	7.81	6.86		7.44	6.63	
10/8/2021				7.18			
4/25/2022				7.19		6.77	
4/26/2022	7.53	7.63	7.01		7.82		6.43
10/18/2022	7.61	7.74	6.76	7.15	7.63	6.83	
4/3/2023							6.18
4/4/2023	7.62	7.68	6.81		7.59	6.62	
4/5/2023				7.05			

Hollow symbols indicate censored values.

Fluoride



Time Series Analysis Run 9/19/2023 2:40 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

Constituent: Fluoride (mg/L) Analysis Run 9/19/2023 2:47 PM

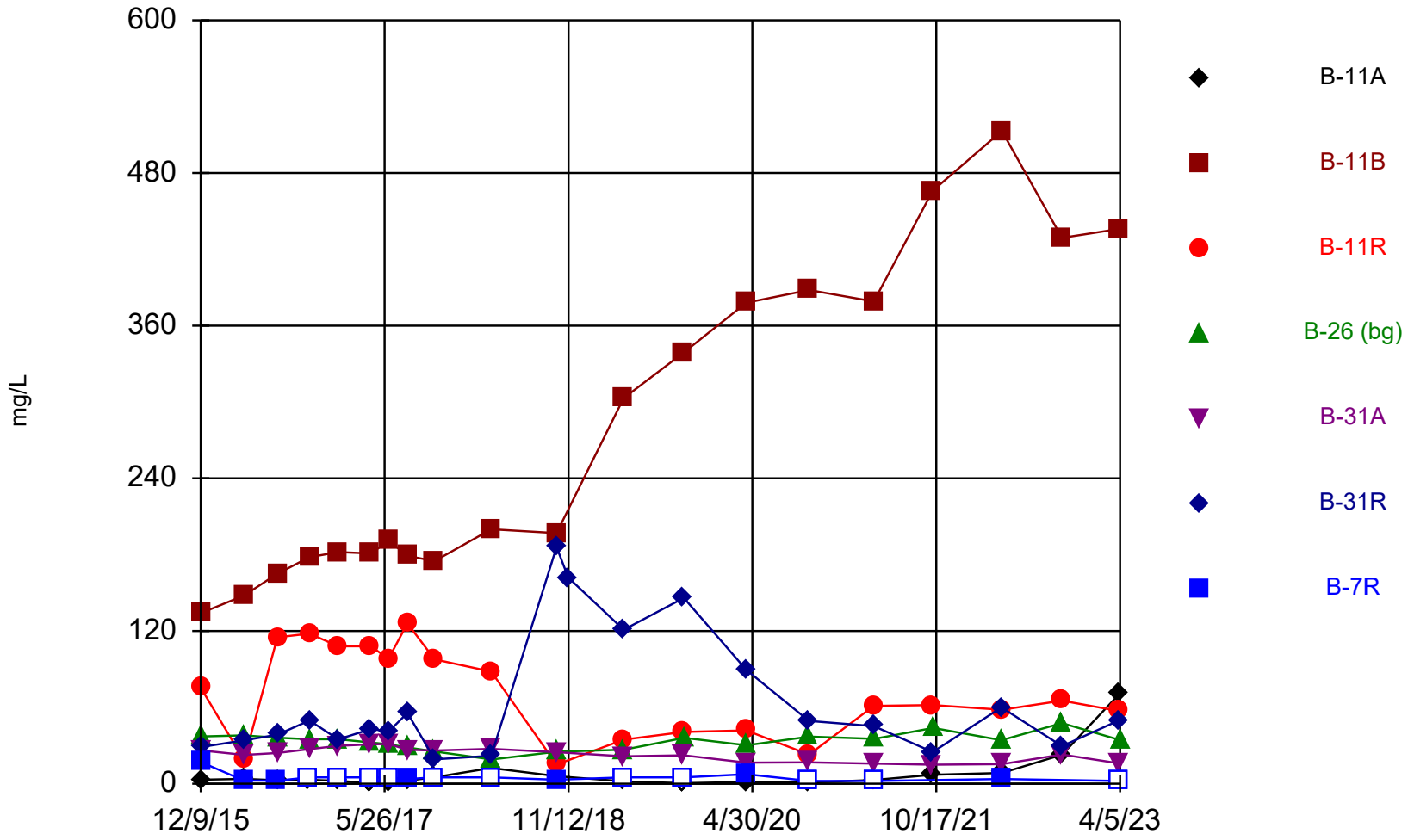
Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	0.3 (J)	0.44	<1 (U)	<0.2 (U)	<0.2 (U)	<0.2 (U)	<1 (U)
4/12/2016				<0.2 (U)			
4/13/2016	0.38 (J)	0.49	<0.2 (U)		0.22 (J)	<0.2 (U)	<0.2 (U)
7/18/2016							<0.2 (U)
7/19/2016	0.35 (J)	0.45	0.22 (J)	<0.2 (U)	<0.2 (U)	<0.2 (U)	
10/19/2016	0.36						<0.5 (U)
10/20/2016		0.53	<0.5 (U)	0.13 (J)	0.18 (J)	0.17 (J)	
1/12/2017	0.43	0.52	<0.5 (U)	<0.1 (U)	0.22 (J)	0.26 (J)	<0.5 (U)
4/17/2017	0.36	0.58	<0.5 (U)	<0.1 (U)	0.19 (J)	0.12 (J)	<0.5 (U)
6/7/2017			<0.5 (U)	<0.1 (U)			<0.5 (U)
6/8/2017	0.37	0.59			0.18 (J)	0.13 (J)	
8/1/2017	0.37	0.6	0.25 (J)		0.2 (J)	0.16 (J)	<0.1 (U)
8/2/2017				<0.1 (U)			
10/19/2017	0.32	0.59	<0.5 (U)	<0.1 (U)	0.16 (J)	0.14 (J)	<0.5 (U)
4/2/2018	0.24 (J)	0.65	<0.5 (U)		0.13 (J)	<0.1 (U)	<0.5 (U)
4/3/2018				<0.1 (U)			
10/8/2018				<0.1 (U)			
10/9/2018	0.29 (J)	0.61	0.15 (J)		0.17 (J)	<0.1 (U)	<0.1 (U)
4/22/2019	0.29 (J)	0.64	0.2 (J)		0.22 (J)	0.16 (J)	<0.5 (U)
4/23/2019				<0.1 (U)			
10/14/2019	0.26 (J)	0.62	0.26 (J)		0.22 (J)	0.25 (J)	<0.5 (U)
10/15/2019				<0.1 (U)			
4/13/2020	0.27 (J)	<0.95 (U)	<0.48 (U)		0.19 (J)	0.28 (J)	<0.48 (U)
4/14/2020				0.11 (J)			
10/12/2020	0.28 (J)	<0.095 (U)	<0.48 (U)		0.18 (J)	<0.48 (U)	
10/13/2020				<0.095 (U)			<0.48 (U)
4/19/2021	0.23 (J)	0.36	<0.48		0.14 (J)	0.19 (J)	
4/20/2021							<0.48
4/21/2021				<0.095 (U)			
10/7/2021	0.22 (J)	<0.95 (U)	<0.48 (U)		0.15 (J)	0.22 (J)	
10/8/2021				<0.095 (U)			
4/25/2022				<0.48 (UX)		<0.095 (U)	
4/26/2022	<0.095 (U)	<0.48 (U)	<0.48 (U)		0.22 (J)		<0.48 (U)
10/18/2022	0.22 (J)	0.47	0.16 (J)	<0.095 (U)	0.14 (J)	0.21 (J)	
4/3/2023							<0.48 (U)
4/4/2023	0.22 (J)	0.65 (J)	<0.48 (U)		0.18 (J)	<0.48 (U)	
4/5/2023				<0.095 (U)			

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

Hollow symbols indicate censored values.

Sulfate



Time Series Analysis Run 9/19/2023 2:40 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

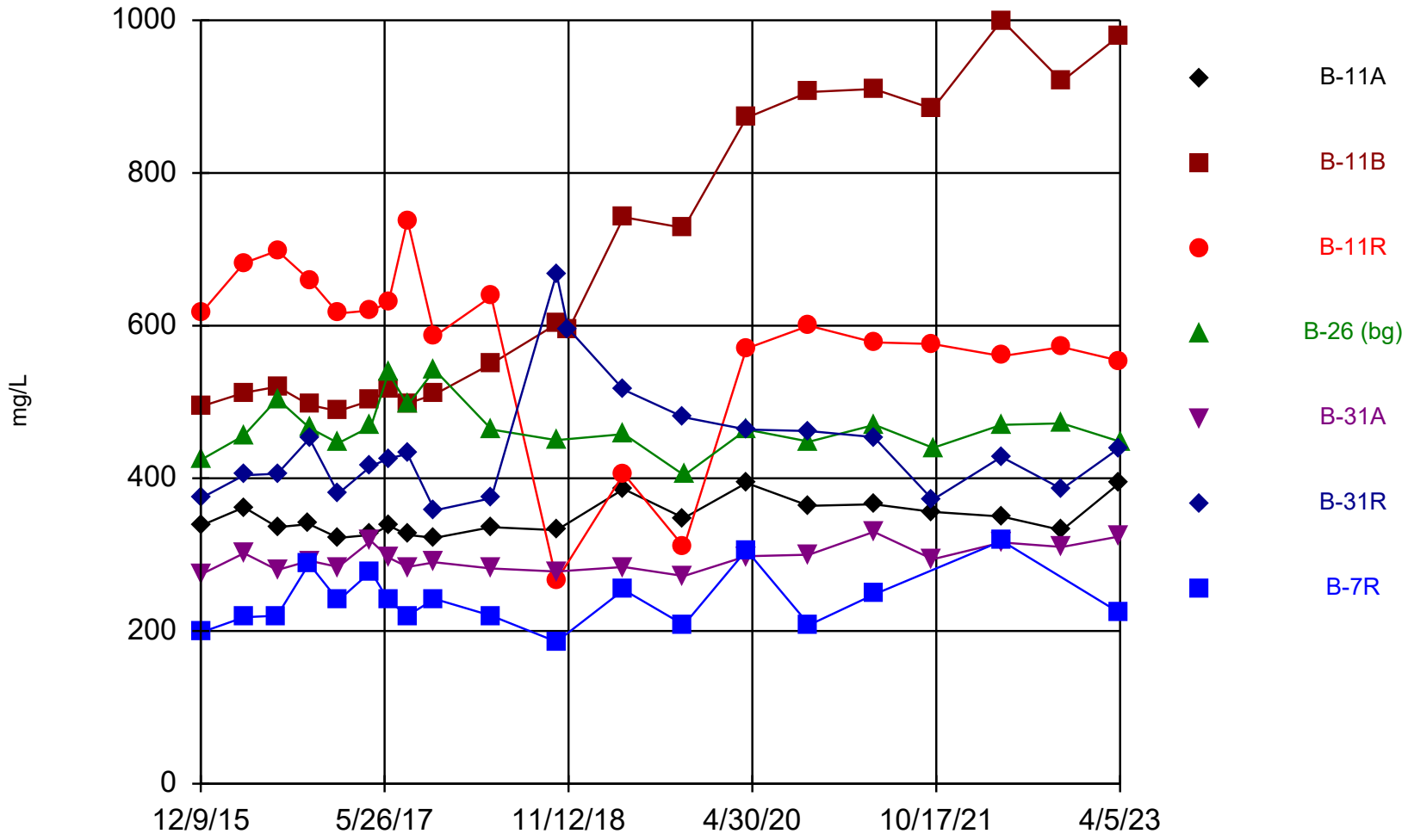
Constituent: Sulfate (mg/L) Analysis Run 9/19/2023 2:47 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	3.2 (J)	134	75.4	37.1	26.2	28.8	17 (J)
4/12/2016				38			
4/13/2016	3.8 (J)	148	18.4		22.6	34.1	2.5 (J)
7/18/2016							2.4 (J)
7/19/2016	2.7 (J)	165	115	36.2	24.2	38.5	
10/19/2016	3 (J)						<5 (U)
10/20/2016		178	118	35	27.2	49.7	
1/12/2017	2.3 (J)	182	108	35	29.8	34.9	<5 (U)
4/17/2017	<1 (U)	181	108	32.4	31	43	<5 (U)
6/7/2017			98.2	31			<5 (U)
6/8/2017	1.4 (J)	191			31.2	41.1	
8/1/2017	2.4 (J)	179	126		26.6	55.6	3.7
8/2/2017				28.5			
10/19/2017	5.1	175	97.7	25.3	26.1	19.2	<5 (U)
4/2/2018	12.3	200	88.1		27.4	22	<5 (U)
4/3/2018				19.1			
10/8/2018				25.1			
10/9/2018	6	197	15.1		24.8	186	3.2
11/12/2018						162	
4/22/2019	1.9 (J)	303	34.6		21.6	121	<5 (U)
4/23/2019				26.7			
10/14/2019	<1 (U)	339	40.7		22.3	146	<5 (U)
10/15/2019				36			
4/13/2020	1.4 (J)	378	41.9		16.6	89.4	7.5 (J)
4/14/2020				30.2			
10/12/2020	1 (J)	388	22.8		16.8	49.4	
10/13/2020				37			<2.2 (U)
4/19/2021	2.9	379	61.2		15.8	45.3	
4/20/2021							<2.2
4/21/2021				35.3			
10/7/2021	7	466	61.8		14.9	24.9	
10/8/2021				43.8			
4/25/2022				34.2		60	
4/26/2022	8.5	513	58.1		15.4		3.7 (J)
10/18/2022	22.7	429	65.3	47.6	23	29.6	
4/3/2023							<2.2 (U)
4/4/2023	70.8	436	57		15.9	50	
4/5/2023				34.3			

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

Total Dissolved Solids



Time Series Analysis Run 9/19/2023 2:40 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

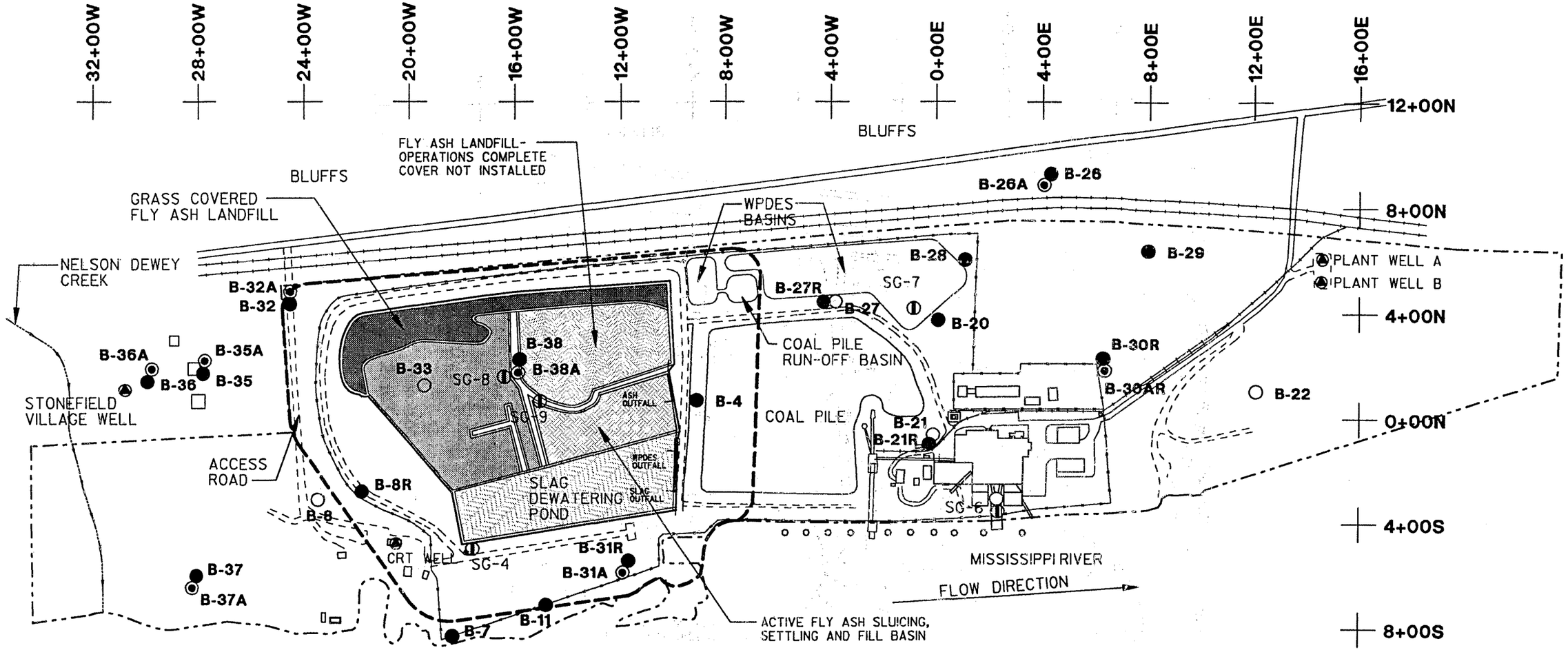
Constituent: Total Dissolved Solids (mg/L) Analysis Run 9/19/2023 2:47 PM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	338	494	616	424	274	374	198
4/12/2016				456			
4/13/2016	362	512	682		302	404	218
7/18/2016							220
7/19/2016	336	520	698	504	280	406	
10/19/2016	340						288
10/20/2016		496	660	466	292	452	
1/12/2017	322	488	616	446	284	380	240
4/17/2017	326	502	620	468	318	416	278
6/7/2017			630	538			240
6/8/2017	338	516			296	426	
8/1/2017	326	498	738		284	432	220
8/2/2017				496			
10/19/2017	322	510	586	542	290	358	242
4/2/2018	336	550	638		282	374	220
4/3/2018				464			
10/8/2018				450			
10/9/2018	332	602	266		278	668	186
11/12/2018		594				596	
4/22/2019	386	742	406		284	516	254
4/23/2019				458			
10/14/2019	348	728	310		272	480	208
10/15/2019				404			
4/13/2020	394	872	570		298	464	306
4/14/2020				464			
10/12/2020	364	906	600		300	462	
10/13/2020				448			208
4/19/2021	366	910	578		330	454	
4/20/2021							248
4/21/2021				470			
10/7/2021	356	884	576		294	372	
10/8/2021				440			
4/25/2022				470		428	
4/26/2022	350	1000	560		316		318
10/18/2022	332	920	572	472	310	386	
4/3/2023							224
4/4/2023	394	980	554		324	440	
4/5/2023				448			

Appendix B

1994 RMT Environmental Contamination Assessment Information



LEGEND

● B-28	WATER TABLE OBSERVATION WELL
◉ B-28A	PIEZOMETER
○ B-33	ABANDONED WELL
▲ CRT WELL	WATER SUPPLY WELL
◐ SG-4	STAFF GAUGE
———	APPROXIMATE LIMITS OF LICENSED LANDFILL
——+——+——	RAILROAD TRACK
====	ROAD
— - — - —	PROPERTY LINE
— — — —	DESIGN MANAGEMENT ZONE
+ 8+00S	LOCAL GRID
□	BUILDINGS
o	PILINGS

NOTES

1. BASE MAP WELLHEAD LOCATIONS SURVEYED BY SCHMITT ENGINEERING IN OCTOBER 1993.
2. OTHER SITE INFORMATION PROVIDED BY WP&L.

TRUE

0 400 800

SCALE: 1"=400'

WISCONSIN POWER & LIGHT
NELSON DEWEY GENERATING STATION
EXISTING CONDITIONS
OCTOBER 1993

RMT, INC.

Dwn.By:	CDH
Approved By:	ELM
Date:	OCTOBER 1994
Proj.#:	2767.03
File #:	2767030LDGN

Plot File = P:\MSPC\2767030\DGN\2767030LDGN
Plot Date = Fri Oct 21 08:28:28 1994
Pen Table =DEFAULT.TBL

OCT 31 1994

FIGURE 4

TABLE 5

SUMMARY OF LEACHING TEST RESULTS

	Fly Ash		Slag
Year	1983	1990 to 1992	1987 to 1992
Coal Type	Eastern (and Western)	Western (and Eastern)	Western (and Eastern) [1]
Water:Solid Ratio	2:1	4:1	4:1
Extraction Time	24 hours	48 hours	48 hours
Number of Samples	1	3	6
Arsenic (mg/L)	< 0.001	0.05 to 2.02	< 0.002 to 0.081
Selenium (mg/L)	NA	0.42 to 160	< 0.002 to 0.045
Boron (mg/L)	420	4.63 to 37.34	< 0.010 to 1.05
Iron (mg/L)	NA	NA	< 0.02 to 0.98
Sulfate (mg/L)	13,070	2,000 to 16,700	2.0 to < 5.0
pH (SU)	6.6	10.3 to 12.5	5.6 to 9.9

NOTES:

1. 1983 fly ash leaching data from RMT (1984); remaining leaching data provided by WP&L.
2. NA = Not Analyzed.

PROJECT NUMBER: 1831.28
BEGINNING DATE: 01-JUN-93
ENDING DATE: 07-SEP-93

TABLE 6
SLAG AND ASH BASIN CHEMISTRY

PARAMETER	UNITS	FLY ASH BASIN 07-SEP-93 3302-011		SLAG BASIN 07-SEP-93 3302-010	
COLOR, FIELD		CLEAR		CLEAR	
CONDUCTANCE, SPECIFIC	UMHOS/CM	5190		400	
ODOR, FIELD		NONE		NONE	
PH, FIELD	SU	8.1		7.4	
TEMPERATURE	DEG C	17		18	
TURBIDITY, FIELD		SLIGHT		SLIGHT	
ALKALINITY AS CACO3	MG/L	230		160	
HARDNESS AS CACO3	MG/L	930		200	
SOLIDS, TOTAL DISSOLVED	MG/L	410		300	
SULFATE	MG/L	3300		50	
ARSENIC, TOTAL	UG/L	60		8.0	
BARIUM, TOTAL	UG/L	270		150	
BORON, TOTAL	UG/L	2300		210	
CADMIUM, TOTAL	UG/L	5.4		< 0.30	
CHROMIUM, TOTAL	UG/L	11		< 10	
IRON, TOTAL	UG/L	1600		2000	
LEAD, TOTAL	UG/L	< 3.0		< 3.0	
MERCURY, TOTAL	UG/L	< 0.20		< 0.20	
SELENIUM, TOTAL	UG/L	36	I	2.1	L
SILVER, TOTAL	UG/L	< 1.0		< 1.0	

wpvalid:SWI.BJC

18-OCT-94

PROJECT NUMBER: 1831.28
BEGINNING DATE: 01-JUN-93
ENDING DATE: 29-OCT-93

TABLE 8
GROUNDWATER CHEMISTRY

PARAMETER	UNITS	B-04 01-JUN-93 1670-015	B-04 07-SEP-93 3293-010	B-07 ND 01-JUN-93 1670-020	B-07 ND 07-SEP-93 3302-004	B-08 01-JUN-93 1670-001	B-08R 07-SEP-93 3293-009
COLOR, FIELD		CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	1160	1240	460	550	670	1160
DEPTH TO WATER	FEET	9.90	12.75	12.83	16.12	5.68	20.13
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	7.3	7.5	7.0	6.9	7.1	6.8
TEMPERATURE	DEG C	15	10	14	12	15	7
TURBIDITY, FIELD		NONE	SLIGHT	NONE	SLIGHT	NONE	MODERATE
WATER ELEVATION	FEET	610.68	607.83	610.97	607.68	610.51	
ALKALINITY AS CACO3	MG/L	72	92	160	190	220	440
CHLORIDE	MG/L	18	23	17	15	9.4	2.8
COD	MG/L						
FLUORIDE	MG/L	0.58	5.5	0.26	0.32	< 0.10	0.12
HARDNESS AS CACO3	MG/L	220	120	210	250	370	620
NITROGEN, NITRATE + NITRITE	MG/L	0.15	0.33	< 0.050	< 0.050	< 0.050	4.2
SOLIDS, TOTAL DISSOLVED	MG/L	900	940	300	360	460	770
SULFATE	MG/L	500	560	74	100	180	180
ARSENIC, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
BARIUM, DISSOLVED	UG/L	68	< 50	61	73	63	50
BORON, DISSOLVED	UG/L	1900	4200	230	< 200	2200	9400
CADMIUM, DISSOLVED	UG/L	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	0.38
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
COPPER, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20
IRON, DISSOLVED	UG/L	720	890	2800	4100	< 100	< 100
LEAD, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MANGANESE, DISSOLVED	UG/L	1200	720	970	1500	17	3400
MERCURY, DISSOLVED	UG/L	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
SELENIUM, DISSOLVED	UG/L	6.9	3.2	< 1.0 L	< 1.0 L	< 1.0 L	34
SILVER, DISSOLVED	UG/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
ZINC, DISSOLVED	UG/L	1000	100	22	< 20	220	< 20

18-OCT-94

wpvalid:MWI.BJC

PROJECT NUMBER: 1831.28
BEGINNING DATE: 01-JUN-93
ENDING DATE: 29-OCT-93

TABLE 8
GROUNDWATER CHEMISTRY

PARAMETER	UNITS	B-11 07-SEP-93 X0001	B-11 29-OCT-93 3485-001	B-20 07-SEP-93 X0002	B-26 01-JUN-93 1670-022	B-26 07-SEP-93 3302-005	B-26A 01-JUN-93 1670-023
COLOR, FIELD					CLEAR	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	1500		310	610	670	660
DEPTH TO WATER	FEET	15.91		10.81	16.22	18.85	16.20
ODOR, FIELD					NONE	NONE	NONE
PH, FIELD	SU				7.1	7.2	7.0
TEMPERATURE	DEG C	13	13	14	14	11	15
TURBIDITY, FIELD					NONE	SLIGHT	NONE
WATER ELEVATION	FEET				610.18	607.55	610.19
ALKALINITY AS CACO3	MG/L		470		320	300	340
CHLORIDE	MG/L				21	43	33
COD	MG/L						
FLUORIDE	MG/L				< 0.10	0.15	< 0.10
HARDNESS AS CACO3	MG/L		810		390	410	400
NITROGEN, NITRATE + NITRITE	MG/L				2.6	4.9	2.0
SOLIDS, TOTAL DISSOLVED	MG/L		520		440	450	450
SULFATE	MG/L		360		34	34	33
ARSENIC, DISSOLVED	UG/L		8.4		< 3.0	< 3.0	< 3.0
BARIUM, DISSOLVED	UG/L		100		62	68	96
BORON, DISSOLVED	UG/L		5100		< 200	< 200	< 200
CADMIUM, DISSOLVED	UG/L		< 0.30		< 0.30	< 0.30	< 0.30
CHROMIUM, DISSOLVED	UG/L		< 10		< 10	< 10	< 10
COPPER, DISSOLVED	UG/L				< 20	< 20	< 20
IRON, DISSOLVED	UG/L		55000		< 100	< 100	< 100
LEAD, DISSOLVED	UG/L		< 3.0		< 3.0	< 3.0	< 3.0
MANGANESE, DISSOLVED	UG/L				< 5.0	< 5.0	< 5.0
MERCURY, DISSOLVED	UG/L		< 0.20		< 0.20	< 0.20	< 0.20
SELENIUM, DISSOLVED	UG/L		< 1.0 LNP		< 1.0 L	< 1.0 L	< 1.0 L
SILVER, DISSOLVED	UG/L		< 10		< 1.0	< 1.0	< 1.0
ZINC, DISSOLVED	UG/L				< 20	< 20	< 20

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TABLE 8
GROUNDWATER CHEMISTRY

PARAMETER	UNITS	B-26A 07-SEP-93 3302-006	B-27R 07-SEP-93 X0003	B-28 01-JUN-93 1670-014	B-28 07-SEP-93 3302-003	B-29 07-SEP-93 X0004	B-30AR 01-JUN-93 1670-013
COLOR, FIELD		CLEAR		CLEAR	CLEAR		CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	440	370	190	230	360	220
DEPTH TO WATER	FEET	18.84	14.67	6.40	9.08	9.57	12.33
ODOR, FIELD		NONE		NONE	NONE		NONE
PH, FIELD	SU	7.2		6.1	6.0		7.2
TEMPERATURE	DEG C	11	14	17	15	15	17
TURBIDITY, FIELD		NONE		SLIGHT	MODERATE		NONE
WATER ELEVATION	FEET	607.55		610.46	607.74	607.26	610.11
ALKALINITY AS CACO3	MG/L	340		26	54		200
CHLORIDE	MG/L	25		4.6	11		13
COD	MG/L						7.3
FLUORIDE	MG/L	0.15		< 0.10	< 0.10		0.10
HARDNESS AS CACO3	MG/L	410		82	110		220
NITROGEN, NITRATE + NITRITE	MG/L	1.8		2.7	0.60		< 0.050
SOLIDS, TOTAL DISSOLVED	MG/L	440		140	160		280
SULFATE	MG/L	38		45	42		27
ARSENIC, DISSOLVED	UG/L	< 3.0		< 3.0	< 3.0		< 3.0
BARIUM, DISSOLVED	UG/L	86		< 50	52		< 50
BORON, DISSOLVED	UG/L	< 200		< 200	< 200		< 200
CADMIUM, DISSOLVED	UG/L	< 0.30		< 0.30	< 0.30		< 0.30
CHROMIUM, DISSOLVED	UG/L	< 10		< 10	< 10		< 10
COPPER, DISSOLVED	UG/L	< 20		< 20	< 20		< 20
IRON, DISSOLVED	UG/L	< 100		210	< 100		< 100
LEAD, DISSOLVED	UG/L	< 3.0		< 3.0	< 3.0		< 3.0
MANGANESE, DISSOLVED	UG/L	< 5.0		8.6	< 5.0		< 5.0
MERCURY, DISSOLVED	UG/L	< 0.20		< 0.20	< 0.20		< 0.20
SELENIUM, DISSOLVED	UG/L	< 1.0 LN		< 1.0 L	< 1.0 L		< 1.0 L
SILVER, DISSOLVED	UG/L	< 1.0		< 1.0	< 1.0		< 1.0
ZINC, DISSOLVED	UG/L	< 20		< 20	< 20		< 20

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BEGINNING DATE: 01-JUN-93
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TABLE 8
GROUNDWATER CHEMISTRY

PARAMETER	UNITS	B-30AR 07-SEP-93 3302-002	B-30R 01-JUN-93 1670-012	B-30R 07-SEP-93 3302-001	B-31A 01-JUN-93 1670-019	B-31A 07-SEP-93 3293-011	B-31R 01-JUN-93 1670-018
COLOR, FIELD		CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	410	420	360	700	800	640
DEPTH TO WATER	FEET	15.37	12.25	15.17	12.21	15.93	11.56
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	7.3	7.0	6.8	6.9	7.3	6.8
TEMPERATURE	DEG C	12	16	14	17	14	17
TURBIDITY, FIELD		NONE	MODERATE	MODERATE	NONE	SLIGHT	SLIGHT
WATER ELEVATION	FEET	607.07	610.10	607.18	610.46	606.74	610.85
ALKALINITY AS CACO3	MG/L	190	160	140	170	160	240
CHLORIDE	MG/L	14	13	6.6	16	17	11
COD	MG/L		9.7				
FLUORIDE	MG/L	0.16	< 0.10	< 0.10	0.39	0.43	< 0.10
HARDNESS AS CACO3	MG/L	230	210	210	120	160	330
NITROGEN, NITRATE + NITRITE	MG/L	< 0.050	8.5	8.8	< 0.050	< 0.050	< 0.050
SOLIDS, TOTAL DISSOLVED	MG/L	280	280	230	510	570	510
SULFATE	MG/L	25	25	26	250	250	150
ARSENIC, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
BARIUM, DISSOLVED	UG/L	< 50	< 50	< 50	54	66	110
BORON, DISSOLVED	UG/L	< 200	< 200	< 200	2900	2100	2900
CADMIUM, DISSOLVED	UG/L	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	2.7
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
COPPER, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	110
IRON, DISSOLVED	UG/L	< 100	< 100	< 100	210	300	450
LEAD, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MANGANESE, DISSOLVED	UG/L	< 5.0	< 5.0	< 5.0	4600	6000	440
MERCURY, DISSOLVED	UG/L	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
SELENIUM, DISSOLVED	UG/L	< 1.0 L	1.3 L	3.2	< 1.0 L	< 1.0 L	1.2 L
SILVER, DISSOLVED	UG/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
ZINC, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	27

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TABLE 8
GROUNDWATER CHEMISTRY

PARAMETER	UNITS	B-31R 07-SEP-93 3293-012	B-32 01-JUN-93 1670-002	B-32 07-SEP-93 3293-016	B-32A 01-JUN-93 1670-003	B-32A 07-SEP-93 3293-017	B-35 01-JUN-93 1670-004
COLOR, FIELD		CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	L YLW/BN
CONDUCTANCE, SPECIFIC	UMHOS/CM	480	300	330	610	1320	1070
DEPTH TO WATER	FEET	14.44	3.37	6.22	3.59	6.46	10.10
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	7.0	6.3	5.6	7.0	6.8	6.3
TEMPERATURE	DEG C	15	13	14	13	14	12
TURBIDITY, FIELD		MODERATE	SLIGHT	MODERATE	NONE	SLIGHT	SLIGHT
WATER ELEVATION	FEET	607.97	610.80	607.95	610.81	607.94	610.66
ALKALINITY AS CACO3	MG/L	190	140	140	330	320	190
CHLORIDE	MG/L	11	6.7	6.9	7.0	7.6	110
COD	MG/L						
FLUORIDE	MG/L	0.18	< 0.10	0.12	0.12	0.19	< 0.10
HARDNESS AS CACO3	MG/L	240	160	180	350	390	260
NITROGEN, NITRATE + NITRITE	MG/L	< 0.050	0.68	1.2	1.1	1.3	36
SOLIDS, TOTAL DISSOLVED	MG/L	340	200	240	380	420	800
SULFATE	MG/L	71	11	16	29	30	35
ARSENIC, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	7.4
BARIUM, DISSOLVED	UG/L	81	100	120	98	91	100
BORON, DISSOLVED	UG/L	1100	< 200	< 200	< 200	< 200	210
CADMIUM, DISSOLVED	UG/L	1.1	< 0.30	0.38	< 0.30	0.35	< 0.30
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
COPPER, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	21
IRON, DISSOLVED	UG/L	210	< 100	< 100	< 100	< 100	< 100
LEAD, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MANGANESE, DISSOLVED	UG/L	360	< 5.0	280	6.9	33	< 5.0
MERCURY, DISSOLVED	UG/L	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
SELENIUM, DISSOLVED	UG/L	< 1.0 L	< 1.0 L	< 1.0 L	< 1.0 L	< 1.0 L	< 1.0 L
SILVER, DISSOLVED	UG/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
ZINC, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20

PROJECT NUMBER: 1831.28
BEGINNING DATE: 01-JUN-93
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TABLE 8
GROUNDWATER CHEMISTRY

PARAMETER	UNITS	B-35 07-SEP-93 3293-002	B-35A 01-JUN-93 1670-005	B-35A 07-SEP-93 3293-003	B-36 01-JUN-93 1670-007	B-36 07-SEP-93 3293-004	B-36A 01-JUN-93 1670-006
COLOR, FIELD		YELLOW	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	1050	620	680	430	500	620
DEPTH TO WATER	FEET	13.13	10.55	13.57	10.86	13.97	11.11
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	6.8	7.0	7.1	6.3	7.0	7.1
TEMPERATURE	DEG C	14	13	12	12	13	13
TURBIDITY, FIELD		SLIGHT	NONE	NONE	SLIGHT	MODERATE	NONE
WATER ELEVATION	FEET	607.63	610.63	607.61	610.60	607.49	610.35
ALKALINITY AS CACO3	MG/L	210	330	320	230	210	330
CHLORIDE	MG/L	80	26	24	4.4	25	12
COD	MG/L						
FLUORIDE	MG/L	0.19	< 0.10	0.13	< 0.10	0.14	< 0.10
HARDNESS AS CACO3	MG/L	290	380	400	240	280	350
NITROGEN, NITRATE + NITRITE	MG/L	39	1.7	2.0	< 0.050	1.4	0.83
SOLIDS, TOTAL DISSOLVED	MG/L	770	480	460	280	350	400
SULFATE	MG/L	43	33	37	15	18	36
ARSENIC, DISSOLVED	UG/L	3.6	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
BARIUM, DISSOLVED	UG/L	120	< 50	54	110	120	68
BORON, DISSOLVED	UG/L	220	< 200	< 200	< 200	< 200	< 200
CADMIUM, DISSOLVED	UG/L	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	< 10	< 10	< 10
COPPER, DISSOLVED	UG/L	24	< 20	< 20	< 20	< 20	< 20
IRON, DISSOLVED	UG/L	< 100	< 100	< 100	< 100	< 100	< 100
LEAD, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MANGANESE, DISSOLVED	UG/L	< 5.0	< 5.0	< 5.0	< 5.0	55	< 5.0
MERCURY, DISSOLVED	UG/L	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
SELENIUM, DISSOLVED	UG/L	< 1.0 L	< 1.0 L	< 1.0 L	1.0 L	2.6 L	< 1.0 L
SILVER, DISSOLVED	UG/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
ZINC, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20

PROJECT NUMBER: 1831.28
BEGINNING DATE: 01-JUN-93
ENDING DATE: 29-OCT-93

TABLE 8
GROUNDWATER CHEMISTRY

PARAMETER	UNITS	B-36A 07-SEP-93 3293-005	B-37 07-SEP-93 3302-007	B-37A 07-SEP-93 3302-008	B-38 01-JUN-93 1670-016	B-38 07-SEP-93 3293-006	B-38A 01-JUN-93 1670-017
COLOR, FIELD		CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM	620	510	770	3630	2830	2760
DEPTH TO WATER	FEET	14.18	8.13	8.14	18.53	20.19	24.87
ODOR, FIELD		NONE	NONE	NONE	NONE	NONE	NONE
PH, FIELD	SU	7.1	7.3	7.3	8.3	9.9	7.7
TEMPERATURE	DEG C	11	13	11	20	20	15
TURBIDITY, FIELD		NONE	SLIGHT	NONE	NONE	SLIGHT	NONE
WATER ELEVATION	FEET	607.51	606.69	606.69	617.29	615.63	610.96
ALKALINITY AS CACO3	MG/L	330	200	190	100	420	80
CHLORIDE	MG/L	13	6.8	11	26	24	23
COD	MG/L						
FLUORIDE	MG/L	0.14	< 0.10	< 0.10	1.8	2.6	1.1
HARDNESS AS CACO3	MG/L	390	290	410	620	21	500
NITROGEN, NITRATE + NITRITE	MG/L	0.85	1.2	< 0.050	1.7	0.29	1.6
SOLIDS, TOTAL DISSOLVED	MG/L	420	380	590	3000	2200	2300
SULFATE	MG/L	36	100	240	2600	1200	2000
ARSENIC, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	180	90	38
BARIUM, DISSOLVED	UG/L	68	< 50	< 50	110	< 50	58
BORON, DISSOLVED	UG/L	< 200	3100	7400	2500	2600	2200
CADMIUM, DISSOLVED	UG/L	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
CHROMIUM, DISSOLVED	UG/L	< 10	< 10	< 10	68	< 10	52
COPPER, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20
IRON, DISSOLVED	UG/L	< 100	< 100	< 100	< 100	< 100	< 100
LEAD, DISSOLVED	UG/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
MANGANESE, DISSOLVED	UG/L	< 5.0	< 5.0	55	< 5.0	< 5.0	< 5.0
MERCURY, DISSOLVED	UG/L	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
SELENIUM, DISSOLVED	UG/L	< 1.0 L	< 1.0 L	< 1.0 L	57	320	22
SILVER, DISSOLVED	UG/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
ZINC, DISSOLVED	UG/L	< 20	< 20	< 20	< 20	< 20	< 20

PROJECT NUMBER: 1831.28
BEGINNING DATE: 01-JUN-93
ENDING DATE: 29-OCT-93

TABLE 8
GROUNDWATER CHEMISTRY

PARAMETER	UNITS		B-38A 07-SEP-93 3293-007
COLOR, FIELD			CLEAR
CONDUCTANCE, SPECIFIC	UMHOS/CM		3280
DEPTH TO WATER	FEET		27.59
ODOR, FIELD			NONE
PH, FIELD	SU		9.0
TEMPERATURE	DEG C		16
TURBIDITY, FIELD			NONE
WATER ELEVATION	FEET		608.24
ALKALINITY AS CACO3	MG/L		90
CHLORIDE	MG/L		21
COD	MG/L		
FLUORIDE	MG/L		3.4
HARDNESS AS CACO3	MG/L		390
NITROGEN, NITRATE + NITRITE	MG/L		0.59
SOLIDS, TOTAL DISSOLVED	MG/L		2600
SULFATE	MG/L		1800
ARSENIC, DISSOLVED	UG/L		51
BARIUM, DISSOLVED	UG/L		54
BORON, DISSOLVED	UG/L		3300
CADMIUM, DISSOLVED	UG/L	<	0.30
CHROMIUM, DISSOLVED	UG/L		11
COPPER, DISSOLVED	UG/L	<	20
IRON, DISSOLVED	UG/L	<	100
LEAD, DISSOLVED	UG/L	<	3.0
MANGANESE, DISSOLVED	UG/L	<	5.0
MERCURY, DISSOLVED	UG/L	<	0.20
SELENIUM, DISSOLVED	UG/L		57
SILVER, DISSOLVED	UG/L	<	1.0
ZINC, DISSOLVED	UG/L	<	20

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Appendix C

2016 Low-Hazard Waste Exemption Leaching Test Results – Slag and Ash

Sediment and Soil Analytical Results - Water Leach Test Results
WPL Nelson Dewey

Sample	Date	Depth (feet)	Material Type	Lab Notes	Boron (ug/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
WPDES POND								
SED-1	8/3/2016	0-1.3	Fly Ash	--	240	4.3	4.4	54
SED-2	8/3/2016	0-1.0	Fly Ash	--	200	4.3	11.5	60
QC-3 (SED-2)	8/3/2016	0-1	Fly Ash	--	240	3.5 J	6.1	52
SED-3	7/20/2016	0-4.5	Slag	--	130	2.7 J	5	28
	7/20/2016	4.5-5.5	SP	--	<50	2.5 J	<2.0	14 J
SED-4	7/19/2016	0-4.8	ML	--	510	10.5 J	11.9 J	86
	7/19/2016	4.8-5.5		--	74 J	NA	NA	NA
GP-19	8/4/2016	8-12	SM	--	62 J	2.4 J	2 J	16 J
SLAG POND								
SED-5	7/20/2016	0-1.6	ML-OL	--	54 J	3.2 J	33.3	90
SED-6	7/20/2016	0-1.0	ML	--	60 J	3.7 J	59.1	130
SED-7	8/4/2016	0-3.0	Fly Ash	--	88 J	4	10.5	76
SED-8	8/4/2016	1.0-1.5	Fly Ash	--	82 J	3.7 J	12.1	74
COAL YARD								
TP-CY-1	7/19/2016	0-0.5	Coal	--	140	<20.0	<20.0	32
	7/19/2016	3.0-3.5	SM	--	100 J	2.8 J	<2.0	20
TP-CY-3	7/20/2016	1.9-2.1	GM	--	<50	3.9 J	2.8 J	50
	7/20/2016	4.8-5.5	SM	--	NA	NA	NA	NA
TP-CY-4	7/19/2016	0-2.8	Coal	--	190	<20.0	<20.0	38
	7/19/2016	2.8-3.2	GP & SM	--	<50	<10.0	<10.0	34
	7/19/2016	3.6-4.8	Slag	--	<50	<20.0	<20.0	10 J
	7/19/2016	4.8-5.0		--	NA	NA	NA	NA
TP-CY-6	7/19/2016	0-0.5	Coal	--	190	<20.0	<20.0	54
	7/19/2016	0.7-1.0	SP	--	<50	2.5 J	2.3 J	30
TP-CY-10	7/19/2016	0-0.5	Coal	--	120	2.4 J	11.6	48
	7/19/2016	1.0-2.0	SM	--	<50	2.2 J	2.3 J	28
TP-CY-12	7/20/2016	0-0.3	Coal	--	160	<20.0	<20.0	44
	7/20/2016	0.3-2.0	SP	--	<50	2.2 J	2.2 J	24
	7/20/2016	2.0-2.7	SP	--	<50	2.3 J	27.5	50
QC-1 (TP-CY-12)	7/20/2016	0.3-2.0	SP	--	<50	2.6 J	2.5 J	24
SLAG HANDLING AREA								
GP-5	8/3/2016	12.5-15	Fly Ash	--	100	<2.0	3.0 J	22
	8/3/2016	18-24	ML & SM	--	99 J	3.3 J	<2.0	24
GP-7	8/3/2016	7.5-18	Slag	--	<50	2.2 J	<2.0	<8.7
QC-2 (GP-7)	8/3/2016	7.5-18	Slag	--	<50	2.2 J	<2.0	10 J
GP-14	8/4/2016	12.5-15	Fly Ash	--	120	<2.0	13.4	96
SLAG SAMPLES[1]								
Slag 01 [2]	6/3/2013	--	Slag	--	NA	NA	NA	NA
Slag 01	12/23/2013	--	Slag	--	12.5 AB	0.277 B	0.218	NA
NED Slag Composite 2014	7/1/2014	--	Slag	--	11.7 AB*^	< 0.142	0.457 B	98 H
Slag Sample	4/14/2015	--	Slag	--	< 1020 A	0.751	0.427	NA

Sediment and Soil Analytical Results - Water Leach Test Results
WPL Nelson Dewey

Sample	Date	Depth (feet)	Material Type	Lab Notes	Boron (ug/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
FLY ASH SAMPLES[1]								
NED Flyash Composite [2]	2/14/2014	--	Fly Ash	--	NA	NA	6,530 B	NA
Week of 062815 [2]	7/3/2015	--	Fly Ash	--	NA	NA	6,260	NA
Week of 010916	1/4/2016	--	Fly Ash	--	NA	NA	NA	NA
NR 140 Preventative Action Limits (PALs)					200	125	125	NE
NR 140 Enforcement Standards (ESs)					1000	250	250	NE
40 CFR Part 141.62 Maximum Contaminant Levels (MCL)					NE	NE	NE	NE
NR 538 Table 1A Standards					190	125	125	NE
NR 538 Table 2A Standards					1900	1,250	1,250	NE

Abbreviations:
mg/L = micrograms per liter
ML = Silt
ML-OL = Silty Organic Clay
NE = No Standard Established
ML-CL = Silty Clay
SP = Poorly Graded Sand
NA = Not Analyzed
SM = Silty Sand
ML-OL = Silty Organic Clay
GM = Silty Gravel
GP = Poorly Graded Gravel
TDS = Total Dissolved Solids

Notes:
1. Slag and Fly Ash samples were collected by the plant as part of permit requirements.
2. Sample was analyzed using the SPLP Leach Method rather than the ASTM Water Leach Method for tested parameters except for Sulfate.
NR 140 ESs - Wisconsin Administrative Code (WAC), Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.
NR 140 PALs - WAC, Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.

Laboratory Notes/Qualifiers:
J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
A = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B = Compound was found in the blank and sample.
F1 = MS and/or MSD Recovery is outside acceptance limits.
H = Sample was prepped or analyzed beyond the specified holding time.
^ = ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
* = LCS or LCSD is outside acceptance limits.

Created by: RJG Date: 3/14/2016
Last revision by: RJG Date: 10/24/2016
Checked by: BSS Date: 10/24/2016
Original table prepared for Slag Pond Closure Low Hazard Waste Exemption Request (SCS Project #25216054.00).
Reformatted for the Alternative Source Demonstration to include only the parameters with SSIs that were included in the leach testing by NDK, 9/14/2020; SCC 10/1/2021.

I:\25223071.00\Deliverables\April 2023 ASD NED\Appendix C 2016 Leachate Results Slag and Ash\[Table 4. Sediment_Soil_Water Leach Results-Updated.xlsx]Leach Test - SSI Parameters

Table 4a. Sediment and Soil Analytical Results - Water Leach Test Metals
WPL Nelson Dewey / SCS Engineers Project #25216054.00
(Results are in µg/L, except where noted otherwise)

Sample	Date	Depth (feet)	Material Type	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium (Total)	Cobalt	Copper	Iron	Lead	Lithium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Zinc
WPDES POND																									
SED-1	8/3/2016	0-1.3	Fly Ash	<250	<25	<25	650	<25	240	<2.5	6,100	<25	<25	<25	<250	<3.8	7.9	<25	<0.13	130	<25	<25	<25	<25	<25
SED-2	8/3/2016	0-1.0	Fly Ash	<250	<25	<25	550	<25	200	<2.5	5,900	<25	<25	<25	<250	<3.8	12	<25	0.18 J	120	25 J	<25	<25	<25	<25
QC-3 (SED-2)	8/3/2016	0-1	Fly Ash	<250	<25	<25	520	<25	240	<2.5	5,900 J	<25	<25	<25	<250	<3.8	7.7	<25	<0.13	56	<25	<25	<25	<25	<25
SED-3	7/20/2016	0-4.5	Slag	<250	<25	<25	<250	<25	130	<2.5	2,200	<25	<25	<25	<250	<3.8	3.4	<25	<0.13	<25	<25	<25	<25	<25	<25
	7/20/2016	4.5-5.5	SP	<250	<25	<25	<250	<25	<50	<2.5	<500	<25	<25	<25	<250	<3.8	0.81 J	<25	<0.13	<25	<25	<25	<25	<25	<25
SED-4	7/19/2016	0-4.8	ML	<250	<25	130	280 J	<25	510	<2.5	4,100	<25	<25	<25	<250	<3.8	1.2	<25	<0.13	410	<25	<25	<25	<25	<25
	7/19/2016	4.8-5.5	SP	NA	NA	<25	<250	NA	74 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	44 J	NA	NA	NA	NA	NA
GP-19	8/4/2016	8-12	SM	<250	<25	<25	<250	<25	62 J	<2.5	<500	<25	<25	<25	<250	<3.8	<0.11	<25	<0.13	<25	<25	<25	<25	<25	<25
SLAG POND																									
SED-5	7/20/2016	0-1.6	ML-OL	<250	<25	<25	390 J	<25	54 J	<2.5	18,200	<25	<25	<25	<250	<3.8	3.4	<25	<0.13	<25	<25	<25	<25	<25	<25
	7/20/2016	3.7-5.3	SM	NA	NA	NA	<250	NA	93 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SED-6	7/20/2016	0-1.0	ML	<250	<25	<25	310 J	<25	60 J	<25	17,500	<25	<25	<25	<25	<3.8	1.5	<25	<0.13	<25	<25	<25	<25	<25	<25
SED-7	8/4/2016	0-3.0	Fly Ash	<250	<25	<25	440 J	<25	88 J	<2.5	11,300	<25	<25	<25	<250	<3.8	2.1	<25	<0.13	75	<25	<25	<25	<25	<25
SED-8	8/4/2016	1.0-1.5	Fly Ash	<250	<25	<25	410 J	<25	82 J	<2.5	11,400	<25	<25	<25	<250	<3.8	2.2	70	<0.13	27 J	<25	<25	<25	<25	<25
COAL YARD																									
TP-CY-1	7/19/2016	0-0.5	Coal	<250	<25	<25	<250	<25	140	<2.5	<500	<25	<25	<25	<250	<3.8	1.9	<25	<0.13	<25	<25	<25	<25	<25	<25
	7/19/2016	3.0-3.5	SM	<250	<25	<25	<250	<25	100 J	<2.5	<500	<25	<25	<25	<250	<3.8	0.21 J	<25	<0.13	<25	<25	<25	<25	<25	<25
TP-CY-3	7/20/2016	1.9-2.1	GM	<250	<25	<25	<250	<25	<50	<2.5	7,600	<25	<25	<25	<250	<3.8	2.5	<25	<0.13	<25	<25	<25	<25	<25	<25
	7/20/2016	4.8-5.5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP-CY-4	7/19/2016	0-2.8	Coal	<250	<25	<25	<250	<25	190	<2.5	<500	<25	<25	<25	<250	<3.8	1.1	<25	<0.13	<25	<25	<25	<25	<25	<25
	7/19/2016	2.8-3.2	GP & SM	<250	<25	<25	<250	<25	<50	<2.5	4,500	<25	<25	<25	<250	<3.8	1.9	<25	0.24 J	<25	<25	<25	<25	<25	<25
	7/19/2016	3.6-4.8	Slag	<250	<25	<25	<250	<25	<50	<2.5	<500	<25	<25	<25	<250	<3.8	1.3	<25	<0.13	<25	<25	<25	<25	<25	<25
	7/19/2016	4.8-5.0		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP-CY-6	7/19/2016	0-0.5	Coal	<250	<25	<25	<250	<25	190	<2.5	<500	<25	<25	<25	<250	<3.8	4.3	<25	<0.13	<25	<25	<25	<25	<25	<25
	7/19/2016	0.7-1.0	SP	<250	<25	<25	<250	<25	<50	<2.5	2,600	<25	<25	<25	<250	<3.8	2.3	<25	<0.13	<25	<25	<25	<25	<25	<25
TP-CY-10	7/19/2016	0-0.5	Coal	<250	<25	<25	<250	<25	120	<2.5	<25	<25	<25	<25	<250	<3.8	3.5	<25	<0.13	<25	<25	<25	<25	<25	<25
	7/19/2016	1.0-2.0	SM	<250	<25	<25	<250	<25	<50	<2.5	2,000	<25	<25	<25	<250	<3.8	1.4	<25	<0.13	<25	<25	<25	<25	<25	<25
	7/19/2016	6.5-7.0		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP-CY-12	7/20/2016	0-0.3	Coal	<250	<25	<25	<250	<25	160	<2.5	<500	<25	<25	<25	<250	<3.8	3.8	<25	<0.13	<25	<25	<25	<25	<25	<25
	7/20/2016	0.3-2.0	SP	<250	<25	<25	<250	<25	<50	<2.5	2,600	<25	<25	<25	<250	<3.8	1.7	<25	<0.13	<25	<25	<25	<25	<25	<25
QC-1 (TP-CY-12)	7/20/2016	0.3-2.0	SP	<250	<25	<25	<250	<25	<50	<2.5	700 J	<25	<25	<25	<250	<3.8	1.7	<25	<0.13	<25	<25	<25	<25	<25	<25
	7/20/2016	2.0-2.7	SP	<250	<25	<25	<250	<25	<50	<2.5	11,000	<25	<25	<25	<250	<3.8	1.6	<25	<0.13	<25	<25	<25	<25	<25	<25
SLAG HANDLING AREA																									
GP-5	8/3/2016	12.5-15	Fly Ash	<250	<25	<25	<250	<25	100	<2.5	3,000	<25	<25	<25	<250	<3.8	5.5	<25	<0.13	<25	<25	<25	<25	<25	<25
	8/3/2016	18-24	ML & SM	<250	<25	<25	<250	<25	99 J	<2.5	2,300	<25	<25	<25	<250	<3.8	0.42 J	<25	<0.13	56	<25	<25	<25	<25	<25
GP-7	8/3/2016	7.5-18	Slag	<250	<25	<25	<250	<25	<50	<2.5	720 J	<25	<25	<25	<250	<3.8	0.85 J	<25	<0.13	<25	<25	<25	<25	<25	<25
QC-2 (GP-7)	8/3/2016	7.5-18	Slag	<250	<25	<25	<250	<25	<50	<2.5	710 J	<25	<25	<25	<250	<3.8	0.84 J	<25	<0.13	<25	<25	<25	<25	<25	<25
GP-14	8/4/2016	12.5-15	Fly Ash	<250	<25	<25	320 J	<25	120	<2.5	25,200	<25	<25	<25	<250	<3.8	3.0	<25	<0.13	52	<25	<25	<25	<25	<25
	8/4/2016	17.5-20	SM	<250	<25	<25	<250	<25	120	<2.5	2,500	<25	<25	<25	<250	<3.8	NA	<25	NA	69	<25	<25	<25	<25	36 J
SLAG SAMPLES[1]																									
Slag 01 [2]	6/3/2013	--	Slag	NA	< 2.93	< 0.925	< 100	< 10	NA	< 10	NA	< 20	NA	< 100	NA	< 100	NA	NA	< 0.250	NA	NA	< 150	NA	< 2.62	NA
Slag 01	12/23/2013	--	Slag	312	0.92 A B	0.95 A B	43 B	0.166 A	12.5 A B	0.602 A	1,240	1.0 A B	NA	1.48 A B	238 B	0.621 A	NA	2.99 A	< 0.020	< 0.81	1.5 A B	0.425 A	0.05 A B	< 0.40	3.8 A B
NED Slag Composite 2014	7/1/2014	--	Slag	809	< 0.11	0.34 A B	65.6	0.29 A B	11.7 AB^A	< 0.026	879 A	0.764 A	NA	1.78 A B	394	0.177 A	NA	4.49 A	< 0.071	< 0.81	0.4 A	< 0.340	0.01 A B	< 0.40	5.7 A B
Slag Sample	4/14/2015	--	Slag	788 B	0.69 A B	0.99 A B	49.3 B	0.221 A	< 1020 A	0.067 A	1,140 A	1.65 A B	NA	1.87 A	493 B	< 1.01	NA	3.96 A	< 1.84	1.05 A B	< 0.23	0.903 A	0.02 A B	0.19 A	7.3 A
FLY ASH SAMPLES[1]																									
NED Flyash Composite [2]	2/14/2014	--	Fly Ash	NA	5.99 A	52.6	497	< 30	NA	< 722	NA	265	NA	< 300	NA	< 1.02	NA	NA	< 0.710	NA	NA	< 450	NA	< 2.38	NA
Week of 062815 [2]	7/3/2015	--	Fly Ash	NA	27.5 A	278	626 B	< 9.36	NA	< 12	NA	282	NA	< 11	NA	< 59.4	NA	NA	< 0.926	NA	NA	< 98.7	NA	< 2.98 F1	NA
Week of 010916	1/4/2016	--	Fly Ash	NA	< 3.37 F1	61.3 F1	482 B	< 9.36	NA	< 12	NA	250	NA	< 11	NA	< 59.4	NA	NA	< 0.926	NA	NA	434 A	NA	< 1.79 F1	NA
NR 140 Preventative Action Limits (PALs)				40	1.2	1	400	0.4	200	0.5	NE	10	8	130	150	1.5	NE	60	0.2	8	20	10	10	0.4	2,500
NR 140 Enforcement Standards (ESs)				200	6	10	2,000	4	1,000	5	NE	100	40	1,300	300	15	NE	300	2	40	100	50	50	2	5,000
CFR 40 141.62 Maximum Contaminant Levels (MCL)				NE	6	10	2,000	4	NE	5	NE	100	NE	NE	NE	NE	NE	NE	2	NE	NE	50	NE	2	NE
NR 538 Table 1A Standards				1,500	1.2	5	400	0.4	190	0.5	NE	10	NE	130	150	1.5	NE	25	0.2	50	20	10	10	0.4	2,500
NR 538 Table 2A Standards				NE	12	50	4,000	4	1,900	5	NE	100	NE	1,300	1,500	15	NE	250	2	NE	200	100	100	4	25,000

Table 4a. Sediment and Soil Analytical Results - Water Leach Test Metals
WPL Nelson Dewey / SCS Engineers Project #25216054.00

Abbreviations:
µg/L = micrograms per liter or parts per billion (ppb) | NA = Not Analyzed | NE = No Standard Established | GM = Silty Gravel | GP = Poorly Graded Gravel
ML = Silt | ML-CL = Silty Clay | SM = Silty Sand | SP = Poorly Graded Sand

Notes:
1. Slag and Fly Ash samples were collected by the plant as part of permit requirements.
2. Sample was analyzed using the SPLP Leach Method rather than the ASTM Water Leach Method for tested parameters except for Sulfate.
NR 140 ESs - Wisconsin Administrative Code (WAC), Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.
NR 140 PALs - WAC, Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.
Bold+underlined values meet or exceed NR 140 enforcement standards.
Italic+underlined values meet or exceed NR 140 preventive action limits.
Shaded values exceed NR 538 Table 1A Standards.
Red text exceeds NR 538 Table 2A Standards.

Laboratory Notes/Qualifiers:
J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
A = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B = Compound was found in the blank and sample.
F1 = MS and/or MSD Recovery is outside acceptance limits.
^ = ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
* = LCS or LCSD is outside acceptance limits.

Created by:	RJG	Date: 3/14/2016
Last revision by:	RJG	Date: 10/24/2016
Checked by:	BSS	Date: 10/24/2016

I:\25223071.00\Deliverables\April 2023 ASD NED\Appendix C 2016 Leachate Results Slag and Ash\[Table 4. Sediment_Soil_Water Leach Results-Updated.xlsx]4a. Leach Test - Metals

Table 4b. Sediment and Soil Analytical Results - Water Leach Test Additional Parameters
WPL Nelson Dewey / SCS Engineers Project #25216054.00
(Results are in mg/L, except where noted otherwise)

Sample	Date	Depth (feet)	Material Type	Lab Notes	Chloride	Fluoride	Nitrite+ Nitrate	Total Kjeldahl Nitrogen	Sulfate	TDS
WPDES POND										
SED-1	8/3/2016	0-1.3	Fly Ash	--	4.3	<1.0	<0.095	0.69 J	4.4	54
SED-2	8/3/2016	0-1.0	Fly Ash	--	4.3	<1.0	<0.095	0.75	11.5	60
QC-3 (SED-2)	8/3/2016	0-1	Fly Ash	--	3.5 J	<1.0	<0.095	0.59 J	6.1	52
SED-3	7/20/2016	0-4.5	Slag	--	2.7 J	<1.0	<0.095	0.22 J	5	28
	7/20/2016	4.5-5.5	SP	--	2.5 J	<0.20	<0.095	0.22 J	<2.0	14 J
SED-4	7/19/2016	0-4.8	ML	--	10.5 J	<10.0	<0.095	1.4	11.9 J	86
GP-19	8/4/2016	8-12	SM	--	2.4 J	<1.0	<0.095	0.23 J	2 J	16 J
SLAG POND										
SED-5	7/20/2016	0-1.6	ML-OL	--	3.2 J	<1.0	<0.095	<0.22	33.3	90
SED-6	7/20/2016	0-1.0	ML	--	3.7 J	0.36 J	1.0	<0.22	59.1	130
SED-7	8/4/2016	0-3.0	Fly Ash	--	4	<1.0	<0.095	1.1	10.5	76
SED-8	8/4/2016	1.0-1.5	Fly Ash	--	3.7 J	<1.0	<0.095	1.1	12.1	74
COAL YARD										
TP-CY-1	7/19/2016	0-0.5	Coal	--	<20.0	<2.0	<0.095	0.26 J	<20.0	32
	7/19/2016	3.0-3.5	SM	--	2.8 J	<1.0	<0.095	0.28 J	<2.0	20
TP-CY-3	7/20/2016	1.9-2.1	GM	--	3.9 J	<0.20	<0.095	<0.22	2.8 J	50
TP-CY-4	7/19/2016	0-2.8	Coal	--	<20.0	<2.0	<0.095	0.81	<20.0	38
	7/19/2016	2.8-3.2	GP & SM	--	<10.0	<1.0	<0.095	<0.22	<10.0	34
	7/19/2016	3.6-4.8	Slag	--	<20.0	<2.0	<0.095	<0.22	<20.0	10 J
TP-CY-6	7/19/2016	0-0.5	Coal	--	<20.0	<2.0	<0.095	0.23 J	<20.0	54
	7/19/2016	0.7-1.0	SP	--	2.5 J	<0.20	<0.095	<0.22	2.3 J	30
TP-CY-10	7/19/2016	0-0.5	Coal	--	2.4 J	<1.0	<0.095	<0.22	11.6	48
	7/19/2016	1.0-2.0	SM	--	2.2 J	<1.0	<0.095	<0.22	2.3 J	28
TP-CY-12	7/20/2016	0-0.3	Coal	--	<20.0	<2.0	<0.095	0.26 J	<20.0	44
	7/20/2016	0.3-2.0	SP	--	2.2 J	<0.20	<0.095	<0.22	2.2 J	24
	7/20/2016	2.0-2.7	SP	--	2.3 J	<0.20	<0.095	<0.22	27.5	50
QC-1 (TP-CY-12)	7/20/2016	0.3-2.0	SP	--	2.6 J	<0.20	<0.095	<0.22	2.5 J	24
SLAG HANDLING AREA										
GP-5	8/3/2016	12.5-15	Fly Ash	--	<2.0	<1.0	0.11 J	<0.22	3.0 J	22
	8/3/2016	18-24	ML & SM	--	3.3 J	<1.0	<0.095	0.48 J	<2.0	24
GP-7	8/3/2016	7.5-18	Slag	--	2.2 J	<1.0	<0.095	0.22 J	<2.0	<8.7
QC-2 (GP-7)	8/3/2016	7.5-18	Slag	--	2.2 J	<1.0	<0.095	0.24 J	<2.0	10 J
GP-14	8/4/2016	12.5-15	Fly Ash	--	<2.0	<1.0	0.1 J	<0.22	13.4	96
SLAG SAMPLES[1]										
Slag 01 [2]	6/3/2013	--	Slag	--	NA	NA	NA	NA	NA	NA
Slag 01	12/23/2013	--	Slag	--	0.277 B	NA	0.923	NA	0.218	NA
NED Slag Composite 2014	7/1/2014	--	Slag	--	< 0.142	NA	< 0.045	NA	0.457 B	98 H
Slag Sample	4/14/2015	--	Slag	--	0.751	NA	< 0.045	NA	0.427	NA
FLY ASH SAMPLES[1]										
NED Flyash Composite [2]	2/14/2014	--	Fly Ash	--	NA	NA	NA	NA	**6,530** B	NA
Week of 062815 [2]	7/3/2015	--	Fly Ash	--	NA	NA	NA	NA	**6,260**	NA
Week of 010916	1/4/2016	--	Fly Ash	--	NA	NA	NA	NA	NA	NA
NR 140 Preventative Action Limits (PALs)					125	0.8	2	NE	125	NE
NR 140 Enforcement Standards (ESs)					250	4	10	NE	250	NE
40 CFR Part 141.62 Maximum Contaminant Levels (MCL)					NE	4	10	NE	NE	NE
NR 538 Table 1A Standards					125	0.8	2	NE	125	NE
NR 538 Table 2A Standards					1,250	8	20	NE	1,250	NE

Table 4b. Sediment and Soil Analytical Results - Water Leach Test Additional Parameters
WPL Nelson Dewey / SCS Engineers Project #25216054.00

Abbreviations:

mg/L = micrograms per liter	NE = No Standard Established	NA = Not Analyzed	TDS = Total Dissolved Solids	GM = Silty Gravel
ML = Silt	ML-CL = Silty Clay	SM = Silty Sand	SP = Poorly Graded Sand	GP = Poorly Graded Gravel

Notes:
1. Slag and Fly Ash samples were collected by the plant as part of permit requirements.
2. Sample was analyzed using the SPLP Leach Method rather than the ASTM Water Leach Method for tested parameters except for Sulfate.
NR 140 ESs - Wisconsin Administrative Code (WAC), Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.
NR 140 PALs - WAC, Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.
Bold+underlined values meet or exceed NR 140 enforcement standards.
Italic+underlined values meet or exceed NR 140 preventive action limits.
Shaded values exceed NR 538 Table 1A Standards.
Red text exceeds NR 538 Table 2A Standards.

Laboratory Notes/Qualifiers:
J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
A = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B = Compound was found in the blank and sample.
F1 = MS and/or MSD Recovery is outside acceptance limits.
H = Sample was prepped or analyzed beyond the specified holding time.
^ = ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
* = LCS or LCSD is outside acceptance limits.

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I:\25223071.00\Deliverables\April 2023 ASD NED\Appendix C 2016 Leachate Results Slag and Ash\[Table 4. Sediment_Soil_Water Leach Results-Updated.xlsx]4b. Leach Test - Parameters

Table 4c. Sediment and Soil Analytical Results - Water Leach Test Radiochemistry
WPL Nelson Dewey / SCS Engineers Project #25216054.00
(Results are in pCi/L)

Sample	Date	Depth (feet)	Lab Notes	Radium-226	Radium-228	Total Radium
WPDES POND						
SED-4	7/19/2016	0-4.8	--	0.0858 ± 0.481 (0.922)	0.355 ± 0.483 (1.00)	0.441 ± 0.964 (1.92)
SLAG POND						
SED-6	7/20/2016	0-1.0	--	0.206 ± 0.905 (1.45)	2.97 ± 1.30 (2.14)	3.18 ± 2.21 (3.59)
COAL YARD						
TP-CY-10	7/19/2016	0-0.5	--	1.23 ± 0.996 (0.556)	0.915 ± 0.497 (0.891)	2.145 ± 1.493 (1.45)
SLAG HANDLING AREA						
GP-5	8/3/2016	12.5-15	--	0.0829 ± 0.586 (0.996)	0.447 ± 0.474 (0.981)	0.53 ± 1.06 (1.98)
GP-7	8/3/2016	7.5-18	--	-0.085 ± 0.683 (1.19)	0.446 ± 0.418 (0.843	0.446 ± 1.1 (2.03)
NR 140 Preventive Action Limits (PALs)				NE	NE	NE
NR 140 Enforcement Standards (ESs)				NE	NE	NE
CFR 40 141.66 Maximum Contaminant Levels (MCL)				NE	NE	5
NR 538 Table 1A Standards				NE	NE	NE
NR 538 Table 2A Standards				NE	NE	NE

Abbreviations:
pCi/L = picocuries per liter
NA = Not Analyzed
NE = No Standard Established
GM = Silty Gravel
ML = Silt
ML-CL = Silty Clay
SM = Silty Sand
SP = Poorly Graded Sand

Notes:
NR 140 ESs - Wisconsin Administrative Code (WAC), Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.
NR 140 PALs - WAC, Chapter NR 140.10 Table 1 - Public Health Groundwater Quality Standards from July 2015 and WAC, Chapter NR 140.12 Table 2 - Public Welfare Groundwater Quality Standards from July 2015.
Bold+underlined values meet or exceed NR 140 enforcement standards.
Italic+underlined values meet or exceed NR 140 preventive action limits.
Shaded values exceed NR 538 Table 1A Standards.
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Created by: RJG Date: 3/14/2016
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I:\25223071.00\Deliverables\April 2023 ASD NED\Appendix C 2016 Leachate Results Slag and Ash\[Table 4. Sediment_Soil_Water Leach Results-Updated.xlsx]4c. Leach Test - Radium

Appendix F

Statistical Evaluation

July 28, 2023
File No. 25223071.00

TECHNICAL MEMORANDUM

SUBJECT: Statistical Evaluation of Groundwater Monitoring Results – Prediction Limit Update
Nelson Dewey Generating Station

PREPARED BY: Ryan Matzuk

CHECKED BY: Sherren Clark

STATISTICAL METHOD

Groundwater monitoring data for the Nelson Dewey Generating Station (NED) Slag Pond, is evaluated in accordance with 40 CFR 257.93(f)(3), using a prediction interval procedure, in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper prediction limit.

Statistical evaluation is performed using commercially available software (*Sanitas for Groundwater*© or similar) in general accordance with the USEPA's *Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities* dated March 2009 (Unified Guidance) (USEPA, 2009) and generally accepted procedures.

The NED monitoring data includes one background monitoring well, B-26, and six compliance monitoring wells, B-7R, B-11A, B-11B, B-11R, B-31A, and B-31R. The statistical analysis includes Interwell evaluation for the Appendix III parameters.

The initial UPLs were calculated based on nine rounds of background monitoring performed up to the initiation of compliance monitoring for the existing CCR unit at NED, from December 2015 through October 2017. Since then, additional rounds of monitoring for Appendix III parameters have been performed at the background well. The most recent update to the interwell UPLs was completed in January 2021 using background data collected through October 2020. As part of the evaluation of the April 2023 monitoring results, the background data set for the UPL calculations is being updated to include data from the background well collected through April 2023. This memo addresses updated UPLs for Appendix III parameters.

TIME SERIES PLOTS

Time series plots are prepared for the required monitoring parameters to show the concentration variations over time. Time series graphs are included in **Attachment 1**.

OUTLIER ANALYSIS - INTERWELL

For interwell analysis, an outlier evaluation is performed for background monitoring results at the upgradient well. A statistical outlier is a value that is extremely different from the other values in the data set. The Sanitas outlier tests identify data points that do not appear to fit the distribution of the rest of the data set and determine if they differ significantly from the rest of the data. The outlier analysis performed in Sanitas includes the following steps:

1) Run normality test (Shapiro Wilk/Francia).

2) If normally distributed, run USEPA's 1989 Outlier Test to identify suspected outliers.
   a) If number of background samples is less than or equal to 25, run Dixon's test for suspected outliers.
   b) If number of background samples is more than 25, run Rosner's test for suspected outliers.

3) If not normally distributed, run Tukey's test for outliers.

4) Review data flagged as possible outliers to evaluate whether they should be removed from the background data set. Also review time series plots for possible outliers that were not picked up in the statistical evaluation (e.g., outlier test may not identify outliers when two values are similar to each other, but very different from all other data).

Results identified as statistical outliers are checked for possible lab instrument failure, field collection problems, or data entry errors; however, outliers may exist naturally in the data if there is an extremely wide inherent or temporal variability in the data. The Unified Guidance states that unless a likely error can be identified, the outlier should not be removed.

For the interwell evaluation of background data collected through April 2023, the following background values were identified as potential outliers and handled as described:

- **Boron.** One low result from the October 2019 event was previously flagged as statistical outlier, but was not flagged as an outlier during this statistical evaluation. The low result was removed from the dataset as an outlier because it was below detection, which appears very unlikely to be a valid result based on other detections. Review of the October 2019 data indicates that this was likely due to a sampling or laboratory error that resulted in the field blank sample and B-26 sample for metals being switched.

- **Calcium.** One low result from the October 2019 event was not flagged as an outlier by Sanitas but was identified visually as a statistical outlier. The low result was removed from the dataset because it was below detection, which appears very unlikely to be a valid result based on other detections, and was likely due to the same sampling or laboratory analysis error noted for the boron result above.

- **Fluoride.** One high result from the April 2022 event was flagged as a statistical outlier. The high result was removed from the dataset because it was a non-detect result with an unusually high limit of detection caused by a high dilution factor.

Outlier analyses are included in **Attachment 2.**

BACKGROUND UPDATE

The background data pool was updated in accordance with the Unified Guidance, which recommends updating background every 2 to 3 years for semiannual sampling. Prior to expanding the data pool, the original background data set (12/2015 through 10/2020) and the data to be added (4/2021 through 4/2023) were compared. The Unified Guidance states that recently collected measurements from the background wells can be added to the existing pool if a Student's t-test or Wilcoxon rank-sum test finds no significant difference between the two groups at the 1% level of significance.

The Sanitas background group comparison for the NED background data sets, included in Attachment 3, indicated no signficant difference at the 1% level; therefore, the more recent data can be added to the background pool. The comparison uses Welch's t-test for normally distributed data and the Mann-Whitney test for non-normal data. (Note: The Sanitas output labels the earlier background dataset as "Background" and the later background dataset as "Compliance," but all data from background well B-26 is background data.)

INTERWELL PREDICTION LIMITS

Interwell prediction limits are calculated using background data from the upgradient monitoring well (B-26) for each monitored constituent, with outliers removed as noted above. During this evaluation of compliance monitoring groundwater results from December 2015 through April 2023 were included to calculate the interwell prediction limits. The prediction limit analysis performed in Sanitas includes the following steps:

1) If 100% of the background values are non-detect, the Double Quanitification rule applies and no prediction limit is calculated.

2) If more than 50% of results are non-detect, then a non-parametric prediction limit is calculated.

3) If 50% or fewer of the results are non-detect, run normality test (Shapiro Wilk/Francia) to assess whether the data fit a normal distribution or can be transformed to fit a normal distribution (e.g., lognormal).

4) If normal or transformed normal, calculate parametric prediction limit.

5) If not normal or transformed normal, calculate non-parametric prediction limit.

Consistent with the Unified Guidance, parametric prediction limits are calculated based on a 1-of-2 retesting protocol and a 10 percent site-wide false positive rate. Sanitas establishes the per-test significance level based on user inputs of the number of events per year, number of constituents being evaluated, and number of compliance wells. For the April 2023 event, the following values were used:

Parameter	Value	Comments
Evaluations per year	2	Spring and Fall events
Constituents analyzed	7	Appendix III parameters
Compliance wells	6	

Non-parametric prediction limits are also based on a 1-of-2 retesting protocol. The non-parametric limit is the highest value in the background dataset. Due to the small sample size, the false positive rate for the non-parametric tests is higher than for the parametric tests, but will go down as more background data are obtained.

For results with 100 percent non-detects in the background data, evaluation under the Double Quantification Rule means that a statistically significant increase (SSI) has not occurred for a compliance well unless two sample results from the well exceed the laboratory's reporting limit or quanitification limit. For the current background dataset, none of the Appendix III parameters had 100 percent non-detects, so the Double Quantification rule was not applied.

For evaluation of parameters with less than 100 percent non-detects in the background sampling, the non-detects were adjusted using the Kaplan-Meier technique, unless the non-detects represent less than 15 percent of the total samples, in which case one-half of the detection limit was used. Interwell prediction limit analysis results are included in **Attachment 4**.

RM/SCC

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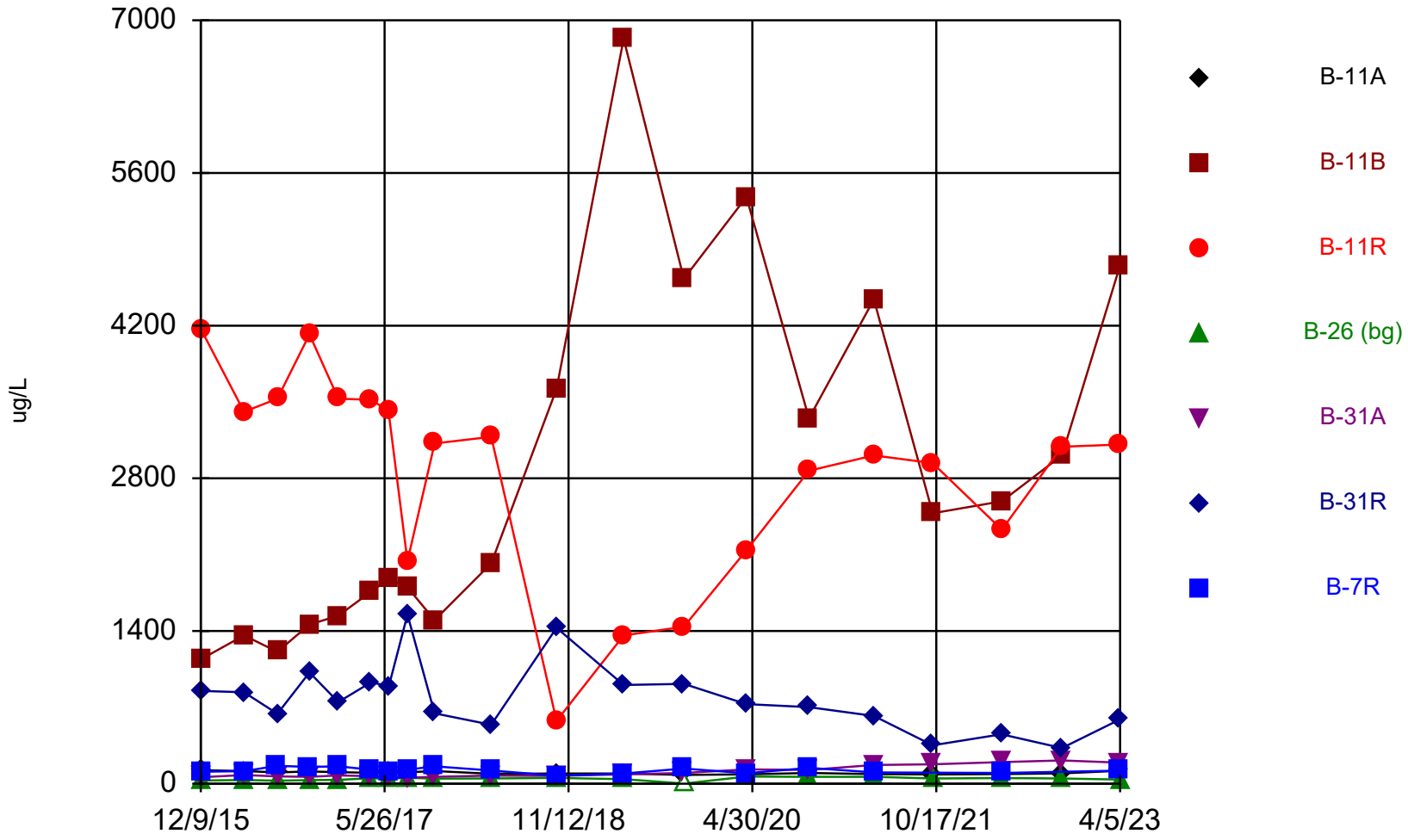
Attachment 1

Times Series Graphs

Hollow symbols indicate censored values.

Time Series



Constituent: Boron Analysis Run 7/28/2023 9:53 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

Constituent: Boron (ug/L) Analysis Run 7/28/2023 10:06 AM

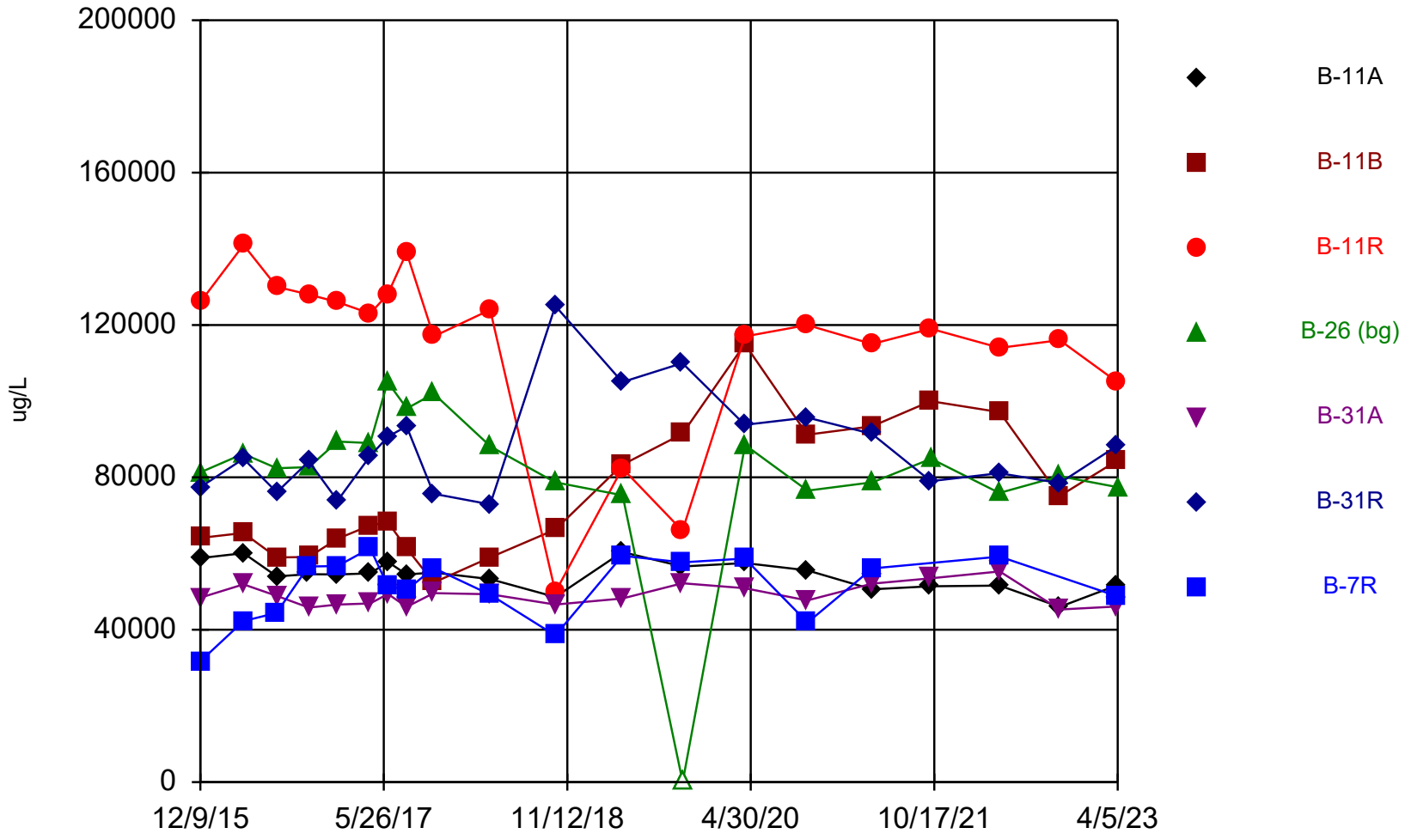
Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	124	1140	4170	29.6	59	851	110
4/12/2016				33.7			
4/13/2016	116	1360	3410		79.2	838	115
7/18/2016							164
7/19/2016	104	1210	3530	28.6	67.2	641	
10/19/2016	112						154
10/20/2016		1460	4120	33	63.7	1020	
1/12/2017	106	1540	3530	35.2	76.4	749	159
4/17/2017	100	1760	3520	50.1	69.9	929	129
6/7/2017			3420	45.8			110
6/8/2017	102	1880			58.5	895	
8/1/2017	105	1800	2040		56.3	1550	129
8/2/2017				54.6			
10/19/2017	116	1500	3120	47.4	63.9	645	159
4/2/2018	91	2020	3180		74.8	540	121
4/3/2018				48			
10/8/2018				53.4			
10/9/2018	94.2	3620	576		71.8	1430	73
4/22/2019	93.9	6830	1360		86.2	906	93.5
4/23/2019				41.6			
10/14/2019	80.7	4630	1440		98.5	915	139
10/15/2019				<3 (UX)			
4/13/2020	86.3	5380	2140		132	730	96
4/14/2020				66.1			
10/12/2020	99.3	3350	2870		127	702	
10/13/2020				63.6			145
4/19/2021	88.1	4440	3010		172	621	
4/20/2021							104
4/21/2021				63.6			
10/7/2021	85.4	2480	2940		178	353	
10/8/2021				48.4			
4/25/2022				52.5		454	
4/26/2022	88.6	2590	2330		198		98.1
10/18/2022	95.2	3010	3090	48.8	213	327	
4/3/2023							120
4/4/2023	119	4740	3110		193	589	
4/5/2023				38.6			

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

Hollow symbols indicate censored values.

Time Series



Constituent: Calcium Analysis Run 7/28/2023 9:53 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

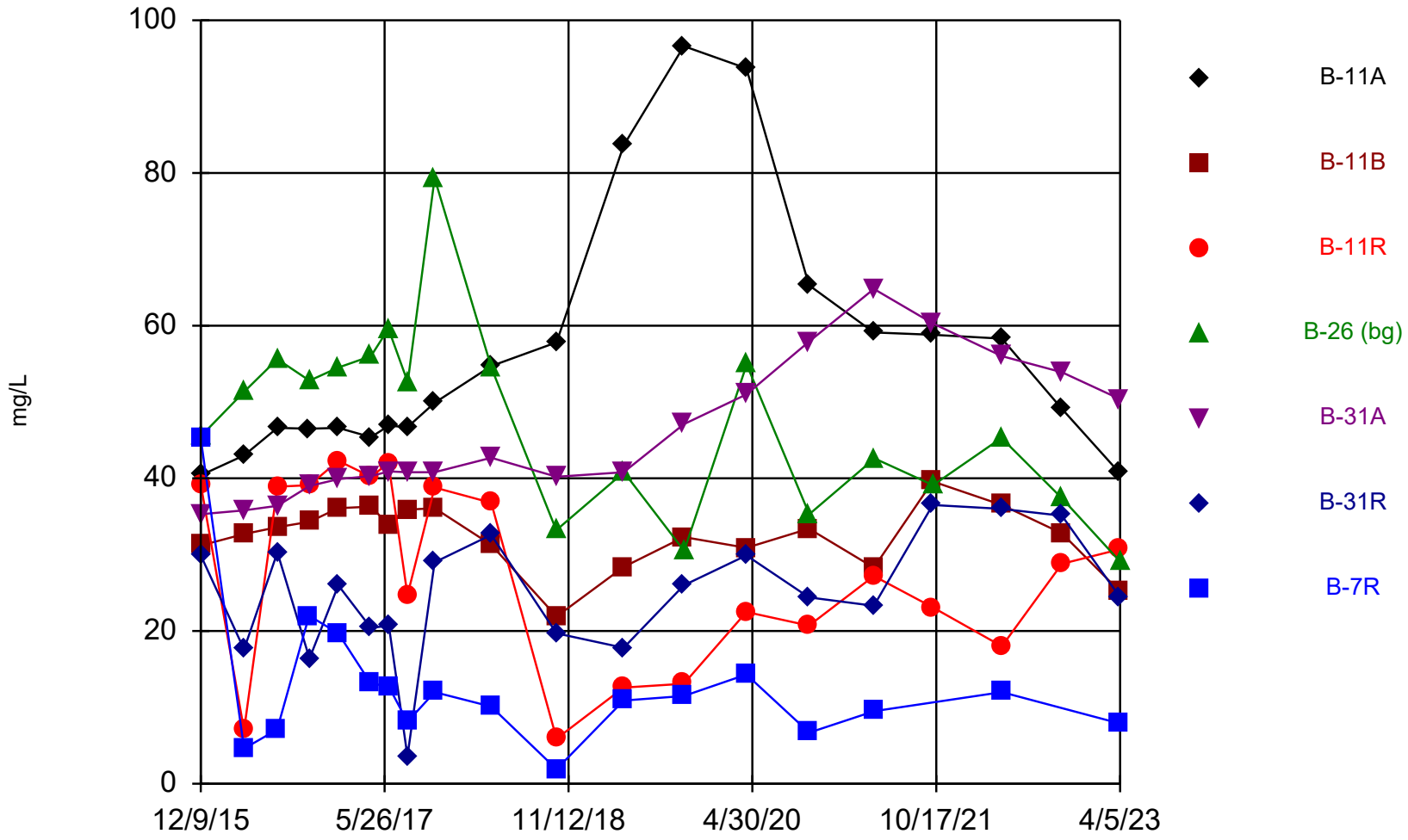
Constituent: Calcium (ug/L) Analysis Run 7/28/2023 10:06 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	58800	64100	126000	81300	48400	77400	31700
4/12/2016				86200			
4/13/2016	60100	65400	141000		51900	84900	42300
7/18/2016							44400
7/19/2016	54000	59000	130000	82400	48900	76100	
10/19/2016	54600						56600
10/20/2016		59100	128000	82700	45800	84200	
1/12/2017	54500	63900	126000	89400	46600	73900	56700
4/17/2017	54800	67400	123000	89000	46900	85600	61400
6/7/2017			128000	105000			51600
6/8/2017	57800	68200			49400	90700	
8/1/2017	54500	61400	139000		46000	93400	50400
8/2/2017				98100			
10/19/2017	55000	52400	117000	102000	49600	75700	56200
4/2/2018	53300	59000	124000		49300	72900	49200
4/3/2018				88100			
10/8/2018				78700			
10/9/2018	48600	66300	49900		46600	125000	38500
4/22/2019	60400	83300	82400		48200	105000	59400
4/23/2019				75300			
10/14/2019	56600	91400	66000		52200	110000	57700
10/15/2019				<76.2 (UX)			
4/13/2020	57500	115000	117000		50900	93800	58700
4/14/2020				88500			
10/12/2020	55600	91200	120000		47700	95700	
10/13/2020				76500			41900
4/19/2021	50600	93400	115000		52100	91400	
4/20/2021							56100
4/21/2021				78700			
10/7/2021	51400	100000	119000		53500	79000	
10/8/2021				84900			
4/25/2022				75900		81100	
4/26/2022	51600	97100	114000		55300		59200
10/18/2022	46000	75100	116000	80300	45300	78500	
4/3/2023							48800
4/4/2023	51700	84400	105000		46100	88300	
4/5/2023				77400			

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

Time Series



Constituent: Chloride Analysis Run 7/28/2023 9:53 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

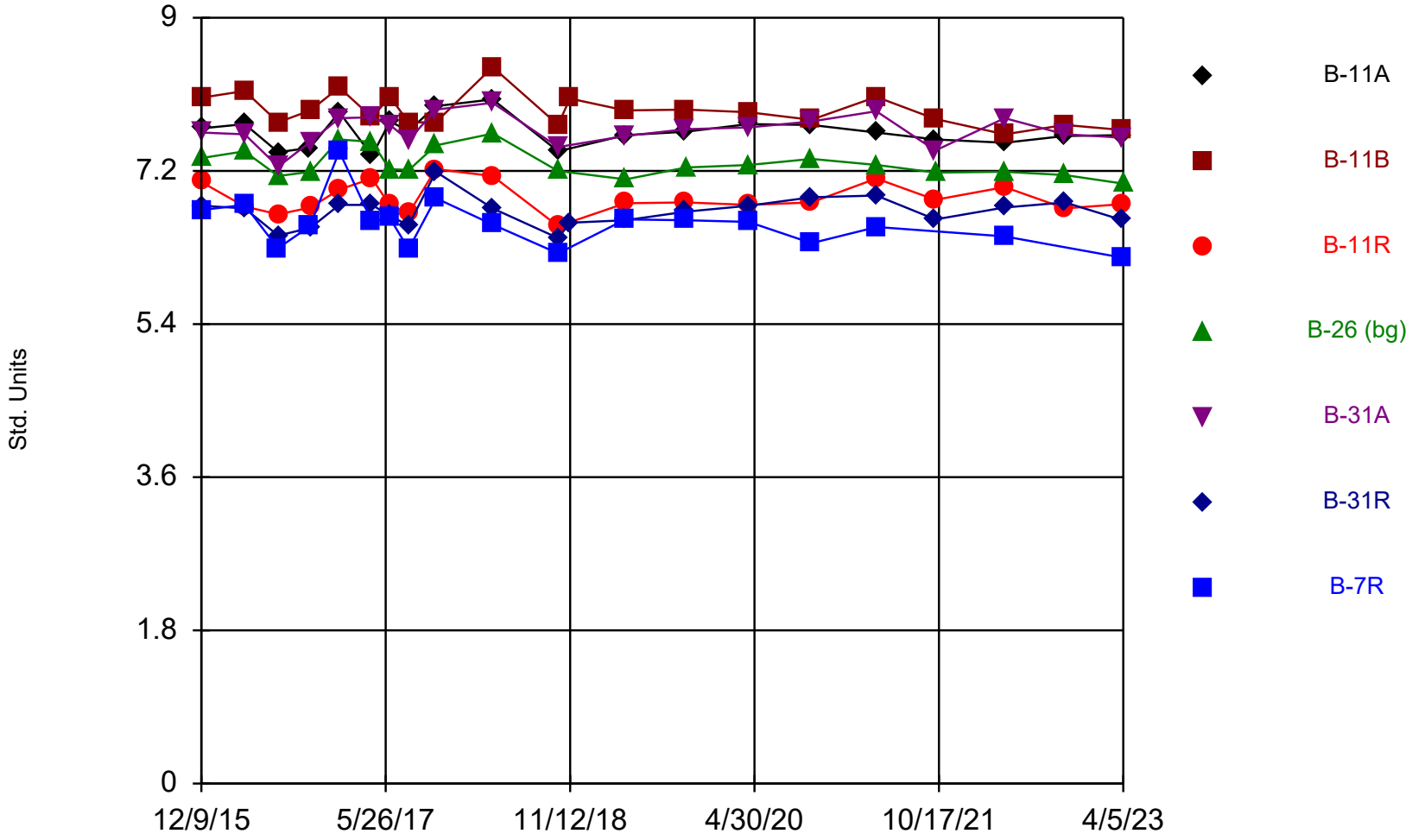
Time Series

Constituent: Chloride (mg/L) Analysis Run 7/28/2023 10:06 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	40.4	31.2	39.2	45.5	35.3	29.9	45.2
4/12/2016				51.3			
4/13/2016	43	32.7	7		35.8	17.6	4.6
7/18/2016							7.1
7/19/2016	46.6	33.6	38.9	55.6	36.4	30.3	
10/19/2016	46.5						22
10/20/2016		34.3	39.1	52.8	39	16.4	
1/12/2017	46.6	36.1	42.3	54.5	39.9	26	19.7
4/17/2017	45.4	36.3	40.2	56	40.3	20.4	13.1
6/7/2017			42	59.6			12.8
6/8/2017	46.9	33.9			40.9	20.7	
8/1/2017	46.7	35.9	24.7		40.8	3.6	8.1
8/2/2017				52.6			
10/19/2017	49.9	36.1	38.8	79.3	40.8	29	12
4/2/2018	54.7	31.3	36.8		42.7	32.6	10.1
4/3/2018				54.4			
10/8/2018				33.2			
10/9/2018	57.8	21.9	5.9		40.2	19.7	1.9 (J)
4/22/2019	83.6	28.4	12.6		40.8	17.8	10.9
4/23/2019				40.8			
10/14/2019	96.6	32.3	13.1		47.1	26	11.5
10/15/2019				30.5			
4/13/2020	93.7	30.9	22.5		51	29.9	14.3
4/14/2020				54.9			
10/12/2020	65.3	33.4	20.7		57.9	24.4	
10/13/2020				35.3			6.7 (J)
4/19/2021	59.1	28.3	27.2		64.8	23.3	
4/20/2021							9.5 (J)
4/21/2021				42.6			
10/7/2021	58.8	39.6	23.1		60.3	36.5	
10/8/2021				39.1			
4/25/2022				45.3		36	
4/26/2022	58.3	36.5	18		56		12
10/18/2022	49.1	32.8	28.8	37.4	53.9	35.1	
4/3/2023							7.9 (J)
4/4/2023	40.7	25.2	30.7		50.4	24.5	
4/5/2023				29.1			

Time Series



Constituent: Field pH Analysis Run 7/28/2023 9:53 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

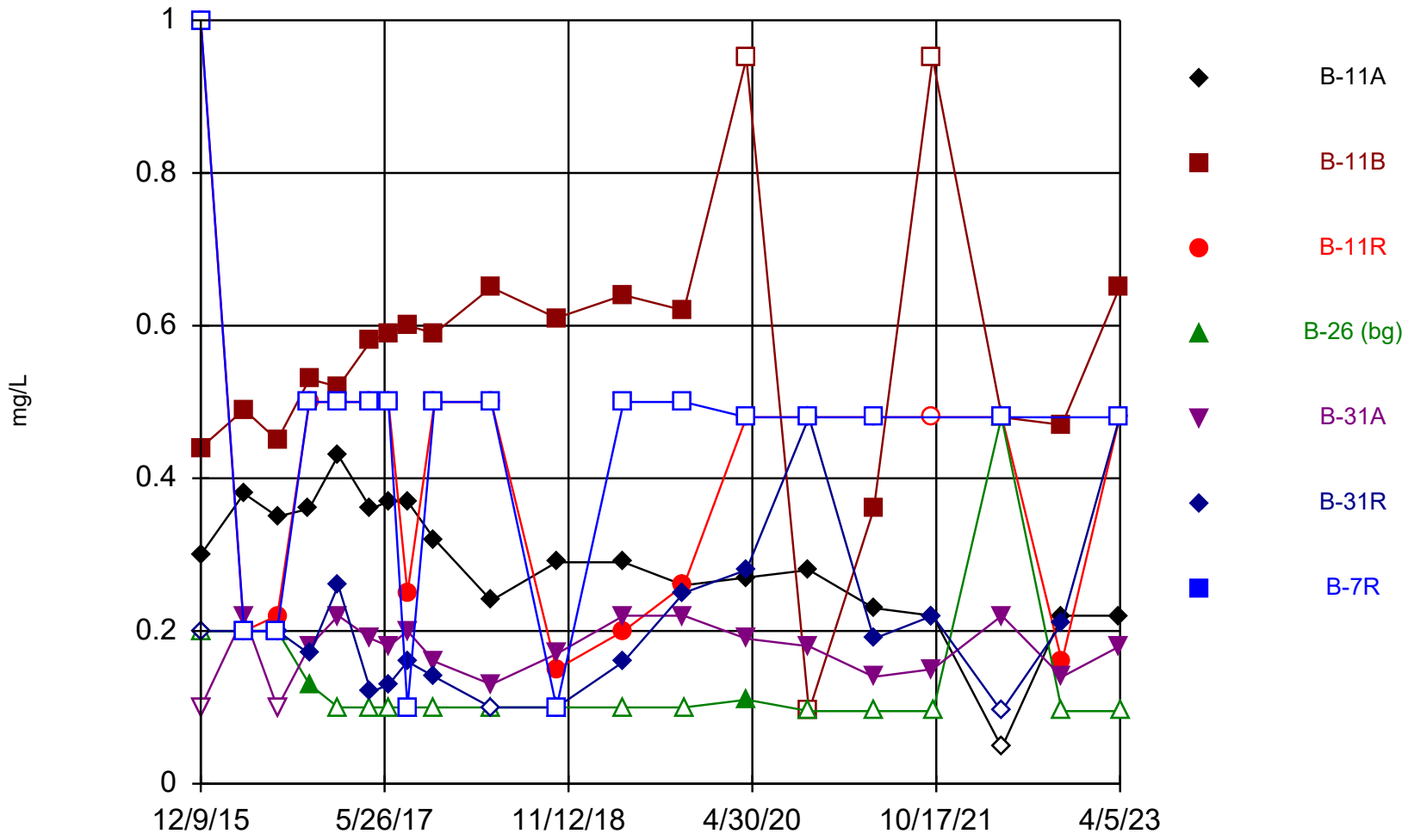
Constituent: Field pH (Std. Units) Analysis Run 7/28/2023 10:06 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	7.7	8.06	7.07	7.35	7.65	6.79	6.74
4/12/2016				7.43			
4/13/2016	7.75	8.14	6.78		7.63	6.76	6.8
7/18/2016							6.29
7/19/2016	7.42	7.77	6.69	7.14	7.25	6.44	
10/19/2016	7.47						6.55
10/20/2016		7.91	6.77	7.19	7.54	6.53	
1/12/2017	7.89	8.18	6.98	7.57	7.82	6.8	7.43
4/17/2017	7.38	7.83	7.11	7.54	7.83	6.8	6.6
6/7/2017			6.8	7.22			6.65
6/8/2017	7.78	8.07			7.74	6.67	
8/1/2017	7.67	7.77	6.7		7.56	6.56	6.28
8/2/2017				7.21			
10/19/2017	7.96	7.77	7.22	7.5	7.92	7.19	6.88
4/2/2018	8.04	8.42	7.14		8	6.76	6.57
4/3/2018				7.64			
10/8/2018				7.2			
10/9/2018	7.43	7.74	6.55		7.48	6.41	6.23
11/12/2018		8.05				6.59	
4/22/2019	7.62	7.91	6.82		7.61	6.62	6.63
4/23/2019				7.1			
10/14/2019	7.66	7.92	6.83		7.69	6.72	6.62
10/15/2019				7.24			
4/13/2020	7.75	7.89	6.8		7.71	6.79	6.6
4/14/2020				7.27			
10/12/2020	7.74	7.8	6.83		7.78	6.89	
10/13/2020				7.34			6.35
4/19/2021	7.65	8.07	7.11		7.9	6.91	
4/20/2021							6.54
4/21/2021				7.27			
10/7/2021	7.57	7.81	6.86		7.44	6.63	
10/8/2021				7.18			
4/25/2022				7.19		6.77	
4/26/2022	7.53	7.63	7.01		7.82		6.43
10/18/2022	7.61	7.74	6.76	7.15	7.63	6.83	
4/3/2023							6.18
4/4/2023	7.62	7.68	6.81		7.59	6.62	
4/5/2023				7.05			

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Fluoride Analysis Run 7/28/2023 9:53 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

Constituent: Fluoride (mg/L) Analysis Run 7/28/2023 10:06 AM

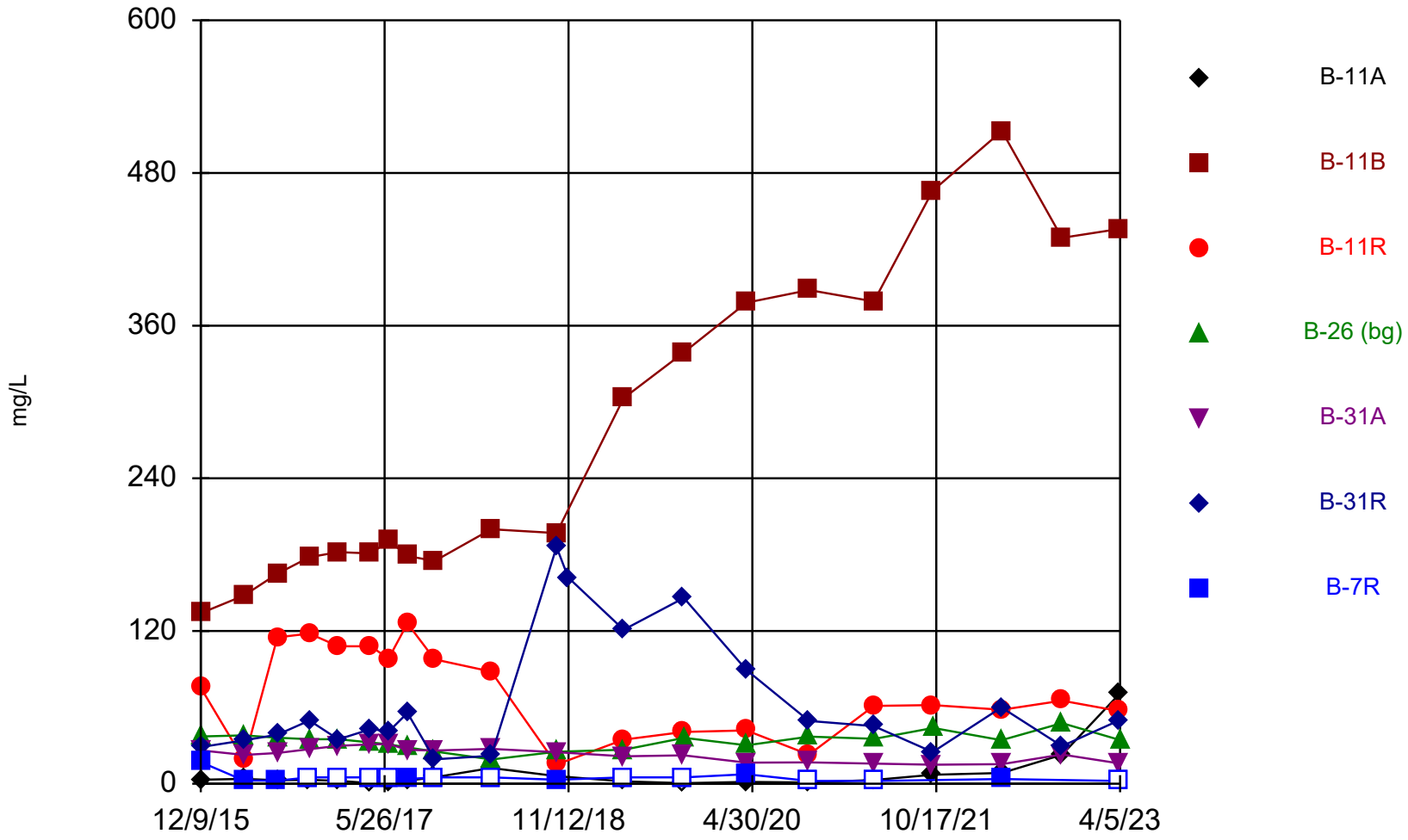
Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	0.3 (J)	0.44	<1 (U)	<0.2 (U)	<0.2 (U)	<0.2 (U)	<1 (U)
4/12/2016				<0.2 (U)			
4/13/2016	0.38 (J)	0.49	<0.2 (U)		0.22 (J)	<0.2 (U)	<0.2 (U)
7/18/2016							<0.2 (U)
7/19/2016	0.35 (J)	0.45	0.22 (J)	<0.2 (U)	<0.2 (U)	<0.2 (U)	
10/19/2016	0.36						<0.5 (U)
10/20/2016		0.53	<0.5 (U)	0.13 (J)	0.18 (J)	0.17 (J)	
1/12/2017	0.43	0.52	<0.5 (U)	<0.1 (U)	0.22 (J)	0.26 (J)	<0.5 (U)
4/17/2017	0.36	0.58	<0.5 (U)	<0.1 (U)	0.19 (J)	0.12 (J)	<0.5 (U)
6/7/2017			<0.5 (U)	<0.1 (U)			<0.5 (U)
6/8/2017	0.37	0.59			0.18 (J)	0.13 (J)	
8/1/2017	0.37	0.6	0.25 (J)		0.2 (J)	0.16 (J)	<0.1 (U)
8/2/2017				<0.1 (U)			
10/19/2017	0.32	0.59	<0.5 (U)	<0.1 (U)	0.16 (J)	0.14 (J)	<0.5 (U)
4/2/2018	0.24 (J)	0.65	<0.5 (U)		0.13 (J)	<0.1 (U)	<0.5 (U)
4/3/2018				<0.1 (U)			
10/8/2018				<0.1 (U)			
10/9/2018	0.29 (J)	0.61	0.15 (J)		0.17 (J)	<0.1 (U)	<0.1 (U)
4/22/2019	0.29 (J)	0.64	0.2 (J)		0.22 (J)	0.16 (J)	<0.5 (U)
4/23/2019				<0.1 (U)			
10/14/2019	0.26 (J)	0.62	0.26 (J)		0.22 (J)	0.25 (J)	<0.5 (U)
10/15/2019				<0.1 (U)			
4/13/2020	0.27 (J)	<0.95 (U)	<0.48 (U)		0.19 (J)	0.28 (J)	<0.48 (U)
4/14/2020				0.11 (J)			
10/12/2020	0.28 (J)	<0.095 (U)	<0.48 (U)		0.18 (J)	<0.48 (U)	
10/13/2020				<0.095 (U)			<0.48 (U)
4/19/2021	0.23 (J)	0.36	<0.48		0.14 (J)	0.19 (J)	
4/20/2021							<0.48
4/21/2021				<0.095			
10/7/2021	0.22 (J)	<0.95 (U)	<0.48 (U)		0.15 (J)	0.22 (J)	
10/8/2021				<0.095 (U)			
4/25/2022				<0.48 (U)		<0.095 (U)	
4/26/2022	<0.095 (U)	<0.48 (U)	<0.48 (U)		0.22 (J)		<0.48 (U)
10/18/2022	0.22 (J)	0.47	0.16 (J)	<0.095 (U)	0.14 (J)	0.21 (J)	
4/3/2023							<0.48 (U)
4/4/2023	0.22 (J)	0.65 (J)	<0.48 (U)		0.18 (J)	<0.48 (U)	
4/5/2023				<0.095 (U)			

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

Hollow symbols indicate censored values.

Time Series



Constituent: Sulfate Analysis Run 7/28/2023 9:53 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

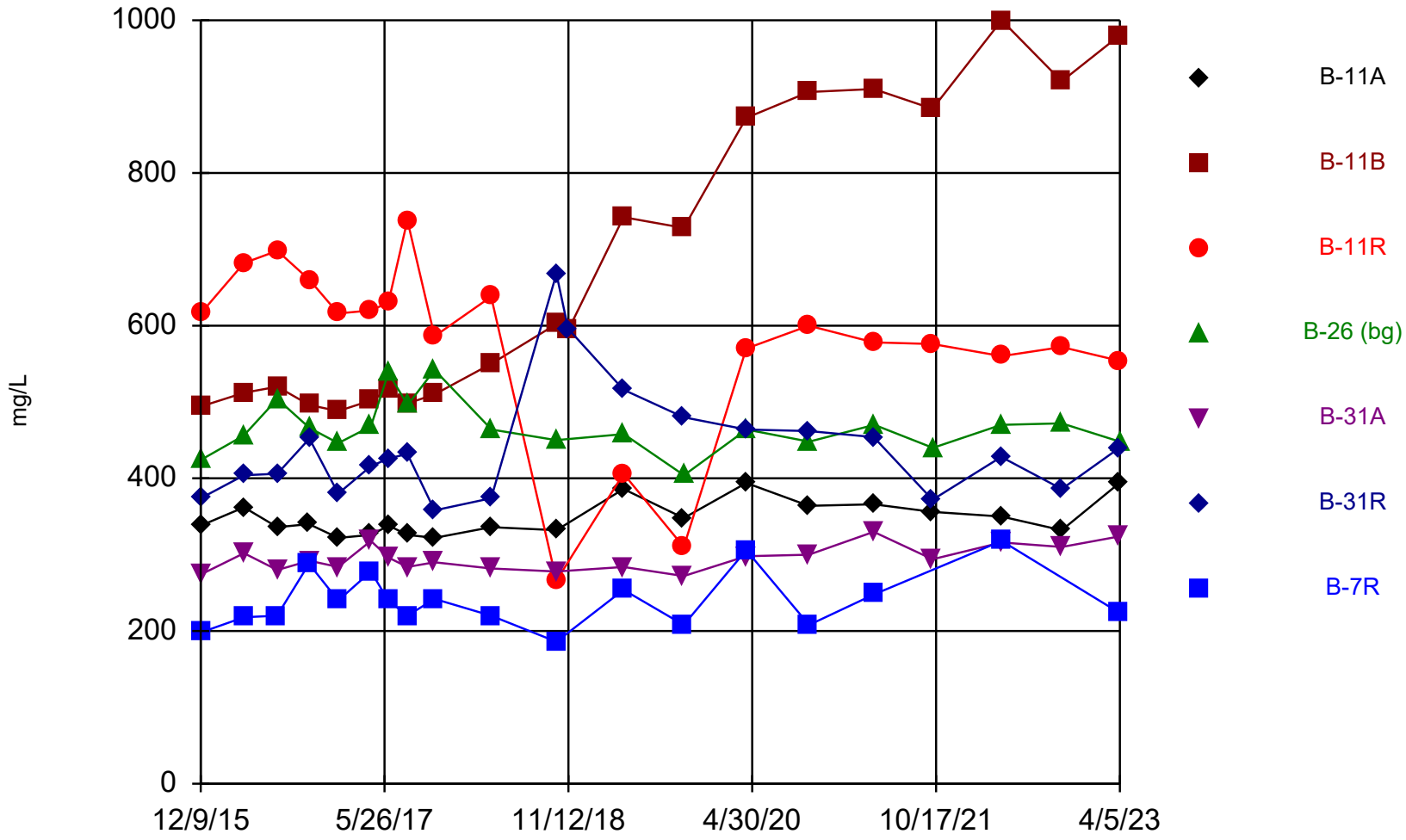
Constituent: Sulfate (mg/L) Analysis Run 7/28/2023 10:06 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	3.2 (J)	134	75.4	37.1	26.2	28.8	17 (J)
4/12/2016				38			
4/13/2016	3.8 (J)	148	18.4		22.6	34.1	2.5 (J)
7/18/2016							2.4 (J)
7/19/2016	2.7 (J)	165	115	36.2	24.2	38.5	
10/19/2016	3 (J)						<5 (U)
10/20/2016		178	118	35	27.2	49.7	
1/12/2017	2.3 (J)	182	108	35	29.8	34.9	<5 (U)
4/17/2017	<1 (U)	181	108	32.4	31	43	<5 (U)
6/7/2017			98.2	31			<5 (U)
6/8/2017	1.4 (J)	191			31.2	41.1	
8/1/2017	2.4 (J)	179	126		26.6	55.6	3.7
8/2/2017				28.5			
10/19/2017	5.1	175	97.7	25.3	26.1	19.2	<5 (U)
4/2/2018	12.3	200	88.1		27.4	22	<5 (U)
4/3/2018				19.1			
10/8/2018				25.1			
10/9/2018	6	197	15.1		24.8	186	3.2
11/12/2018						162	
4/22/2019	1.9 (J)	303	34.6		21.6	121	<5 (U)
4/23/2019				26.7			
10/14/2019	<1 (U)	339	40.7		22.3	146	<5 (U)
10/15/2019				36			
4/13/2020	1.4 (J)	378	41.9		16.6	89.4	7.5 (J)
4/14/2020				30.2			
10/12/2020	1 (J)	388	22.8		16.8	49.4	
10/13/2020				37			<2.2 (U)
4/19/2021	2.9	379	61.2		15.8	45.3	
4/20/2021							<2.2
4/21/2021				35.3			
10/7/2021	7	466	61.8		14.9	24.9	
10/8/2021				43.8			
4/25/2022				34.2		60	
4/26/2022	8.5	513	58.1		15.4		3.7 (J)
10/18/2022	22.7	429	65.3	47.6	23	29.6	
4/3/2023							<2.2 (U)
4/4/2023	70.8	436	57		15.9	50	
4/5/2023				34.3			

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

Time Series



Constituent: Total Dissolved Solids Analysis Run 7/28/2023 9:53 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 7/28/2023 10:06 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-11B	B-11R	B-26 (bg)	B-31A	B-31R	B-7R
12/9/2015	338	494	616	424	274	374	198
4/12/2016				456			
4/13/2016	362	512	682		302	404	218
7/18/2016							220
7/19/2016	336	520	698	504	280	406	
10/19/2016	340						288
10/20/2016		496	660	466	292	452	
1/12/2017	322	488	616	446	284	380	240
4/17/2017	326	502	620	468	318	416	278
6/7/2017			630	538			240
6/8/2017	338	516			296	426	
8/1/2017	326	498	738		284	432	220
8/2/2017				496			
10/19/2017	322	510	586	542	290	358	242
4/2/2018	336	550	638		282	374	220
4/3/2018				464			
10/8/2018				450			
10/9/2018	332	602	266		278	668	186
11/12/2018		594				596	
4/22/2019	386	742	406		284	516	254
4/23/2019				458			
10/14/2019	348	728	310		272	480	208
10/15/2019				404			
4/13/2020	394	872	570		298	464	306
4/14/2020				464			
10/12/2020	364	906	600		300	462	
10/13/2020				448			208
4/19/2021	366	910	578		330	454	
4/20/2021							248
4/21/2021				470			
10/7/2021	356	884	576		294	372	
10/8/2021				440			
4/25/2022				470		428	
4/26/2022	350	1000	560		316		318
10/18/2022	332	920	572	472	310	386	
4/3/2023							224
4/4/2023	394	980	554		324	440	
4/5/2023				448			

Attachment 2

Outlier Analysis

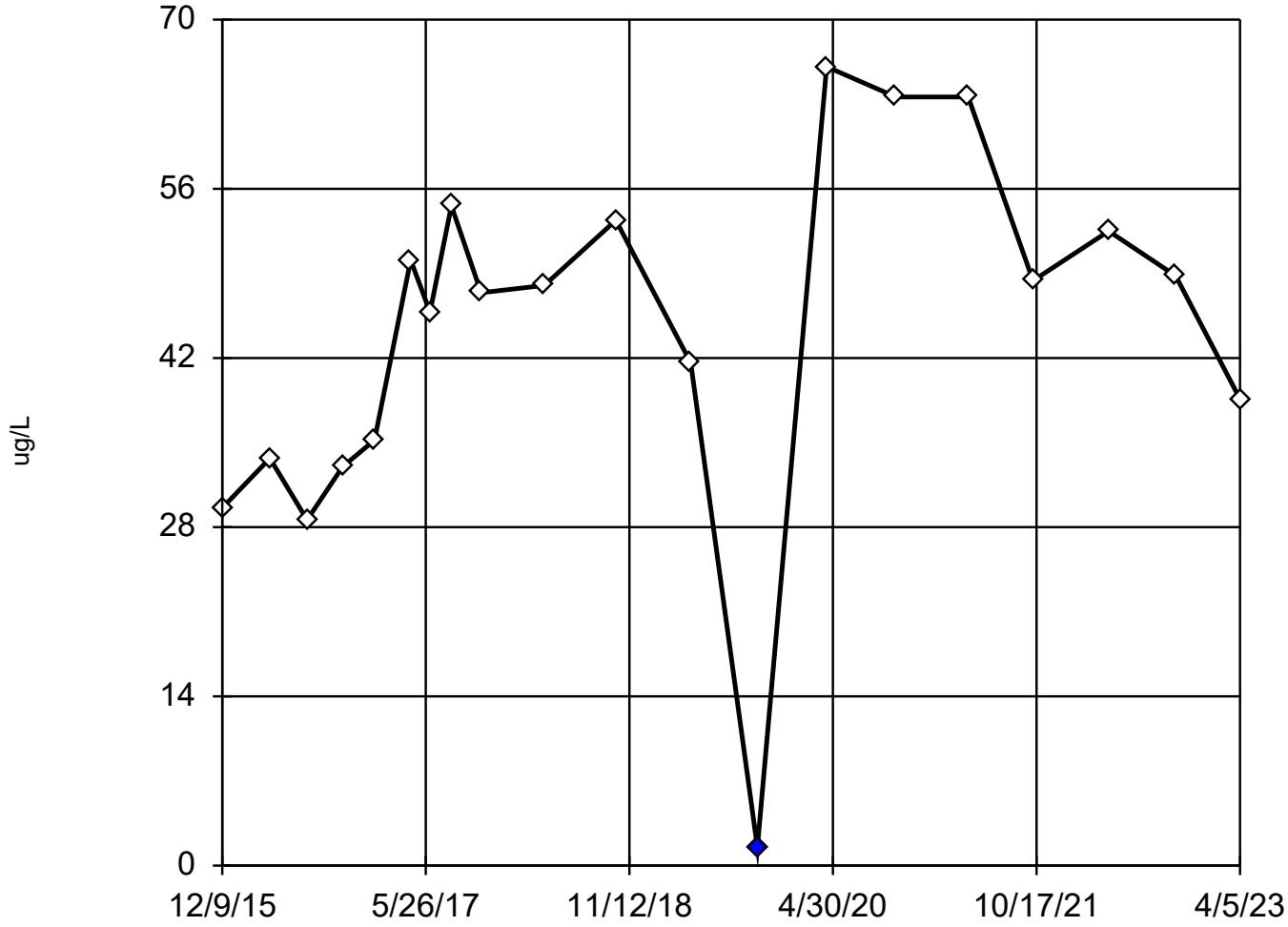
Outlier Analysis

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020 Printed 7/28/2023, 10:08 AM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Boron (ug/L)	**B-26 (bg)**	**Yes**	**1.5**	**10/15/2019**	**Dixon`s**	**0.05**	**20**	**44.21**	**14.92**	**normal**	**ShapiroWilk**
Calcium (ug/L)	B-26 (bg)	No	n/a	n/a	NP (nrm)	NaN	20	81022	20845	unknown	ShapiroWilk
Chloride (mg/L)	B-26 (bg)	No	n/a	n/a	EPA 1989	0.05	20	47.49	12.02	normal	ShapiroWilk
Field pH (Std. Units)	B-26 (bg)	No	n/a	n/a	NP (nrm)	NaN	20	7.289	0.166	unknown	ShapiroWilk
Fluoride (mg/L)	**B-26 (bg)**	**Yes**	**0.48**	**4/25/2022**	**NP (nrm)**	**NaN**	**20**	**0.1348**	**0.08926**	**unknown**	**ShapiroWilk**
Sulfate (mg/L)	B-26 (bg)	No	n/a	n/a	Dixon`s	0.05	20	33.39	6.518	normal	ShapiroWilk
Total Dissolved Solids (mg/L)	B-26 (bg)	No	n/a	n/a	EPA 1989	0.05	20	466.4	33.35	ln(x)	ShapiroWilk

Dixon's Outlier Test

B-26 (bg)



n = 20

Statistical outlier is drawn as solid.
Testing for 1 low outlier.
Mean = 44.21.
Std. Dev. = 14.92.
<3 (UX): c = 0.4525
tabl = 0.45.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.953
Critical = 0.917
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Boron Analysis Run 7/28/2023 10:06 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Dixon's Outlier Test

Constituent: Boron (ug/L) Analysis Run 7/28/2023 10:08 AM

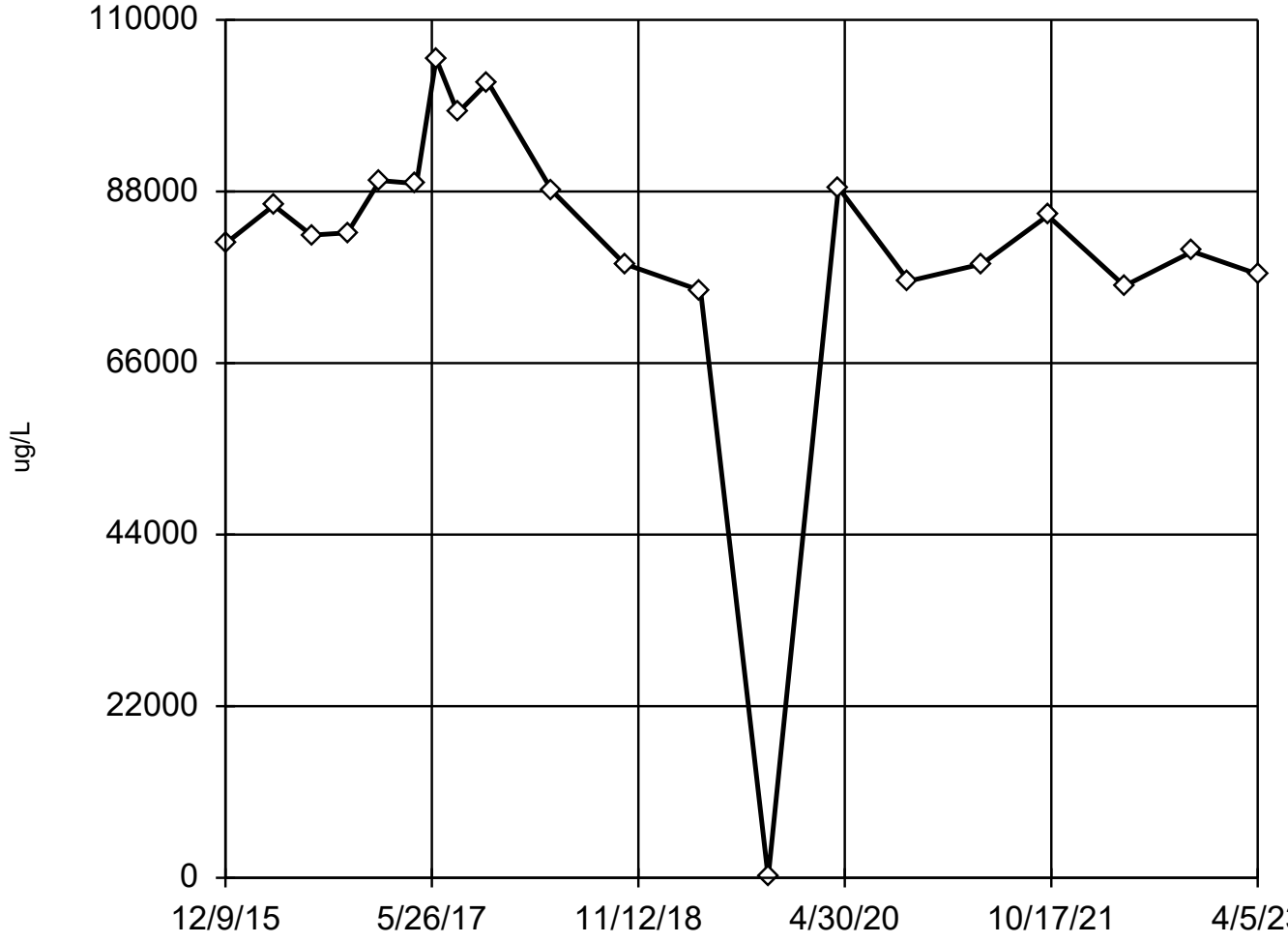
Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26 (bg)
12/9/2015	29.6
4/12/2016	33.7
7/19/2016	28.6
10/20/2016	33
1/12/2017	35.2
4/17/2017	50.1
6/7/2017	45.8
8/2/2017	54.6
10/19/2017	47.4
4/3/2018	48
10/8/2018	53.4
4/23/2019	41.6
10/15/2019	<3 (UXO)
4/14/2020	66.1
10/13/2020	63.6
4/21/2021	63.6
10/8/2021	48.4
4/25/2022	52.5
10/18/2022	48.8
4/5/2023	38.6

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

Tukey's Outlier Screening

B-26 (bg)



n = 20

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 111052, low cutoff = -57982, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/28/2023 10:06 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Tukey's Outlier Screening

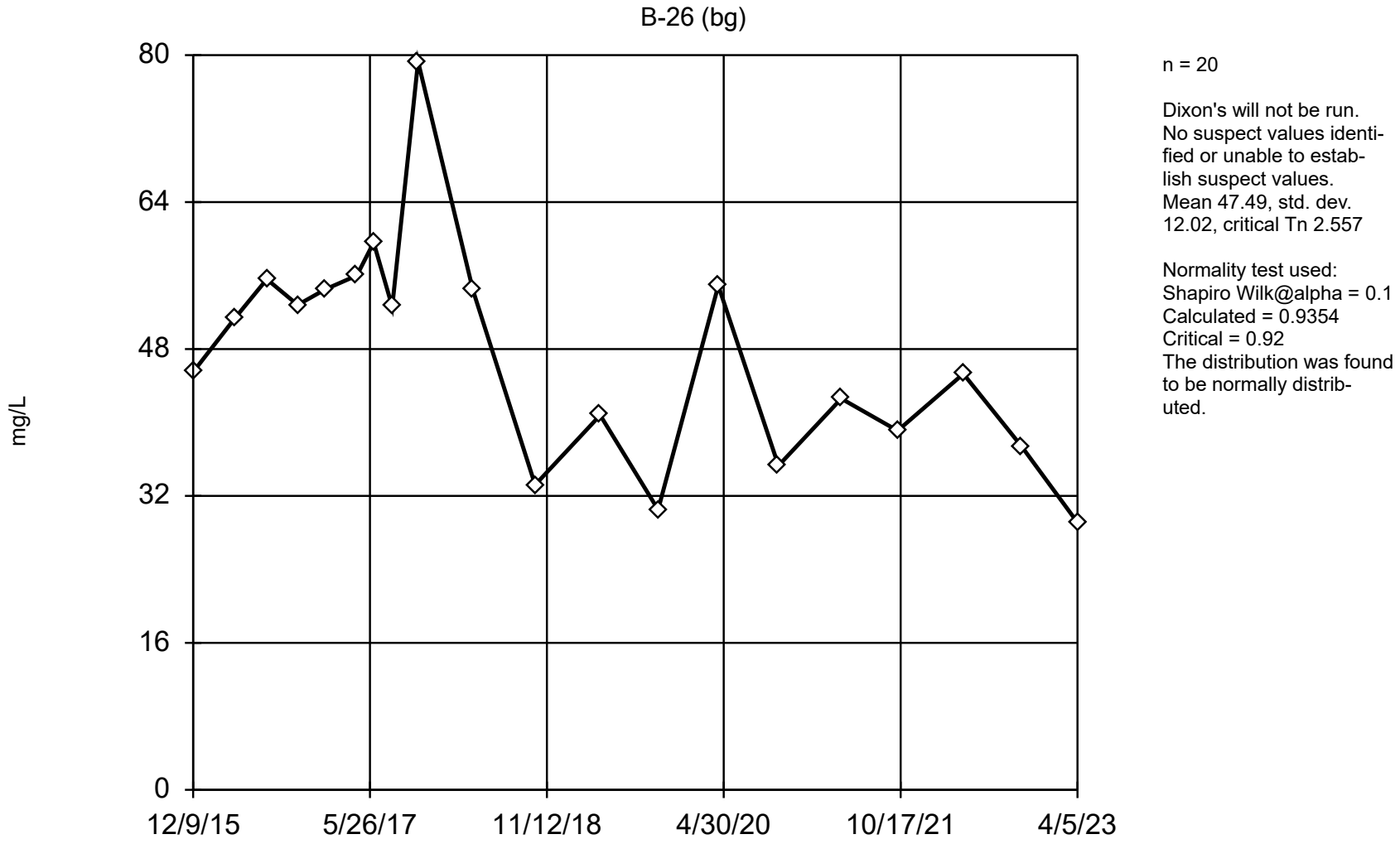
Constituent: Calcium (ug/L) Analysis Run 7/28/2023 10:08 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26 (bg)
12/9/2015	81300
4/12/2016	86200
7/19/2016	82400
10/20/2016	82700
1/12/2017	89400
4/17/2017	89000
6/7/2017	105000
8/2/2017	98100
10/19/2017	102000
4/3/2018	88100
10/8/2018	78700
4/23/2019	75300
10/15/2019	<76.2 (UX)
4/14/2020	88500
10/13/2020	76500
4/21/2021	78700
10/8/2021	84900
4/25/2022	75900
10/18/2022	80300
4/5/2023	77400

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

EPA Screening (suspected outliers for Dixon's Test)



n = 20

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 47.49, std. dev. 12.02, critical Tn 2.557

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9354
Critical = 0.92
The distribution was found to be normally distributed.

Constituent: Chloride Analysis Run 7/28/2023 10:06 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

EPA 1989 Outlier Screening

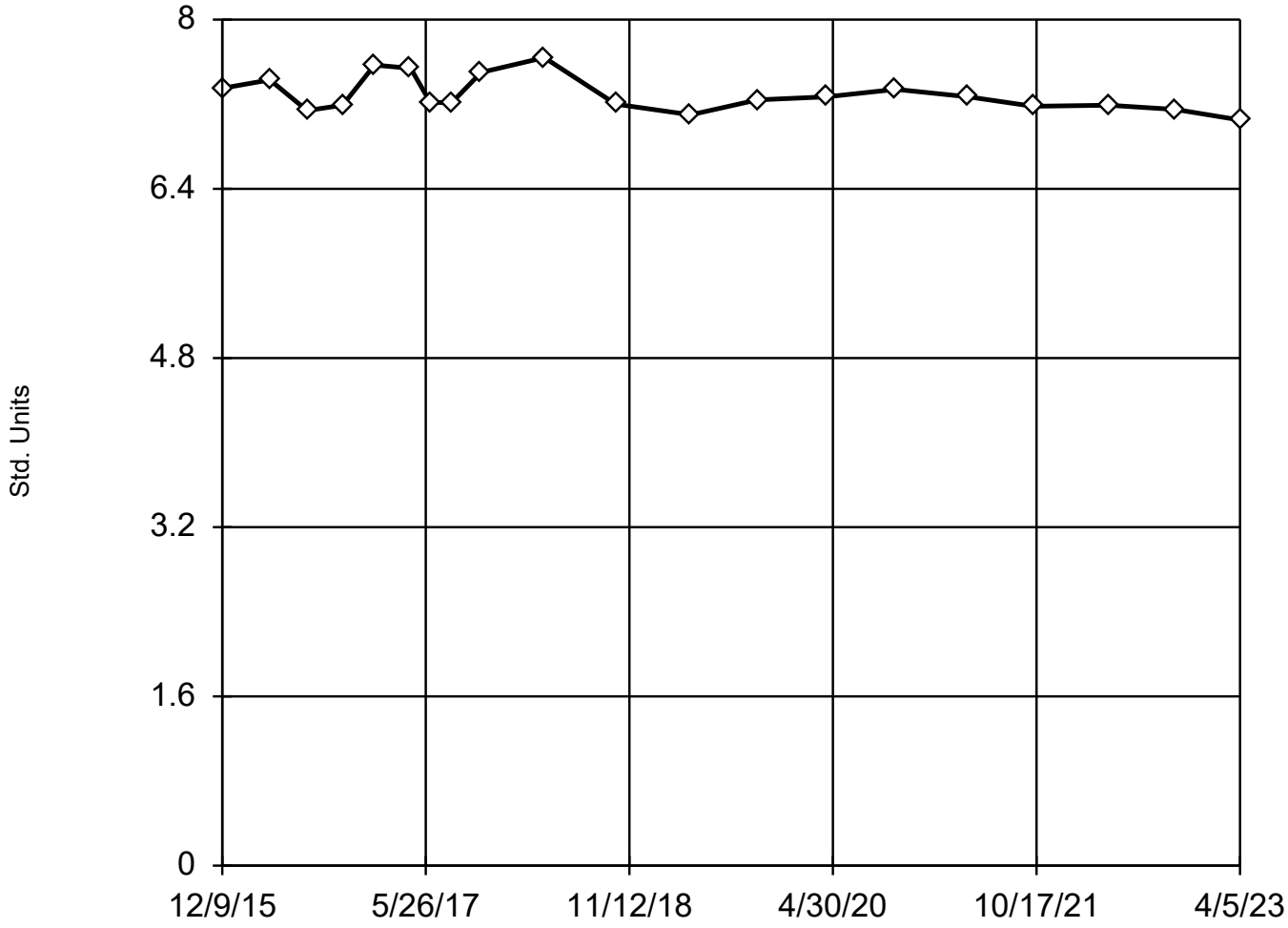
Constituent: Chloride (mg/L) Analysis Run 7/28/2023 10:08 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26 (bg)
12/9/2015	45.5
4/12/2016	51.3
7/19/2016	55.6
10/20/2016	52.8
1/12/2017	54.5
4/17/2017	56
6/7/2017	59.6
8/2/2017	52.6
10/19/2017	79.3
4/3/2018	54.4
10/8/2018	33.2
4/23/2019	40.8
10/15/2019	30.5
4/14/2020	54.9
10/13/2020	35.3
4/21/2021	42.6
10/8/2021	39.1
4/25/2022	45.3
10/18/2022	37.4
4/5/2023	29.1

Tukey's Outlier Screening

B-26 (bg)



n = 20

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.04, low cutoff = 6.604, based on IQR multiplier of 3.

Constituent: Field pH Analysis Run 7/28/2023 10:06 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Tukey's Outlier Screening

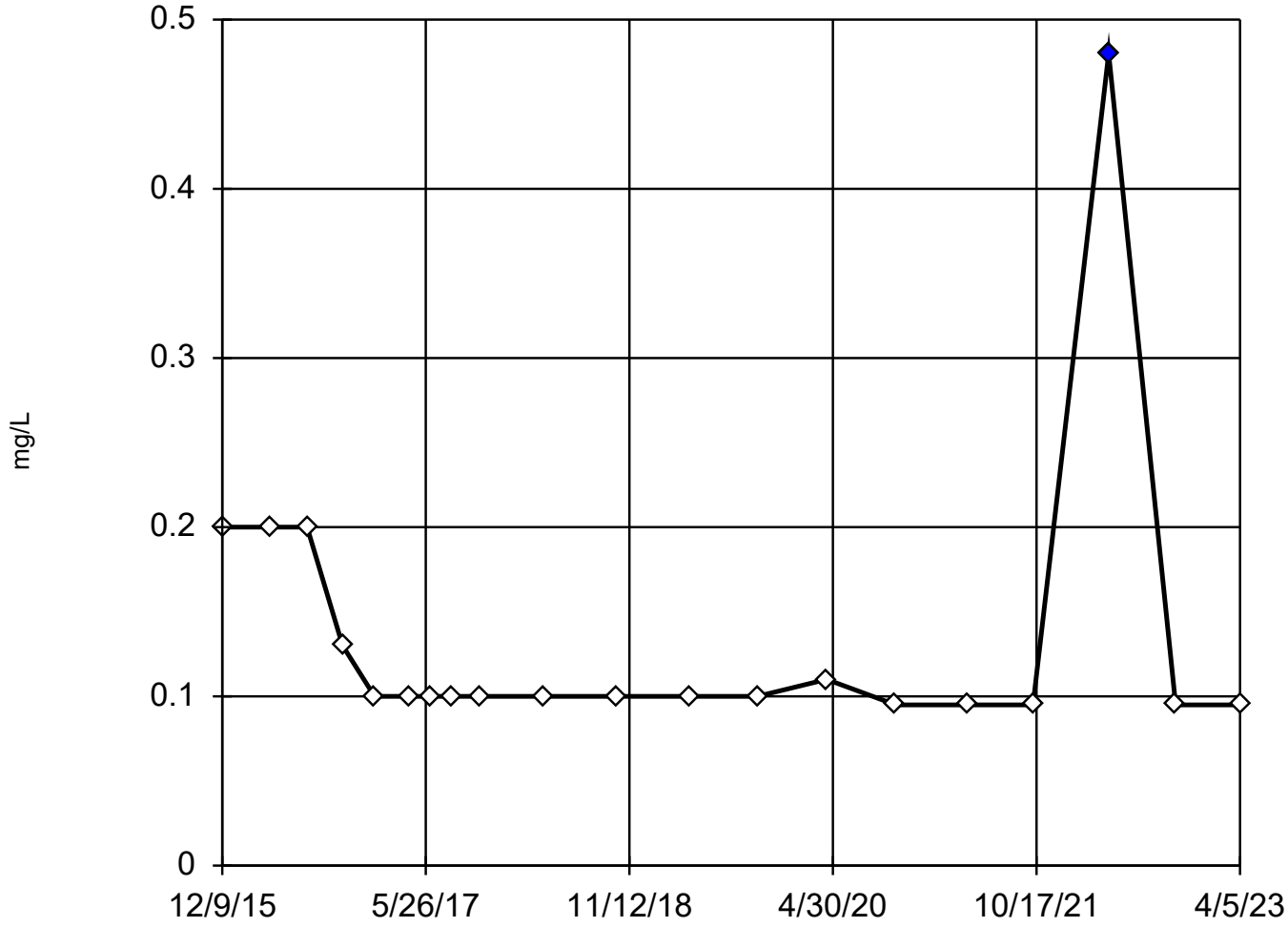
Constituent: Field pH (Std. Units) Analysis Run 7/28/2023 10:08 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26 (bg)
12/9/2015	7.35
4/12/2016	7.43
7/19/2016	7.14
10/20/2016	7.19
1/12/2017	7.57
4/17/2017	7.54
6/7/2017	7.22
8/2/2017	7.21
10/19/2017	7.5
4/3/2018	7.64
10/8/2018	7.2
4/23/2019	7.1
10/15/2019	7.24
4/14/2020	7.27
10/13/2020	7.34
4/21/2021	7.27
10/8/2021	7.18
4/25/2022	7.19
10/18/2022	7.15
4/5/2023	7.05

Tukey's Outlier Screening

B-26 (bg)



n = 20

Outlier is drawn as solid. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2208, low cutoff = 0.05278, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/28/2023 10:06 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Tukey's Outlier Screening

Constituent: Fluoride (mg/L) Analysis Run 7/28/2023 10:08 AM

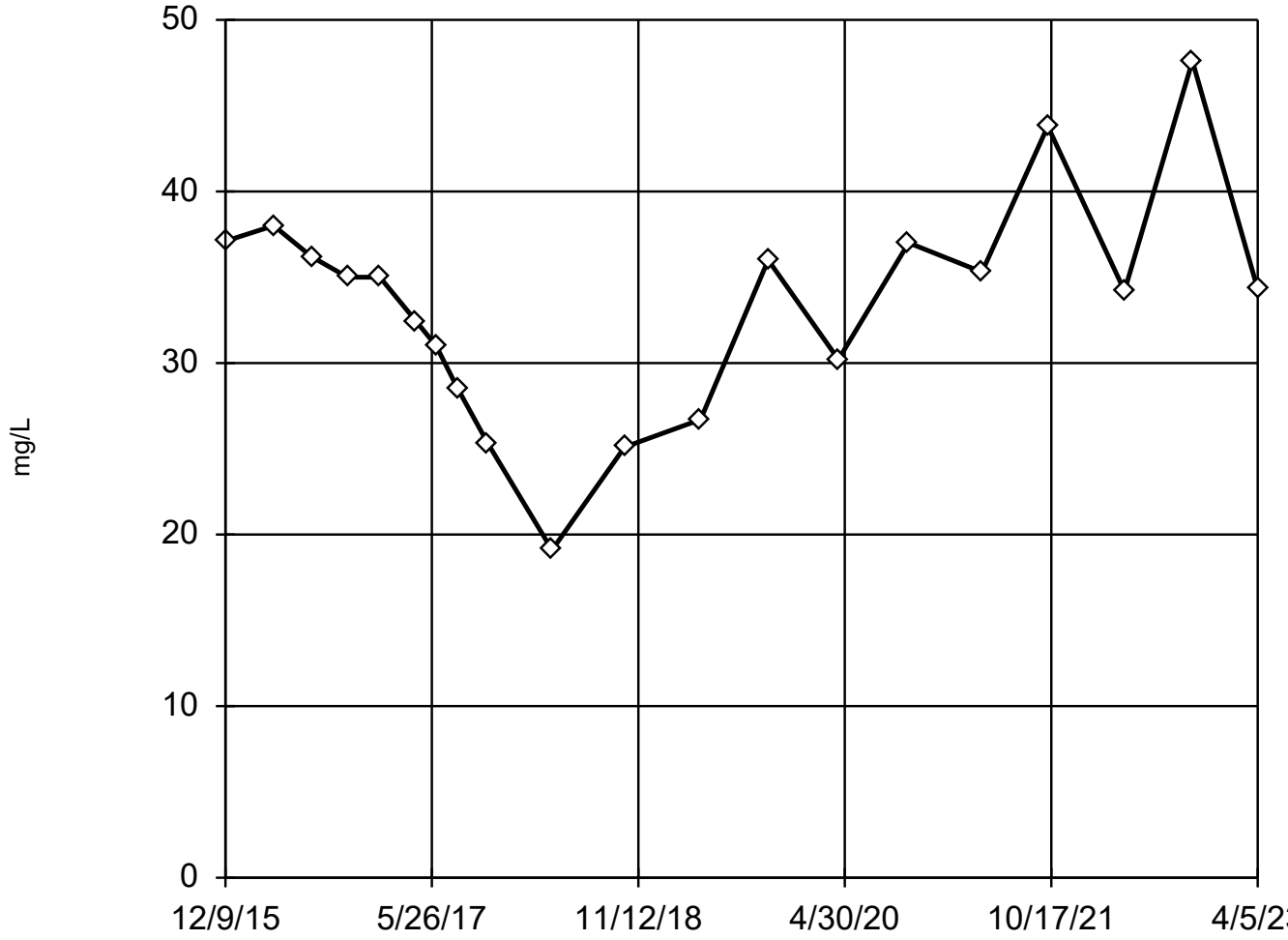
Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26 (bg)
12/9/2015	<0.2 (U)
4/12/2016	<0.2 (U)
7/19/2016	<0.2 (U)
10/20/2016	0.13 (J)
1/12/2017	<0.1 (U)
4/17/2017	<0.1 (U)
6/7/2017	<0.1 (U)
8/2/2017	<0.1 (U)
10/19/2017	<0.1 (U)
4/3/2018	<0.1 (U)
10/8/2018	<0.1 (U)
4/23/2019	<0.1 (U)
10/15/2019	<0.1 (U)
4/14/2020	0.11 (J)
10/13/2020	<0.095 (U)
4/21/2021	<0.095
10/8/2021	<0.095 (U)
4/25/2022	<0.48 (UO)
10/18/2022	<0.095 (U)
4/5/2023	<0.095 (U)

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

Dixon's Outlier Test

B-26 (bg)



n = 20

No statistical outliers.
Testing for 1 low outlier.
Mean = 33.39.
Std. Dev. = 6.518.
19.1: c = 0.328
tabl = 0.45.
Alpha = 0.05.

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9453
Critical = 0.917
The distribution was found to be normally distrib-uted.

Constituent: Sulfate Analysis Run 7/28/2023 10:06 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

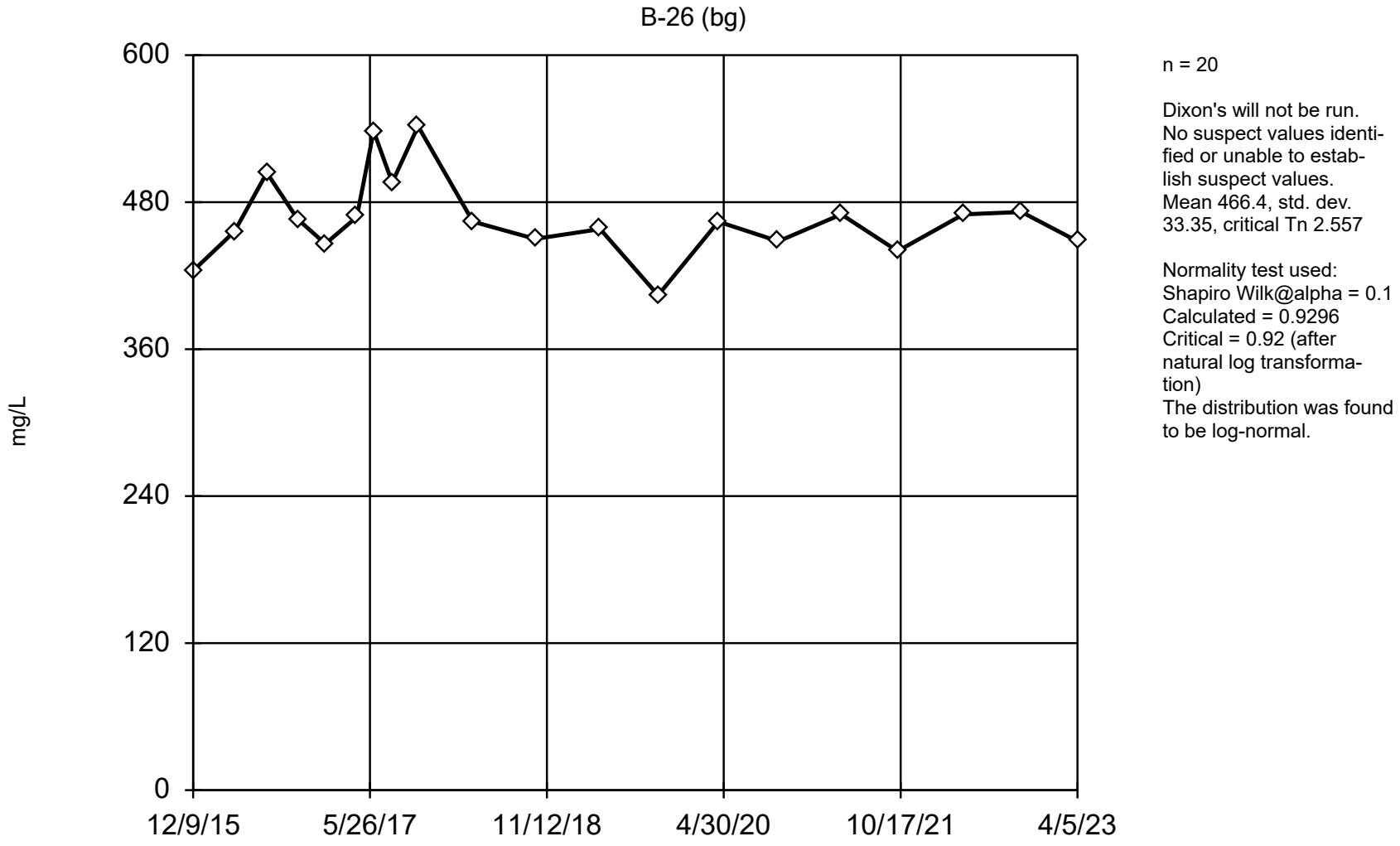
Dixon's Outlier Test

Constituent: Sulfate (mg/L) Analysis Run 7/28/2023 10:08 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26 (bg)
12/9/2015	37.1
4/12/2016	38
7/19/2016	36.2
10/20/2016	35
1/12/2017	35
4/17/2017	32.4
6/7/2017	31
8/2/2017	28.5
10/19/2017	25.3
4/3/2018	19.1
10/8/2018	25.1
4/23/2019	26.7
10/15/2019	36
4/14/2020	30.2
10/13/2020	37
4/21/2021	35.3
10/8/2021	43.8
4/25/2022	34.2
10/18/2022	47.6
4/5/2023	34.3

EPA Screening (suspected outliers for Dixon's Test)



n = 20

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 466.4, std. dev. 33.35, critical Tn 2.557

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9296
Critical = 0.92 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Total Dissolved Solids Analysis Run 7/28/2023 10:06 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

EPA 1989 Outlier Screening

Constituent: Total Dissolved Solids (mg/L) Analysis Run 7/28/2023 10:08 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26 (bg)
12/9/2015	424
4/12/2016	456
7/19/2016	504
10/20/2016	466
1/12/2017	446
4/17/2017	468
6/7/2017	538
8/2/2017	496
10/19/2017	542
4/3/2018	464
10/8/2018	450
4/23/2019	458
10/15/2019	404
4/14/2020	464
10/13/2020	448
4/21/2021	470
10/8/2021	440
4/25/2022	470
10/18/2022	472
4/5/2023	448

Attachment 3

Welch’s/Mann-Whitney Comparison

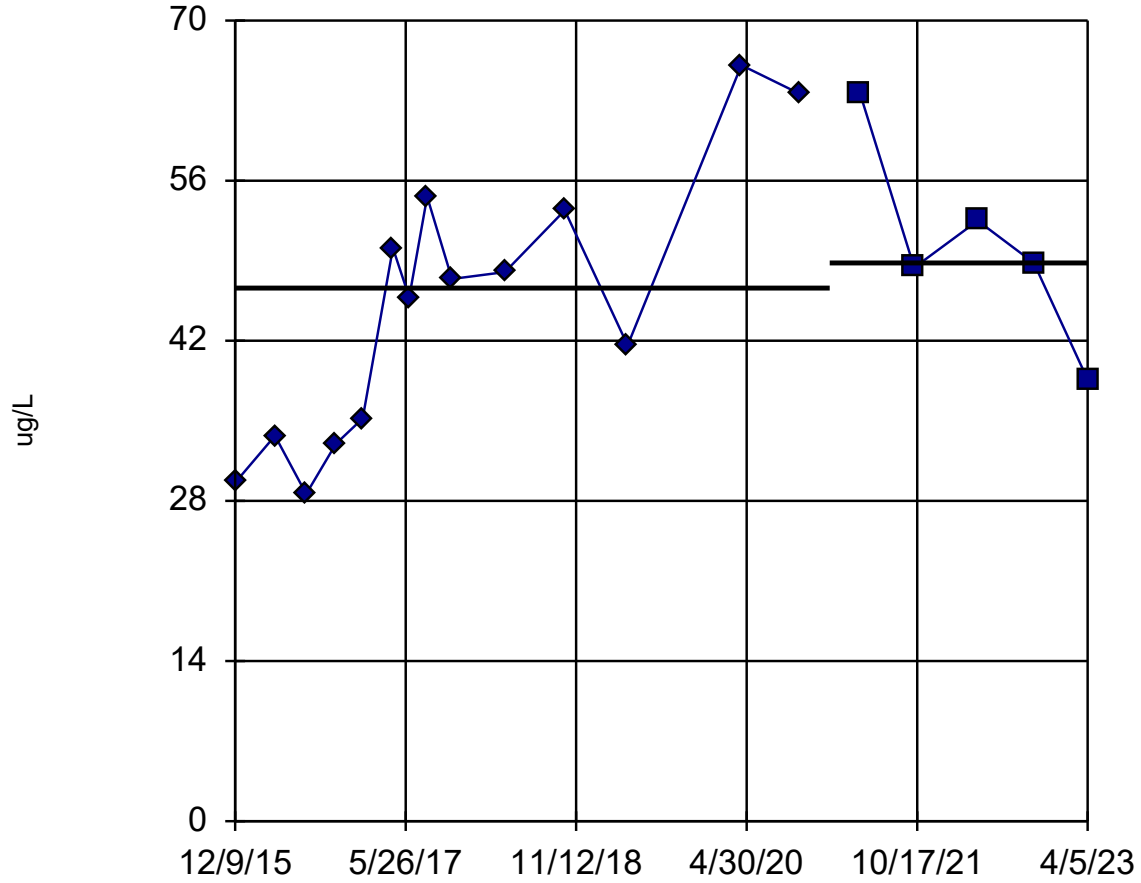
Welch's t-test/Mann-Whitney

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020 Printed 7/28/2023, 10:20 AM

Constituent	Well	Calc.	0.1	0.05	0.025	0.01	Alpha	Sig.	Bg. Wells	Method
Boron (ug/L)	B-26 (bg)	1.034	No	No	No	No	0.01	No	(intrawell)	Welch`s
Calcium (ug/L)	B-26 (bg)	-2.756	No	No	No	No	0.01	No	(intrawell)	Welch`s
Chloride (mg/L)	B-26 (bg)	-2.799	No	No	No	No	0.01	No	(intrawell)	Welch`s
Field pH (Std. Units)	B-26 (bg)	-2.864	No	No	No	No	0.01	No	(intrawell)	Welch`s
Fluoride (mg/L)	B-26 (bg)	-3.049	No	No	No	No	0.01	No	(intrawell)	Mann-W (NDs)
Sulfate (mg/L)	B-26 (bg)	2.397	Yes	Yes	No	No	0.01	No	(intrawell)	Welch`s
Total Dissolved Solids (mg/L)	B-26 (bg)	-0.7225	No	No	No	No	0.01	No	(intrawell)	Welch`s

Welch's t-test

B-26 (bg)



◆ B-26 background

■ B-26 compliance

background median = 46.6

compliance median = 48.8

t = 1.034

Alpha	Table	Sig.
0.1	1.372	No
0.05	1.812	No
0.025	2.228	No
0.01	2.764	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9463, critical = 0.874.

Constituent: Boron Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Welch's t-test

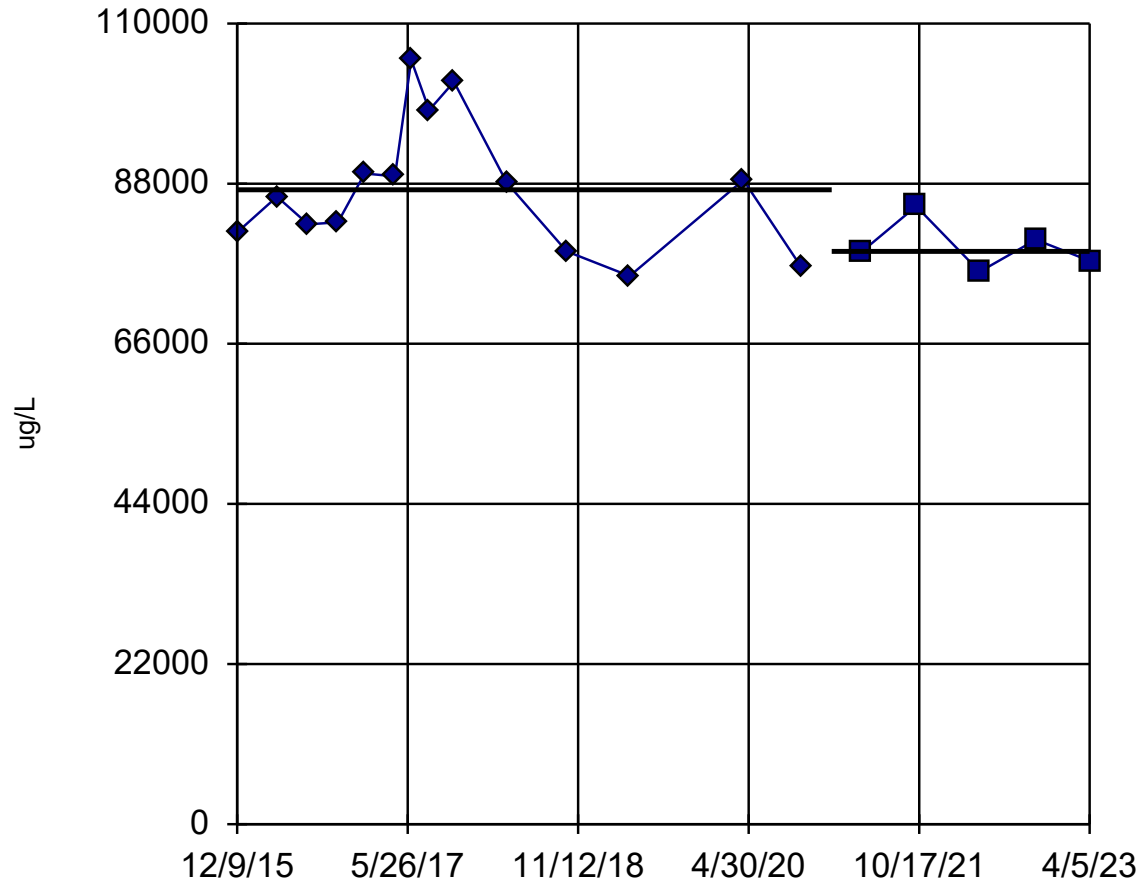
Constituent: Boron (ug/L) Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26	B-26
12/9/2015	29.6	
4/12/2016	33.7	
7/19/2016	28.6	
10/20/2016	33	
1/12/2017	35.2	
4/17/2017	50.1	
6/7/2017	45.8	
8/2/2017	54.6	
10/19/2017	47.4	
4/3/2018	48	
10/8/2018	53.4	
4/23/2019	41.6	
10/15/2019	<3 (UX)	
4/14/2020	66.1	
10/13/2020	63.6	
4/21/2021		63.6
10/8/2021		48.4
4/25/2022		52.5
10/18/2022		48.8
4/5/2023		38.6

Welch's t-test

B-26 (bg)



◆ B-26 background

■ B-26 compliance

background median = 87150

compliance median = 78700

t = -2.756

Alpha	Table	Sig.
0.1	1.333	No
0.05	1.74	No
0.025	2.11	No
0.01	2.567	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9297, critical = 0.874.

Constituent: Calcium Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Welch's t-test

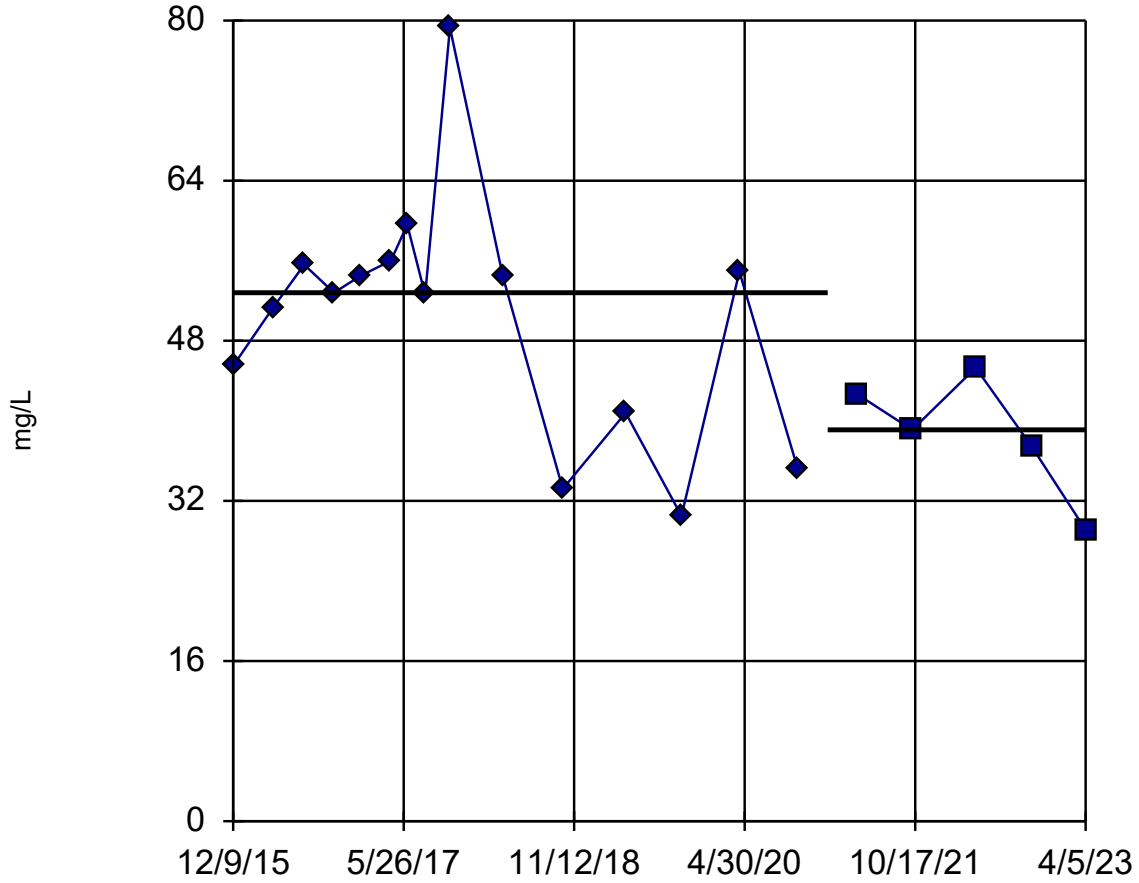
Constituent: Calcium (ug/L) Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26	B-26
12/9/2015	81300	
4/12/2016	86200	
7/19/2016	82400	
10/20/2016	82700	
1/12/2017	89400	
4/17/2017	89000	
6/7/2017	105000	
8/2/2017	98100	
10/19/2017	102000	
4/3/2018	88100	
10/8/2018	78700	
4/23/2019	75300	
10/15/2019	<76.2 (UX)	
4/14/2020	88500	
10/13/2020	76500	
4/21/2021		78700
10/8/2021		84900
4/25/2022		75900
10/18/2022		80300
4/5/2023		77400

Welch's t-test

B-26 (bg)



◆ B-26 background

■ B-26 compliance

background median = 52.8

compliance median = 39.1

t = -2.799

Alpha	Table	Sig.
0.1	1.345	No
0.05	1.761	No
0.025	2.145	No
0.01	2.624	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9076, critical = 0.881.

Constituent: Chloride Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

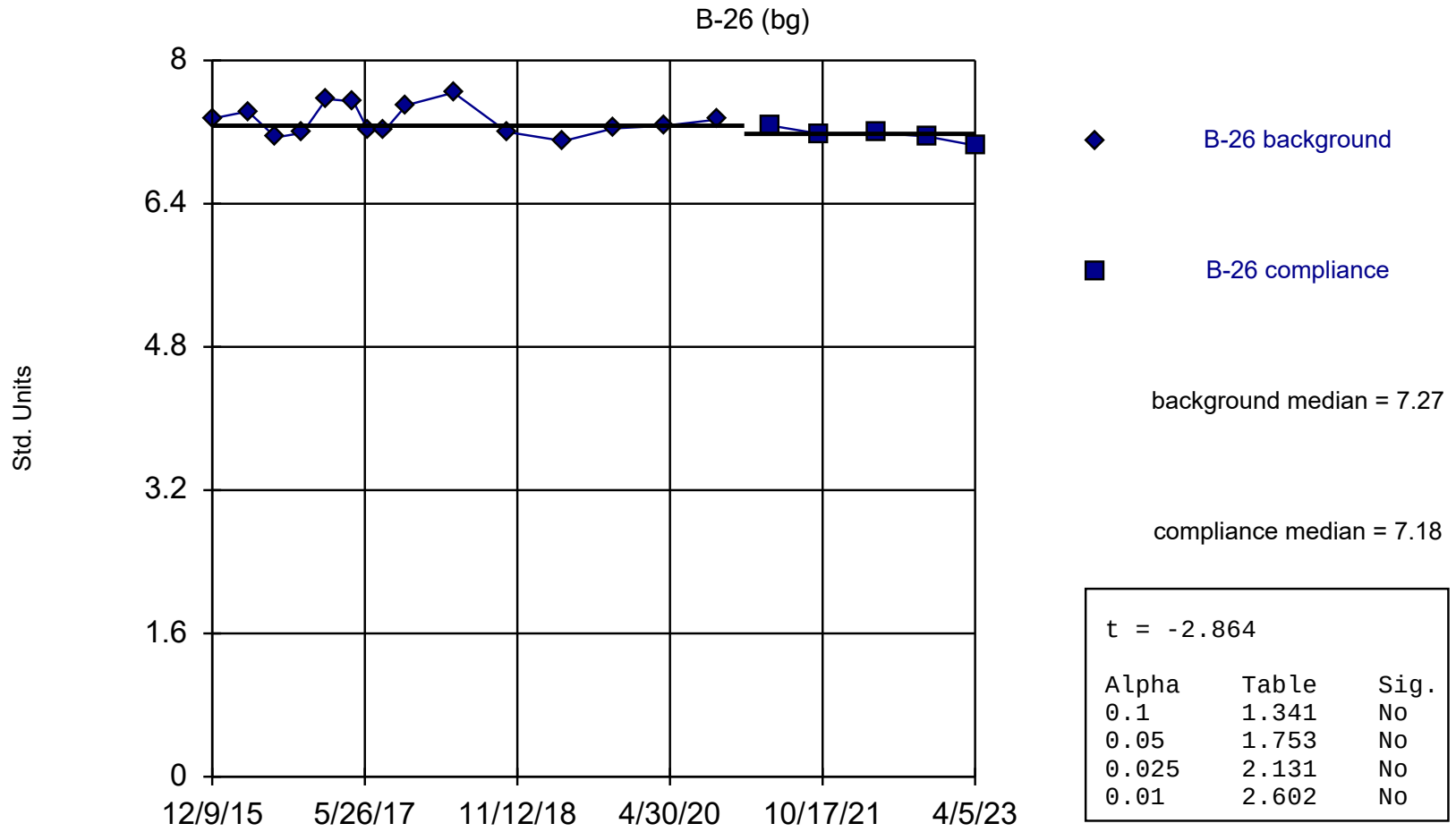
Welch's t-test

Constituent: Chloride (mg/L) Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26	B-26
12/9/2015	45.5	
4/12/2016	51.3	
7/19/2016	55.6	
10/20/2016	52.8	
1/12/2017	54.5	
4/17/2017	56	
6/7/2017	59.6	
8/2/2017	52.6	
10/19/2017	79.3	
4/3/2018	54.4	
10/8/2018	33.2	
4/23/2019	40.8	
10/15/2019	30.5	
4/14/2020	54.9	
10/13/2020	35.3	
4/21/2021		42.6
10/8/2021		39.1
4/25/2022		45.3
10/18/2022		37.4
4/5/2023		29.1

Welch's t-test



t = -2.864

Alpha	Table	Sig.
0.1	1.341	No
0.05	1.753	No
0.025	2.131	No
0.01	2.602	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9265, critical = 0.881.

Constituent: Field pH Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Welch's t-test

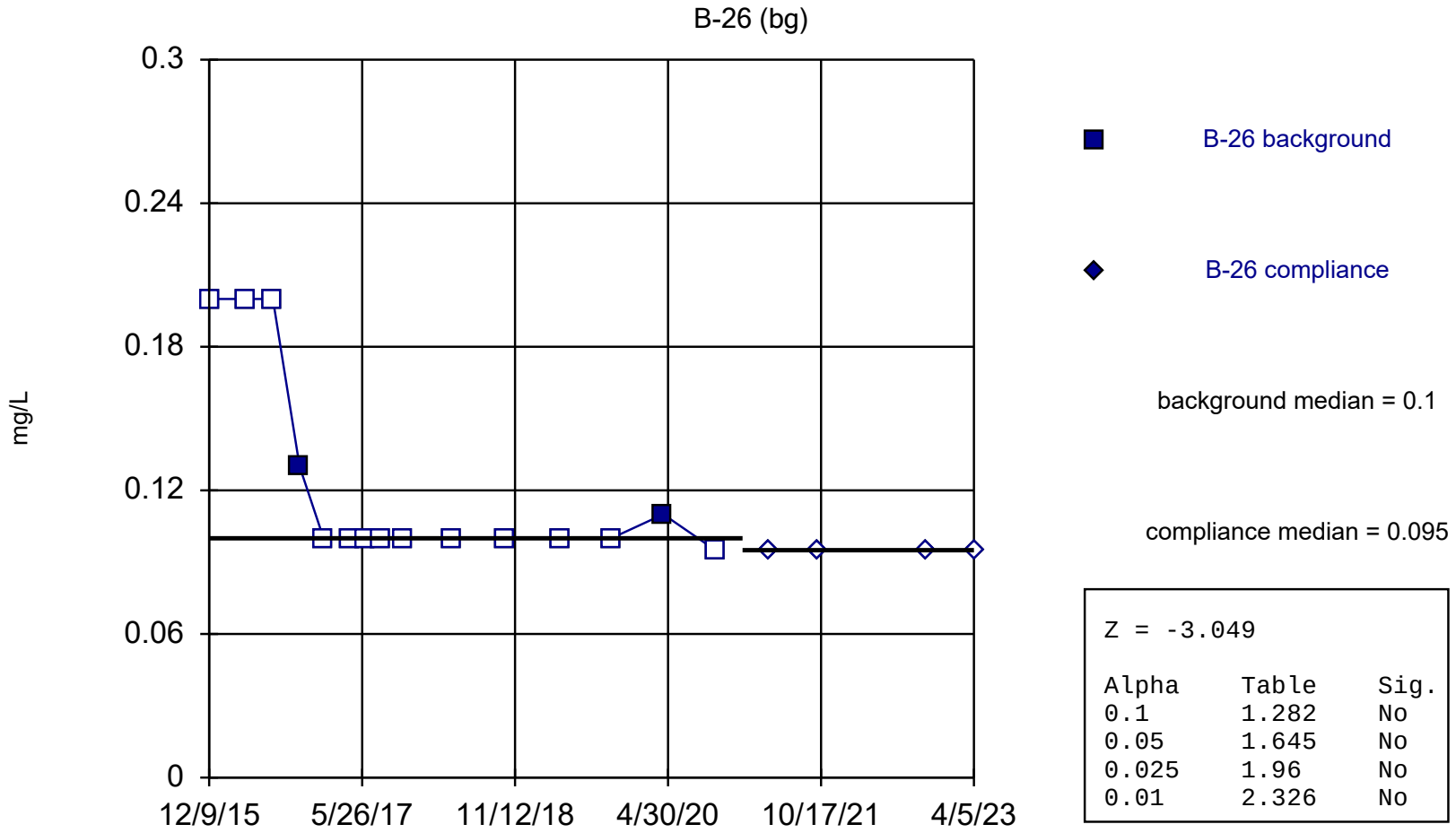
Constituent: Field pH (Std. Units) Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26	B-26
12/9/2015	7.35	
4/12/2016	7.43	
7/19/2016	7.14	
10/20/2016	7.19	
1/12/2017	7.57	
4/17/2017	7.54	
6/7/2017	7.22	
8/2/2017	7.21	
10/19/2017	7.5	
4/3/2018	7.64	
10/8/2018	7.2	
4/23/2019	7.1	
10/15/2019	7.24	
4/14/2020	7.27	
10/13/2020	7.34	
4/21/2021		7.27
10/8/2021		7.18
4/25/2022		7.19
10/18/2022		7.15
4/5/2023		7.05

Hollow symbols indicate censored values.

Mann-Whitney (Wilcoxon Rank Sum)




```
Z = -3.049

Alpha     Table     Sig.
0.1       1.282     No
0.05      1.645     No
0.025     1.96      No
0.01      2.326     No
```

Mann-Whitney (Wilcoxon Rank Sum) used in lieu of Welch's t-test because censored data exceeded 75%.

Constituent: Fluoride Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: Fluoride (mg/L) Analysis Run 7/28/2023 10:20 AM

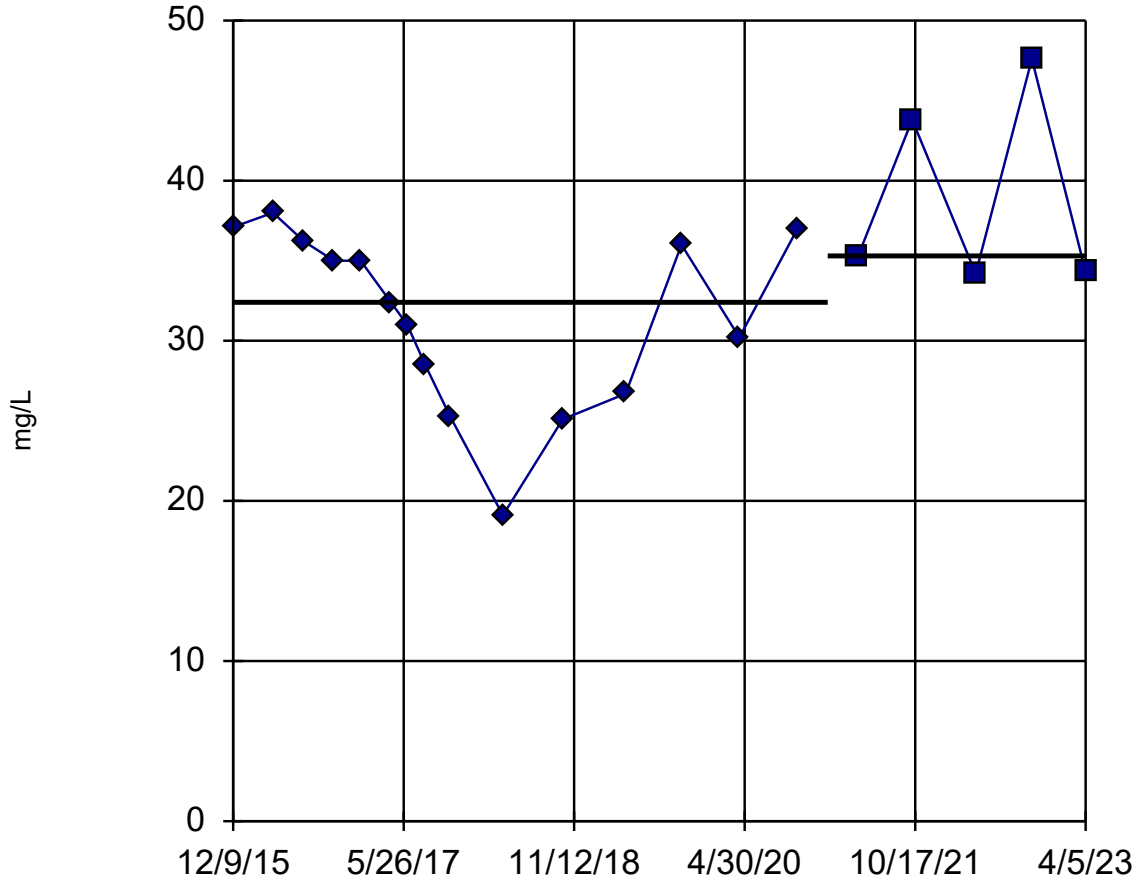
Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26	B-26
12/9/2015	<0.2 (U)	
4/12/2016	<0.2 (U)	
7/19/2016	<0.2 (U)	
10/20/2016	0.13 (J)	
1/12/2017	<0.1 (U)	
4/17/2017	<0.1 (U)	
6/7/2017	<0.1 (U)	
8/2/2017	<0.1 (U)	
10/19/2017	<0.1 (U)	
4/3/2018	<0.1 (U)	
10/8/2018	<0.1 (U)	
4/23/2019	<0.1 (U)	
10/15/2019	<0.1 (U)	
4/14/2020	0.11 (J)	
10/13/2020	<0.095 (U)	
4/21/2021		<0.095 (U)
10/8/2021		<0.095 (U)
4/25/2022	<0.48 (UX)	
10/18/2022		<0.095 (U)
4/5/2023		<0.095 (U)

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

Welch's t-test

B-26 (bg)



B-26 background

B-26 compliance

background median = 32.4

compliance median = 35.3

t = 2.397

Alpha	Table	Sig.
0.1	1.44	Yes
0.05	1.943	Yes
0.025	2.447	No
0.01	3.143	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9132, critical = 0.881.

Constituent: Sulfate Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Welch's t-test

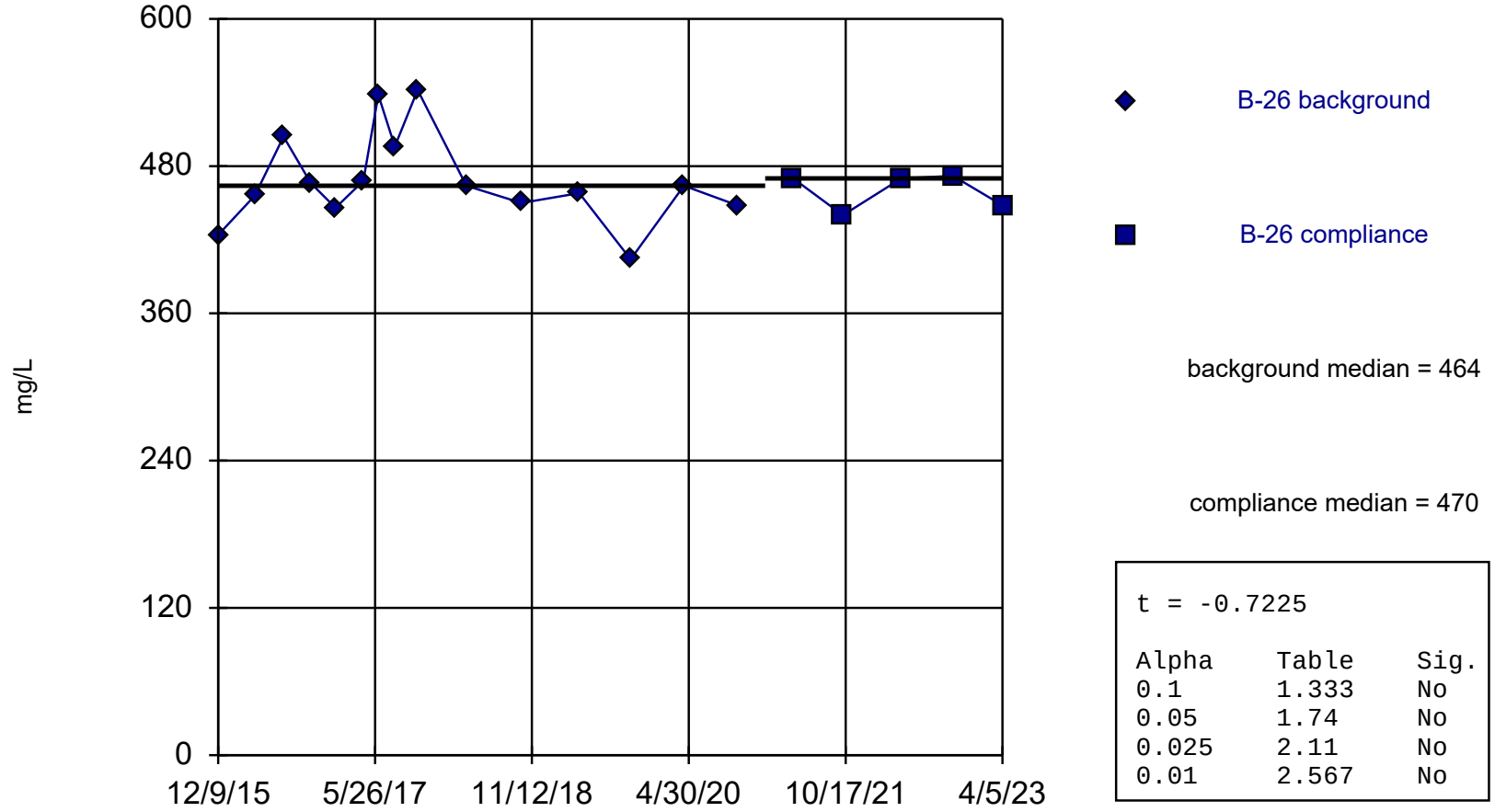
Constituent: Sulfate (mg/L) Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26	B-26
12/9/2015	37.1	
4/12/2016	38	
7/19/2016	36.2	
10/20/2016	35	
1/12/2017	35	
4/17/2017	32.4	
6/7/2017	31	
8/2/2017	28.5	
10/19/2017	25.3	
4/3/2018	19.1	
10/8/2018	25.1	
4/23/2019	26.7	
10/15/2019	36	
4/14/2020	30.2	
10/13/2020	37	
4/21/2021		35.3
10/8/2021		43.8
4/25/2022		34.2
10/18/2022		47.6
4/5/2023		34.3

Welch's t-test

B-26 (bg)



background median = 464

compliance median = 470

t = -0.7225

Alpha	Table	Sig.
0.1	1.333	No
0.05	1.74	No
0.025	2.11	No
0.01	2.567	No

Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9236, critical = 0.881.

Constituent: Total Dissolved Solids Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Welch's t-test

Constituent: Total Dissolved Solids (mg/L) Analysis Run 7/28/2023 10:20 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-26	B-26
12/9/2015	424	
4/12/2016	456	
7/19/2016	504	
10/20/2016	466	
1/12/2017	446	
4/17/2017	468	
6/7/2017	538	
8/2/2017	496	
10/19/2017	542	
4/3/2018	464	
10/8/2018	450	
4/23/2019	458	
10/15/2019	404	
4/14/2020	464	
10/13/2020	448	
4/21/2021		470
10/8/2021		440
4/25/2022		470
10/18/2022		472
4/5/2023		448

Attachment 4

Interwell Prediction Limit Analysis

Prediction Limit

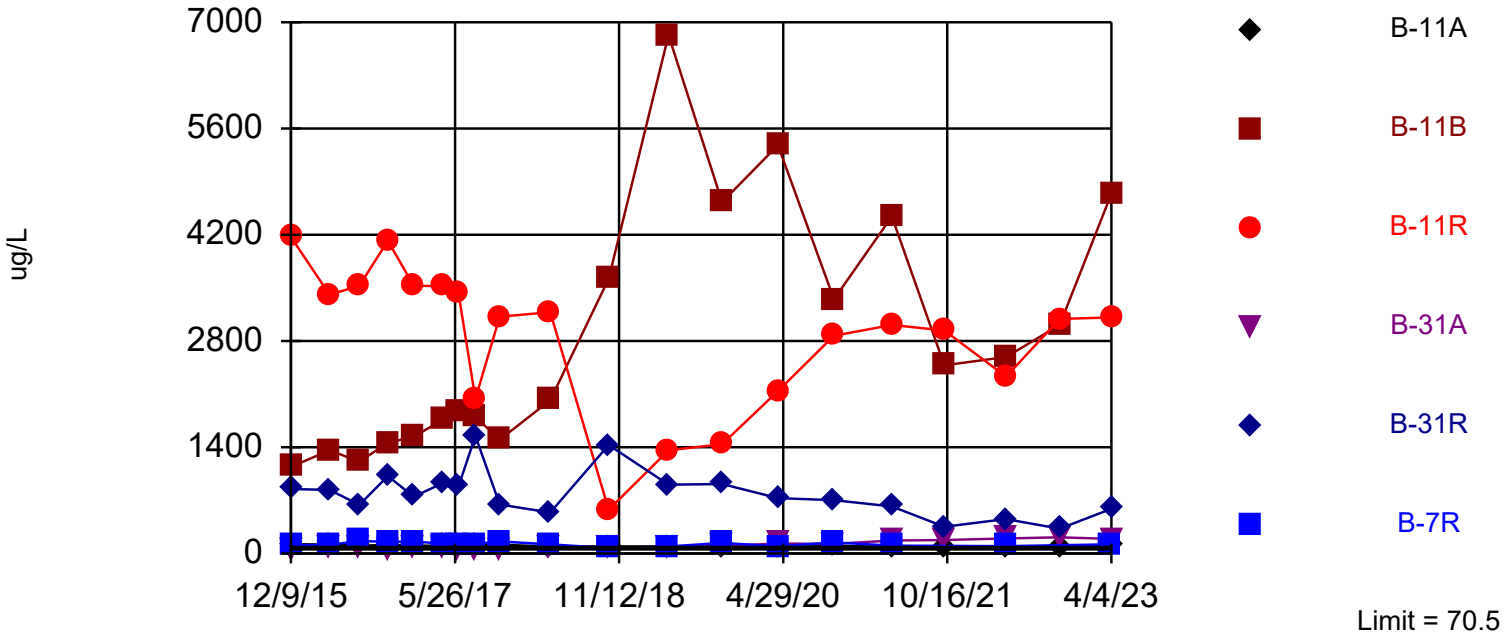
Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020 Printed 7/28/2023, 10:32 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (ug/L)	**B-11A**	**70.5**	**n/a**	**4/4/2023**	**119**	**Yes**	**19**	**B-26**	**46.45**	**11.33**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Boron (ug/L)	**B-11B**	**70.5**	**n/a**	**4/4/2023**	**4740**	**Yes**	**19**	**B-26**	**46.45**	**11.33**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Boron (ug/L)	**B-11R**	**70.5**	**n/a**	**4/4/2023**	**3110**	**Yes**	**19**	**B-26**	**46.45**	**11.33**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Boron (ug/L)	**B-31A**	**70.5**	**n/a**	**4/4/2023**	**193**	**Yes**	**19**	**B-26**	**46.45**	**11.33**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Boron (ug/L)	**B-31R**	**70.5**	**n/a**	**4/4/2023**	**589**	**Yes**	**19**	**B-26**	**46.45**	**11.33**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Boron (ug/L)	**B-7R**	**70.5**	**n/a**	**4/3/2023**	**120**	**Yes**	**19**	**B-26**	**46.45**	**11.33**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Calcium (ug/L)	B-11A	104000	n/a	4/4/2023	51700	No	19	B-26	85284	8666	0	None	No	0.001254	Param Inter 1 of 2
Calcium (ug/L)	B-11B	104000	n/a	4/4/2023	84400	No	19	B-26	85284	8666	0	None	No	0.001254	Param Inter 1 of 2
Calcium (ug/L)	**B-11R**	**104000**	**n/a**	**4/4/2023**	**105000**	**Yes**	**19**	**B-26**	**85284**	**8666**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Calcium (ug/L)	B-31A	104000	n/a	4/4/2023	46100	No	19	B-26	85284	8666	0	None	No	0.001254	Param Inter 1 of 2
Calcium (ug/L)	B-31R	104000	n/a	4/4/2023	88300	No	19	B-26	85284	8666	0	None	No	0.001254	Param Inter 1 of 2
Calcium (ug/L)	B-7R	104000	n/a	4/3/2023	48800	No	19	B-26	85284	8666	0	None	No	0.001254	Param Inter 1 of 2
Chloride (mg/L)	B-11A	72.7	n/a	4/4/2023	40.7	No	20	B-26	47.49	12.02	0	None	No	0.001254	Param Inter 1 of 2
Chloride (mg/L)	B-11B	72.7	n/a	4/4/2023	25.2	No	20	B-26	47.49	12.02	0	None	No	0.001254	Param Inter 1 of 2
Chloride (mg/L)	B-11R	72.7	n/a	4/4/2023	30.7	No	20	B-26	47.49	12.02	0	None	No	0.001254	Param Inter 1 of 2
Chloride (mg/L)	B-31A	72.7	n/a	4/4/2023	50.4	No	20	B-26	47.49	12.02	0	None	No	0.001254	Param Inter 1 of 2
Chloride (mg/L)	B-31R	72.7	n/a	4/4/2023	24.5	No	20	B-26	47.49	12.02	0	None	No	0.001254	Param Inter 1 of 2
Chloride (mg/L)	B-7R	72.7	n/a	4/3/2023	7.9J	No	20	B-26	47.49	12.02	0	None	No	0.001254	Param Inter 1 of 2
Field pH (Std. Units)	B-11A	7.64	n/a	4/4/2023	7.62	No	20	B-26	7.289	0.166	0	None	No	0.001254	Param Inter 1 of 2
Field pH (Std. Units)	**B-11B**	**7.64**	**n/a**	**4/4/2023**	**7.68**	**Yes**	**20**	**B-26**	**7.289**	**0.166**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Field pH (Std. Units)	B-11R	7.64	n/a	4/4/2023	6.81	No	20	B-26	7.289	0.166	0	None	No	0.001254	Param Inter 1 of 2
Field pH (Std. Units)	B-31A	7.64	n/a	4/4/2023	7.59	No	20	B-26	7.289	0.166	0	None	No	0.001254	Param Inter 1 of 2
Field pH (Std. Units)	B-31R	7.64	n/a	4/4/2023	6.62	No	20	B-26	7.289	0.166	0	None	No	0.001254	Param Inter 1 of 2
Field pH (Std. Units)	B-7R	7.64	n/a	4/3/2023	6.18	No	20	B-26	7.289	0.166	0	None	No	0.001254	Param Inter 1 of 2
Fluoride (mg/L)	B-11A	0.200	n/a	4/4/2023	0.22J	No	19	B-26	n/a	n/a	89.47	n/a	n/a	0.004416	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	B-11B	0.200	n/a	4/4/2023	0.65J	No	19	B-26	n/a	n/a	89.47	n/a	n/a	0.004416	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	B-11R	0.200	n/a	4/4/2023	0.48ND	No	19	B-26	n/a	n/a	89.47	n/a	n/a	0.004416	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	B-31A	0.200	n/a	4/4/2023	0.18J	No	19	B-26	n/a	n/a	89.47	n/a	n/a	0.004416	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	B-31R	0.200	n/a	4/4/2023	0.48ND	No	19	B-26	n/a	n/a	89.47	n/a	n/a	0.004416	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	B-7R	0.200	n/a	4/3/2023	0.48ND	No	19	B-26	n/a	n/a	89.47	n/a	n/a	0.004416	NP Inter (NDs) 1 of 2
Sulfate (mg/L)	**B-11A**	**47.1**	**n/a**	**4/4/2023**	**70.8**	**Yes**	**20**	**B-26**	**33.39**	**6.518**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Sulfate (mg/L)	**B-11B**	**47.1**	**n/a**	**4/4/2023**	**436**	**Yes**	**20**	**B-26**	**33.39**	**6.518**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Sulfate (mg/L)	**B-11R**	**47.1**	**n/a**	**4/4/2023**	**57**	**Yes**	**20**	**B-26**	**33.39**	**6.518**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Sulfate (mg/L)	B-31A	47.1	n/a	4/4/2023	15.9	No	20	B-26	33.39	6.518	0	None	No	0.001254	Param Inter 1 of 2
Sulfate (mg/L)	**B-31R**	**47.1**	**n/a**	**4/4/2023**	**50**	**Yes**	**20**	**B-26**	**33.39**	**6.518**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Sulfate (mg/L)	B-7R	47.1	n/a	4/3/2023	1.1ND	No	20	B-26	33.39	6.518	0	None	No	0.001254	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	B-11A	536	n/a	4/4/2023	394	No	20	B-26	466.4	33.35	0	None	No	0.001254	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	**B-11B**	**536**	**n/a**	**4/4/2023**	**980**	**Yes**	**20**	**B-26**	**466.4**	**33.35**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**B-11R**	**536**	**n/a**	**4/4/2023**	**554**	**Yes**	**20**	**B-26**	**466.4**	**33.35**	**0**	**None**	**No**	**0.001254**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	B-31A	536	n/a	4/4/2023	324	No	20	B-26	466.4	33.35	0	None	No	0.001254	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	B-31R	536	n/a	4/4/2023	440	No	20	B-26	466.4	33.35	0	None	No	0.001254	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	B-7R	536	n/a	4/3/2023	224	No	20	B-26	466.4	33.35	0	None	No	0.001254	Param Inter 1 of 2

Exceeds Limit: B-11A, B-11B, B-11R, B-31A, B-31R, B-7R

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=46.45, Std. Dev.=11.33, n=19. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.953, critical = 0.863. Kappa = 2.12 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001254. Comparing 6 points to limit.

Constituent: Boron Analysis Run 7/28/2023 10:26 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Prediction Limit

Constituent: Boron (ug/L) Analysis Run 7/28/2023 10:32 AM

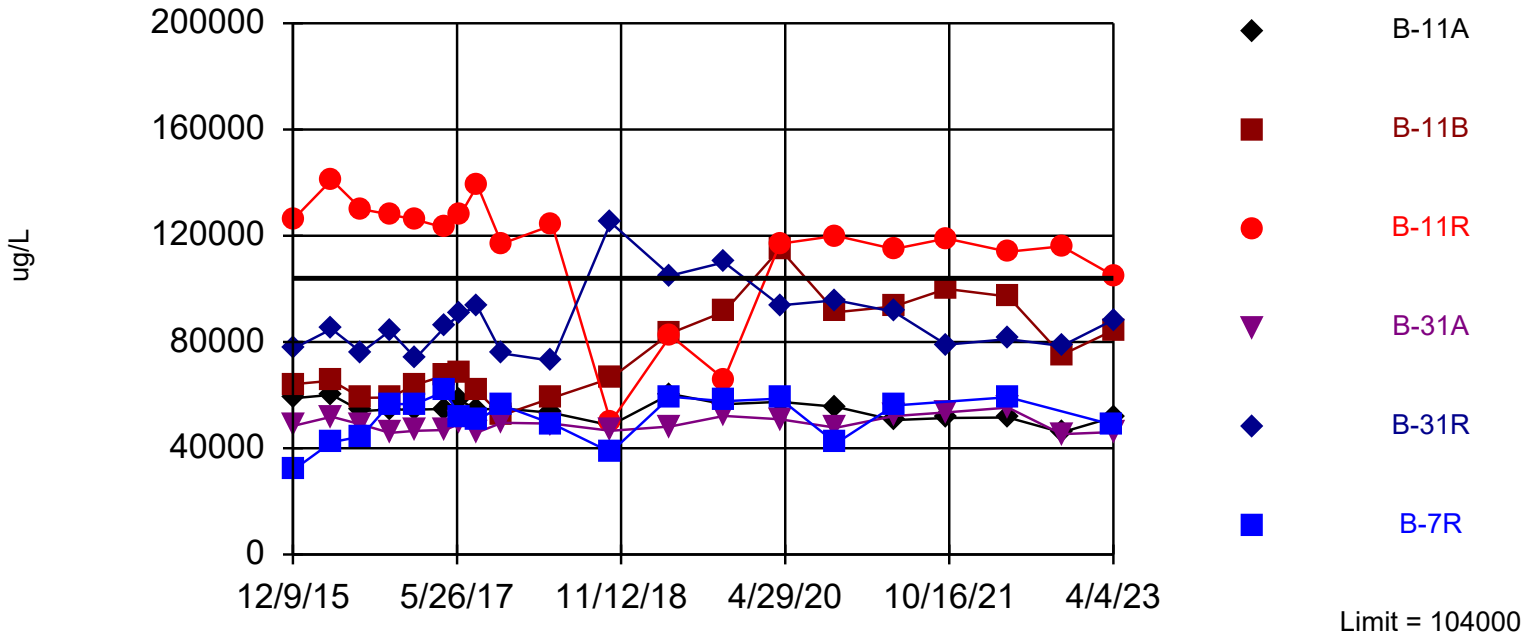
Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-31A	B-11R	B-31R	B-11B	B-7R	B-26 (bg)
12/9/2015	124	59	4170	851	1140	110	29.6
4/12/2016							33.7
4/13/2016	116	79.2	3410	838	1360	115	
7/18/2016						164	
7/19/2016	104	67.2	3530	641	1210		28.6
10/19/2016	112					154	
10/20/2016		63.7	4120	1020	1460		33
1/12/2017	106	76.4	3530	749	1540	159	35.2
4/17/2017	100	69.9	3520	929	1760	129	50.1
6/7/2017			3420			110	45.8
6/8/2017	102	58.5		895	1880		
8/1/2017	105	56.3	2040	1550	1800	129	
8/2/2017							54.6
10/19/2017	116	63.9	3120	645	1500	159	47.4
4/2/2018	91	74.8	3180	540	2020	121	
4/3/2018							48
10/8/2018							53.4
10/9/2018	94.2	71.8	576	1430	3620	73	
4/22/2019	93.9	86.2	1360	906	6830	93.5	
4/23/2019							41.6
10/14/2019	80.7	98.5	1440	915	4630	139	
10/15/2019							<3 (UX)
4/13/2020	86.3	132	2140	730	5380	96	
4/14/2020							66.1
10/12/2020	99.3	127	2870	702	3350		
10/13/2020						145	63.6
4/19/2021	88.1	172	3010	621	4440		
4/20/2021						104	
4/21/2021							63.6
10/7/2021	85.4	178	2940	353	2480		
10/8/2021							48.4
4/25/2022				454			52.5
4/26/2022	88.6	198	2330		2590	98.1	
10/18/2022	95.2	213	3090	327	3010		48.8
4/3/2023						120	
4/4/2023	119	193	3110	589	4740		
4/5/2023							38.6

Exceeds Limit: B-11R

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=85284, Std. Dev.=8666, n=19. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8936, critical = 0.863. Kappa = 2.12 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001254. Comparing 6 points to limit.

Constituent: Calcium Analysis Run 7/28/2023 10:26 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Prediction Limit

Constituent: Calcium (ug/L) Analysis Run 7/28/2023 10:32 AM

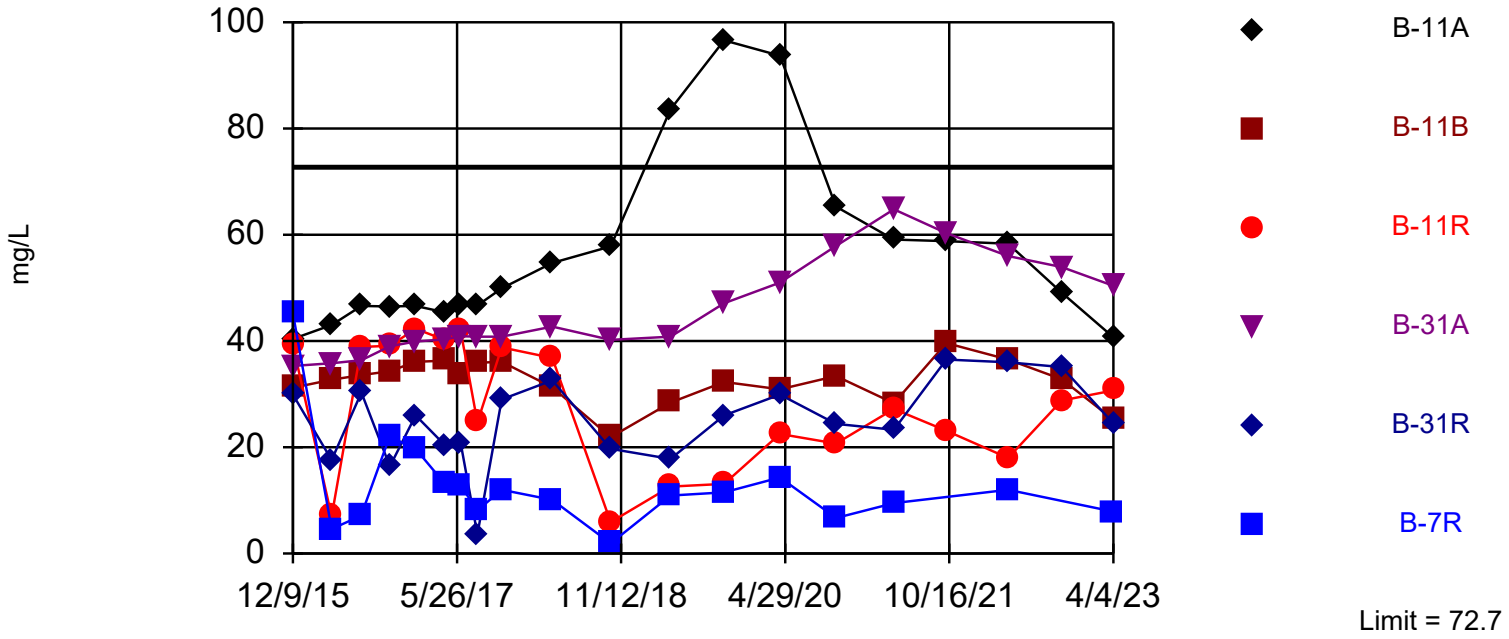
Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-31A	B-11R	B-31R	B-11B	B-7R	B-26 (bg)
12/9/2015	58800	48400	126000	77400	64100	31700	81300
4/12/2016							86200
4/13/2016	60100	51900	141000	84900	65400	42300	
7/18/2016						44400	
7/19/2016	54000	48900	130000	76100	59000		82400
10/19/2016	54600					56600	
10/20/2016		45800	128000	84200	59100		82700
1/12/2017	54500	46600	126000	73900	63900	56700	89400
4/17/2017	54800	46900	123000	85600	67400	61400	89000
6/7/2017			128000			51600	105000
6/8/2017	57800	49400		90700	68200		
8/1/2017	54500	46000	139000	93400	61400	50400	
8/2/2017							98100
10/19/2017	55000	49600	117000	75700	52400	56200	102000
4/2/2018	53300	49300	124000	72900	59000	49200	
4/3/2018							88100
10/8/2018							78700
10/9/2018	48600	46600	49900	125000	66300	38500	
4/22/2019	60400	48200	82400	105000	83300	59400	
4/23/2019							75300
10/14/2019	56600	52200	66000	110000	91400	57700	
10/15/2019							<76.2 (UX)
4/13/2020	57500	50900	117000	93800	115000	58700	
4/14/2020							88500
10/12/2020	55600	47700	120000	95700	91200		
10/13/2020						41900	76500
4/19/2021	50600	52100	115000	91400	93400		
4/20/2021						56100	
4/21/2021							78700
10/7/2021	51400	53500	119000	79000	100000		
10/8/2021							84900
4/25/2022				81100			75900
4/26/2022	51600	55300	114000		97100	59200	
10/18/2022	46000	45300	116000	78500	75100		80300
4/3/2023						48800	
4/4/2023	51700	46100	105000	88300	84400		
4/5/2023							77400

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=47.49, Std. Dev.=12.02, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9354, critical = 0.868. Kappa = 2.098 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001254. Comparing 6 points to limit.

Constituent: Chloride Analysis Run 7/28/2023 10:26 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 7/28/2023 10:32 AM

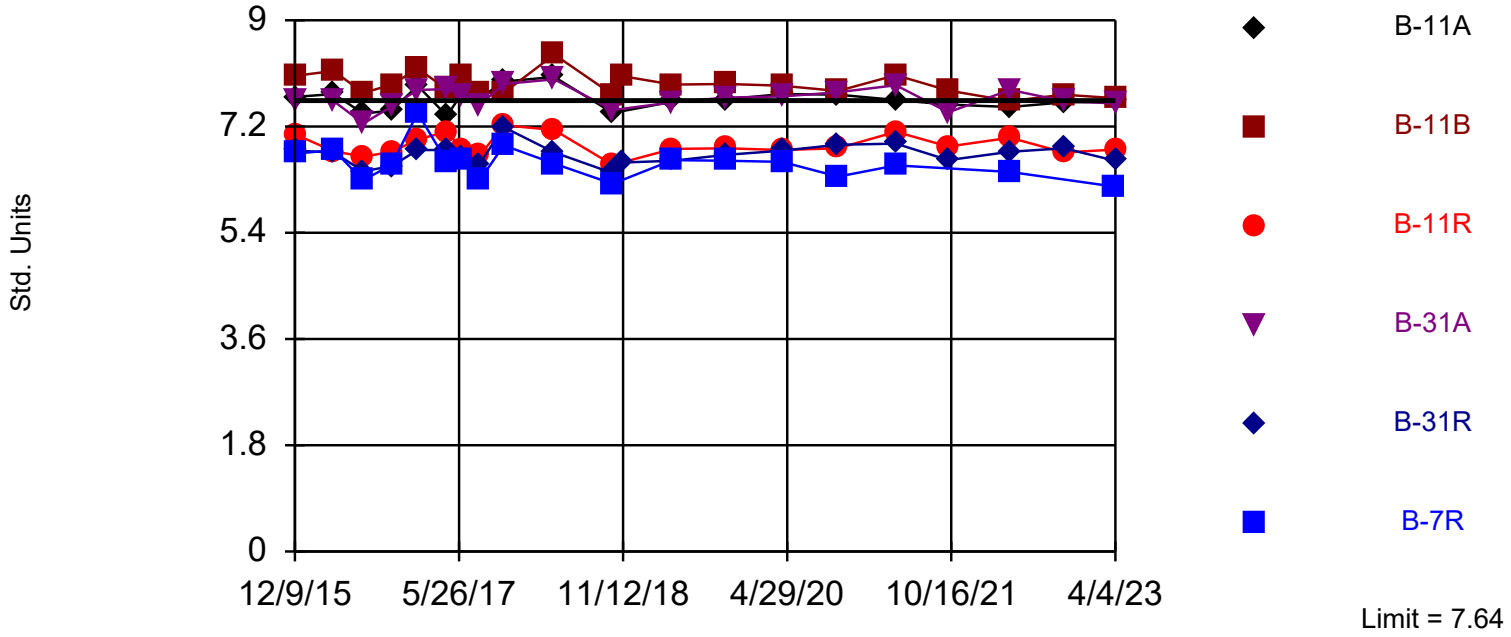
Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-31A	B-11R	B-31R	B-11B	B-7R	B-26 (bg)
12/9/2015	40.4	35.3	39.2	29.9	31.2	45.2	45.5
4/12/2016							51.3
4/13/2016	43	35.8	7	17.6	32.7	4.6	
7/18/2016						7.1	
7/19/2016	46.6	36.4	38.9	30.3	33.6		55.6
10/19/2016	46.5					22	
10/20/2016		39	39.1	16.4	34.3		52.8
1/12/2017	46.6	39.9	42.3	26	36.1	19.7	54.5
4/17/2017	45.4	40.3	40.2	20.4	36.3	13.1	56
6/7/2017			42			12.8	59.6
6/8/2017	46.9	40.9		20.7	33.9		
8/1/2017	46.7	40.8	24.7	3.6	35.9	8.1	
8/2/2017							52.6
10/19/2017	49.9	40.8	38.8	29	36.1	12	79.3
4/2/2018	54.7	42.7	36.8	32.6	31.3	10.1	
4/3/2018							54.4
10/8/2018							33.2
10/9/2018	57.8	40.2	5.9	19.7	21.9	1.9 (J)	
4/22/2019	83.6	40.8	12.6	17.8	28.4	10.9	
4/23/2019							40.8
10/14/2019	96.6	47.1	13.1	26	32.3	11.5	
10/15/2019							30.5
4/13/2020	93.7	51	22.5	29.9	30.9	14.3	
4/14/2020							54.9
10/12/2020	65.3	57.9	20.7	24.4	33.4		
10/13/2020						6.7 (J)	35.3
4/19/2021	59.1	64.8	27.2	23.3	28.3		
4/20/2021						9.5 (J)	
4/21/2021							42.6
10/7/2021	58.8	60.3	23.1	36.5	39.6		
10/8/2021							39.1
4/25/2022				36			45.3
4/26/2022	58.3	56	18		36.5	12	
10/18/2022	49.1	53.9	28.8	35.1	32.8		37.4
4/3/2023						7.9 (J)	
4/4/2023	40.7	50.4	30.7	24.5	25.2		
4/5/2023							29.1

Exceeds Limit: B-11B

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=7.289, Std. Dev.=0.166, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.915, critical = 0.868. Kappa = 2.098 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001254. Comparing 6 points to limit.

Constituent: Field pH Analysis Run 7/28/2023 10:26 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Prediction Limit

Constituent: Field pH (Std. Units) Analysis Run 7/28/2023 10:32 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

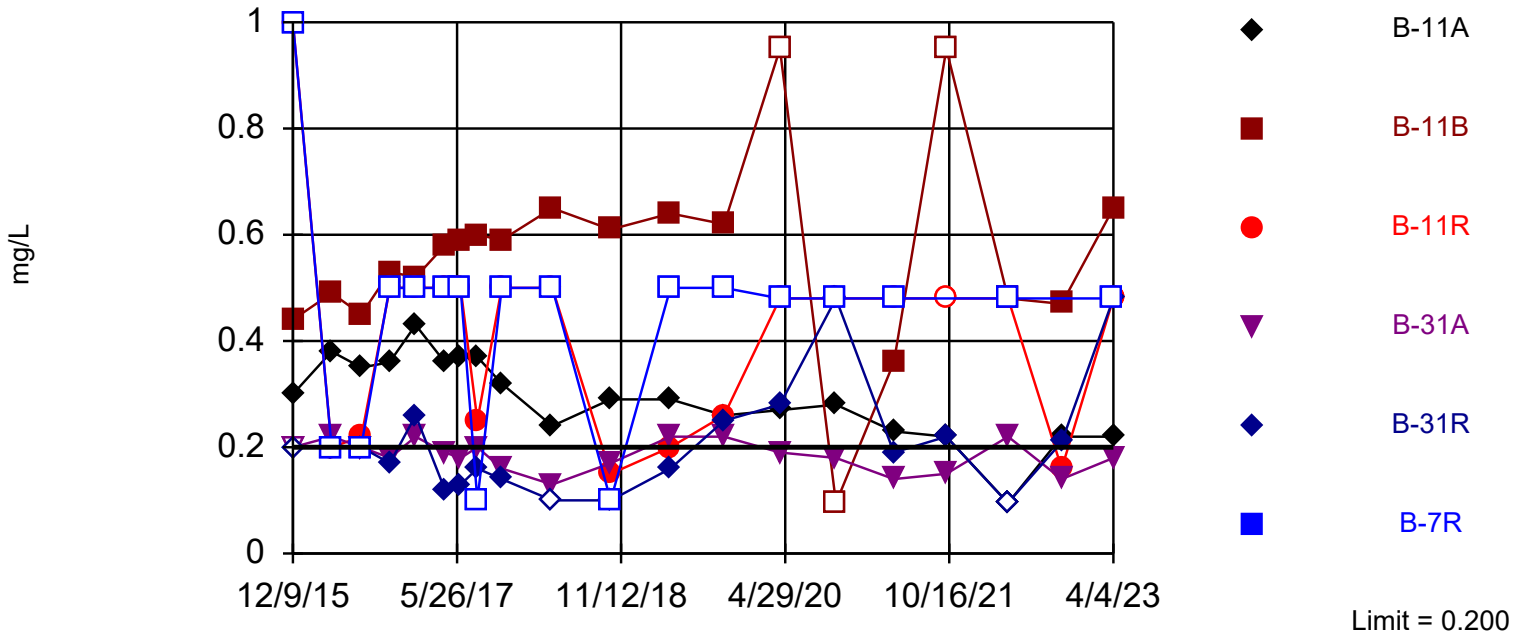
	B-11A	B-31A	B-11R	B-31R	B-11B	B-7R	B-26 (bg)
12/9/2015	7.7	7.65	7.07	6.79	8.06	6.74	7.35
4/12/2016							7.43
4/13/2016	7.75	7.63	6.78	6.76	8.14	6.8	
7/18/2016						6.29	
7/19/2016	7.42	7.25	6.69	6.44	7.77		7.14
10/19/2016	7.47					6.55	
10/20/2016		7.54	6.77	6.53	7.91		7.19
1/12/2017	7.89	7.82	6.98	6.8	8.18	7.43	7.57
4/17/2017	7.38	7.83	7.11	6.8	7.83	6.6	7.54
6/7/2017			6.8			6.65	7.22
6/8/2017	7.78	7.74		6.67	8.07		
8/1/2017	7.67	7.56	6.7	6.56	7.77	6.28	
8/2/2017							7.21
10/19/2017	7.96	7.92	7.22	7.19	7.77	6.88	7.5
4/2/2018	8.04	8	7.14	6.76	8.42	6.57	
4/3/2018							7.64
10/8/2018							7.2
10/9/2018	7.43	7.48	6.55	6.41	7.74	6.23	
11/12/2018				6.59	8.05		
4/22/2019	7.62	7.61	6.82	6.62	7.91	6.63	
4/23/2019							7.1
10/14/2019	7.66	7.69	6.83	6.72	7.92	6.62	
10/15/2019							7.24
4/13/2020	7.75	7.71	6.8	6.79	7.89	6.6	
4/14/2020							7.27
10/12/2020	7.74	7.78	6.83	6.89	7.8		
10/13/2020						6.35	7.34
4/19/2021	7.65	7.9	7.11	6.91	8.07		
4/20/2021						6.54	
4/21/2021							7.27
10/7/2021	7.57	7.44	6.86	6.63	7.81		
10/8/2021							7.18
4/25/2022				6.77			7.19
4/26/2022	7.53	7.82	7.01		7.63	6.43	
10/18/2022	7.61	7.63	6.76	6.83	7.74		7.15
4/3/2023						6.18	
4/4/2023	7.62	7.59	6.81	6.62	7.68		
4/5/2023							7.05

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 19 background values. 89.47% NDs. Annual per-constituent alpha = 0.05172. Individual comparison alpha = 0.004416 (1 of 2). Comparing 6 points to limit.

Constituent: Fluoride Analysis Run 7/28/2023 10:26 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 7/28/2023 10:32 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-31A	B-11R	B-31R	B-11B	B-7R	B-26 (bg)
12/9/2015	0.3 (J)	<0.2 (U)	<1 (U)	<0.2 (U)	0.44	<1 (U)	<0.2 (U)
4/12/2016							<0.2 (U)
4/13/2016	0.38 (J)	0.22 (J)	<0.2 (U)	<0.2 (U)	0.49	<0.2 (U)	
7/18/2016						<0.2 (U)	
7/19/2016	0.35 (J)	<0.2 (U)	0.22 (J)	<0.2 (U)	0.45		<0.2 (U)
10/19/2016	0.36					<0.5 (U)	
10/20/2016		0.18 (J)	<0.5 (U)	0.17 (J)	0.53		0.13 (J)
1/12/2017	0.43	0.22 (J)	<0.5 (U)	0.26 (J)	0.52	<0.5 (U)	<0.1 (U)
4/17/2017	0.36	0.19 (J)	<0.5 (U)	0.12 (J)	0.58	<0.5 (U)	<0.1 (U)
6/7/2017			<0.5 (U)			<0.5 (U)	<0.1 (U)
6/8/2017	0.37	0.18 (J)		0.13 (J)	0.59		
8/1/2017	0.37	0.2 (J)	0.25 (J)	0.16 (J)	0.6	<0.1 (U)	
8/2/2017							<0.1 (U)
10/19/2017	0.32	0.16 (J)	<0.5 (U)	0.14 (J)	0.59	<0.5 (U)	<0.1 (U)
4/2/2018	0.24 (J)	0.13 (J)	<0.5 (U)	<0.1 (U)	0.65	<0.5 (U)	
4/3/2018							<0.1 (U)
10/8/2018							<0.1 (U)
10/9/2018	0.29 (J)	0.17 (J)	0.15 (J)	<0.1 (U)	0.61	<0.1 (U)	
4/22/2019	0.29 (J)	0.22 (J)	0.2 (J)	0.16 (J)	0.64	<0.5 (U)	
4/23/2019							<0.1 (U)
10/14/2019	0.26 (J)	0.22 (J)	0.26 (J)	0.25 (J)	0.62	<0.5 (U)	
10/15/2019							<0.1 (U)
4/13/2020	0.27 (J)	0.19 (J)	<0.48 (U)	0.28 (J)	<0.95 (U)	<0.48 (U)	
4/14/2020							0.11 (J)
10/12/2020	0.28 (J)	0.18 (J)	<0.48 (U)	<0.48 (U)	<0.095 (U)		
10/13/2020						<0.48 (U)	<0.095 (U)
4/19/2021	0.23 (J)	0.14 (J)	<0.48	0.19 (J)	0.36		
4/20/2021						<0.48	
4/21/2021							<0.095 (U)
10/7/2021	0.22 (J)	0.15 (J)	<0.48 (U)	0.22 (J)	<0.95 (U)		
10/8/2021							<0.095 (U)
4/25/2022				<0.095 (U)			<0.48 (UX)
4/26/2022	<0.095 (U)	0.22 (J)	<0.48 (U)		<0.48 (U)	<0.48 (U)	
10/18/2022	0.22 (J)	0.14 (J)	0.16 (J)	0.21 (J)	0.47		<0.095 (U)
4/3/2023						<0.48 (U)	
4/4/2023	0.22 (J)	0.18 (J)	<0.48 (U)	<0.48 (U)	0.65 (J)		
4/5/2023							<0.095 (U)

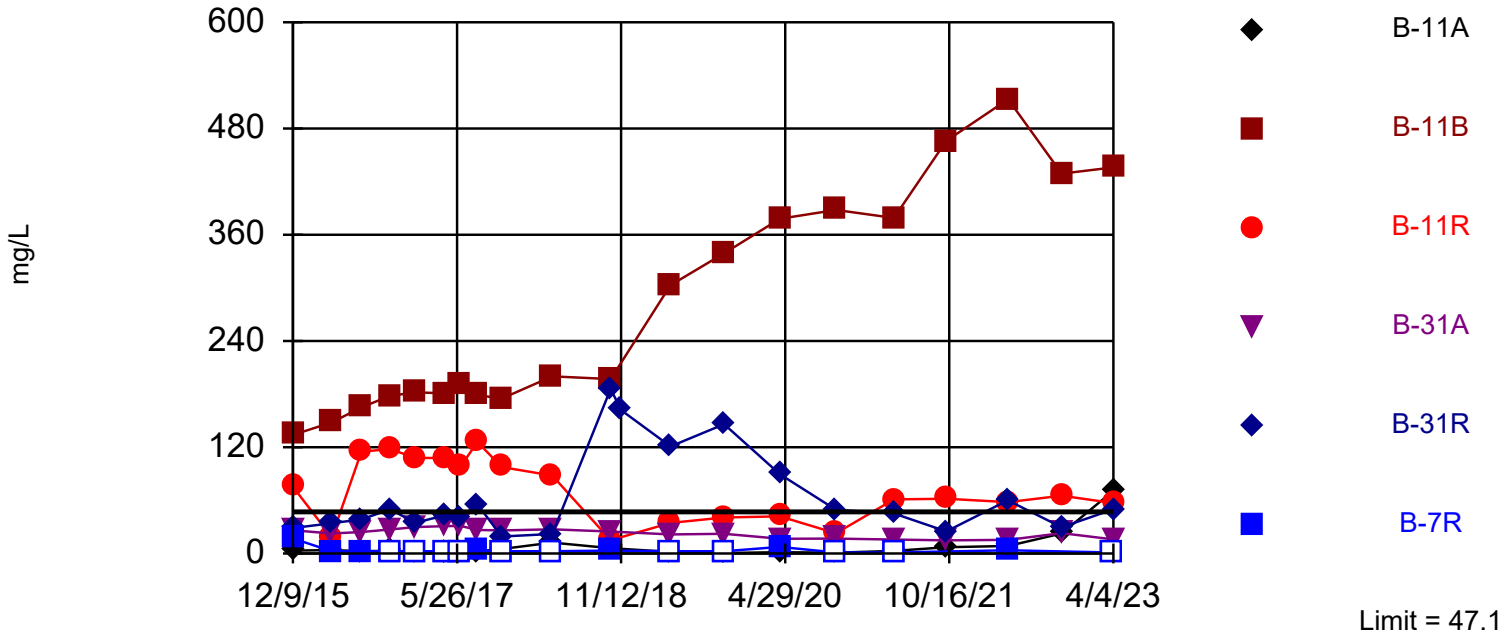
ND substitution: RL or RL/2 if <15% NDs.

Hollow symbols indicate censored values.

Exceeds Limit: B-11A, B-11B, B-11R, B-31R

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=33.39, Std. Dev.=6.518, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9651, critical = 0.868. Kappa = 2.098 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001254. Comparing 6 points to limit.

Constituent: Sulfate Analysis Run 7/28/2023 10:26 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 7/28/2023 10:32 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

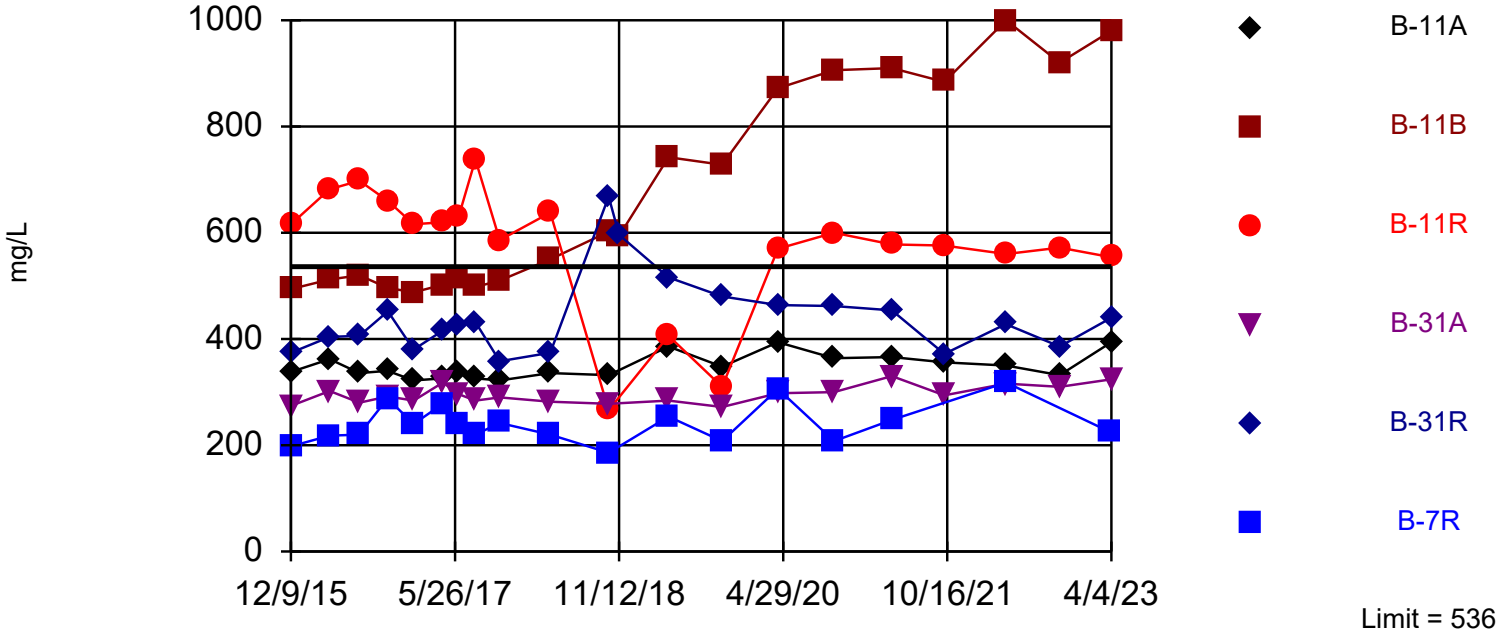
	B-11A	B-31R	B-11R	B-11B	B-7R	B-26 (bg)	B-31A
12/9/2015	3.2 (J)	28.8	75.4	134	17 (J)	37.1	26.2
4/12/2016						38	
4/13/2016	3.8 (J)	34.1	18.4	148	2.5 (J)		22.6
7/18/2016					2.4 (J)		
7/19/2016	2.7 (J)	38.5	115	165		36.2	24.2
10/19/2016	3 (J)				<5 (U)		
10/20/2016		49.7	118	178		35	27.2
1/12/2017	2.3 (J)	34.9	108	182	<5 (U)	35	29.8
4/17/2017	<1 (U)	43	108	181	<5 (U)	32.4	31
6/7/2017			98.2		<5 (U)	31	
6/8/2017	1.4 (J)	41.1		191			31.2
8/1/2017	2.4 (J)	55.6	126	179	3.7		26.6
8/2/2017						28.5	
10/19/2017	5.1	19.2	97.7	175	<5 (U)	25.3	26.1
4/2/2018	12.3	22	88.1	200	<5 (U)		27.4
4/3/2018						19.1	
10/8/2018						25.1	
10/9/2018	6	186	15.1	197	3.2		24.8
11/12/2018		162					
4/22/2019	1.9 (J)	121	34.6	303	<5 (U)		21.6
4/23/2019						26.7	
10/14/2019	<1 (U)	146	40.7	339	<5 (U)		22.3
10/15/2019						36	
4/13/2020	1.4 (J)	89.4	41.9	378	7.5 (J)		16.6
4/14/2020						30.2	
10/12/2020	1 (J)	49.4	22.8	388			16.8
10/13/2020					<2.2 (U)	37	
4/19/2021	2.9	45.3	61.2	379			15.8
4/20/2021					<2.2		
4/21/2021						35.3	
10/7/2021	7	24.9	61.8	466			14.9
10/8/2021						43.8	
4/25/2022		60				34.2	
4/26/2022	8.5		58.1	513	3.7 (J)		15.4
10/18/2022	22.7	29.6	65.3	429		47.6	23
4/3/2023					<2.2 (U)		
4/4/2023	70.8	50	57	436			15.9
4/5/2023						34.3	

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

Exceeds Limit: B-11B, B-11R

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=466.4, Std. Dev.=33.35, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9139, critical = 0.868. Kappa = 2.098 (c=7, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001254. Comparing 6 points to limit.

Constituent: Total Dissolved Solids Analysis Run 7/28/2023 10:26 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 7/28/2023 10:32 AM

Nelson Dewey Generating Station Client: SCS Engineers Data: NED - Chempoint- export-Dec2020

	B-11A	B-31A	B-11R	B-31R	B-11B	B-7R	B-26 (bg)
12/9/2015	338	274	616	374	494	198	424
4/12/2016							456
4/13/2016	362	302	682	404	512	218	
7/18/2016						220	
7/19/2016	336	280	698	406	520		504
10/19/2016	340					288	
10/20/2016		292	660	452	496		466
1/12/2017	322	284	616	380	488	240	446
4/17/2017	326	318	620	416	502	278	468
6/7/2017			630			240	538
6/8/2017	338	296		426	516		
8/1/2017	326	284	738	432	498	220	
8/2/2017							496
10/19/2017	322	290	586	358	510	242	542
4/2/2018	336	282	638	374	550	220	
4/3/2018							464
10/8/2018							450
10/9/2018	332	278	266	668	602	186	
11/12/2018				596	594		
4/22/2019	386	284	406	516	742	254	
4/23/2019							458
10/14/2019	348	272	310	480	728	208	
10/15/2019							404
4/13/2020	394	298	570	464	872	306	
4/14/2020							464
10/12/2020	364	300	600	462	906		
10/13/2020						208	448
4/19/2021	366	330	578	454	910		
4/20/2021						248	
4/21/2021							470
10/7/2021	356	294	576	372	884		
10/8/2021							440
4/25/2022				428			470
4/26/2022	350	316	560		1000	318	
10/18/2022	332	310	572	386	920		472
4/3/2023						224	
4/4/2023	394	324	554	440	980		
4/5/2023							448