2023 Annual Groundwater Monitoring and Corrective Action Report

Secondary Ash Pond
Columbia Energy Center
Pardeeville, Wisconsin

Prepared for:

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SCS ENGINEERS

25224067.00 | July 29, 2024

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OVERVIEW OF CURRENT STATUS

Columbia Energy Center, Secondary Ash 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;	Assessment
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;	Assessment
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	SSIs initially determined on July 15, 2019, based on April 2019 monitoring results. In 2023, SSIs for semiannual events for compliance wells at the waste boundary included the following; see **Table 5** for complete results. <u>January 2023</u> Boron: MW-306, MW-307, MW-308 Calcium: MW-308 Chloride: MW-306, MW-307 Sulfate: MW-307 Total Dissolved Solids (TDS): MW-307, MW-308 <u>February 2023</u> Boron: MW-306, MW-307, MW-308 Calcium: MW-308 Chloride: MW-306, MW-307

Category	Rule Requirement	Site Status
		Sulfate: MW-307 Total Dissolved Solids (TDS): MW-307, MW-308 <u>April 2023</u> Boron: MW-306, MW-307, MW-308 Calcium: MW-308 Chloride: MW-306, MW-307 Sulfate: MW-307, MW-308 TDS: MW-308 <u>October 2023</u> Boron: MW-306, MW-307, MW-308 Chloride: MW-306, MW-307 Sulfate: MW-306, MW-307 TDS: MW-306, MW-308 <u>November 2023</u> Boron: MW-306, MW-307, MW-308 Chloride: MW-306, MW-307 Sulfate: MW-306, MW-307 TDS: MW-306, MW-307
	(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	January 13, 2020

Category	Rule Requirement	Site Status
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:	
	(A) Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase;	None
	(B) Provide the date when the assessment of corrective measures was initiated for the CCR unit;	Not applicable – No SSLs above GPSs
	(C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and	Not applicable – ACM not required
	(D) Provide the date when the assessment of corrective measures was completed for the CCR unit.	Not applicable – ACM not required
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 – Selection of remedy not required
Corrective Action	(vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.	Not applicable – Selection of remedy not required

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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 257.100 and 40 CFR 257.90(e) for inactive CCR surface impoundments. 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.

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

The groundwater monitoring system for the Secondary Ash Pond at the Columbia Energy Center (COL) monitors a single inactive CCR unit:

- COL Secondary Ash Pond (inactive surface impoundment)

The system is designed to detect monitored constituents at the waste boundary of the COL Secondary Ash Pond as required by 40 CFR 257.91(d). The groundwater monitoring system consists of two background wells and three downgradient monitoring wells (**Table 1**, **Figure 1**, and **Figure 2**).

Removal of CCR material from the inactive pond was completed in 2022. Secondary Ash Pond closure activities were completed in February 2023 and certification of closure is pending.

Other CCR units at the COL facility include the Primary Ash Pond and Dry Ash Disposal Facility Modules 1-3, Modules 4-6, and Modules 10-11. Annual groundwater monitoring and corrective action reports for these CCR units are submitted separately on January 31 of each year in accordance with 40 CFR 257.90(e).

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 requirement sections:

- Geologic and hydrogeologic setting
- CCR Rule monitoring system

2.1 GEOLOGIC AND HYDROGEOLOGIC SETTING

2.1.1 Regional Information

For the purposes of groundwater monitoring, the surficial sand and gravel aquifer is considered the uppermost aquifer unit as defined under 40 CFR 257.53 at the COL Secondary Ash Pond. Immediately underlying the surficial sand and gravel aquifer is the Cambrian-Ordovician sandstone aquifer. A summary of the regional hydrogeologic stratigraphy is presented in **Appendix A**.

The sand and gravel aquifer is capable of producing sufficient water for industrial or municipal use in some parts of Columbia County and is capable of producing sufficient water for domestic use in many areas, including along the Wisconsin River near COL (Harr et. al, 1978). A map showing expected well yields within the sand and gravel aquifer in Columbia County is included in **Appendix A.**

Regional groundwater flow in the site vicinity is generally west toward the Wisconsin River. A map showing the regional water table elevations is included with the regional hydrogeologic information in Appendix A.

2.1.2 Site Information

Soils at the site are primarily sand to a depth of approximately 50 to 100 feet and overlie sandstone bedrock. Soils encountered during the site feasibility study for the COL Ash Disposal Facility were described as generally sandy with interbedded silty clay lenses up to 20 feet thick (Warzyn, 1978). During drilling of CCR wells MW-301, MW-306, MW-307, and MW-308, the unconsolidated materials were identified as consisting primarily of silty sand and sand. The boring log for previously installed monitoring well MW-84A also shows silty sand and sand as the primary unconsolidated materials at these locations. The boring logs for the Secondary Ash Pond CCR monitoring wells are provided in Appendix C. All CCR monitoring wells are screened within the unconsolidated sand unit. The groundwater monitoring network and sample summary are provided in Table 1 and Table 2, respectively.

The groundwater flow pattern in April 2023 is shown on Figure 3, and the groundwater flow pattern during the October 2023 sampling event is shown on Figure 4. The groundwater elevation data for the CCR monitoring wells and state monitoring program wells are provided in Table 3. Horizontal gradients and flow velocities for representative flow paths are provided in Table 4.

In the vicinity of the ash ponds, groundwater has historically flowed radially away from the ponds in all directions; however, the April and October 2023 water levels and apparent flow directions reflect the influence of the temporary dewatering systems installed around the Primary and Secondary ponds for closure activities. In 2022, dewatering wells were installed around the Secondary Pond, and groundwater was pumped to lower the water table below the pond to facilitate CCR removal and pond closure. Pumped groundwater was discharged to the Primary Ash Pond. In 2023, groundwater was pumped from dewatering wells installed around the Primary Ash Pond to lower the water table below the pond to facilitate CCR removal and pond closure. The pumped groundwater was discharged to the large cooling pond south of the generating station. The groundwater dewatering system ceased operation as of September 11, 2023.

2.2 CCR RULE MONITORING SYSTEM

The groundwater monitoring system established in accordance with the CCR Rule consists of two upgradient (background) monitoring wells and three downgradient compliance monitoring wells. The background wells include MW-84A and MW-301. The background wells are shared with other CCR units at COL. The downgradient wells include MW-306, MW-307, and MW-308. The CCR Rule wells are installed in the surficial sand aquifer. Well depths range from approximately 26.4 to 37 feet, measured from the top of the well casing. As shown in Figures 3 and 4, groundwater flow directions in 2023 were affected by dewatering activities; however, the compliance monitoring wells are located on the historically downgradient boundary of the area where CCR was formerly located in the Secondary Pond.

3.0 §257.100(E)(5) GROUNDWATER MONITORING AND CORRECTIVE ACTION FOR INACTIVE CCR SURFACE IMPOUNDMENTS

The owner or operator of the inactive CCR surface impoundment must: (i) No later than April 17, 2020, comply with groundwater monitoring requirements set forth in §§ 257.90(b) and 257.94(b); and (ii) No later than August 1, 2020, prepare the initial groundwater monitoring and corrective action report as set forth in § 257.90(e).

This report is submitted to fulfill the annual reporting requirement.

4.0 §257.90(E) ANNUAL REPORT REQUIREMENTS

Annual groundwater monitoring and corrective action report. *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:*

4.1 §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 of the location of the site is provided as **Figure 1**. A map showing the inactive COL Secondary Ash Pond and all background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program is provided as **Figure 2**. Other CCR units are also shown on **Figure 2**.

4.2 §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.

4.3 §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;

Five groundwater sampling events were completed for the inactive COL Secondary Ash Pond in 2023. The established semiannual sampling for the site was followed. The semi-annual sampling

occurred in April 2023 and October 2023. Supplemental sampling events were conducted in January 2023, February 2023, and November 2023. 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 assessment monitoring program is included in **Table 2**.

During the 2022 annual reporting period, MW-306 and MW-307 wells within the Secondary Pond network were dry due to dewatering activities during the regular October 2022 sampling event. A second sample collection attempt was made in December 2022 after the dewatering wells surrounding the Secondary Pond were shut off, but there was not sufficient water present to collect samples. A third attempt made for collection of samples in January 2023 was successful. The background wells were not sampled as part of the January or February 2023 Secondary Pond sampling events.

The semiannual groundwater events were completed for the Secondary Pond in April and October 2023. A supplemental event was conducted in November 2023, which was completed to evaluate groundwater conditions following closure of the Secondary Pond. The background wells were not sampled during the November 2023 supplemental event.

Closure activities for the Secondary Pond were implemented in 2022, including removal of CCR material from the inactive pond. Closure activities of the Secondary Pond were completed prior to the February 2023 sampling event.

The sampling results for Appendix III and Appendix IV parameters in 2023 are summarized in **Table 5.** The October 2022 analytical results are also included in **Table 5** because they were not included in the 2022 annual report. Field parameter results for the 2023 sampling events are provided in **Table 6**. The analytical laboratory reports for 2023 are provided in **Appendix C**. Historical results for each monitoring well are summarized in **Appendix D**.

4.4 §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.

Assessment monitoring for the COL Secondary Ash Pond was initiated in January 2020 in response to statistically significant increases (SSIs) in detection monitoring constituents identified at downgradient wells. SSIs were identified for boron, chloride, and sulfate at one or more wells based on the April 2019 detection monitoring event. Wisconsin Power and Light Company (WPL) collected the first round of assessment monitoring samples in December 2019 and established an assessment monitoring program on January 13, 2020, in accordance with §257.95(b).

The initial evaluation of assessment groundwater monitoring performed at COL Secondary Ash Pond included the December 2019, February 2020, and April 2020 results and was completed in July 2020. Evaluation of the January, February, and April 2023 events was completed in 2023 and evaluation of the October and November 2023 events was completed in 2024.

In accordance with the Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act (RCRA) Facilities (U.S. EPA, 2009), the comparison of

assessment monitoring results to the Groundwater Protection Standards (GPS) was based on the lower confidence limit (LCL) for the arithmetic mean. The LCL evaluation was completed for cobalt, which is the only Appendix IV parameter that has been detected at a concentration exceeding the GPS in at least one sample result since assessment monitoring was initiated. The LCLs were calculated with Sanitas™ using historical concentrations measured since assessment monitoring began in April 2018. LCL evaluations for data collected in October 2022 and April 2023 are provided in **Appendix E**.

Cobalt was the only Appendix IV parameter that was detected in at least one sample at a concentration exceeding the GPSs in 2023. No other individual results in 2023 exceeded the GPS values. Cobalt exceeded the GPS at MW-307 in the January, February, and April 2023 events, but had not exceeded the GPS before 2023. Cobalt concentrations for samples collected in October and November 2023 were below the GPS.

Statistical evaluation of the cobalt results, including LCL evaluations and trend analysis, determined that cobalt was not an SSL above the GPS. Statistical evaluations completed for each sampling event in 2023 are included in **Appendix E**. The approach and findings for each event were as follows:

- **January 2023** – The LCLs were calculated with Sanitas™ using historical concentrations measured since assessment monitoring began in October 2019. The evaluation is provided in **Appendix E1**. The January 2023 cobalt result at MW-307 was higher than previous results; therefore, the cobalt results for this well were also evaluated for a potential increasing trend using a Mann-Kendall analysis. Trend analysis for cobalt results obtained since assessment monitoring was initiated indicated no significant trend. Based on these results, cobalt was determined not to be at an SSL above the GPS at MW-307.

- **February 2023** – The LCLs were calculated with Sanitas™ using historical concentrations measured since assessment monitoring began in October 2019. The evaluation is provided in **Appendix E2**. The February 2023 cobalt result at MW-307 was higher than previous results; therefore, the cobalt results for this well were also evaluated for a potential increasing trend using a Mann-Kendall analysis. Trend analysis for cobalt results obtained since assessment monitoring was initiated indicated no significant trend. Based on these results, cobalt was determined not to be at an SSL above the GPS at MW-307.

- **April 2023** – The LCLs were calculated with Sanitas™ using historical concentrations measured since assessment monitoring was initiated for each well. The LCLs were also calculated using only the last eight monitoring events. The LCL calculations are provided in **Appendix E3**. Due to the observed increasing concentrations, cobalt concentrations were also evaluated for an SSL based on a Mann-Kendall trend analysis and 95 percent confidence band, as calculated using the Mann-Kendall/Sen's Slope analysis in Sanitas. Analysis of the last eight monitoring events indicated that a statistically significant increasing trend was present, but the lower limit of the confidence band was below the GPS. Based on these results, cobalt was determined not to be at an SSL above the GPS at MW-307.

- **October 2023** – The October 2023 cobalt result was below the GPS, but statistical evaluation was still performed due to previous results above the GPS. The LCLs were calculated with Sanitas™ using historical concentrations measured since assessment monitoring was initiated for each well. Due to the shift in cobalt concentrations in 2023,

the LCLs were also calculated using only the last eight monitoring events. The LCL calculations are provided in Appendix E4. For both the analysis with the complete assessment monitoring data set and the analysis of the last eight events, the LCL for cobalt was below the GPS. Due to the observed increasing concentrations, cobalt concentrations were also evaluated for an SSL based on a Mann-Kendall trend analysis and 95 percent confidence band, as calculated using the Mann-Kendall/Sen's Slope analysis in Sanitas. Analysis of the complete assessment monitoring data set indicated that a statistically significant increasing trend was present, but the lower limit of the confidence band was below the GPS. Trend analysis of cobalt concentrations for the last eight events indicated no significant trend. Based on the statistical analyses, cobalt was determined not to be at an SSL above the GPS.

- November 2023 – The November 2023 cobalt result was below the GPS, but statistical evaluation was still performed due to previous results above the GPS. The LCLs were calculated with Sanitas™ using historical concentrations measured since assessment monitoring was initiated for each well. Due to the shift in cobalt concentrations in 2023, the LCLs were also calculated using only the last eight monitoring events. The LCL calculations are provided in Appendix E5. For both the analysis with the complete assessment monitoring data set and the analysis of the last eight events, the LCL for cobalt was below the GPS. Due to the previously observed increasing concentrations at compliance well MW-307, cobalt concentrations were also evaluated for trend based on a Mann-Kendall trend analysis as calculated using the Mann-Kendall/Sen's Slope analysis in Sanitas. Analysis of the complete assessment monitoring data set indicated that no statistically significant trend was present. Trend analysis of cobalt concentrations for the last eight events also indicated no significant trend. Based on the statistical analyses, cobalt was determined not to be at an SSL above the GPS at MW-307.

Based on the results of the assessment monitoring conducted in 2023, WPL will continue assessment monitoring in accordance with 40 CFR 257.95(f).

For comparison of the assessment monitoring results to background concentrations, upper prediction limits (UPLs) for detection and assessment monitoring parameters were calculated based on a 1-of-2 resampling approach. In January 2021, the UPLs for Appendix III and Appendix IV parameters were updated to include background monitoring well data collected through October 2020. The UPL update analysis was provided in the 2020 Annual Groundwater Monitoring and Corrective Action Report. As shown in Table 5, concentrations of several Appendix III and Appendix IV parameters continue to be detected at levels that represent SSIs above background. Based on these results, the Secondary Ash Pond will continue in the assessment monitoring program.

4.5 §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 CCR unit.

4.5.1 §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 is currently in assessment monitoring after transitioning from detection monitoring in January 2020.

Summary of Key Actions Completed.

- Three supplemental sampling events (January, February, and November 2023).
- Two semiannual groundwater sampling and analysis events (April and October 2023).
- Statistical evaluation and determination of any SSLs and/or GPS Exceedances for the October 2022 and January, February, and April 2023 monitoring events.

Description of Any Problems Encountered. No problems were encountered during semiannual sampling events or supplemental sampling events.

Discussion of Actions to Resolve the Problems. Not applicable.

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

- Statistical evaluation and determination of any SSLs exceeding the GPS for the October and November 2023 sampling events (completed February and April 2024, and provided as **Appendix E4** and **Appendix E5**).
- Two semiannual groundwater sampling and analysis events (April and October 2024).
- Statistical evaluation and determination of any SSLs exceeding the GPS for the April 2024 monitoring event.
- If one or more Appendix IV constituents is detected at an SSL above the GPS, then within 30 days WPL will prepare a notification in accordance with §257.95(g), and within 90 days complete an alternative source demonstration or initiate an assessment of corrective measures (§257.95(g)(3)). WPL will also characterize the release pursuant to §257.95(g)(1) and provide notice pursuant to §257.95(g)(2).

4.5.2 §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. The COL Secondary Ash Pond is no longer in detection monitoring.

4.5.3 §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.

Not applicable. The COL Secondary Ash Pond is no longer in detection monitoring.

4.5.4 §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 been initiated, and no alternative assessment monitoring frequency has been proposed at this time.

4.5.5 §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).

The 2023 assessment monitoring results, background UPLs, and GPSs established for the site are provided in Table 5. The laboratory reports are provided in Appendix C. Historical monitoring results are summarized in Appendix D.

4.5.6 §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. No alternative source demonstration for assessment monitoring was completed in 2023.

4.5.7 §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.

4.6 §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.

5.0 REFERENCES

Harr, C.A., L.C. Trotta, and R.G. Borman, 1978, "Ground-Water Resources and Geology of Columbia County, Wisconsin," University of Wisconsin-Extension Geological and Natural History Survey Information Circular Number 37, 1978.

Warzyn Engineering, Inc., 1978, Feasibility Study, Proposed Fly Ash and/or Scrubber Sludge Disposal Facility – Columbia Site, Wisconsin Power and Light Company, Town of Pacific, Columbia County, WI, January 1978.

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Tables

Table 1. Groundwater Monitoring Well Network
Columbia Energy Center Secondary Ash Pond / SCS Engineers Project #25224067.00

Monitoring Well	Location in Monitoring Network	Role in Monitoring Network
MW-84A	Upgradient	Background
MW-301	Upgradient	Background
MW-306	Downgradient	Compliance
MW-307	Downgradient	Compliance
MW-308	Downgradient	Compliance

Created by:	RM	Date:	9/19/2022
Last revision by:	NLB	Date:	3/22/2024
Checked by:	RM	Date:	4/22/2024

Table 2. CCR Rule Groundwater Samples Summary
Columbia Energy Center Secondary Pond / SCS Engineers Project #25224067.00

Sample Dates	Compliance Wells			Background Wells	
	MW-306	MW-307	MW-308	MW-84A	MW-301
1/20/2023	A-S	A-S	A-S	--	--
2/20/2023	A-S	A-S	A-S	--	--
4/24-27/2023	A	A	A	A	A
10/10-11/2023	A	A	A	A	A
11/20/2023	A-S	A-S	A-S	--	--
Total Samples	5	5	5	2	2

Abbreviations:
A = Assessment Monitoring Program
A-S = Supplemental Assessment Monitoring Event
-- = Not Sampled

Created by:	RM	Date:	9/19/2022
Last revision by:	NLB	Date:	3/25/2024
Checked by:	RM	Date:	6/24/2024

Table 3. Groundwater Elevation - State Monitoring Program and CCR Well Network
Columbia Dry Ash and Ash Pond Disposal Facilities / SCS Engineers Project #25224067.00

	Raw Data	MW-1AR	MW-4	MW-5R	MW-33AR	MW-33BR	MW-34A	MW-34B	MW-37A	MW-83	MW-84A	MW-84B	MW-86	MW-91AR	MW-91B	MW-92A	MW-92B	MW-93A	MW-93B	MW-312
	Well Number	**MW-1AR**	**MW-4**	**MW-5R**	**MW-33AR**	**MW-33BR**	**MW-34A**	**MW-34B**	**MW-37A**	**MW-83**	**MW-84A**	**MW-84B**	**MW-86**	**MW-91AR**	**MW-91B**	**MW-92A**	**MW-92B**	**MW-93A**	**MW-93B**	**MW-312**
	Top of Casing Elevation (feet amsl)	822.55	819.74	805.44	808.29	808.39	805.95	806.05	813.04	807.96	814.28	814.26	824.79	809.03	808.45	808.47	808.41	827.89	827.71	826.79
	Screen Length (ft)																	10	5	10
	Total Depth (ft from top of casing)	44.40	39.58	25.97	31.08	57.50	35.43	56.95	31.80	25.42	40.21	52.02	45.43	32.90	52.38	28.94	51.75	50.7	82.5	52.5
	Top of Well Screen Elevation (ft)	778.15	780.16	779.47	777.21	750.89	770.52	749.10	781.24	782.54	774.07	762.24	779.36	776.13	756.07	779.53	756.66	787.19	750.21	784.29
	Measurement Date																			
	October 2, 2012	783.41	783.70	784.96	782.38	782.23	783.03	782.99	782.66	dry	783.84	783.94	783.81	784.09	783.90	784.49	784.06	NI	NI	NI
	April 15, 2013	785.44	784.02	786.09	784.16	784.14	784.74	784.79	783.87	784.49	785.83	785.76	785.22	785.14	785.01	785.75	785.34	NI	NI	NI
	October 8, 2013	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	785.66	785.42	785.97	785.52	NI	NI	NI
	October 15, 2013	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	785.66	785.42	785.97	785.52	NI	NI	NI
	April 14, 2014	784.95	784.09	785.63	783.74	783.91	784.63	784.70	783.45	783.73	785.58	785.52	784.96	785.04	784.96	785.99	785.54	NI	NI	NI
	October 2-3, 2014	785.03	785.39	786.08	784.37	784.28	784.57	784.54	784.56	dry	785.24	785.18	785.19	785.47	785.28	785.75	785.33	NI	NI	NI
	April 13-14, 2015	783.96	783.63	785.25	783.01	782.74	783.65	783.95	782.87	dry	784.43	784.51	784.17	784.48	784.37	785.07	784.66	NI	NI	NI
	October 6-7, 2015	784.28	784.44	785.72	783.68	783.33	784.05	784.02	783.66	dry	784.80	784.76	784.66	784.89	784.70	785.20	784.76	NI	NI	NI
	April 4-6, 2016	785.82	aband	787.02	785.29	785.07	785.63	785.67	784.76	785.43	786.37	786.26	785.89	786.05	785.95	786.61	786.21	NI	NI	NI
	October 11-13, 2016	786.64	aband	788.00	787.36	786.46	786.45	786.32	786.40	786.81	787.22	787.11	786.96	787.17	786.81	787.68	787.25	NI	NI	NI
	April 10-13, 2017	786.96	aband	788.13	786.39	785.99	786.30	786.28	786.34	786.23	787.16	787.06	786.96	787.24	787.03	787.90	787.60	NI	NI	NI
	October 3-5, 2017	785.48	aband	786.66	784.51	784.22	784.67	784.63	784.86	784.29	NM	786.49	785.58	786.08	785.83	786.47	786.02	NI	NI	NI
	October 9-10, 2017	NM	aband	NM	NM	NM	NM	NM	NM	NM	785.56 [6]	NM	NM	NM	NM	NM	NM	NI	NI	NI
	February 21, 2018	783.97	aband	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	784.68	784.46	NM	NM	NI	NI	NI
Dry Ash Facility (Facility ID #03025)	April 23-25, 2018	783.99	aband	785.36	783.09	786.36	781.77	780.79	783.28	783.32	785.88	784.91	782.54	784.71	784.53	785.23	784.81	NI	NI	NI
	October 23-25, 2018	788.25	aband	789.71	788.77	787.96	787.88	787.73	787.62	788.26	788.32	788.19	788.21	788.59	788.31	789.32	788.87	NI	NI	NI
	April 1-4, 2019	787.05	aband	788.64	786.63	786.54	786.82	786.92	786.47	786.78	787.35	787.34	787.16	787.45	787.18	788.04	787.63	NI	NI	NI
	October 7-9, 2019	787.26	aband	789.23	788.26	787.64	787.92	787.74	786.77	788.90	787.79	787.73	787.44	787.78	787.62	788.63	788.17	NI	NI	NI
	May 27-28, 2020	786.92	aband	788.34	786.01	785.75	785.98	785.99	786.22	786.03	787.02	786.99	786.94	787.26	787.05	787.86	787.47	NI	NI	NI
	October 7-8, 2020	785.95	aband	787.76	785.91	785.45	785.70	785.68	785.52	785.72	786.10	786.06	786.10	786.55	786.33	786.85	786.38	NI	NI	NI
	February 25, 2021	NM	aband	NM	NM	NM	784.75	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NI	NI
	April 14, 2021	778.12	aband	787.29	784.27	784.05	784.77	784.77	784.46	c	785.84	785.81	785.60	785.86	785.69	786.47	786.06	NI	NI	NI
	June 11, 2021	NM	aband	NM	784.19	NM	784.66	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NI	NI
	October 11-12, 14, 2021	784.47	aband	786.78	783.73	783.60	784.42	784.41	783.88	783.87	784.96	784.88	784.79	785.14	784.94	785.55	785.11	NI	NI	NI
	October 17, 2021	NM	aband	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NI	NI
	April 1, 2022	aband	aband	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	April 11-13, 2022	aband	aband	785.52	783.27	783.45	784.30	784.42	783.26	783.78	785.02	785.00	784.70	784.83	784.72	785.45	785.02	783.99	783.97	783.73
	October 24-28, 2022	aband	aband	785.43	781.94	781.61	783.61	783.61	782.28	dry	784.57	784.54	784.38	784.64	784.47	785.05	784.62	783.74	782.76	783.50
	February 20-23, 2023	aband	aband	NM	783.57	NM	784.48	NM	NM	NM	785.25	NM	NM	NM	NM	NM	NM	NM	NM	NM
	March 27-28, 2023	aband	aband	NM	784.52	NM	785.23	NM	NM	NM	786.21	NM	NM	NM	NM	NM	NM	NM	NM	NM
	April 24-27, 2023	aband	aband	787.76	785.79	785.35	786.22	786.12	784.99	786.05	786.97	786.86	786.67	786.76	786.59	787.53	787.11	785.87	785.85	785.55
	May 16, 2023	aband	aband	787.79	785.64	785.25	786.06	786.05	785.39	785.77	786.88	786.79	786.74	786.95	786.75	787.47	787.05	786.23	786.21	785.97
	May 30-31, 2023	aband	aband	NM	785.23	NM	785.70	NM	NM	NM	786.57	NM	NM	NM	NM	NM	NM	NM	NM	NM
	October 9-11, 2023	aband	aband	785.33	782.57	782.39	783.55	783.40	782.94	dry	784.39	784.31	784.24	784.63	784.36	784.89	784.36	783.86	783.59	783.69
	April 15-17, 2024	aband	aband	dry	783.02	782.94	784.14	784.11	782.95	783.41	784.90	784.84	784.54	784.61	784.57	785.19	784.75	783.88	783.87	783.59
	April 19, 2024	aband	aband	785.47	783.06	783.02	784.28	784.30	783.05	dry	785.05	785.01	784.67	784.74	784.62	785.63	785.16	783.95	783.95	783.68
	Bottom of Well Elevation (ft)	778.15	780.16	779.47	777.21	750.89	770.52	749.10	781.24	782.54	774.07	762.24	779.36	776.13	756.07	779.53	756.66	777.19	745.21	774.29

Table 3. Groundwater Elevation - State Monitoring Program and CCR Well Network
Columbia Dry Ash and Ash Pond Disposal Facilities / SCS Engineers Project #25224067.00

	Well Number	M-3	M-4R	MW-39A	MW-39B	MW-48A	MW-48B	MW-57	MW-59	MW-216R	MW-217	MW-220RR
	Top of Casing Elevation (feet amsl)	788.23	806.10	809.62	809.50	828.86	828.84	786.29	815.48	814.21	791.55	792.90
	Screen Length (ft)											
	Total Depth (ft from top of casing)	16.90	25.55	34.80	76.07	51.88	75.80	14.40	38.50	37.85	37.37	18.96
	Top of Well Screen Elevation (ft)	771.33	780.55	774.82	733.43	776.98	753.04	771.89	776.98	776.36	754.18	773.94
	Measurement Date											
	October 2, 2012	780.13	786.76	781.49	781.34	782.03	781.93	780.58	779.88	781.91	780.95	780.55
	April 15, 2013	785.16	788.39	783.97	784.00	783.77	783.78	784.69	783.66	784.09	784.75	785.02
	October 8, 2013	781.22	786.67	NM	NM	783.69	783.58	NM	NM	783.39	782.27	782.36
	October 15, 2013	NM	NM	782.94	782.81	NM	NM	782.47	783.49	NM	NM	NM
	April 14, 2014	786.04	788.96	783.57	783.68	783.56	783.57	785.51	783.41	783.73	785.25	785.87
	October 1-3, 2014	781.16	787.55	783.42	783.32	784.05	783.94	782.32	783.55	783.79	782.63	783.03
	April 13-14, 2015	783.08	786.83	782.77	782.68	782.80	782.82	782.81	782.83	782.93	783.34	783.42
	October 6-7, 2015	780.66	786.12	782.97	782.81	783.10	783.01	781.82	783.25	783.18	781.95	782.26
	April 4-6, 2016	784.21	789.09	785.27	785.27	784.79	784.76	783.21	784.97	785.68	785.02	784.36
	October 11-13, 2016	781.88	787.88	785.75	785.52	785.73	785.61	783.12	786.51	786.16	783.75	784.09
Ash Pond Facility (Facility ID #02325)	April 10-13, 2017	782.94	787.95	785.44	785.20	785.82	785.69	782.77	786.09	785.95	784.29	784.09
	October 3-5, 2017	780.93	787.04	783.35	783.18	784.30	784.19	782.37	784.23	783.89	782.48	782.61
	April 23-25, 2018	782.89	790.43	782.86	782.87	783.14	783.09	783.04	783.02	783.23	783.26	783.45
	October 23-25, 2018	782.95	788.47	787.12	786.88	787.12	786.99	783.48	787.73	787.49	784.90	784.52
	April 1-4, 2019	785.68	789.44	786.28	786.31	786.56	786.45	785.27	787.39	786.53	786.33	785.46
	October 7-9, 2019	785.33	790.65	787.10	787.02	786.68	786.65	785.29	786.68	787.07	786.01	785.42
	May 27-29, 2020	781.80	787.73	785.12	784.92	785.74	785.59	783.11	785.89	785.60	783.41	783.89
	October 7-8 &17, 2020	781.42	787.74	784.74	784.64	785.03	784.96	782.83	785.43	785.10	783.06	783.49
	April 12, 2021	782.30	786.34	783.66	783.65	784.13	784.08	782.79	784.08	783.97	783.15	783.49
	October 11-12, 14, 2021	781.03	786.33	782.94	782.85	783.09	783.03	781.94	783.11	783.04	782.15	782.66
	April 11-13, 2022	783.95	788.26	783.37	783.34	783.10	783.10	NM	782.99	783.40	783.93	783.83
	June 3, 2022	NM	NM	NM	NM	NM	NM	782.13	NM	NM	NM	NM
	October 25, 26, 28, 2022	780.41	783.85	780.76	780.66	779.57	779.55	779.23	778.98	778.61	780.33	781.49
	March 27-28, 2023	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	April 24-27, 2023	785.18	782.59	785.38	785.19	784.55	784.51	NM	784.83	784.46	783.78	785.30
	May 16, 2023	782.79	781.64	784.70	784.58	784.60	784.49	782.80	784.68	783.94	782.07	784.03
	October 9-11, 2023	779.65	780.54	781.50	781.30	781.94	781.69	780.26	781.95	781.21	779.89	780.43
	Bottom of Well Elevation (ft)	771.33	780.55	774.82	733.43	776.98	753.04	771.89	776.98	776.36	754.18	773.94

Table 3. Groundwater Elevation - State Monitoring Program and CCR Well Network
Columbia Dry Ash and Ash Pond Disposal Facilities / SCS Engineers Project #25224067.00

	Well Number	MW-301	MW-302	MW-303	MW-304	MW-305	M-4R	MW-33AR	MW-34A	MW-84A	MW-306	MW-307	MW-308	MW-309	MW-310	MW-311	MW-312	MW-313	MW-314	MW-315	MW-316
	Top of Casing Elevation (feet amsl)	806.89	813.00	815.72	805.42	806.32	806.10	808.29	805.95	814.28	807.63	806.89	806.9	813.27	813.62	809.74	826.786	820.3	821.57	819.78	808.49
	Screen Length (ft)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Total Depth (ft from top of casing)	29.40	33.6	35.80	25.7	25.6	39.58	31.08	35.43	40.21	27	26.5	28	37.67	38.41	36.19	52.5	46.2	45.0	45.6	43.7
	Top of Well Screen Elevation (ft)	787.49	789.40	785.72	789.72	790.72	776.52	787.21	780.52	784.07	790.63	790.39	788.90	785.60	785.21	783.55	784.29	784.1	786.6	784.2	774.79
	Measurement Date																				
	December 21-22, 2015	785.56	784.78	784.11	786.13	788.96	787.58	783.77	783.50	785.31	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
	April 4-5, 2016	786.78	785.81	785.48	788.08	789.61	789.09	785.29	785.63	786.37	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
	July 7-8, 2016	786.31	786.28	784.60	787.36	789.26	787.43	785.19	785.05	785.89	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
	July 28, 2016	NM	NM	784.35	NM	NM	NM	NM	784.86	785.61	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
	October 11-13, 2016	787.64	787.76	786.18	788.18	789.78	787.88	787.36	786.45	787.22	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
	December 29, 2016	787.37	787.05	NM	NM	NM	NM	785.66	785.72	786.63	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
	January 25-26, 2017	787.27	786.89	785.28	789.34	789.36	789.64	785.88	785.98	786.70	785.50	785.36	785.73	NI	NI	NI	NI	NI	NI	NI	NI
	April 10 & 11, 2017	787.89	787.55	786.00	788.22	789.57	787.95	786.39	786.30	787.16	786.22	785.64	786.51	NI	NI	NI	NI	NI	NI	NI	NI
	June 6, 2017	788.25	788.37	786.49	788.58	789.79	787.83	787.27	786.66	787.63	786.85	786.07	786.46	NI	NI	NI	NI	NI	NI	NI	NI
	August 7-9, 2017	787.34	787.55	785.42	789.52	789.30	788.54	786.11	785.81	786.68	785.69	785.19	785.37	NI	NI	NI	NI	NI	NI	NI	NI
	October 23-24, 2017	785.89	785.94	783.92	788.97	788.14	788.00	784.13	784.50	785.32	783.97	784.79	784.17	NI	NI	NI	NI	NI	NI	NI	NI
	February 21, 2018	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	783.19	783.05	783.02	NI	NI	NI	NI	NI
	March 23, 2018	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	783.10	783.10	783.00	NI	NI	NI	NI	NI
	April 23-25, 2018	785.29	784.37	783.27	789.69	787.67	790.43	783.09	781.77	785.88	783.24	783.65	782.65	783.07	782.97	781.83	NI	NI	NI	NI	NI
	May 24, 2018	NM	NM	NM	NM	NM	NM	NM	NM	NM	785.79	785.09	NM	785.45	785.97	786.11	NI	NI	NI	NI	NI
	June 23, 2018	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	786.03	786.64	786.47	NI	NI	NI	NI	NI
	July 23, 2018	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	786.27	786.35	786.55	NI	NI	NI	NI	NI
	August 7, 2018	787.06	NM	785.20	788.25	788.56	787.63	NM	NM	786.55	NM	NM	NM	NM	NM	NM	NI	NI	NI	NI	NI
	August 22, 2018	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	785.54	785.40	785.46	NI	NI	NI	NI	NI
	September 21, 2018	NM	788.37	786.50	NM	NM	NM	787.90	787.01	NM	NM	NM	NM	787.08	787.24	787.66	NI	NI	NI	NI	NI
	October 22-24, 2018	788.98	789.16	787.51	789.05	790.04	788.47	788.77	787.88	788.32	787.66	786.57	787.81	787.99	788.18	788.64	NI	NI	NI	NI	NI
	April 1-4, 2019	787.04	787.56	786.52	789.72	790.07	789.44	786.63	786.82	787.35	786.72	786.71	787.53	786.30	786.38	786.38	NI	NI	NI	NI	NI
	June 12, 2019	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	787.25	NM	NI	NI	NI	NI	NI
	June 19, 2019	NM	NM	786.81	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NI	NI	NI	NI
	October 7-9, 2019	788.47	788.31	787.02	790.41	790.36	790.65	NM	NM	NM	787.47	786.99	787.18	787.26	787.94	787.64	NI	NI	NI	NI	NI
	December 13, 2019	NM	NM	NM	NM	NM	NM	NM	NM	NM	787.03	785.68	786.43	NM	NM	NM	NI	NI	NI	NI	NI
	December 23, 2019	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	775.22	NM	NI	NI	NI	NI	NI
CCR Rule Wells	January 17, 2020	NM	NM	785.58	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NI	NI	NI	NI
	February 3, 2020	787.24	NM	NM	NM	NM	NM	NM	NM	786.50	785.77	785.57	786.48	NM	NM	NM	NI	NI	NI	NI	NI
	May 27-29, 2020	787.77	787.29	785.56	789.30	787.78	787.73	786.01	785.98	787.02	785.77	785.35	786.28	785.98	785.81	785.85	NI	NI	NI	NI	NI
	June 30, 2020	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	786.18	NM	NM	NI	NI	NI	NI	NI
	August 6, 2020	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	785.93	NM	NM	NI	NI	NI	NI	NI
	October 7-8, 2020	786.53	786.74	785.16	788.52	787.96	787.74	785.91	785.70	786.10	785.39	784.71	785.68	785.47	785.56	785.83	NI	NI	NI	NI	NI
	December 11, 2020	NM	NM	NM	NM	788.19	NM	NM	NM	NM	NM	NM	NM	785.26	785.26	NM	NI	NI	NI	NI	NI
	February 25, 2021	NM	NM	784.27	NM	788.36	NM	NM	784.75	NM	NM	NM	NM	NM	NM	NM	NI	NI	NI	NI	NI
	April 12, 2021	786.50	785.77	784.07	787.99	788.11	786.34	784.27	784.77	785.84	784.32	784.21	785.55	784.29	784.24	784.15	NI	NI	NI	NI	NI
	June 11, 2021	NM	NM	NM	NM	NM	NM	784.19	784.66	NM	NM	NM	NM	784.20	784.05	NM	NI	NI	NI	NI	NI
	July 20, 2021	NM	NM	783.64	NM	788.39	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NI	NI	NI	NI
	October 11-12, 14, 2021	785.28	785.09	783.09	787.78	787.75	786.33	783.73	784.42	784.96	782.93	782.44	783.76	783.65	783.48	783.48	NI	NI	NI	NI	NI
	December 21, 2021	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	782.93	NM	NM	NI	NI	NI	NI	NI
	February 24, 2022	NM	NM	782.34	NM	786.49	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NI	NI	NI	NI
	April 11-13, 2022	785.44	784.42	783.40	788.20	787.87	788.26	783.27	784.30	785.02	783.11	783.32	784.19	783.14	783.19	783.04	NI	NI	NI	NI	NI
	July 27, 2022	NM	NM	783.07	NM	787.03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NI	NI	NI	NI	NI
	October 25-27, 2022	784.91	784.62	778.94	781.79	784.97	783.85	781.94	783.61	784.57	778.32	777.89	784.16	781.50	780.96	781.23	NI	NI	NI	NI	NI
	November 30, 2022	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	781.62	781.14	781.15	NI	NI	NI	NI	NI
	December 2, 2022	785.12	784.48	NM	783.97	NM	NM	781.91	783.71	784.76	778.52	779.54	NM	NM	NM	NM	NI	NI	NI	NI	NI
	January 12-13, 2023	785.20	784.55	NM	NM	NM	NM	782.75	784.10	784.88	NM	NM	NM	782.57	782.45	782.32	NI	NI	NI	NI	NI
	January 20, 2023	NM	NM	NM	788.08	NM	NM	NM	NM	NM	782.15	782.11	784.98	NM	NM	NM	NM	NM	NM	NM	NI
	January 24, 2023	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	783.73	783.36	783.63	783.77	NI
	February 20-23, 2023	785.56	784.98	NM	NM	NM	NM	NM	NM	NM	783.04	782.91	785.32	783.31	783.34	783.40	783.50	783.59	783.82	783.96	NI
	March 27-28, 2023	786.83	785.87	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	783.84	783.98	784.43	NM	784.12	784.41	784.57	NI
	April 24-27, 2023	787.57	786.87	784.38	784.03	NM	782.59	785.79	786.22	786.97	784.82	784.25	787.75	785.05	785.18	785.69	NM	785.21	785.43	785.59	NI
	May 5, 2023	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	785.55	NM	NM	NM	780.49
	May 16, 2023	787.43	787.07	783.88	784.12	dry	781.64	785.64	786.06	786.88	784.65	783.89	786.88	785.15	785.11	785.39	785.97	785.46	785.68	785.88	780.48
	May 30-31, 2023	787.04	786.89	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	784.90	784.69	784.97	NM	785.24	785.55	785.77	NM
	June 29-30, 2023	786.32	786.39	NM	NM	NM	NM	784.32	785.04	785.92	NM	NM	NM	784.12	783.84	783.97	NM	784.67	784.95	785.17	NM
	July 31, 2023	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	783.96	784.26	784.49	NM
	August 31, 2023	NM	785.30	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	782.47	NM	NM	783.55	783.83	783.97	NM
	October 9-11, 2023	784.67	784.65	781.21	780.09	779.93	780.54	782.57	783.55	784.39	NM	NM	783.09	782.58	782.32	782.22	783.69	783.10	783.33	783.59	780.30
	November 9, 2023	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	782.76	NM	NM	NM	NM	NM	NM	NM
	November 20, 2023	NM	NM	NM	NM	NM	NM	NM	NM	NM	781.97	781.45	782.85	NM	NM	NM	NM	NM	NM	NM	NM
	December 27, 2023	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	783.18	783.36	NM
	Bottom of Well Elevation (ft)	777.49	779.40	775.72	779.72	780.72	766.52	777.21	770.52	774.07	780.63	780.39	778.90	775.60	775.21	773.55	774.29	774.10	776.61	774.18	764.79

Notes:
NM = not measured
NI = not installed
aband = abandoned
(1) The depth to water at MW-84A was not measured prior to purging for sampling during the October 3-5, 2017 sampling event. The level was allowed to return to static and was measured on October 10, 2017.
(2) MW-303 was extended in 2022 due to regrading. Prior to October 2022, the TOC elevation was 811.52'. For events in October 2022 and later, the TOC elevation is 815.72'.

Created by: MDB Date: 5/6/2013
Last revision by: RM Date: 6/5/2024
Checked by: GK Date: 6/5/2024

Table 4. Horizontal Gradients and Flow Velocity
Columbia Energy Center - Secondary Pond /
SCS Engineers Project #25224067.00
January - December 2023

	Northeast*				
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
4/24-27/2024	785.30	784.03	1770	0.0007	0.01

	Southwest*				
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
4/24-27/2024	787.75	785.00	90	0.031	0.38

	Northwest				
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
10/9-11/2023	781.00	780.09	610	0.001	0.02

	South				
Sampling Dates	**h1 (ft)**	**h2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/d)**
10/9-11/2023	783.09	781	110	0.019	0.24

Wells	**K Values (cm/sec)**	**K Values (ft/d)**
MW-306	4.36E-03	12.4
MW-307	1.74E-03	4.9
MW-308	7.03E-04	2.0
Geometric Mean	1.75E-03	5.0

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

*: Groundwater flow in April 2023 was affected by dewatering around the Secondary Pond.

Created by:	NDK	Date:	8/3/2022
Last revision by:	NLB	Date:	4/8/2024
Checked by:	JM	Date:	5/3/2024

Table 5. 2023 Groundwater Analytical Results
Columbia Energy Center - Secondary Pond / SCS Engineers Project #25224067.00

Parameter Name	UPL Method	UPL		Background Wells						Compliance Wells																	
				MW-84A			MW-301			MW-306						MW-307						MW-308					
				10/27/2022	4/27/2023	10/11/2023	10/27/2022	4/27/2023	10/11/2023	10/26/2022	1/20/2023	2/20/2023	4/24/2023	10/10/2023	11/20/2023	10/26/2022	1/20/2023	2/20/2023	4/25/2023	10/10/2023	11/20/2023	10/25/2022	1/20/2023	2/20/2023	4/24/2023	10/10/2023	11/20/2023
Groundwater Elevation (ft amsl)				784.57	786.97	784.39	784.91	787.57	784.67	778.32	782.15	783.04	784.82	below top of pump	781.97	777.89	782.11	782.91	784.25	below top of pump	781.45	784.16	784.98	785.32	787.75	783.09	782.85
Appendix III																											
Boron, µg/L	P	35		12.2	10.3	14.0	37.5	20.1	36.2	--	107	113	102	106	108	--	232	226	202	252	307	667	536	561	288	663	742
Calcium, µg/L	NP	129,000		784,000	68,600	65,100	62,800 P6	120,000	52,300	--	90,400	94,500	106,000	110,000	118,000 P6	--	127,000	123,000	72,200	96,000	109,000	125,000	135,000	150,000	130,000	127,000	127,000
Chloride, mg/L	P	6.02		3.4	3.0	3.1	2.3	1.5 J	2.1	--	12.4	22.0	40.6	21.7	21.2	--	51.3	57.6	32.8	35.8	42.6	1.7 J	1.1 J	1.1 J	3.0 J,D3	2.4	5.7 J
Fluoride, mg/L	DQ	DQ		<0.095	<0.095	<0.095	<0.095 M0	<0.095	<0.095 M0	--	0.27 J	<0.095	<0.095	<0.48 D3,M0	<0.095	--	<0.095	<0.095	<0.48 D3	<0.48 D3	<0.48 D3	<0.095	<0.095	<0.095	<0.48 D3	<0.095	<0.48 D3
Field pH, Std. Units	P	7.76		7.31	7.01	7.51	6.8	6.65	7.06	--	7.63	7.12	7.10	7.09	7.42	--	7.40	6.76	6.69	6.82	7.08	7.15	7.14	7.15	6.99	7.05	6.89
Sulfate, mg/L	P	30.8		1.1 J	1.3 J	1.4 J	11.6	12.3	11.8	--	6.2	7.7	10.3	103	123	--	208	127	47.5	77.6	103	0.55 J	4.3	2.5	47.6	0.59 J	2.5 J
Total Dissolved Solids, mg/L	NP	514		302	326	324	282	526	300	--	350	370	448	566	538	--	630	588	364	506	518	492	538	562	580	542	490
Appendix IV		**UPL**	**GPS**																								
Antimony, µg/L	NP	0.4	6	0.29 J,B	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15 1q	0.19 J	0.16 J	0.22 J	<0.15	--	<0.15 1q	0.19 J	<0.15	<0.15	<0.15	<0.15	<0.15 1q	<0.15	<0.15	<0.15	0.21 J
Arsenic, µg/L	P	0.507	10	0.72 J	<0.28	<0.28	0.30 J	<0.28	<0.28	--	<0.28	0.37 J,B	<0.28	0.42 J	<0.28	--	3.5	1.8 B	1.3	2.1	2.4	4.5	2.8	3.3	4.9	4.5	5.7
Barium, µg/L	P	16.9	2000	13.7	12.6	12.7	7.5	9.8	7.3	--	17.1	14.0	14.9	18.3	20.2	--	39.0	19.4	11.8	17.5	22.2	54	63.3	66.2	77.7	66.9	92.2
Beryllium, µg/L	NP	0.37	4	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Cadmium, µg/L	NP	0.32	5	0.22 J,B	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium, µg/L	P	2.36	100	2.2 J	1.7 J	1.6 J	<1.0	<1.0	<1.0	--	3.3 J	3.0 J	2.1 J	2.3 J	2.5 J	--	2.8 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.7 J	6.4
Cobalt, µg/L	NP	0.38	6	0.25 J,B	<0.12	<0.12	0.46 J,B	<0.12	0.13 J	--	0.49 J	0.14 J	<0.12	0.17 J	<0.12	--	8.7	20.2	16	5.7	4.8	<0.12	<0.12	0.24 J	1.7	0.53 J	2.2
Fluoride, mg/L	DQ	DQ	4	<0.095	<0.095	<0.095	<0.095 M0	<0.095	<0.095 M0	--	0.27 J	<0.095	<0.095	<0.48 D3,M0	<0.095	--	<0.095	<0.095	<0.48 D3	<0.48 D3	<0.48 D3	<0.095	<0.095	<0.095	<0.48 D3	<0.095	<0.48 D3
Lead, µg/L	NP	0.90	15	0.26 J	<0.24	<0.24	<0.24	<0.24	<0.24	--	0.68 J	<0.24	<0.24	<0.24	<0.24	--	1.6	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	0.70 J	1.7
Lithium, µg/L	P	0.827	40	0.41 J	0.71 J	0.54 J	0.37 J	0.62 J	0.43 J	--	12.3	12.7	8.9	13.9	15.2	--	1.3	0.82 J, B	<0.22	0.49 J	<0.22	<0.22	<0.22	<0.22	<0.22	0.77 J	1.6
Mercury, µg/L	DQ	DQ	2	<0.066	<0.066	<0.066	<0.066	<0.066 M0	<0.066	--	<0.066	<0.066	<0.066	<0.066	<0.066 M0	--	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066
Molybdenum, µg/L	NP	0.44	100	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	--	9.3	8.3	6.6	7.4	8.5	--	0.62 J	0.60 J	<0.44	<0.44	0.49 J	0.87 J	1.2 J	1.0 J	9.0	0.63 J	12.9
Selenium, µg/L	NP	0.71	50	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	--	1.4	1.4	1.1	1.4	1.1	--	0.4 J	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.65 J
Thallium, µg/L	NP	0.48	2	0.33 J,B	<0.14	<0.14	<0.14	<0.14	<0.14	--	0.16 J	0.21 J	<0.14	0.15 J	0.43 J	--	<0.14	0.22 J	<0.14	<0.14	0.42 J	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Radium 226/228 Combined, pCi/L	P	1.76	5	0.6730	0.326	0.844	0.0029	0.417	0.611	--	0.721	0.156	0.341	0.336	0.467	--	0.356	0.791	0.608	0.552	0.501	0.800	0.880	0.0103	1.48	0.644	0.499

Blue shaded cell indicates the compliance well result exceeds the UPL and the LOQ.
Yellow shaded cell indicates the compliance well result exceed the GPS.

Abbreviations:
mg/L = milligrams per liter
µg/L = micrograms per liter
LOD = Limit of Detection
LOQ = Limit of Quantitation
GPS = Groundwater Protection Standard
UPL = Upper Prediction Limit
P = Parametric UPL with 1-of-2 retesting
NP = Nonparametric UPL (highest background value) with 1-of-2- retesting
SSI = Statistically Significant Increase
DQ = Double Quantification Rule (not detected in background)
ft amsl = feet above mean sea level

Lab Notes:
J = Estimated concentration at or above the LOD and below the LOQ.
B = Analyte was detected in the associated Method Blank.
D3 = Sample was diluted due to the presece of high levels of non-target analytes or other matrix interference.
M0 = Matrix spike recovery and/or matrix spike duplicate 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.
1q = Analyte was measured in the associated method blank at a concentration of -0.26 ug/L.

Notes:
1. An individual result above the UPL or GPS does not constitute an SSI above background or statistically significant level above the GPS. See the accompanying letter text for identification of statistically significant results.
2. GPS is the United States Environmental Protection Agency (U.S. EPA) Maximum Contamination Level (MCLs), if established; otherwise, the values from 40 CFR 257.95(h)(2).
3. Interwell UPLs calculated based on results from background wells MW-84A and MW-301.
4. For compliance wells, only results confirmed above the LOQ are evaluated as potential Statistically Significant Increases above background.
5. The laboratory report and statistics for the October 2022 results were included in the 2022 annual report.

Created by: RM Date: 9/19/2022
Last revision by: BLR Date: 7/22/2024
Checked by: EMS Date: 7/22/2024
Proj Mgr QA/QC: TK Date: 7/24/2024

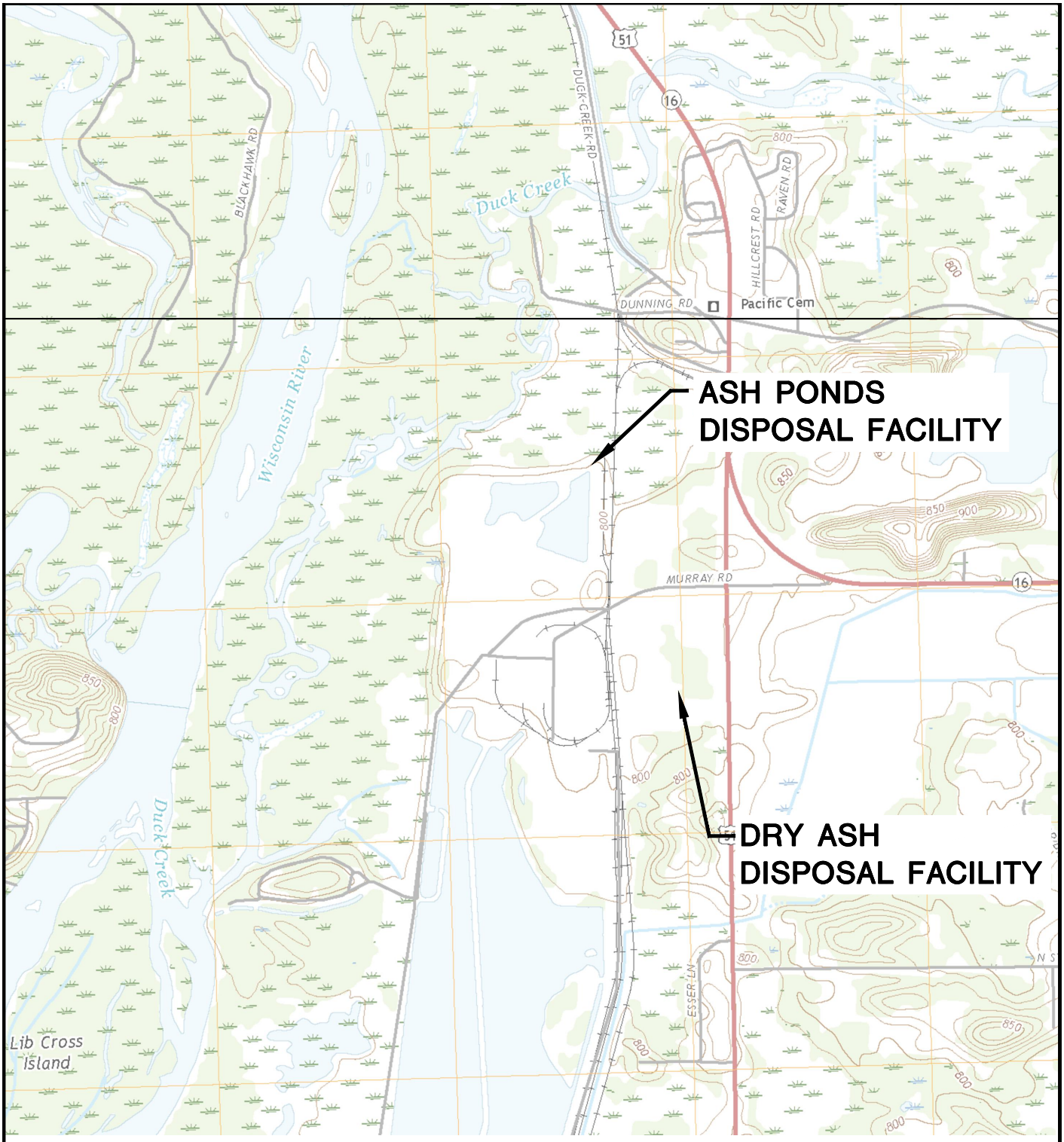
Table 6. 2023 Groundwater Field Data
Columbia Energy Center - Secondary Ash Pond / SCS Engineers Project #25224067.00

Well	Sample Date	Groundwater Elevation (feet)	Field Temperature (deg C)	Field pH (Std. Units)	Oxygen, Dissolved (mg/L)	Field Specific Conductance (umhos/cm)	Field Oxidation Potential (mV)	Turbidity (NTU)
MW-84A	4/27/2023	786.97	10.7	7.01	9.37	557	103	0.72
	10/11/2023	784.39	12.3	7.51	8.44	600	91	0.03
MW-301	4/27/2023	787.57	8.0	6.65	6.50	857	95	0.00
	10/11/2023	784.67	10.7	7.06	0.16	536	24	0.34
MW-306	1/20/2023	782.15	7.0	7.63	8.27	634	115	58.4
	2/20/2023	783.04	9.6	7.12	8.03	578	112	4.82
	4/24/2023	784.82	8.8	7.10	7.76	706	72	4.51
	10/10/2023	NM	13.0	7.09	6.72	832	116	4.14
	11/20/2023	781.97	12.1	7.42	8.69	765	209	0.00
MW-307	1/20/2023	782.11	6.7	7.40	5.44	739	40	242
	2/20/2023	782.91	9.5	6.76	0.13	853	-32	0.50
	4/25/2023	784.25	8.0	6.69	0.19	449	-69	1.01
	10/10/2023	NM	14.4	6.82	0.27	837	-93	0.86
	11/20/2023	781.45	12.3	7.08	0.25	791	18	0.00
MW-308	1/20/2023	784.98	10.0	7.14	0.10	866	-154	1.09
	2/20/2023	785.32	9.1	7.15	0.08	890	-114	4.41
	4/24/2023	787.75	8.2	6.99	0.14	938	-126	3.72
	10/10/2023	783.09	15.7	7.05	0.18	940	-154	25.1
	11/20/2023	782.85	10.7	6.89	0.18	956	-124	18.3

Note: Groundwater elevations at monitoring wells MW-306 and MW-307 were not measured during the October 2023 monitoring event because water was below the top of the dedicated pumps.

Created by: RM Date: 9/2/2022
Last revision by: NLB Date: 3/22/2024
Checked by: RM Date: 6/25/2024

Figures

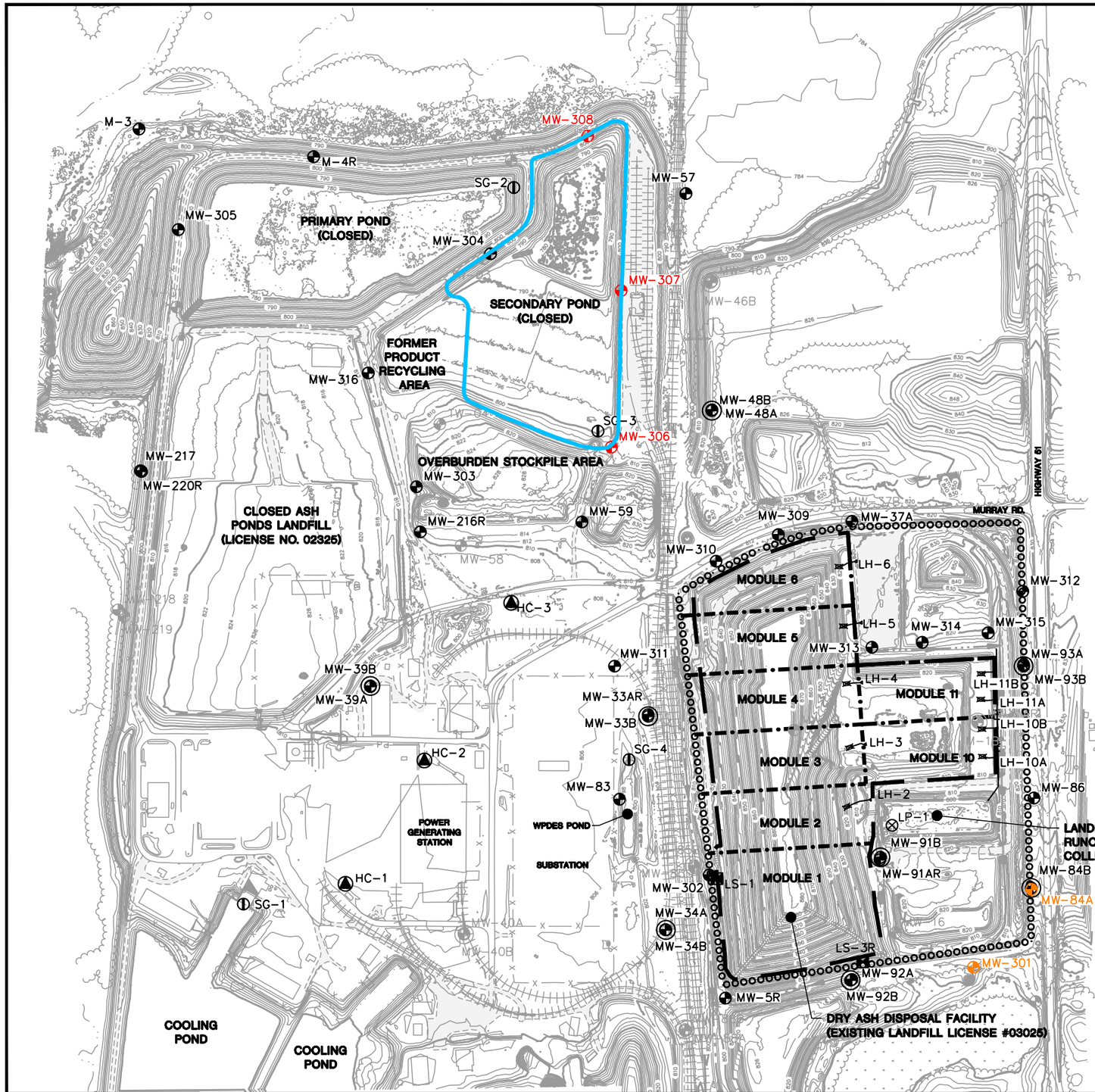


N

POYNETTE QUADRANGLE
WISCONSIN–COLUMBIA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'

CLIENT: ALLIANT ENERGY COLUMBIA ENERGY CENTER W8375 MURRAY ROAD PARDEEVILLE, WI 53954	SITE: ALLIANT ENERGY COLUMBIA ENERGY CENTER PARDEEVILLE, WI	SITE LOCATION MAP	
PROJECT NO. 25219067.00	DRAWN BY: BSS	ENGINEER: SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE 1
DRAWN: 12/02/2019	CHECKED BY: MDB		
REVISED: 01/10/2020	APPROVED BY: TK 01/30/2020		

I:\25219067.00\Drawings\CCR 2019 Annual Report\Site Location Map.dwg, 1/30/2020 3:38:21 PM



LEGEND

- EXISTING MAJOR CONTOUR (10' INTERVAL)
- EXISTING MINOR CONTOUR (2' CONTOUR)
- EXISTING FENCELINE
- EXISTING TRACKS
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EDGE OF WATER
- DRY ASH DISPOSAL FACILITY LIMITS
- LINER PHASE/MODULE LIMITS
- WATER SUPPLY WELL
- STAFF GAUGE
- WATER TABLE WELL
- PIEZOMETER
- SURFACE WATER SAMPLE LOCATION
- LYSIMETER
- ABANDONED WATER TABLE WELL
- ABANDONED PIEZOMETER
- ABANDONED STAFF GAUGE
- LEACHATE HEADWELL
- CCR UNIT
- CCR MONITORING WELL
- CCR BACKGROUND MONITORING WELL

N

500 0 500

SCALE: 1" = 500'

NOTES:

1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014, AND GROUND SURVEYS BY SCS ENGINEERS IN MAY 2019, DECEMBER 2020, NOVEMBER 2021, AND DECEMBER 2021, AND BY DRONE SURVEY BY AMES IN NOVEMBER 2022.
2. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER AND LIGHT, INC. IN DECEMBER 1994, NOVEMBER 1996, APRIL 2003, AND JANUARY 2016, AND BY SCS ENGINEERS IN FEBRUARY 2018.
3. SUPPLY WELL LOCATIONS ARE APPROXIMATE AND ASSUMED BASED ON JANUARY 2013 DRAWINGS BY TRC.
4. MONITORING WELLS MW-301 THROUGH MW-305 INSTALLED BY BADGER STATE DRILLING ON NOVEMBER 11-13, 2015.
5. MONITORING WELLS MW-306 THROUGH MW-308 INSTALLED BY BADGER STATE DRILLING ON NOVEMBER 14-15, 2016.
6. MONITORING WELLS MW-309 THROUGH MW-311 INSTALLED BY BADGER STATE DRILLING ON FEBRUARY 13-14, 2018.
7. MONITORING WELLS MW-93A, MW-93B, AND MW-312 WERE INSTALLED BY CASCADE ENVIRONMENTAL ON MARCH 23-28, 2022.
8. MONITORING WELLS MW-313, MW-314, AND MW-315 WERE INSTALLED BY HORIZON CONSTRUCTION & EXPLORATION ON DECEMBER 12 AND 19, 2022.
9. MONITORING WELL MW-316 WAS INSTALLED BY HORIZON CONSTRUCTION & EXPLORATION ON APRIL 27, 2023.
10. BACKGROUND MONITORING WELLS FOR THE SECONDARY POND ARE: MW-301 AND MW-84A.

PROJECT NO.	25224067.00	DRAWN BY:	KP/SB
DRAWN:	12/02/2019	CHECKED BY:	RM
REVISED:	07/12/2024	APPROVED BY:	TK, 7/24/24

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

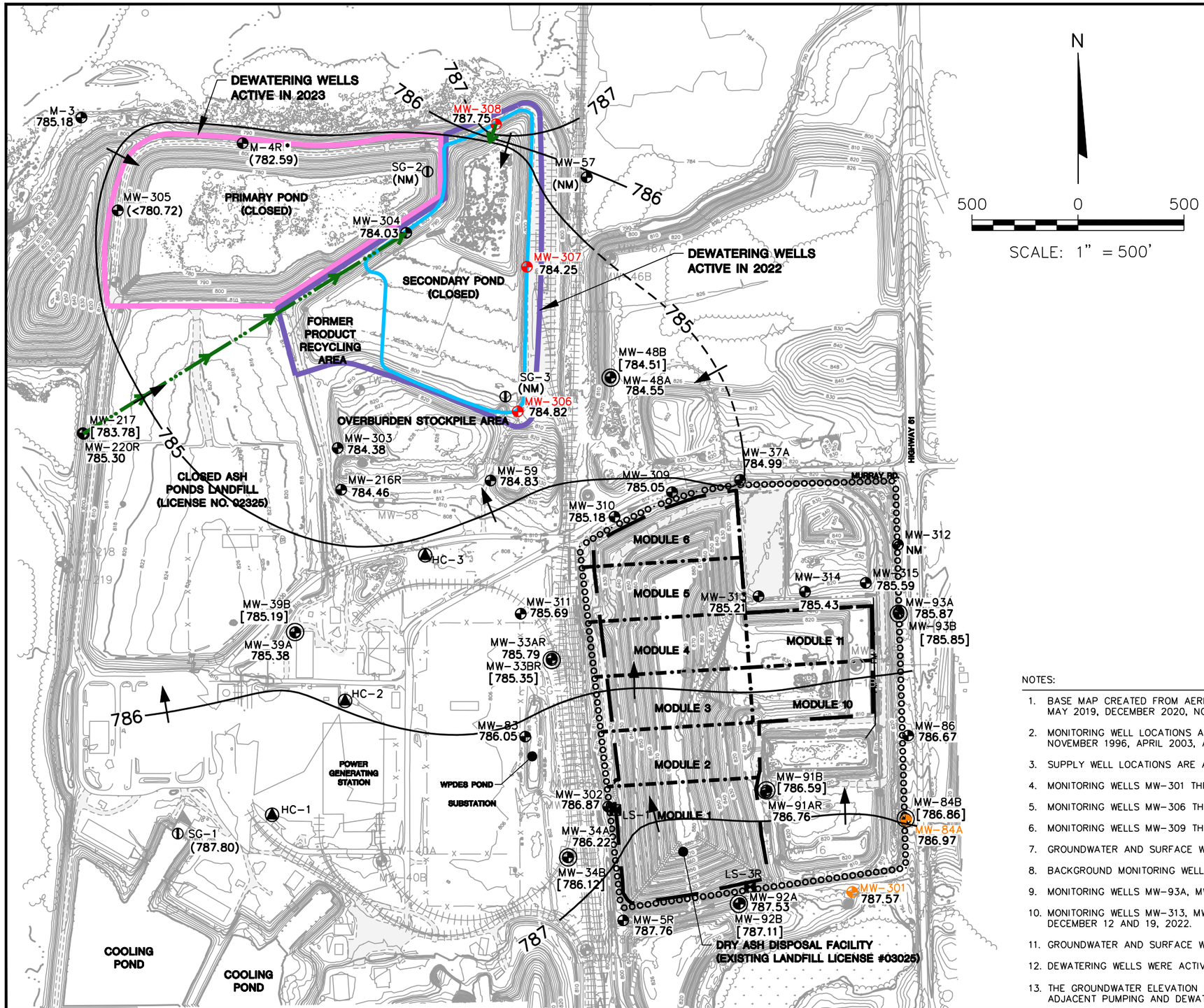
CLIENT: ALLIANT ENERGY
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WI 53954

SITE: ALLIANT ENERGY
COLUMBIA ENERGY CENTER
SECONDARY ASH POND
PARDEEVILLE, WI

SITE PLAN AND MONITORING WELL LOCATIONS

FIGURE 2

I:\25224067.00\Drawings\Secondary Ash Pond\Site Plan and Monitoring Well Locations.dwg, 7/12/2024 2:03:28 PM



N

500 0 500

SCALE: 1" = 500'

LEGEND

- EXISTING MAJOR CONTOUR (10' INTERVAL)
- EXISTING MINOR CONTOUR (2' CONTOUR)
- EXISTING FENCELINE
- EXISTING TRACKS
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EDGE OF WATER
- DRY ASH DISPOSAL FACILITY LIMITS
- LINER PHASE/MODULE LIMITS
- WATER SUPPLY WELL
- STAFF GAUGE
- WATER TABLE WELL
- PIEZOMETER
- LYSIMETER
- ABANDONED WATER TABLE WELL
- ABANDONED PIEZOMETER
- CCR UNIT
- FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4)
- CCR MONITORING WELL
- CCR BACKGROUND MONITORING WELL
- 787.62 WATER TABLE ELEVATION
- [788.87] POTENTIOMETRIC SURFACE ELEVATION (NOT CONTOURED)
- (795.20) SURFACE WATER ELEVATION (NOT CONTOURED)
- WATER TABLE CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- PRIMARY POND DEWATERING WELLS ACTIVE IN 2023
- SECONDARY POND DEWATERING WELLS ACTIVE IN 2022

NOTES:

1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014, AND GROUND SURVEYS BY SCS ENGINEERS IN MAY 2019, DECEMBER 2020, NOVEMBER 2021, AND DECEMBER 2021, AND BY DRONE SURVEY BY AMES IN NOVEMBER 2022.
2. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER AND LIGHT, INC. IN DECEMBER 1994, NOVEMBER 1996, APRIL 2003, AND JANUARY 2016 AND BY SCS ENGINEERS IN FEBRUARY 2018.
3. SUPPLY WELL LOCATIONS ARE APPROXIMATE AND ASSUMED BASED ON JANUARY 2013 DRAWINGS BY TRC.
4. MONITORING WELLS MW-301 THROUGH MW-305 INSTALLED BY BADGER STATE DRILLING ON NOVEMBER 11-13, 2015.
5. MONITORING WELLS MW-306 THROUGH MW-308 INSTALLED BY BADGER STATE DRILLING ON NOVEMBER 14-15, 2016.
6. MONITORING WELLS MW-309 THROUGH MW-311 INSTALLED BY BADGER STATE DRILLING ON FEBRUARY 13-14, 2018.
7. GROUNDWATER AND SURFACE WATER ELEVATIONS WERE MEASURED ON APRIL 12-14, 2021.
8. BACKGROUND MONITORING WELLS FOR THE PRIMARY ASH POND ARE: MW-301 AND MW-84A.
9. MONITORING WELLS MW-93A, MW-93B, AND MW-312 INSTALLED BY CASCADE ENVIRONMENTAL ON MARCH 25-28, 2022.
10. MONITORING WELLS MW-313, MW-314, AND MW-315 WERE INSTALLED BY HORIZON CONSTRUCTION & EXPLORATION ON DECEMBER 12 AND 19, 2022.
11. GROUNDWATER AND SURFACE WATER ELEVATIONS WERE MEASURED ON APRIL 24-27, 2023.
12. DEWATERING WELLS WERE ACTIVE AROUND THE PRIMARY POND DURING THE APRIL 2023 SAMPLING EVENT.
13. THE GROUNDWATER ELEVATION FOR M-4R (*) WAS NOT USED FOR CONTOURING OF THE WATER TABLE (SHALLOW) DUE TO ADJACENT PUMPING AND DEWATERING ACTIVITIES.

PROJECT NO.	25224067.00	DRAWN BY:	KP/SB
DRAWN:	10/12/2023	CHECKED BY:	NLB
REVISED:	07/12/2024	APPROVED BY:	TK, 7/24/24

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

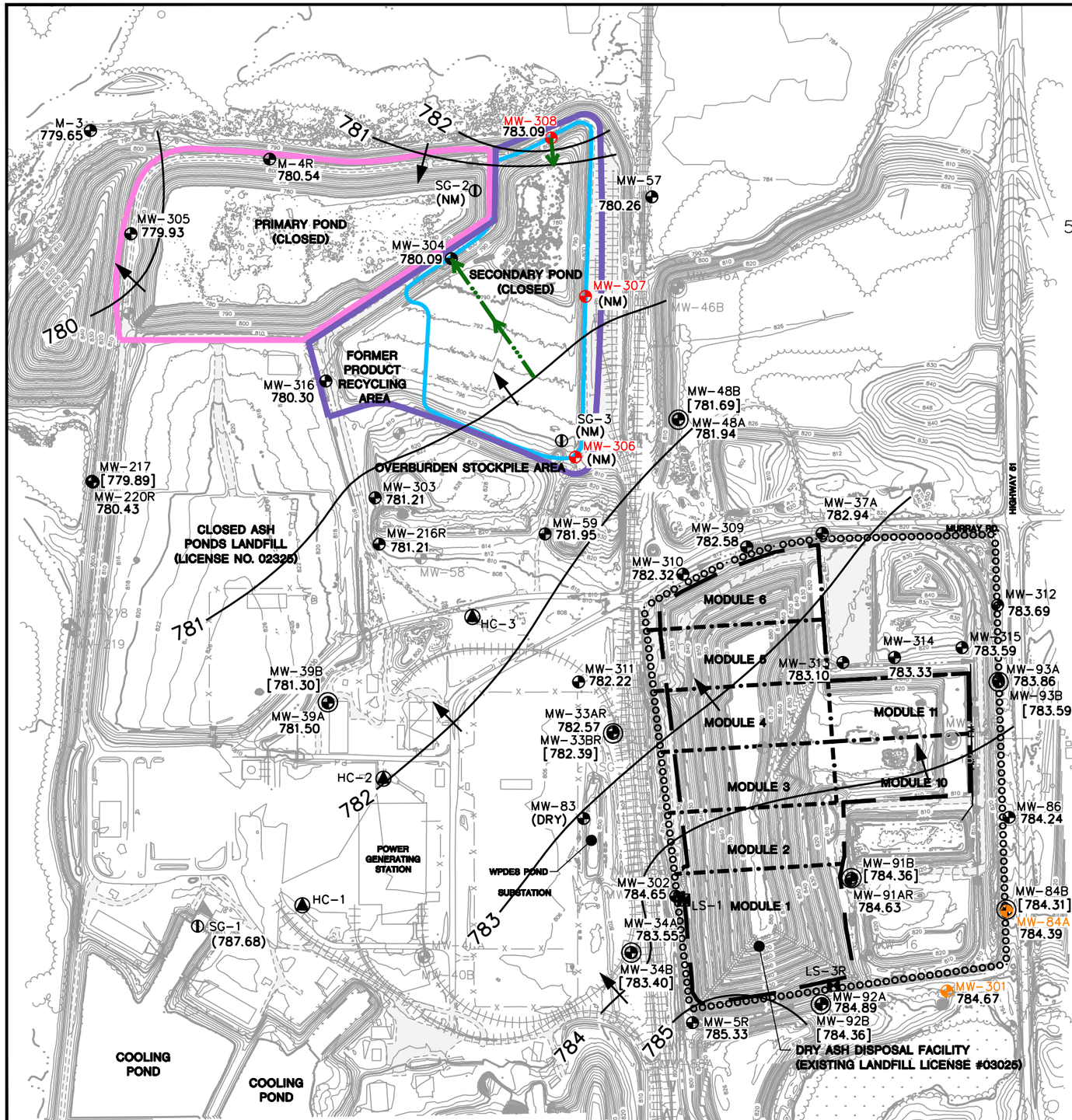
CLIENT: ALLIANT ENERGY
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WI 53954

SITE: ALLIANT ENERGY
COLUMBIA ENERGY CENTER
SECONDARY ASH POND
PARDEEVILLE, WI

WATER TABLE MAP
APRIL 2023

FIGURE 3

I:\25224067.00\Drawings\Secondary Ash Pond\Water Table Map-April 2023.dwg, 7/12/2024 2:03:05 PM



LEGEND

- EXISTING MAJOR CONTOUR (10' INTERVAL)
- EXISTING MINOR CONTOUR (2' CONTOUR)
- EXISTING FENCELINE
- EXISTING TRACKS
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EDGE OF WATER
- DRY ASH DISPOSAL FACILITY LIMITS
- LINER PHASE/MODULE LIMITS
- WATER SUPPLY WELL
- STAFF GAUGE
- WATER TABLE WELL
- PIEZOMETER
- LYSIMETER
- ABANDONED WATER TABLE WELL
- ABANDONED PIEZOMETER
- CCR UNIT
- FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4)
- CCR MONITORING WELL
- CCR BACKGROUND MONITORING WELL
- 787.62 WATER TABLE ELEVATION
- [788.87] POTENTIOMETRIC SURFACE ELEVATION (NOT CONTOURED)
- (795.20) SURFACE WATER ELEVATION (NOT CONTOURED)
- WATER TABLE CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- PRIMARY POND DEWATERING WELLS ACTIVE IN 2023
- SECONDARY POND DEWATERING WELLS ACTIVE IN 2022

NOTES:

1. BASE MAP CREATED FROM AERIAL SURVEY BY KBM, FLOWN DECEMBER 1, 2014, AND GROUND SURVEYS BY SCS ENGINEERS IN MAY 2019, DECEMBER 2020, NOVEMBER 2021, AND DECEMBER 2021, AND BY DRONE SURVEY BY AMES IN NOVEMBER 2022.
2. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER AND LIGHT, INC. IN DECEMBER 1994, NOVEMBER 1996, APRIL 2003, AND JANUARY 2016 AND BY SCS ENGINEERS IN FEBRUARY 2018.
3. SUPPLY WELL LOCATIONS ARE APPROXIMATE AND ASSUMED BASED ON JANUARY 2013 DRAWINGS BY TRC.
4. MONITORING WELLS MW-301 THROUGH MW-305 INSTALLED BY BADGER STATE DRILLING ON NOVEMBER 11-13, 2015.
5. MONITORING WELLS MW-306 THROUGH MW-308 INSTALLED BY BADGER STATE DRILLING ON NOVEMBER 14-15, 2016.
6. MONITORING WELLS MW-309 THROUGH MW-311 INSTALLED BY BADGER STATE DRILLING ON FEBRUARY 13-14, 2018.
7. GROUNDWATER AND SURFACE WATER ELEVATIONS WERE MEASURED ON APRIL 12-14, 2021.
8. BACKGROUND MONITORING WELLS FOR THE PRIMARY ASH POND ARE: MW-301 AND MW-84A.
9. MONITORING WELLS MW-93A, MW-93B, AND MW-312 INSTALLED BY CASCADE ENVIRONMENTAL ON MARCH 25-28, 2022.
10. MONITORING WELLS MW-313, MW-314, AND MW-315 WERE INSTALLED BY HORIZON CONSTRUCTION & EXPLORATION ON DECEMBER 12 AND 19, 2022.
11. MONITORING WELL MW-316 WAS INSTALLED BY HORIZON CONSTRUCTION & EXPLORATION ON APRIL 27, 2023.
12. GROUNDWATER AND SURFACE WATER ELEVATIONS WERE MEASURED OCTOBER 2023.

PROJECT NO.	25224067.00	DRAWN BY:	KP/SB
DRAWN:	11/13/2023	CHECKED BY:	NLB
REVISED:	07/12/2024	APPROVED BY:	TK, 7/24/24

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

CLIENT: ALLIANT ENERGY
COLUMBIA ENERGY CENTER
W8375 MURRAY ROAD
PARDEEVILLE, WI 53954

SITE: ALLIANT ENERGY
COLUMBIA ENERGY CENTER
SECONDARY ASH POND
PARDEEVILLE, WI

WATER TABLE MAP
OCTOBER 2023

FIGURE
4

I:\25224067.00\Drawings\Secondary Ash Pond\Water Table Map-October 2023.dwg, 7/12/2024 2:02:28 PM

Appendix A

Summary of Regional Hydrogeologic Stratigraphy

Table COL-3. Regional Hydrogeologic Stratigraphy
Columbia Energy Center / SCS Engineers Project #25215053

Approximate Age	Hydrogeologic Unit	General Thickness (feet)	Name of Rock Unit*	Predominant Lithology
Quaternary (0-1 million years old)	Surficial Aquifer	0 to 300+	Holocene & Pleistocene Deposits	• Unconsolidated clay, silt, sand, gravel, cobbles, boulders, and organic matter
Ordovician (460 to 490 million years old)	Sandstone Aquifer	0 to 800+	Galena Decorah Platteville St. Peter Prairie du Chien	• Dolomite and shaley dolomite • Sandstone
Cambrian (490 to 500 million years old)			Trempeleau Franconia Galesville Eau Claire Mt. Simon	• Sandstone
Precambrian (more than 1 billion years old)	Used for domestic supply in some areas	--	Precambrian	• Igneous and metamorphic rocks

*This nomenclature and classification of rock units in this report are those of the Wisconsin Geological and Natural History Survey and do not necessarily coincide with those accepted by the U.S. Geological Survey.

Sources:

Harr, C.A., L.C. Trotta, and R.G. Borman, "Ground-Water Resources and Geology of Columbia County, Wisconsin," University of Wisconsin-Extension Geological and Natural History Survey Information Circular Number 37, 1978.

Wisconsin Geological and Natural History Survey, Bedrock Stratigraphic Units in Wisconsin, UW Extension Educational Series 51, ISSN: 1052-2115, 2011.

I:\25215053\Reports\Report 3 - Columbia\Tables\Table_2_Regional_Hydrogeologic_Stratigraphy.doc

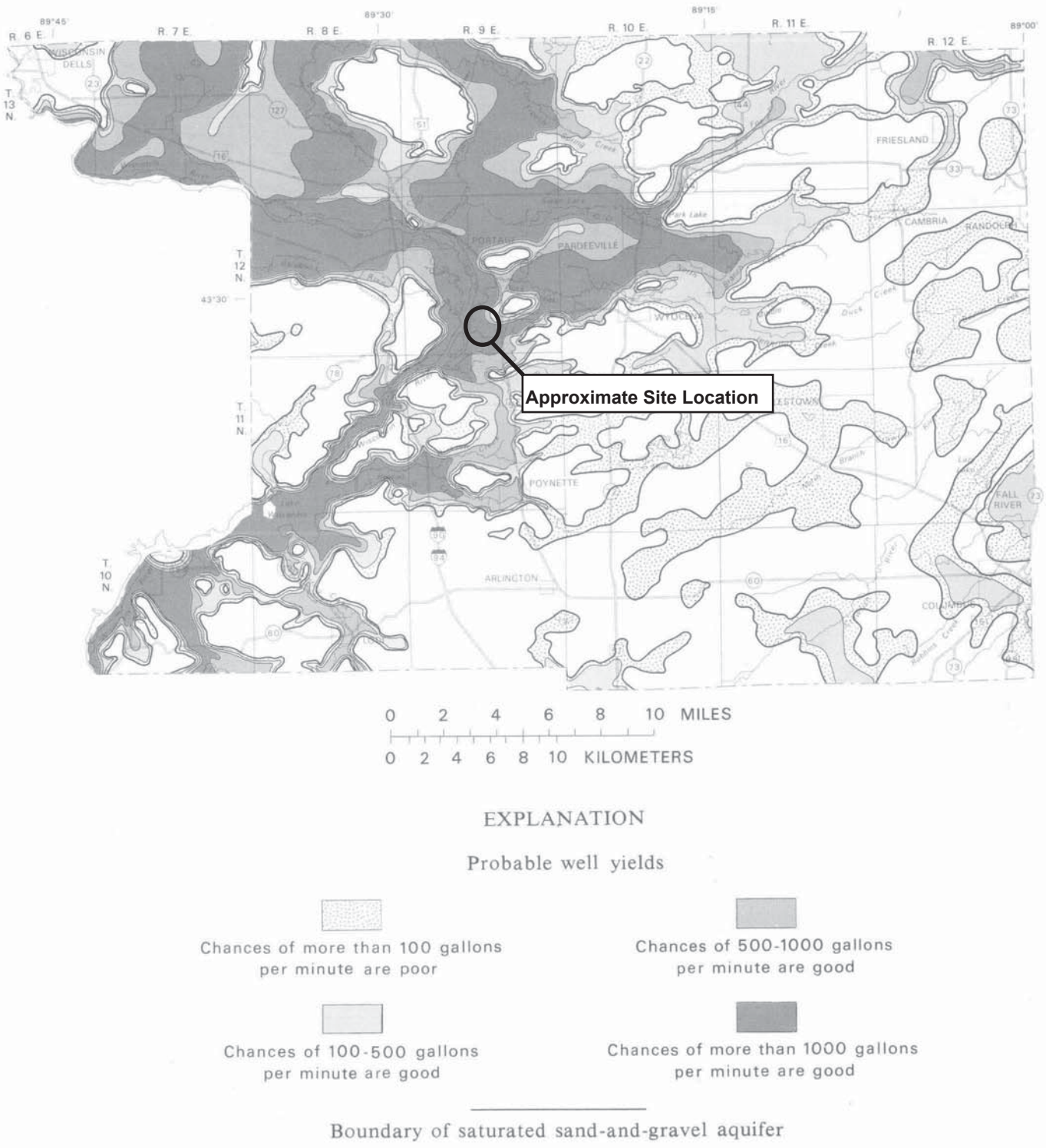
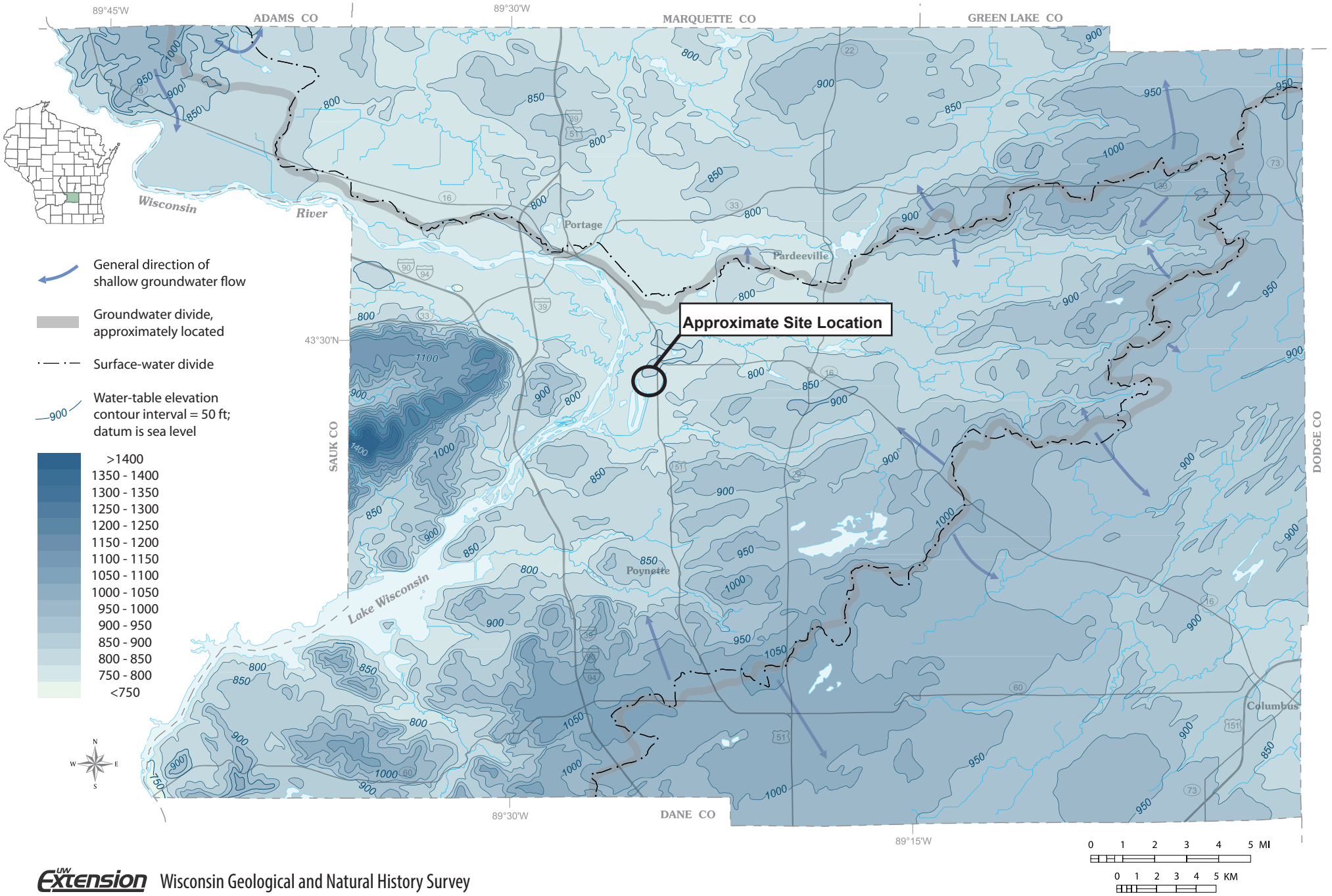


Figure 9. Probably well yields from the sand-and-gravel aquifer.

Source: Harr, C.A., L.C. Trotta, and R.G. Borman, "Ground-Water Resources and Geology of Columbia County, Wisconsin," University of Wisconisn-Extension Geological and Natural History Surevy Information Circular Number 37, 1978.

Generalized water-table elevation in Columbia County, Wisconsin



Wisconsin Geological and Natural History Survey

08/23/2024 Classification: Internal FOIA 23346628

Source: Selkwood, Stephen R., Wisconsin Geologic and Natural History Survey, Water Table Elevation, Groundwater Resources of Columbia County Wisconsin,

Appendix B

Boring Logs and Well Construction Documentation

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project Wisconsin Power & Light

Location Columbia Generating Station

Boring No. MW-84A
Surface Elevation 813.4
Job No. C 7134
Sheet 1 of 1

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

SAMPLE No.	SAMPLE Type	Recovery ↓	Moisture ↓	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES Qu	W	LL	PL	D
						Dark Brown Silty SAND (SM)					
					5						
						Brown Fine to Medium SAND, Little Silt, Trace to Little Gravel and Boulders (SM)					
					10						
					15						
					20						
					25						
					30						
					35						
					40	End Boring at 37'					
						Well Installed at 37'					

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 10/5/83 Complete 10/5/83
Crew Chief JVS Rig B-40
Drilling Method ED 0-37'

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-Columbia SCS#: 25215135.00		MW-301

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin Durst Badger State Drilling	11/11/2015	11/11/2015	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VY701			Feet	803.69 Feet	8.5 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 541562.2 N, 2025001.0 E S/C/N
1/4 of 1/4 of Section 27, T 12 N, R 9 E
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Columbia	11	Portage

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
S1	21	7 6 9 10	1–2	SILTY SAND, yellowish brown (10YR 5/6), fine to medium grained.						M				
S2	20	6 7 9 10	3–4	Same as above except, 10YR 5/4 (top section), 10YR 3/6 (bottom section), trace gravel.						M				
S3	22	7 6 9 6	5–7	Same as above except, 10YR 3/4 (bottom), 10YR 5/4 (top), trace little roots and sticks, trace gravel.	SM					M				
S4	21	4 5 6 5	8–10	Same as above except, 10YR (top), 10YR 4/6 (bottom), trace clay at bottom.						M				
S5	18	2 2 4 5	11–12	Same as above except, fine to coarse grained sand, little gravel, trace clay in top half, 10YR 3/6.						M				
S6	20	2 3 3 3	13–15	Same as above except, 10YR 6/8.						M				

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 53711
Tel: (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 MW-301 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
			16	SILTY SAND, yellowish brown (10YR 5/6), fine to medium grained.										
S7	20	5 4 4 3	17							M				
			18											
			19											
S8	20	2 4 4 5	20							W				
			21											
					SM									
S9	23	4 4 3 6	22							W				
			23											
			24	Same as above except, 10YR 6/4.										
S10	21	3 2 4 10	25							W				
			26											
			27											
			28											
				End of boring at 28 ft 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- Columbia SCS#: 25216146.00		MW-306

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin Duerst Badger State Drilling	11/14/2016	11/14/2016	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VY812		MW-306	Feet	805.30 Feet	8.5 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 543,829 N, 2,123,424 E S/C/N
SE 1/4 of NW 1/4 of Section 27, T 12 N, R 9 E
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Columbia	11	Portage

Sample Number and Type	Sample Length Att. & Recovered (in)	Sample 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	Plasticity Index	P 200	RQD/ Comments
			1	TOPSOIL.										
			1	SILTY SAND, yellowish brown (10YR 5/4), medium grained.										
S1	23	8 13 11 11	4							M				
S2	16	7 5 5 5	7		SM					M				
S3	16	2 4 8 14	9							M				
S4	16	7 10 7 10	12							M				
S5	23	9 22 31 39	14	POORLY GRADED SAND, light yellowish brown (10YR 6/4), medium grained, dense.	SP					M				
			15											

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

Signature [signature] Firm SCS Engineers
2830 Dairy Drive Madison, WI 53711
Tel: (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 MW-306 Use only as an attachment to Form 4400-122. Page 2 of 2

Sample Number and Type	Sample Length Att. & Recovered (in)	Sample 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: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16		SP									
S6	22	17 29 40 42	17							M				
				SILTY SAND, yellowish brown (10YR 5/4), fine to medium grained.										
			18											
S7	24	26 41 47 44	19							M				
			20											wl= 20 ft bgs.
			21											
S8	20	11 25 37 46	22		SM					W				
			23											
S9	24	8 19 31 44	24							W				
			25											
			26											
			27											
			28	End of boring at 28 ft 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- Columbia SCS#: 25216146.00		MW-307

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin Duerst Badger State Drilling	11/14/2016	11/15/2016	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VY813		MW-307	Feet	804.53 Feet	8.5 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 544,511 N, 2,123,467 E S/C/N
SE 1/4 of NW 1/4 of Section 27, T 12 N, R 9 E
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Columbia	11	Portage

Sample Number and Type	Sample Length Att. & Recovered (in)	Sample 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: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			0	TOPSOIL.										
			1	SILTY SAND, yellowish brown (10YR 5/4), medium grained.										
S1	23	5 5 7 14	4							M				
S2	22	11 22 24 38	6	Same as above except, pale brown (10YR 6/3).						M				
			8		SM									
S3	22	7 25 33 40	9							M				rock in spoon.
S4	22	14 18 22 26	11							M				
S5	24	12 18 19 22	14							M				
			15											

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

Signature	Firm	Tel: (608) 224-2830
	SCS Engineers 2830 Dairy Drive Madison, WI 53711	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 MW-307 Use only as an attachment to Form 4400-122.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Sample: 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: Plasticity Index	Soil Properties: P 200	RQD/ Comments
S6	23	12 16 16 19	16–17							M				
			17–18											
			18	Same as above except, brown (10YR 4/3).										
S7	24	6 8 8 6	19–20							M				wl=19.5 ft bgs.
			20–21											
S8	20	3 4 4 4	21–22		SM					W				
			22–23											
			23	Same as above except, brown (10YR 5/3).										
S9	24	2 2 6 8	24–25							W				
			25–26											
S10	24	2 3 3 7	26–27							W				
				End of boring at 27.5 ft 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- Columbia SCS#: 25216146.00		MW-308

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Kevin Duerst Badger State Drilling	11/15/2016	11/15/2016	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VY814		MW-308	Feet	804.54 Feet	8.5 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 545,184 N, 2,123,321 E S/C/N
NE 1/4 of NW 1/4 of Section 27, T 12 N, R 9 E
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Columbia	11	Portage

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: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	POORLY GRADED GRAVEL.	GP									
			1	SILTY SAND, brown (10YR 5/3), medium grained.										
S1	23	5 17 23 25	4							M				
S2	23	10 21 17 19	7							M				
			8		SM									
S3	24	10 15 18 26	9							M				
S4	24	11 23 19 23	12							M				
			13	Same as above except, brown (10YR 4/3).										
S5	19	9 12 16 16	14							M				
			15											

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

Signature [signature] Firm SCS Engineers
2830 Dairy Drive Madison, WI 53711
Tel: (608) 224-2830
Fax:

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-308 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: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S6	24	9 12 11 9	16–17	SITLY SAND, brown (10YR 5/3), medium grained.						M				
S7	22	9 11 10 11	18–20	Same as above except, very dark grayish brown (10YR 3/2).	SM					M				
S8	22	4 10 11 7	21–22							W				wl=21.25 ft bgs.
S9A S9B	23	4 3 4 7	23–25	Same as above except, brown (10YR 5/3). PEAT, black (10YR 2/1), dense.	PT					W				Fibrous roots
S10A S10B	24	5 6 9 15	26–27	SILT, dark gray (10YR 4/1). SILTY SAND, grayish brown (10YR 5/2).	ML SM					W				
S11	18	5 10 9 9	28–29							W				
				End of boring at 29 ft bgs.										

WELL DETAIL INFORMATION SHEET

JOB NO. C 7134

BORING NO. MW-84A

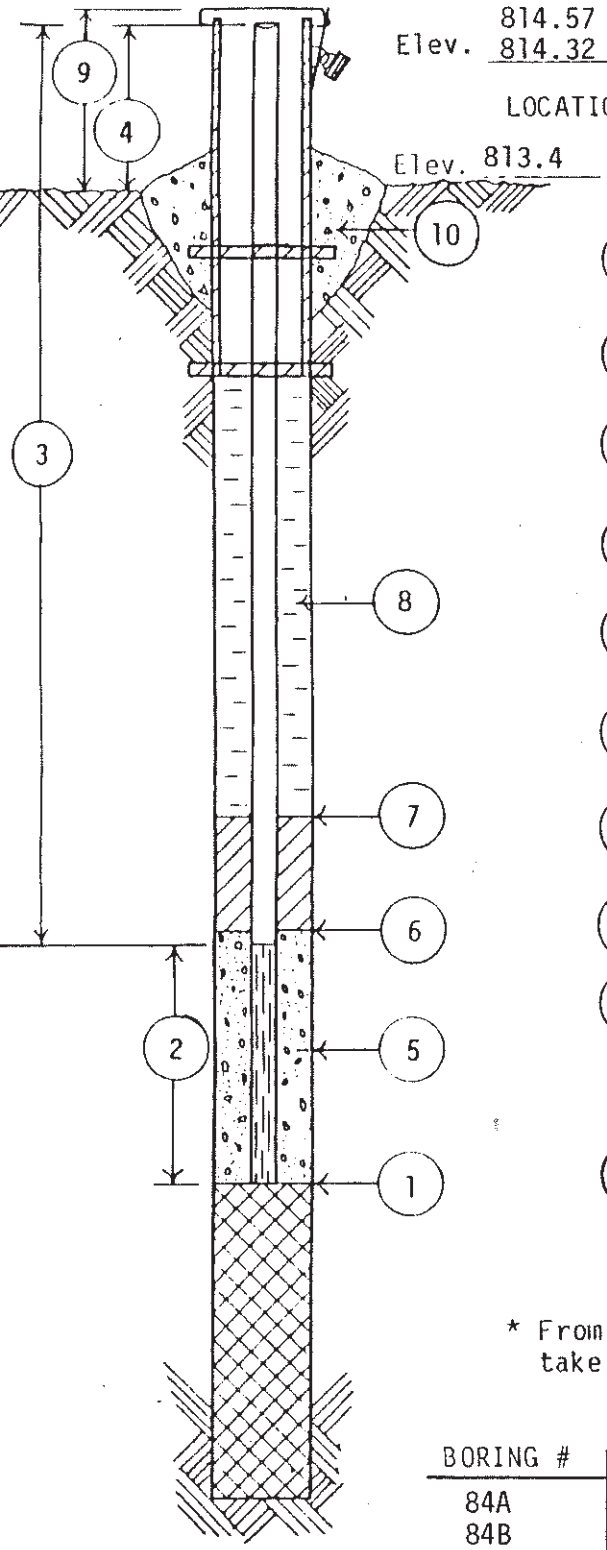
DATE 10/5/83

Elev. 814.57 Steel
814.32 PVC

CHIEF JS

LOCATION WP&L-Columbia Generating Station

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



(1) DEPTH TO BOTTOM OF BOREHOLE
37 FEET

(2) LENGTH OF WELL POINT, (WELL SCREEN,) OR SLOTTED PIPE 10 FEET

(3) TOTAL LENGTH OF SOLID PIPE 29 FEET @ 2 IN. DIAMETER

(4) HEIGHT OF WELL CASING ABOVE GROUND
2 FEET

(5) TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Flint Sand

(6) DEPTH OF LOWER OR BOTTOM SEAL
3 FEET

(7) DEPTH OF UPPER OR TOP SEAL
0 FEET

(8) TYPE OF BACKFILL Spoils (Sand)

(9) PROTECTIVE CASING (YES) NO

HEIGHT ABOVE GROUND 2'

LOCKING CAP (YES) NO

(10) CONCRETE CAP (YES) NO

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
84A	10/7/83	3 days	21'	
84B	10/7/83	3 days	19'6"	

WARZYN ENGINEERING INC.

SCS # 25215135

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-Columbia	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: MW-301
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: VY701 / DNR Well ID No.: ____
Facility ID: ____	St. Plane 541562.2 ft. N, 2125001 ft. E. S/C/N	Date Well Installed: 11/11/2015 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: SW 1/4 of SE 1/4 of Sec. 27, T. 12 N, R. 9 ☒E ☐W	Well Installed By: Name (first, last) and Firm: Kevin Duerst / Badger State Drilling
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 807.16 ft. MSL
B. Well casing, top elevation 806.89 ft. MSL
C. Land surface elevation 803.69 ft. MSL
D. Surface seal, bottom 791.69 ft. MSL or 12 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

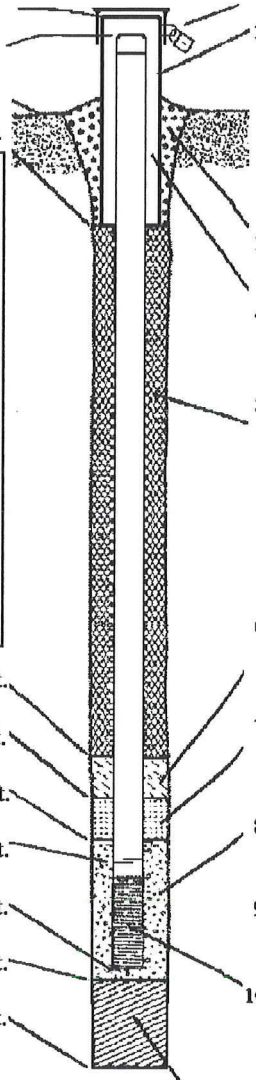
14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐ ____

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 803.69 ft. MSL or 0 ft.
F. Fine sand, top 791.69 ft. MSL or 12 ft.
G. Filter pack, top 789.69 ft. MSL or 14 ft.
H. Screen joint, top 787.69 ft. MSL or 16 ft.
I. Well bottom 777.69 ft. MSL or 26 ft.
J. Filter pack, bottom 776.69 ft. MSL or 27 ft.
K. Borehole, bottom 775.69 ft. MSL or 28 ft.
L. Borehole, diameter 8.5 in.
M. O.D. well casing 2.4 in.
N. I.D. well casing 2.0 in.



1. Cap and lock? ☐ Yes ☒ No
2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 5 ft.
c. Material: Steel ☒ 04 / Other ☐ ____
d. Additional protection? ☒ Yes ☐ No
If yes, describe: bumper posts
3. Surface seal: Bentonite ☒ 30 / Concrete ☐ 01 / Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☐ ____
Bentonite to grade, sand above
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. 4 ft3 Other ☐ ____
7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sidley Inc. #7 ☐
b. Volume added 0.5 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #5 ☐
b. Volume added 2 ft^3
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 Johnson
c. Slot size: 0.01 in.
d. Slotted length: 10 ft.
11. Backfill material (below filter pack): Native / None ☐ 14 / Other ☒ ____

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

Signature: [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.

SCS # 25216146.00

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- Columbia	Local Grid Location of Well: ____ ft. ☐N ☐S, ____ ft. ☐E ☐W	Well Name: MW-306
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒; Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: VY812 / DNR Well ID No.
Facility ID	St. Plane 543828.99 ft. N, 2123423.65 ft. E. S/C/N	Date Well Installed: 11 / 14 / 2016 (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. 27, T. 12 N, R. 9 ☒E ☐W	Well Installed By: Name (first, last) and Firm: Kevin Duerst; Badger State Drilling
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 807.88 ft. MSL
B. Well casing, top elevation 807.66 ft. MSL
C. Land surface elevation 805.30 ft. MSL
D. Surface seal, bottom 804.8 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 ☐ ___

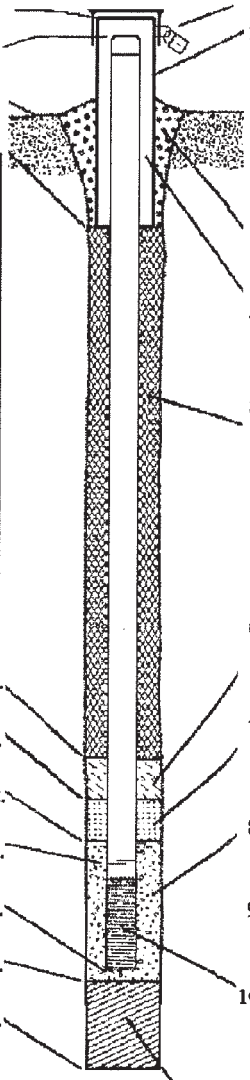
15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ____

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

E. Bentonite seal, top 804.8 ft. MSL or 0.5 ft.
F. Fine sand, top 791.3 ft. MSL or 14 ft.
G. Filter pack, top 790.3 ft. MSL or 15 ft.
H. Screen joint, top 788.3 ft. MSL or 17 ft.
I. Well bottom 778.3 ft. MSL or 27 ft.
J. Filter pack, bottom 778.3 ft. MSL or 27 ft.
K. Borehole, bottom 777.3 ft. MSL or 28 ft.
L. Borehole, diameter 8.5 in.
M. O.D. well casing 2.4 in.
N. I.D. well casing 2.0 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 5 ft.
c. Material: Steel ☒ 04 Other ☐ ___
d. Additional protection? ☒ Yes ☐ No
If yes, describe: bumper posts
3. Surface seal: Bentonite ☒ 30 Concrete ☐ 01 Other ☐ ___
4. Material between well casing and protective pipe: Bentonite ☒ 30 Other ☐ ___
Bentonite to grade, sand above
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. RW Sidley Inc. #7 ☐
b. Volume added 0.5 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #5 ☐
b. Volume added 3 ft^3
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 Johnson
c. Slot size: 0.01 in.
d. Slotted length: 10 ft.
11. Backfill material (below filter pack): None ☐ 14
RW Sidley #5 Other ☒ ___

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

Signature: [signature] Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

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.

SCS # 25216146.00

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- Columbia	Local Grid Location of Well: ___ ft. ☐N ☐S ___ ft. ☐E ☐W	Well Name: MW-307
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒ Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or	Wis. Unique Well No.: VY813 / DNR Well ID No.:
Facility ID	St. Plane 544510.95 ft. N, 2123466.6 ft. E. S/C/N	Date Well Installed: 11 / 15 / 2016 (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. 27, T. 12 N, R. 9 ☒E ☐W	Well Installed By: Name (first, last) and Firm: Kevin Duerst; Badger State Drilling
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 807.16 ft. MSL
B. Well casing, top elevation 806.96 ft. MSL
C. Land surface elevation 804.53 ft. MSL
D. Surface seal, bottom 804.03 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

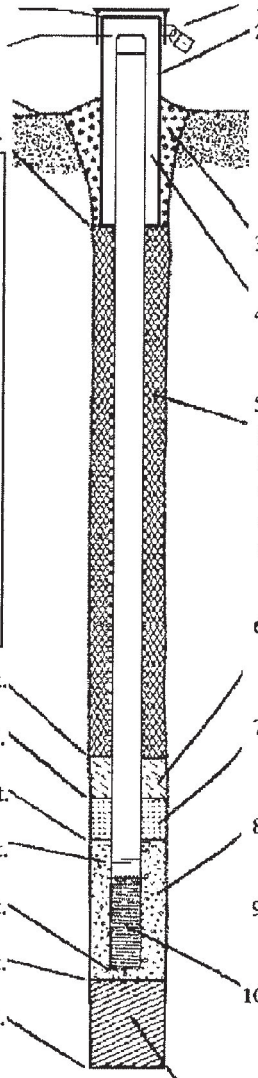
14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐ ___

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 804.03 ft. MSL or 0.5 ft.
F. Fine sand, top 791.03 ft. MSL or 13.5 ft.
G. Filter pack, top 790.03 ft. MSL or 14.5 ft.
H. Screen joint, top 788.03 ft. MSL or 16.5 ft.
I. Well bottom 778.03 ft. MSL or 26.5 ft.
J. Filter pack, bottom 777.03 ft. MSL or 27.5 ft.
K. Borehole, bottom 777.03 ft. MSL or 27.5 ft.
L. Borehole, diameter 8.5 in.
M. O.D. well casing 2.4 in.
N. I.D. well casing 2.0 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 5 ft.
c. Material: Steel ☒ 04 / Other ☐ ___
d. Additional protection? ☒ Yes ☐ No
If yes, describe: bumper posts
3. Surface seal: Bentonite ☒ 30 / Concrete ☐ 01 / Other ☐ ___
4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☐ ___
Bentonite to grade, sand above
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. RW Sidley Inc. #7 ☐
b. Volume added 0.5 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #5 ☐
b. Volume added 3.5 ft^3
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 Johnson
c. Slot size: 0.01 in.
d. Slotted length: 10 ft.
11. Backfill material (below filter pack): None ☐ 14 / Other ☒ ___
RW Sidley #5

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

Signature: Kyle Thum
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

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.

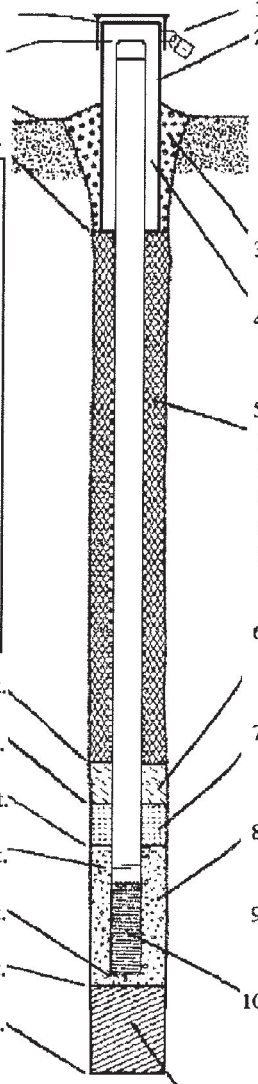
SCS # 25216146.00

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- Columbia	Local Grid Location of Well: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.	Well Name: MW-308
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☒ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: VY814 / DNR Well ID No.:
Facility ID	St. Plane 545183.88 ft. N, 2123320.76 ft. E. S/C/N	Date Well Installed: 11 / 15 / 2016 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: NE 1/4 of NW 1/4 of Sec. 27, T. 12 N, R. 9 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Kevin Duerst / Badger State Drilling
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 807.10 ft. MSL
B. Well casing, top elevation 806.92 ft. MSL
C. Land surface elevation 804.54 ft. MSL
D. Surface seal, bottom 804.04 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 804.04 ft. MSL or 0.5 ft.
F. Fine sand, top 789.54 ft. MSL or 15.0 ft.
G. Filter pack, top 788.54 ft. MSL or 16.0 ft.
H. Screen joint, top 786.54 ft. MSL or 18.0 ft.
I. Well bottom 776.54 ft. MSL or 28.0 ft.
J. Filter pack, bottom 775.54 ft. MSL or 29.0 ft.
K. Borehole, bottom 775.54 ft. MSL or 29.0 ft.
L. Borehole, diameter 8.5 in.
M. O.D. well casing 2.4 in.
N. I.D. well casing 2.0 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 5 ft.
c. Material: Steel ☒ 04 / Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: bumper posts

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

4. Material between well casing and protective pipe: Bentonite ☒ 30 / Other ☐
Bentonite to grade, sand above

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. RW Sidley Inc. #7 ☐
b. Volume added 0.5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sidley #5 ☐
b. Volume added 3 ft^3

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 Johnson
c. Slot size: 0.01 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☐ 14 / Other ☒
RW Sidley #5

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

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.

Appendix C

Laboratory Reports

C1 January 2023 Supplemental Assessment Monitoring

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

February 15, 2023

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on January 24, 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
- Pace Analytical Services - Greensburg

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
Marc Morandi, ALLIANT ENERGY

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

CERTIFICATIONS

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40257418001	**MW-306**	Water	01/20/23 14:20	01/24/23 07:50
40257418002	**MW-307**	Water	01/20/23 14:40	01/24/23 07:50
40257418003	**MW-308**	Water	01/20/23 12:50	01/24/23 07:50
40257418004	**FIELD BLANK-SC POND**	Water	01/20/23 13:50	01/24/23 07:50

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40257418001	**MW-306**	EPA 6020B	KXS	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			CKV	7	PASI-G
		EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	SRK	1	PASI-G
		EPA 9040	YER	1	PASI-G
		EPA 300.0	HMB, TMK	3	PASI-G
40257418002	**MW-307**	EPA 6020B	KXS	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			CKV	7	PASI-G
		EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	SRK	1	PASI-G
		EPA 9040	YER	1	PASI-G
		EPA 300.0	HMB, TMK	3	PASI-G
40257418003	**MW-308**	EPA 6020B	KXS	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			CKV	7	PASI-G
		EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	SRK	1	PASI-G
		EPA 9040	YER	1	PASI-G
		EPA 300.0	HMB, TMK	3	PASI-G
40257418004	**FIELD BLANK-SC POND**	EPA 6020B	KXS	14	PASI-G
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	SRK	1	PASI-G
		EPA 9040	YER	1	PASI-G
		EPA 300.0	HMB, TMK	3	PASI-G

PASI-G = Pace Analytical Services - Green Bay
PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Sample: MW-306 **Lab ID: 40257418001** Collected: 01/20/23 14:20 Received: 01/24/23 07:50 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	01/26/23 05:36	01/31/23 04:37	7440-36-0	1q
Arsenic	**<0.28**	ug/L	1.0	0.28	1	01/26/23 05:36	01/31/23 04:37	7440-38-2	
Barium	**17.1**	ug/L	2.3	0.70	1	01/26/23 05:36	01/31/23 04:37	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	01/26/23 05:36	01/31/23 04:37	7440-41-7	
Boron	**107**	ug/L	10.0	3.0	1	01/26/23 05:36	01/31/23 04:37	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	01/26/23 05:36	01/31/23 04:37	7440-43-9	
Calcium	**90400**	ug/L	254	76.2	1	01/26/23 05:36	01/31/23 04:37	7440-70-2	
Chromium	**3.3J**	ug/L	3.4	1.0	1	01/26/23 05:36	01/31/23 14:04	7440-47-3	
Cobalt	**0.49J**	ug/L	1.0	0.12	1	01/26/23 05:36	01/31/23 04:37	7440-48-4	
Lead	**0.68J**	ug/L	1.0	0.24	1	01/26/23 05:36	01/31/23 04:37	7439-92-1	
Lithium	**12.3**	ug/L	1.0	0.22	1	01/26/23 05:36	01/31/23 04:37	7439-93-2	
Molybdenum	**9.3**	ug/L	1.5	0.44	1	01/26/23 05:36	01/31/23 04:37	7439-98-7	
Selenium	**1.4**	ug/L	1.1	0.32	1	01/26/23 05:36	01/31/23 04:37	7782-49-2	
Thallium	**0.16J**	ug/L	1.0	0.14	1	01/26/23 05:36	01/31/23 04:37	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	01/25/23 10:40	01/26/23 07:13	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.63**	Std. Units			1		01/20/23 14:20		
Field Specific Conductance	**634**	umhos/cm			1		01/20/23 14:20		
Oxygen, Dissolved	**8.27**	mg/L			1		01/20/23 14:20	7782-44-7	
REDOX	**114.9**	mV			1		01/20/23 14:20		
Turbidity	**58.36**	NTU			1		01/20/23 14:20		
Static Water Level	**782.15**	feet			1		01/20/23 14:20		
Temperature, Water (C)	**7.0**	deg C			1		01/20/23 14:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**350**	mg/L	20.0	8.7	1		01/24/23 15:17		
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		01/31/23 07:43		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**12.4**	mg/L	2.0	0.43	1		01/25/23 15:31	16887-00-6	
Fluoride	**0.27J**	mg/L	0.32	0.095	1		02/03/23 02:37	16984-48-8	
Sulfate	**6.2**	mg/L	2.0	0.44	1		01/25/23 15:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Sample: MW-307 **Lab ID: 40257418002** Collected: 01/20/23 14:40 Received: 01/24/23 07:50 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	01/26/23 05:36	01/31/23 04:52	7440-36-0	1q
Arsenic	**3.5**	ug/L	1.0	0.28	1	01/26/23 05:36	01/31/23 04:52	7440-38-2	
Barium	**39.0**	ug/L	2.3	0.70	1	01/26/23 05:36	01/31/23 04:52	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	01/26/23 05:36	01/31/23 04:52	7440-41-7	
Boron	**232**	ug/L	10.0	3.0	1	01/26/23 05:36	01/31/23 04:52	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	01/26/23 05:36	01/31/23 04:52	7440-43-9	
Calcium	**127000**	ug/L	254	76.2	1	01/26/23 05:36	01/31/23 04:52	7440-70-2	
Chromium	**2.8J**	ug/L	3.4	1.0	1	01/26/23 05:36	01/31/23 14:19	7440-47-3	
Cobalt	**8.7**	ug/L	1.0	0.12	1	01/26/23 05:36	01/31/23 04:52	7440-48-4	
Lead	**1.6**	ug/L	1.0	0.24	1	01/26/23 05:36	01/31/23 04:52	7439-92-1	
Lithium	**1.3**	ug/L	1.0	0.22	1	01/26/23 05:36	01/31/23 04:52	7439-93-2	
Molybdenum	**0.62J**	ug/L	1.5	0.44	1	01/26/23 05:36	01/31/23 04:52	7439-98-7	
Selenium	**0.40J**	ug/L	1.1	0.32	1	01/26/23 05:36	01/31/23 04:52	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	01/26/23 05:36	01/31/23 04:52	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	01/25/23 10:40	01/26/23 07:16	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.40**	Std. Units			1		01/20/23 14:40		
Field Specific Conductance	**739**	umhos/cm			1		01/20/23 14:40		
Oxygen, Dissolved	**5.44**	mg/L			1		01/20/23 14:40	7782-44-7	
REDOX	**39.5**	mV			1		01/20/23 14:40		
Turbidity	**242.4**	NTU			1		01/20/23 14:40		
Static Water Level	**782.11**	feet			1		01/20/23 14:40		
Temperature, Water (C)	**6.7**	deg C			1		01/20/23 14:40		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**630**	mg/L	20.0	8.7	1		01/24/23 15:18		
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		01/31/23 07:46		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**51.3**	mg/L	2.0	0.43	1		01/25/23 15:44	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		02/03/23 02:52	16984-48-8	
Sulfate	**208**	mg/L	20.0	4.4	10		01/26/23 15:44	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Sample: MW-308 **Lab ID: 40257418003** Collected: 01/20/23 12:50 Received: 01/24/23 07:50 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	01/26/23 05:36	01/31/23 05:29	7440-36-0	1q
Arsenic	**2.8**	ug/L	1.0	0.28	1	01/26/23 05:36	01/31/23 05:29	7440-38-2	
Barium	**63.3**	ug/L	2.3	0.70	1	01/26/23 05:36	01/31/23 05:29	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	01/26/23 05:36	01/31/23 05:29	7440-41-7	
Boron	**536**	ug/L	100	30.3	10	01/26/23 05:36	01/30/23 19:22	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	01/26/23 05:36	01/31/23 05:29	7440-43-9	
Calcium	**135000**	ug/L	254	76.2	1	01/26/23 05:36	01/31/23 05:29	7440-70-2	
Chromium	**<1.0**	ug/L	3.4	1.0	1	01/26/23 05:36	01/31/23 14:56	7440-47-3	
Cobalt	**<0.12**	ug/L	1.0	0.12	1	01/26/23 05:36	01/31/23 05:29	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	01/26/23 05:36	01/31/23 05:29	7439-92-1	
Lithium	**<0.22**	ug/L	1.0	0.22	1	01/26/23 05:36	01/31/23 05:29	7439-93-2	
Molybdenum	**1.2J**	ug/L	1.5	0.44	1	01/26/23 05:36	01/31/23 05:29	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	01/26/23 05:36	01/31/23 05:29	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	01/26/23 05:36	01/31/23 05:29	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	01/25/23 10:40	01/26/23 07:18	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.14**	Std. Units			1		01/20/23 12:50		
Field Specific Conductance	**866**	umhos/cm			1		01/20/23 12:50		
Oxygen, Dissolved	**0.10**	mg/L			1		01/20/23 12:50	7782-44-7	
REDOX	**-154.1**	mV			1		01/20/23 12:50		
Turbidity	**1.09**	NTU			1		01/20/23 12:50		
Static Water Level	**784.98**	feet			1		01/20/23 12:50		
Temperature, Water (C)	**10.0**	deg C			1		01/20/23 12:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**538**	mg/L	20.0	8.7	1		01/24/23 15:18		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.010	1		01/31/23 07:51		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**1.1J**	mg/L	2.0	0.43	1		01/25/23 15:57	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		02/03/23 03:07	16984-48-8	
Sulfate	**4.3**	mg/L	2.0	0.44	1		01/25/23 15:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Sample: FIELD BLANK-SC POND **Lab ID: 40257418004** Collected: 01/20/23 13:50 Received: 01/24/23 07:50 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	01/26/23 05:36	01/31/23 05:36	7440-36-0	1q
Arsenic	**<0.28**	ug/L	1.0	0.28	1	01/26/23 05:36	01/31/23 05:36	7440-38-2	
Barium	**<0.70**	ug/L	2.3	0.70	1	01/26/23 05:36	01/31/23 05:36	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	01/26/23 05:36	01/31/23 05:36	7440-41-7	
Boron	**<3.0**	ug/L	10.0	3.0	1	01/26/23 05:36	01/31/23 05:36	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	01/26/23 05:36	01/31/23 05:36	7440-43-9	
Calcium	**<76.2**	ug/L	254	76.2	1	01/26/23 05:36	01/31/23 05:36	7440-70-2	
Chromium	**<1.0**	ug/L	3.4	1.0	1	01/26/23 05:36	01/31/23 14:41	7440-47-3	
Cobalt	**<0.12**	ug/L	1.0	0.12	1	01/26/23 05:36	01/31/23 05:36	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	01/26/23 05:36	01/31/23 05:36	7439-92-1	
Lithium	**<0.22**	ug/L	1.0	0.22	1	01/26/23 05:36	01/31/23 05:36	7439-93-2	
Molybdenum	**<0.44**	ug/L	1.5	0.44	1	01/26/23 05:36	01/31/23 05:36	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	01/26/23 05:36	01/31/23 05:36	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	01/26/23 05:36	01/31/23 05:36	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	01/25/23 10:40	01/26/23 07:20	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**10.0J**	mg/L	20.0	8.7	1		01/24/23 15:18		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**5.7**	Std. Units	0.10	0.010	1		01/31/23 08:06		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		01/25/23 16:10	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		02/03/23 03:22	16984-48-8	
Sulfate	**<0.44**	mg/L	2.0	0.44	1		01/25/23 16:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

QC Batch: 436462
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40257418001, 40257418002, 40257418003, 40257418004

METHOD BLANK: 2509695 Matrix: Water
Associated Lab Samples: 40257418001, 40257418002, 40257418003, 40257418004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.066	0.20	01/26/23 06:39	

LABORATORY CONTROL SAMPLE: 2509696

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2509697 2509698

Parameter	Units	40257378001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.066	5	5	4.7	4.7	94	94	85-115	1	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: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

QC Batch: 436525
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40257418001, 40257418002, 40257418003, 40257418004

METHOD BLANK: 2510527 Matrix: Water
Associated Lab Samples: 40257418001, 40257418002, 40257418003, 40257418004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	01/31/23 03:46	
Arsenic	ug/L	<0.28	1.0	01/31/23 03:46	
Barium	ug/L	<0.70	2.3	01/31/23 03:46	
Beryllium	ug/L	<0.25	1.0	01/31/23 03:46	
Boron	ug/L	<3.0	10.0	01/31/23 03:46	
Cadmium	ug/L	<0.15	1.0	01/31/23 03:46	
Calcium	ug/L	<76.2	254	01/31/23 03:46	
Chromium	ug/L	<1.0	3.4	01/31/23 13:13	
Cobalt	ug/L	<0.12	1.0	01/31/23 03:46	
Lead	ug/L	<0.24	1.0	01/31/23 03:46	
Lithium	ug/L	<0.22	1.0	01/31/23 03:46	
Molybdenum	ug/L	<0.44	1.5	01/31/23 03:46	
Selenium	ug/L	<0.32	1.1	01/31/23 03:46	
Thallium	ug/L	<0.14	1.0	01/31/23 03:46	

LABORATORY CONTROL SAMPLE: 2510528

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	250	261	104	80-120	
Arsenic	ug/L	250	255	102	80-120	
Barium	ug/L	250	255	102	80-120	
Beryllium	ug/L	250	255	102	80-120	
Boron	ug/L	250	239	95	80-120	
Cadmium	ug/L	250	261	104	80-120	
Calcium	ug/L	10000	10300	103	80-120	
Chromium	ug/L	250	247	99	80-120	
Cobalt	ug/L	250	250	100	80-120	
Lead	ug/L	250	258	103	80-120	
Lithium	ug/L	250	255	102	80-120	
Molybdenum	ug/L	250	259	104	80-120	
Selenium	ug/L	250	263	105	80-120	
Thallium	ug/L	250	251	100	80-120	

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REPORT OF LABORATORY ANALYSIS

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(920)469-2436

QUALITY CONTROL DATA

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2510529 2510530

Parameter	Units	40257413001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.15	250	250	266	256	106	102	75-125	4	20	
Arsenic	ug/L	1.4	250	250	264	258	105	103	75-125	2	20	
Barium	ug/L	30.7	250	250	286	282	102	100	75-125	1	20	
Beryllium	ug/L	<0.25	250	250	256	250	102	100	75-125	2	20	
Boron	ug/L	346	250	250	612	588	106	97	75-125	4	20	
Cadmium	ug/L	<0.15	250	250	260	251	104	100	75-125	3	20	
Calcium	ug/L	92700	10000	10000	105000	102000	123	96	75-125	3	20	
Chromium	ug/L	<1.0	250	250	243	240	97	96	75-125	1	20	
Cobalt	ug/L	0.37J	250	250	254	248	101	99	75-125	2	20	
Lead	ug/L	0.24J	250	250	262	255	105	102	75-125	3	20	
Lithium	ug/L	0.29J	250	250	256	249	102	100	75-125	3	20	
Molybdenum	ug/L	2.4	250	250	261	262	104	104	75-125	0	20	
Selenium	ug/L	<0.32	250	250	273	265	109	106	75-125	3	20	
Thallium	ug/L	0.23J	250	250	255	251	102	100	75-125	2	20	

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QUALITY CONTROL DATA

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

QC Batch: 436380
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40257418001, 40257418002, 40257418003, 40257418004

METHOD BLANK: 2509357 Matrix: Water
Associated Lab Samples: 40257418001, 40257418002, 40257418003, 40257418004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	01/24/23 15:07	

LABORATORY CONTROL SAMPLE: 2509358

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	596	542	91	80-120	

SAMPLE DUPLICATE: 2509359

Parameter	Units	40257369001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	578	590	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

QC Batch: 436819
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40257418001, 40257418002, 40257418003, 40257418004

SAMPLE DUPLICATE: 2511795

Parameter	Units	40257413001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.5	7.5	0	20	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

QC Batch: 436413
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: 40257418001, 40257418002, 40257418003, 40257418004

METHOD BLANK: 2509517 Matrix: Water
Associated Lab Samples: 40257418001, 40257418002, 40257418003, 40257418004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.43	2.0	01/25/23 14:14	
Fluoride	mg/L	<0.095	0.32	02/03/23 00:23	
Sulfate	mg/L	<0.44	2.0	01/25/23 14:14	

LABORATORY CONTROL SAMPLE: 2509518

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.2	101	90-110	
Fluoride	mg/L	2	2.0	98	90-110	
Sulfate	mg/L	20	19.8	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2509519 2509520

Parameter	Units	40257413001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.7	20	20	34.4	34.2	109	108	90-110	0	15	
Fluoride	mg/L	0.32	2	2	2.3	2.7	100	121	90-110	17	15	M0,R1
Sulfate	mg/L	31.3	20	20	52.3	52.0	105	104	90-110	1	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Sample: MW-306 **Lab ID: 40257418001** Collected: 01/20/23 14:20 Received: 01/24/23 07:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.441 ± 0.613 (1.04) C:NA T:97%**	pCi/L	02/04/23 13:52	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.280 ± 0.307 (0.642) C:88% T:87%**	pCi/L	02/02/23 11:13	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.721 ± 0.920 (1.68)**	pCi/L	02/09/23 17:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Sample: MW-307 **Lab ID: 40257418002** Collected: 01/20/23 14:40 Received: 01/24/23 07:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.179 ± 0.703 (1.49) C:NA T:83%**	pCi/L	02/04/23 13:52	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.356 ± 0.299 (0.598) C:91% T:84%**	pCi/L	02/02/23 11:13	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.356 ± 1.00 (2.09)**	pCi/L	02/09/23 17:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Sample: MW-308 **Lab ID: 40257418003** Collected: 01/20/23 12:50 Received: 01/24/23 07:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.253 ± 0.682 (1.27) C:NA T:98%**	pCi/L	02/04/23 13:52	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.627 ± 0.337 (0.598) C:92% T:85%**	pCi/L	02/02/23 11:14	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.880 ± 1.02 (1.87)**	pCi/L	02/09/23 17:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Sample: FIELD BLANK-SC POND **Lab ID: 40257418004** Collected: 01/20/23 13:50 Received: 01/24/23 07:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.241 ± 0.610 (1.13) C:NA T:94%**	pCi/L	02/04/23 13:52	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.0412 ± 0.258 (0.592) C:91% T:87%**	pCi/L	02/02/23 11:14	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.282 ± 0.868 (1.72)**	pCi/L	02/09/23 17:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

QC Batch: 563007
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40257418001, 40257418002, 40257418003, 40257418004

METHOD BLANK: 2734746 Matrix: Water
Associated Lab Samples: 40257418001, 40257418002, 40257418003, 40257418004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.464 ± 0.432 (0.569) C:NA T:101%	pCi/L	02/04/23 13:38	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

QC Batch: 563008
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40257418001, 40257418002, 40257418003, 40257418004

METHOD BLANK: 2734747 Matrix: Water
Associated Lab Samples: 40257418001, 40257418002, 40257418003, 40257418004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0754 ± 0.199 (0.447) C:93% T:94%	pCi/L	02/02/23 11:11	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

DEFINITIONS

Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
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

1q	Analyte was measured in the associated method blank at a concentration of -0.26ug/L.
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.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25222157 COL CCR SEC POND
Pace Project No.: 40257418

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40257418001	**MW-306**	EPA 3010A	436525	EPA 6020B	436664
40257418002	**MW-307**	EPA 3010A	436525	EPA 6020B	436664
40257418003	**MW-308**	EPA 3010A	436525	EPA 6020B	436664
40257418004	**FIELD BLANK-SC POND**	EPA 3010A	436525	EPA 6020B	436664
40257418001	**MW-306**	EPA 7470	436462	EPA 7470	436477
40257418002	**MW-307**	EPA 7470	436462	EPA 7470	436477
40257418003	**MW-308**	EPA 7470	436462	EPA 7470	436477
40257418004	**FIELD BLANK-SC POND**	EPA 7470	436462	EPA 7470	436477
40257418001	**MW-306**				
40257418002	**MW-307**				
40257418003	**MW-308**				
40257418001	**MW-306**	EPA 903.1	563007		
40257418002	**MW-307**	EPA 903.1	563007		
40257418003	**MW-308**	EPA 903.1	563007		
40257418004	**FIELD BLANK-SC POND**	EPA 903.1	563007		
40257418001	**MW-306**	EPA 904.0	563008		
40257418002	**MW-307**	EPA 904.0	563008		
40257418003	**MW-308**	EPA 904.0	563008		
40257418004	**FIELD BLANK-SC POND**	EPA 904.0	563008		
40257418001	**MW-306**	Total Radium Calculation	565994		
40257418002	**MW-307**	Total Radium Calculation	565994		
40257418003	**MW-308**	Total Radium Calculation	565994		
40257418004	**FIELD BLANK-SC POND**	Total Radium Calculation	565994		
40257418001	**MW-306**	SM 2540C	436380		
40257418002	**MW-307**	SM 2540C	436380		
40257418003	**MW-308**	SM 2540C	436380		
40257418004	**FIELD BLANK-SC POND**	SM 2540C	436380		
40257418001	**MW-306**	EPA 9040	436819		
40257418002	**MW-307**	EPA 9040	436819		
40257418003	**MW-308**	EPA 9040	436819		
40257418004	**FIELD BLANK-SC POND**	EPA 9040	436819		
40257418001	**MW-306**	EPA 300.0	436413		
40257418002	**MW-307**	EPA 300.0	436413		
40257418003	**MW-308**	EPA 300.0	436413		
40257418004	**FIELD BLANK-SC POND**	EPA 300.0	436413		

REPORT OF LABORATORY ANALYSIS

40257418

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: SCS Engineers	Billing Information: 25222157
Address: 2830 Dairy Dr Madison WI 53718	
Report To: Meghan Blodgett	Email To: mblodgett@scsengineers.com
Copy To:	Site Collection Info/Address:
Customer Project Name/Number:	State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: 414-497-4253 Email: eschaefer@scsengineers.com	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Ethan Schaefer	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)
	Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: TDS and pH	Chloride, Fluoride, Sulfate	Metals	Radium 226	Radium 228	Lab Sample # / Comments
MW-306	GW	G	1/20/23	1420				5	X	X	X	X	X	001
MW-307	GW	G	1/20/23	1440				5	X	X	X	X	X	002
MW-308	GW	G	1/20/23	1250				5	X	X	X	X	X	003
Field Blank-XPond		G	1/20/23	1350				5	X	X	X	X	X	004

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2823845

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: oC
Cooler 1 Therm Corr. Factor: oC
Cooler 1 Corrected Temp: oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
SCS	1/23/23 9:30		
CS Logistics	1/24/23 0750		1/24/23 0750

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

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~~40257444~~ 40257418

Table 2. Sampling Points and Parameters - CCR Rule Sampling Program
Groundwater Monitoring - Columbia Energy Center / SCS Engineers Project #25219067

		COL CCR PONDS	COC #2 - Secondary Pond			
		Parameter	MW-306	MW-307	MW-308	FIELD BLANK - SCPOND
Lab Parameters	Appendix III Parameters (Detection Monitoring)	Boron	X	X	X	X
		Calcium	X	X	X	X
		Chloride	X	X	X	X
		Fluoride	X	X	X	X
		pH	X	X	X	X
		Sulfate	X	X	X	X
		TDS	X	X	X	X
	Appendix IV Parameters (Assessment Monitoring)	Antimony	X	X	X	X
		Arsenic	X	X	X	X
		Barium	X	X	X	X
		Beryllium	X	X	X	X
		Cadmium	X	X	X	X
		Chromium	X	X	X	X
		Cobalt	X	X	X	X
		Fluoride	X	X	X	X
		Lead	X	X	X	X
		Lithium	X	X	X	X
		Mercury	X	X	X	X
		Molybdenum	X	X	X	X
		Selenium	X	X	X	X
		Thallium	X	X	X	X
		Radium 226+228	X	X	X	X
Field Parameters	CCR Rule Field Parameters	Groundwater Elevation	X	X	X	
		pH	X	X	X	
	Low-Flow Sampling Field Parameters	Well Depth				
		Specific Conductance	X	X	X	
		Dissolved Oxygen	X	X	X	
		ORP	X	X	X	
		Temperature	X	X	X	
		Turbidity	X	X	X	
		Color	X	X	X	
		Odor	X	X	X	

Notes: All samples are unfiltered (total).

C:\Users\krichards\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\I8YFSP3D\[2023_CO

Sample Preservation Receipt Form

Client Name: SCS Project # 410267418

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

Lab Lot# of pH paper 1000722 Lab Std #ID of preservation (if pH adjusted).

	Glass							Plastic						Vials						Jars				General								
Pace Lab #	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	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001									2		1															2						X		2.5 / 5
002									2		1															2						X		2.5 / 5
003									2		1															2						X		2.5 / 5
004									2		1															2						X		2.5 / 5
005																																		2.5 / 5
006																																		2.5 / 5
007																																		2.5 / 5
008																																		2.5 / 5
009																																		2.5 / 5
010																																		2.5 / 5
011																																		2.5 / 5
012																																		2.5 / 5
013																																		2.5 / 5
014				MH 1/24/25																														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

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
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4
BP2Z	500 mL plastic NaOH + Zn

VG9C	40 mL clear ascorbic w/ HCl
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN 1	1L poly HNO3
GN 2	

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40257418

40257418

Client Name: SCS

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 - 120 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr 2.0 /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: 1/24/23 /Initials: mlt

Labeled By Initials: NV

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☒No ☐N/A	2. preservative, p/f# mlt 1/24/23
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:	☒Yes ☐No	9.
Correct Type: (Pace Green Bay), Pace IR, Non-Pace		
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
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

C2 February 2023 Supplemental Assessment Monitoring

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

March 17, 2023

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on February 23, 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
- Pace Analytical Services - Greensburg

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: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40258595001	**MW-306**	Water	02/20/23 14:10	02/23/23 10:00
40258595002	**MW-307**	Water	02/20/23 15:35	02/23/23 10:00
40258595003	**MW-308**	Water	02/20/23 12:40	02/23/23 10:00
40258595004	**FIELD BLANK - SC POND**	Water	02/20/23 15:30	02/23/23 10:00

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40258595001	**MW-306**	EPA 6020B	KXS	12	PASI-G
		EPA 6020B	KXS	12	PASI-G
		EPA 7470	AJT	1	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	7	PASI-G
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2540C	HNT	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40258595002	**MW-307**	EPA 6020B	KXS	12	PASI-G
		EPA 6020B	KXS	12	PASI-G
		EPA 7470	AJT	1	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	7	PASI-G
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2540C	HNT	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40258595003	**MW-308**	EPA 6020B	KXS	12	PASI-G
		EPA 6020B	KXS	12	PASI-G
		EPA 7470	AJT	1	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	7	PASI-G
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2540C	HNT	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40258595004	**FIELD BLANK - SC POND**	EPA 6020B	KXS	12	PASI-G
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2540C	HNT	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

PASI-G = Pace Analytical Services - Green Bay
PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Sample: MW-306 **Lab ID: 40258595001** Collected: 02/20/23 14:10 Received: 02/23/23 10:00 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								
Antimony	**0.19J**	ug/L	1.0	0.15	1	02/28/23 06:10	03/01/23 11:24	7440-36-0	
Arsenic	**0.37J**	ug/L	1.0	0.28	1	02/28/23 06:10	03/01/23 11:24	7440-38-2	B
Barium	**14.0**	ug/L	2.3	0.70	1	02/28/23 06:10	03/01/23 11:24	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	02/28/23 06:10	03/01/23 11:24	7440-41-7	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	02/28/23 06:10	03/01/23 11:24	7440-43-9	
Chromium	**3.0J**	ug/L	3.4	1.0	1	02/28/23 06:10	03/01/23 11:24	7440-47-3	
Cobalt	**0.14J**	ug/L	1.0	0.12	1	02/28/23 06:10	03/01/23 11:24	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	02/28/23 06:10	03/01/23 11:24	7439-92-1	
Lithium	**12.7**	ug/L	1.0	0.22	1	02/28/23 06:10	03/01/23 11:24	7439-93-2	
Molybdenum	**8.3**	ug/L	1.5	0.44	1	02/28/23 06:10	03/01/23 11:24	7439-98-7	
Selenium	**1.4**	ug/L	1.1	0.32	1	02/28/23 06:10	03/01/23 11:24	7782-49-2	
Thallium	**0.21J**	ug/L	1.0	0.14	1	02/28/23 06:10	03/01/23 11:24	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Antimony, Dissolved	**0.18J**	ug/L	1.0	0.15	1	02/28/23 06:11	03/01/23 12:45	7440-36-0	
Arsenic, Dissolved	**<0.28**	ug/L	1.0	0.28	1	02/28/23 06:11	03/01/23 12:45	7440-38-2	
Barium, Dissolved	**14.2**	ug/L	2.3	0.70	1	02/28/23 06:11	03/01/23 12:45	7440-39-3	D9
Beryllium, Dissolved	**<0.25**	ug/L	1.0	0.25	1	02/28/23 06:11	03/01/23 12:45	7440-41-7	
Cadmium, Dissolved	**<0.15**	ug/L	1.0	0.15	1	02/28/23 06:11	03/01/23 12:45	7440-43-9	
Chromium, Dissolved	**2.6J**	ug/L	3.4	1.0	1	02/28/23 06:11	03/01/23 12:45	7440-47-3	
Cobalt, Dissolved	**0.22J**	ug/L	1.0	0.12	1	02/28/23 06:11	03/01/23 12:45	7440-48-4	
Lead, Dissolved	**<0.24**	ug/L	1.0	0.24	1	02/28/23 06:11	03/01/23 12:45	7439-92-1	
Lithium, Dissolved	**11.9**	ug/L	1.0	0.22	1	02/28/23 06:11	03/01/23 12:45	7439-93-2	
Molybdenum, Dissolved	**8.0**	ug/L	1.5	0.44	1	02/28/23 06:11	03/01/23 12:45	7439-98-7	
Selenium, Dissolved	**1.4**	ug/L	1.1	0.32	1	02/28/23 06:11	03/01/23 12:45	7782-49-2	
Thallium, Dissolved	**0.14J**	ug/L	1.0	0.14	1	02/28/23 06:11	03/01/23 12:45	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	02/27/23 09:40	02/28/23 11:16	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury, Dissolved	**<0.066**	ug/L	0.20	0.066	1	02/27/23 09:40	02/28/23 11:58	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.12**	Std. Units			1		02/20/23 14:10		
Field Specific Conductance	**578**	umhos/cm			1		02/20/23 14:10		
Oxygen, Dissolved	**8.03**	mg/L			1		02/20/23 14:10	7782-44-7	
REDOX	**111.9**	mV			1		02/20/23 14:10		
Turbidity	**4.82**	NTU			1		02/20/23 14:10		
Static Water Level	**783.04**	feet			1		02/20/23 14:10		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Sample: MW-306 **Lab ID: 40258595001** Collected: 02/20/23 14:10 Received: 02/23/23 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Temperature, Water (C)	**9.6**	deg C			1		02/20/23 14:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**370**	mg/L	20.0	8.7	1		02/24/23 10:56		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**22.0**	mg/L	2.0	0.43	1		02/28/23 20:16	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		02/28/23 20:16	16984-48-8	
Sulfate	**7.7**	mg/L	2.0	0.44	1		02/28/23 20:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Sample: MW-307 **Lab ID: 40258595002** Collected: 02/20/23 15:35 Received: 02/23/23 10:00 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								
Antimony	**0.19J**	ug/L	1.0	0.15	1	02/28/23 06:10	03/01/23 11:54	7440-36-0	
Arsenic	**1.8**	ug/L	1.0	0.28	1	02/28/23 06:10	03/01/23 11:54	7440-38-2	B
Barium	**19.4**	ug/L	2.3	0.70	1	02/28/23 06:10	03/01/23 11:54	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	02/28/23 06:10	03/01/23 11:54	7440-41-7	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	02/28/23 06:10	03/01/23 11:54	7440-43-9	
Chromium	**<1.0**	ug/L	3.4	1.0	1	02/28/23 06:10	03/01/23 11:54	7440-47-3	
Cobalt	**20.2**	ug/L	1.0	0.12	1	02/28/23 06:10	03/01/23 11:54	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	02/28/23 06:10	03/01/23 11:54	7439-92-1	
Lithium	**0.82J**	ug/L	1.0	0.22	1	02/28/23 06:10	03/01/23 11:54	7439-93-2	B
Molybdenum	**0.60J**	ug/L	1.5	0.44	1	02/28/23 06:10	03/01/23 11:54	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	02/28/23 06:10	03/01/23 11:54	7782-49-2	
Thallium	**0.22J**	ug/L	1.0	0.14	1	02/28/23 06:10	03/01/23 11:54	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Antimony, Dissolved	**<0.15**	ug/L	1.0	0.15	1	02/28/23 06:11	03/01/23 14:43	7440-36-0	
Arsenic, Dissolved	**1.4**	ug/L	1.0	0.28	1	02/28/23 06:11	03/01/23 14:43	7440-38-2	
Barium, Dissolved	**21.0**	ug/L	2.3	0.70	1	02/28/23 06:11	03/01/23 14:43	7440-39-3	D9
Beryllium, Dissolved	**<0.25**	ug/L	1.0	0.25	1	02/28/23 06:11	03/01/23 14:43	7440-41-7	
Cadmium, Dissolved	**<0.15**	ug/L	1.0	0.15	1	02/28/23 06:11	03/01/23 14:43	7440-43-9	
Chromium, Dissolved	**<1.0**	ug/L	3.4	1.0	1	02/28/23 06:11	03/01/23 14:43	7440-47-3	
Cobalt, Dissolved	**18.4**	ug/L	1.0	0.12	1	02/28/23 06:11	03/01/23 14:43	7440-48-4	
Lead, Dissolved	**<0.24**	ug/L	1.0	0.24	1	02/28/23 06:11	03/01/23 14:43	7439-92-1	
Lithium, Dissolved	**0.58J**	ug/L	1.0	0.22	1	02/28/23 06:11	03/01/23 14:43	7439-93-2	B
Molybdenum, Dissolved	**0.47J**	ug/L	1.5	0.44	1	02/28/23 06:11	03/01/23 14:43	7439-98-7	
Selenium, Dissolved	**<0.32**	ug/L	1.1	0.32	1	02/28/23 06:11	03/01/23 14:43	7782-49-2	
Thallium, Dissolved	**<0.14**	ug/L	1.0	0.14	1	02/28/23 06:11	03/01/23 14:43	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	02/27/23 09:40	02/28/23 11:18	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury, Dissolved	**<0.066**	ug/L	0.20	0.066	1	02/27/23 09:40	02/28/23 12:05	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**6.76**	Std. Units			1		02/20/23 15:35		
Field Specific Conductance	**853**	umhos/cm			1		02/20/23 15:35		
Oxygen, Dissolved	**0.13**	mg/L			1		02/20/23 15:35	7782-44-7	
REDOX	**-32.3**	mV			1		02/20/23 15:35		
Turbidity	**0.5**	NTU			1		02/20/23 15:35		
Static Water Level	**782.91**	feet			1		02/20/23 15:35		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Sample: MW-307 **Lab ID: 40258595002** Collected: 02/20/23 15:35 Received: 02/23/23 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Temperature, Water (C)	**9.5**	deg C			1		02/20/23 15:35		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**588**	mg/L	20.0	8.7	1		02/24/23 10:56		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**57.6**	mg/L	2.0	0.43	1		03/02/23 13:11	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		03/02/23 13:11	16984-48-8	
Sulfate	**127**	mg/L	20.0	4.4	10		03/02/23 15:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Sample: MW-308 **Lab ID: 40258595003** Collected: 02/20/23 12:40 Received: 02/23/23 10:00 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	02/28/23 06:10	03/01/23 12:08	7440-36-0	
Arsenic	**3.3**	ug/L	1.0	0.28	1	02/28/23 06:10	03/01/23 12:08	7440-38-2	B
Barium	**66.2**	ug/L	2.3	0.70	1	02/28/23 06:10	03/01/23 12:08	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	02/28/23 06:10	03/01/23 12:08	7440-41-7	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	02/28/23 06:10	03/01/23 12:08	7440-43-9	
Chromium	**<1.0**	ug/L	3.4	1.0	1	02/28/23 06:10	03/01/23 12:08	7440-47-3	
Cobalt	**0.24J**	ug/L	1.0	0.12	1	02/28/23 06:10	03/01/23 12:08	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	02/28/23 06:10	03/01/23 12:08	7439-92-1	
Lithium	**<0.22**	ug/L	1.0	0.22	1	02/28/23 06:10	03/01/23 12:08	7439-93-2	
Molybdenum	**1.0J**	ug/L	1.5	0.44	1	02/28/23 06:10	03/01/23 12:08	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	02/28/23 06:10	03/01/23 12:08	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	02/28/23 06:10	03/01/23 12:08	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3010A Pace Analytical Services - Green Bay								
Antimony, Dissolved	**<0.15**	ug/L	1.0	0.15	1	02/28/23 06:11	03/01/23 14:57	7440-36-0	
Arsenic, Dissolved	**2.6**	ug/L	1.0	0.28	1	02/28/23 06:11	03/01/23 14:57	7440-38-2	
Barium, Dissolved	**67.2**	ug/L	2.3	0.70	1	02/28/23 06:11	03/01/23 14:57	7440-39-3	D9
Beryllium, Dissolved	**<0.25**	ug/L	1.0	0.25	1	02/28/23 06:11	03/01/23 14:57	7440-41-7	
Cadmium, Dissolved	**<0.15**	ug/L	1.0	0.15	1	02/28/23 06:11	03/01/23 14:57	7440-43-9	
Chromium, Dissolved	**<1.0**	ug/L	3.4	1.0	1	02/28/23 06:11	03/01/23 14:57	7440-47-3	
Cobalt, Dissolved	**0.22J**	ug/L	1.0	0.12	1	02/28/23 06:11	03/01/23 14:57	7440-48-4	
Lead, Dissolved	**<0.24**	ug/L	1.0	0.24	1	02/28/23 06:11	03/01/23 14:57	7439-92-1	
Lithium, Dissolved	**0.27J**	ug/L	1.0	0.22	1	02/28/23 06:11	03/01/23 14:57	7439-93-2	B
Molybdenum, Dissolved	**1.2J**	ug/L	1.5	0.44	1	02/28/23 06:11	03/01/23 14:57	7439-98-7	
Selenium, Dissolved	**<0.32**	ug/L	1.1	0.32	1	02/28/23 06:11	03/01/23 14:57	7782-49-2	
Thallium, Dissolved	**<0.14**	ug/L	1.0	0.14	1	02/28/23 06:11	03/01/23 14:57	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	02/27/23 09:40	02/28/23 11:20	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury, Dissolved	**<0.066**	ug/L	0.20	0.066	1	02/27/23 09:40	02/28/23 12:07	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.15**	Std. Units			1		02/20/23 12:40		
Field Specific Conductance	**890**	umhos/cm			1		02/20/23 12:40		
Oxygen, Dissolved	**0.08**	mg/L			1		02/20/23 12:40	7782-44-7	
REDOX	**-113.8**	mV			1		02/20/23 12:40		
Turbidity	**4.41**	NTU			1		02/20/23 12:40		
Static Water Level	**785.32**	feet			1		02/20/23 12:40		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Sample: MW-308 **Lab ID: 40258595003** Collected: 02/20/23 12:40 Received: 02/23/23 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Temperature, Water (C)	**9.1**	deg C			1		02/20/23 12:40		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**562**	mg/L	20.0	8.7	1		02/24/23 10:57		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**1.1J**	mg/L	2.0	0.43	1		03/02/23 13:23	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		03/02/23 13:23	16984-48-8	
Sulfate	**2.5**	mg/L	2.0	0.44	1		03/02/23 13:23	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Sample: FIELD BLANK - SC POND **Lab ID: 40258595004** Collected: 02/20/23 15:30 Received: 02/23/23 10:00 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	02/28/23 06:10	03/01/23 09:41	7440-36-0	
Arsenic	**0.53J**	ug/L	1.0	0.28	1	02/28/23 06:10	03/01/23 09:41	7440-38-2	B
Barium	**<0.70**	ug/L	2.3	0.70	1	02/28/23 06:10	03/01/23 09:41	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	02/28/23 06:10	03/01/23 09:41	7440-41-7	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	02/28/23 06:10	03/01/23 09:41	7440-43-9	
Chromium	**<1.0**	ug/L	3.4	1.0	1	02/28/23 06:10	03/01/23 09:41	7440-47-3	
Cobalt	**<0.12**	ug/L	1.0	0.12	1	02/28/23 06:10	03/01/23 09:41	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	02/28/23 06:10	03/01/23 09:41	7439-92-1	
Lithium	**<0.22**	ug/L	1.0	0.22	1	02/28/23 06:10	03/01/23 09:41	7439-93-2	
Molybdenum	**<0.44**	ug/L	1.5	0.44	1	02/28/23 06:10	03/01/23 09:41	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	02/28/23 06:10	03/01/23 09:41	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	02/28/23 06:10	03/01/23 09:41	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	02/27/23 09:40	02/28/23 11:23	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**38.0**	mg/L	20.0	8.7	1		02/24/23 10:57		
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**<0.43**	mg/L	2.0	0.43	1		03/02/23 13:36	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		03/02/23 13:36	16984-48-8	
Sulfate	**<0.44**	mg/L	2.0	0.44	1		03/02/23 13:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

QC Batch: 438678
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40258595001, 40258595002, 40258595003, 40258595004

METHOD BLANK: 2520570 Matrix: Water
Associated Lab Samples: 40258595001, 40258595002, 40258595003, 40258595004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.066	0.20	02/28/23 10:30	

LABORATORY CONTROL SAMPLE: 2520571

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.4	107	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2520572 2520573

Parameter	Units	40258473001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.000066 mg/L	5	5	5.4	5.1	109	102	85-115	7	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

QC Batch: 438679
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury Dissolved
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40258595001, 40258595002, 40258595003

METHOD BLANK: 2520574 Matrix: Water
Associated Lab Samples: 40258595001, 40258595002, 40258595003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.066	0.20	02/28/23 11:25	

LABORATORY CONTROL SAMPLE: 2520575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.3	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2520576 2520577

Parameter	Units	40258487013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.066	5	5	4.9	4.7	98	94	85-115	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

QC Batch: 438762
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40258595001, 40258595002, 40258595003, 40258595004

METHOD BLANK: 2520770 Matrix: Water
Associated Lab Samples: 40258595001, 40258595002, 40258595003, 40258595004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	03/01/23 09:34	
Arsenic	ug/L	0.88J	1.0	03/01/23 09:34	
Barium	ug/L	<0.70	2.3	03/01/23 09:34	
Beryllium	ug/L	<0.25	1.0	03/01/23 09:34	
Cadmium	ug/L	<0.15	1.0	03/01/23 09:34	
Chromium	ug/L	<1.0	3.4	03/01/23 09:34	
Cobalt	ug/L	<0.12	1.0	03/01/23 09:34	
Lead	ug/L	<0.24	1.0	03/01/23 09:34	
Lithium	ug/L	0.22J	1.0	03/01/23 09:34	
Molybdenum	ug/L	<0.44	1.5	03/01/23 09:34	
Selenium	ug/L	<0.32	1.1	03/01/23 09:34	
Thallium	ug/L	<0.14	1.0	03/01/23 09:34	

LABORATORY CONTROL SAMPLE: 2520771

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	250	246	98	80-120	
Arsenic	ug/L	250	249	99	80-120	
Barium	ug/L	250	241	96	80-120	
Beryllium	ug/L	250	248	99	80-120	
Cadmium	ug/L	250	254	101	80-120	
Chromium	ug/L	250	243	97	80-120	
Cobalt	ug/L	250	239	96	80-120	
Lead	ug/L	250	242	97	80-120	
Lithium	ug/L	250	249	100	80-120	
Molybdenum	ug/L	250	249	100	80-120	
Selenium	ug/L	250	250	100	80-120	
Thallium	ug/L	250	226	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2520772 2520773

Parameter	Units	40258595001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.19J	250	250	260	253	104	101	75-125	3	20	
Arsenic	ug/L	0.37J	250	250	258	254	103	101	75-125	2	20	
Barium	ug/L	14.0	250	250	267	264	101	100	75-125	1	20	
Beryllium	ug/L	<0.25	250	250	261	253	104	101	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2520772 2520773

Parameter	Units	40258595001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	ug/L	<0.15	250	250	262	251	105	100	75-125	4	20	
Chromium	ug/L	3.0J	250	250	256	251	101	99	75-125	2	20	
Cobalt	ug/L	0.14J	250	250	249	240	100	96	75-125	4	20	
Lead	ug/L	<0.24	250	250	258	254	103	101	75-125	2	20	
Lithium	ug/L	12.7	250	250	276	268	105	102	75-125	3	20	
Molybdenum	ug/L	8.3	250	250	273	262	106	101	75-125	4	20	
Selenium	ug/L	1.4	250	250	264	257	105	102	75-125	3	20	
Thallium	ug/L	0.21J	250	250	248	237	99	95	75-125	5	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

QC Batch: 438764
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET Dissolved
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40258595001, 40258595002, 40258595003

METHOD BLANK: 2520778 Matrix: Water
Associated Lab Samples: 40258595001, 40258595002, 40258595003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony, Dissolved	ug/L	<0.15	1.0	03/01/23 12:30	
Arsenic, Dissolved	ug/L	<0.28	1.0	03/01/23 12:30	
Barium, Dissolved	ug/L	<0.70	2.3	03/01/23 12:30	
Beryllium, Dissolved	ug/L	<0.25	1.0	03/01/23 12:30	
Cadmium, Dissolved	ug/L	<0.15	1.0	03/01/23 12:30	
Chromium, Dissolved	ug/L	<1.0	3.4	03/01/23 12:30	
Cobalt, Dissolved	ug/L	<0.12	1.0	03/01/23 12:30	
Lead, Dissolved	ug/L	<0.24	1.0	03/01/23 12:30	
Lithium, Dissolved	ug/L	0.29J	1.0	03/01/23 12:30	
Molybdenum, Dissolved	ug/L	<0.44	1.5	03/01/23 12:30	
Selenium, Dissolved	ug/L	<0.32	1.1	03/01/23 12:30	
Thallium, Dissolved	ug/L	<0.14	1.0	03/01/23 12:30	

LABORATORY CONTROL SAMPLE: 2520779

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	ug/L	250	239	95	80-120	
Arsenic, Dissolved	ug/L	250	243	97	80-120	
Barium, Dissolved	ug/L	250	234	94	80-120	
Beryllium, Dissolved	ug/L	250	250	100	80-120	
Cadmium, Dissolved	ug/L	250	244	98	80-120	
Chromium, Dissolved	ug/L	250	239	96	80-120	
Cobalt, Dissolved	ug/L	250	239	96	80-120	
Lead, Dissolved	ug/L	250	241	96	80-120	
Lithium, Dissolved	ug/L	250	245	98	80-120	
Molybdenum, Dissolved	ug/L	250	244	97	80-120	
Selenium, Dissolved	ug/L	250	248	99	80-120	
Thallium, Dissolved	ug/L	250	227	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2520780 2520781

Parameter	Units	40258595001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony, Dissolved	ug/L	0.18J	250	250	254	256	101	102	75-125	1	20	
Arsenic, Dissolved	ug/L	<0.28	250	250	253	251	101	100	75-125	1	20	
Barium, Dissolved	ug/L	14.2	250	250	265	261	100	99	75-125	2	20	
Beryllium, Dissolved	ug/L	<0.25	250	250	251	254	100	101	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2520780 2520781

Parameter	Units	40258595001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	<0.15	250	250	259	259	104	103	75-125	0	20	
Chromium, Dissolved	ug/L	2.6J	250	250	252	249	100	98	75-125	1	20	
Cobalt, Dissolved	ug/L	0.22J	250	250	245	243	98	97	75-125	1	20	
Lead, Dissolved	ug/L	<0.24	250	250	253	253	101	101	75-125	0	20	
Lithium, Dissolved	ug/L	11.9	250	250	263	264	100	101	75-125	0	20	
Molybdenum, Dissolved	ug/L	8.0	250	250	258	263	100	102	75-125	2	20	
Selenium, Dissolved	ug/L	1.4	250	250	261	258	104	102	75-125	1	20	
Thallium, Dissolved	ug/L	0.14J	250	250	238	241	95	96	75-125	1	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: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

QC Batch: 438590
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40258595001, 40258595002, 40258595003, 40258595004

METHOD BLANK: 2520017 Matrix: Water
Associated Lab Samples: 40258595001, 40258595002, 40258595003, 40258595004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	02/24/23 10:54	

LABORATORY CONTROL SAMPLE: 2520018

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	540	570	106	80-120	

SAMPLE DUPLICATE: 2520019

Parameter	Units	40258595001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	370	378	2	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

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(920)469-2436

QUALITY CONTROL DATA

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

QC Batch: 438640
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: 40258595001, 40258595002, 40258595003, 40258595004

METHOD BLANK: 2520461 Matrix: Water
Associated Lab Samples: 40258595001, 40258595002, 40258595003, 40258595004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.43	2.0	02/28/23 19:51	
Fluoride	mg/L	<0.095	0.32	02/28/23 19:51	
Sulfate	mg/L	<0.44	2.0	02/28/23 19:51	

LABORATORY CONTROL SAMPLE: 2520462

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.9	104	90-110	
Fluoride	mg/L	2	2.1	104	90-110	
Sulfate	mg/L	20	18.4	92	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2520463 2520464

Parameter	Units	40258595001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	22.0	20	20	41.1	41.4	95	97	90-110	1	15	
Fluoride	mg/L	<0.095	2	2	2.1	2.1	104	105	90-110	1	15	
Sulfate	mg/L	7.7	20	20	26.1	26.4	92	93	90-110	1	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
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(920)469-2436

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Sample: MW-306 **Lab ID: 40258595001** Collected: 02/20/23 14:10 Received: 02/23/23 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.310 ± 0.570 (1.29) C:NA T:102%**	pCi/L	03/10/23 16:34	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.156 ± 0.391 (0.873) C:71% T:90%**	pCi/L	03/09/23 15:48	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(920)469-2436

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Sample: MW-307 **Lab ID: 40258595002** Collected: 02/20/23 15:35 Received: 02/23/23 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.228 ± 0.495 (0.913) C:NA T:100%**	pCi/L	03/10/23 16:34	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.563 ± 0.427 (0.835) C:77% T:83%**	pCi/L	03/09/23 15:48	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Sample: MW-308 **Lab ID: 40258595003** Collected: 02/20/23 12:40 Received: 02/23/23 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.159 ± 0.585 (1.26) C:NA T:96%**	pCi/L	03/10/23 16:34	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.0103 ± 0.384 (0.892) C:76% T:86%**	pCi/L	03/09/23 15:49	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Sample: FIELD BLANK - SC POND **Lab ID: 40258595004** Collected: 02/20/23 15:30 Received: 02/23/23 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0970 ± 0.736 (1.54) C:NA T:94%**	pCi/L	03/10/23 16:34	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.0729 ± 0.399 (0.913) C:78% T:80%**	pCi/L	03/09/23 15:49	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL - RADIOCHEMISTRY

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

QC Batch: 570028 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40258595001, 40258595002, 40258595003, 40258595004

METHOD BLANK: 2768270 Matrix: Water
Associated Lab Samples: 40258595001, 40258595002, 40258595003, 40258595004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.604 ± 0.418 (0.796) C:73% T:86%	pCi/L	03/09/23 15:46	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

QC Batch: 570027
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40258595001, 40258595002, 40258595003, 40258595004

METHOD BLANK: 2768269 Matrix: Water
Associated Lab Samples: 40258595001, 40258595002, 40258595003, 40258595004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.132 ± 0.411 (0.795) C:NA T:91%	pCi/L	03/10/23 16:20	

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REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

DEFINITIONS

Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
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.

SAMPLE QUALIFIERS

Sample: 40258595001
[1] CCR gap compliance
Sample: 40258595002
[1] CCR gap compliance
Sample: 40258595003
[1] CCR gap compliance
Sample: 40258595004
[1] CCR gap compliance

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.
D9 Dissolved result is greater than the total. Data is within laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25222157.00 WPL-COLUMBIA
Pace Project No.: 40258595

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40258595001	**MW-306**	EPA 3010A	438762	EPA 6020B	438841
40258595002	**MW-307**	EPA 3010A	438762	EPA 6020B	438841
40258595003	**MW-308**	EPA 3010A	438762	EPA 6020B	438841
40258595004	**FIELD BLANK - SC POND**	EPA 3010A	438762	EPA 6020B	438841
40258595001	**MW-306**	EPA 3010A	438764	EPA 6020B	438843
40258595002	**MW-307**	EPA 3010A	438764	EPA 6020B	438843
40258595003	**MW-308**	EPA 3010A	438764	EPA 6020B	438843
40258595001	**MW-306**	EPA 7470	438678	EPA 7470	438793
40258595002	**MW-307**	EPA 7470	438678	EPA 7470	438793
40258595003	**MW-308**	EPA 7470	438678	EPA 7470	438793
40258595004	**FIELD BLANK - SC POND**	EPA 7470	438678	EPA 7470	438793
40258595001	**MW-306**	EPA 7470	438679	EPA 7470	438795
40258595002	**MW-307**	EPA 7470	438679	EPA 7470	438795
40258595003	**MW-308**	EPA 7470	438679	EPA 7470	438795
40258595001	**MW-306**				
40258595002	**MW-307**				
40258595003	**MW-308**				
40258595001	**MW-306**	EPA 903.1	570027		
40258595002	**MW-307**	EPA 903.1	570027		
40258595003	**MW-308**	EPA 903.1	570027		
40258595004	**FIELD BLANK - SC POND**	EPA 903.1	570027		
40258595001	**MW-306**	EPA 904.0	570028		
40258595002	**MW-307**	EPA 904.0	570028		
40258595003	**MW-308**	EPA 904.0	570028		
40258595004	**FIELD BLANK - SC POND**	EPA 904.0	570028		
40258595001	**MW-306**	SM 2540C	438590		
40258595002	**MW-307**	SM 2540C	438590		
40258595003	**MW-308**	SM 2540C	438590		
40258595004	**FIELD BLANK - SC POND**	SM 2540C	438590		
40258595001	**MW-306**	EPA 300.0	438640		
40258595002	**MW-307**	EPA 300.0	438640		
40258595003	**MW-308**	EPA 300.0	438640		
40258595004	**FIELD BLANK - SC POND**	EPA 300.0	438640		

Pace Analytical®
www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

4025859T

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	SCS Engineers
Branch/Location:	Madison, WI
Project Contact:	Meghan Blodgett mblodgett@scsengineers.com
Phone:	
Project Number:	25222157.00
Project Name:	WPL-Columbia
Project State:	WI
Sampled By (Print):	Ethan Schaefer
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, W = Water, B = Biota, DW = Drinking Water, C = Charcoal, GW = Ground Water, O = Oil, SW = Surface Water, S = Soil, WW = Waste Water, SI = Sludge, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO)	PRESERVATION (CODE)*	Analyses Requested: Metals (filtered)	Metals (unfiltered)	Radium 226+228	TDS	Chloride, Fluoride, Sulf.	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
					Y/N	Pick Letter								
	MW-306	2/20	1410	GW	Y	D	X	X	X	X	X		001	
	MW-307	2/20	1535	GW	N	D	X	X	X	X	X		002	
	MW-308	2/20	1240	GW	N	D	X	X	X	X	X		003	
	Field Blank-SC Pond	2/20	1530		N	A		X	X	X	X		004	

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By	Date/Time	Received By	Date/Time
	2/22/23 10:00		
CS Logistics	02/23/2023 10:00	Matt VanLoenbeek Pace	02/24/2023 10:00

PACE Project No.

Receipt Temp = 0.5 °C

Sample Receipt pH
(OK) Adjusted

Cooler Custody Seal
(Present) Not Present
(Intact) Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Client Name: SCS Engineers

Sample Preservation Receipt Form Project # 4025895

All containers needing preservation have been checked and noted below ☑Yes ☐No ☐N/A

Lab Lot# of pH paper: 10P0722 Lab Std #ID of preservation (if pH adjusted):

Initial when completed: MDR Date/Time: 2/23/2023

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		2															1					X		2.5 / 5
002									2		2															2					X		2.5 / 5
003									2		2															2					X		2.5 / 5
004									2		1															2					X		2.5 / 5
005																																		2.5 / 5
006																																		2.5 / 5
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017																																		2.5 / 5
018																																		2.5 / 5
019																																		2.5 / 5
020																																		2.5 / 5

MDR 2/23/2023

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
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4
BP2Z	500 mL plastic NaOH + Zn

VG9C	40 mL clear ascorbic w/ HCl
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN 1	BP1N1 Liter plastic HNO_3
GN 2	

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40258595

40258595

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 - 128 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 0.5 /Corr: 0.5

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

Person examining contents:
Date: 02/23/2023 Initials: MS

Labeled By Initials: 86

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

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: Trip Blank Custody Seals Present Pace Trip Blank Lot # (if purchased): _____	☐Yes ☐No ☑N/A ☐Yes ☐No ☑N/A	13.

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

C3 April 2023 Assessment Monitoring

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

May 26, 2023

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 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
- Pace Analytical Services - Greensburg

Revised Report: REDOX has been added to the field data list for MW-84A.

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: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40261460001	**MW-301**	Water	04/27/23 12:20	04/28/23 08:40
40261460002	**MW-84A**	Water	04/27/23 14:05	04/28/23 08:40

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40261460001	**MW-301**	EPA 6020B	TXW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	7	PASI-G
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	HNT	1	PASI-G
		EPA 9040	SRK	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40261460002	**MW-84A**	EPA 6020B	TXW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	7	PASI-G
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	HNT	1	PASI-G
		EPA 9040	SRK	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

PASI-G = Pace Analytical Services - Green Bay
PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

Sample: MW-301 **Lab ID: 40261460001** Collected: 04/27/23 12:20 Received: 04/28/23 08:40 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	05/01/23 06:24	05/15/23 08:01	7440-36-0	
Arsenic	**<0.28**	ug/L	1.0	0.28	1	05/01/23 06:24	05/15/23 08:01	7440-38-2	
Barium	**9.8**	ug/L	2.3	0.70	1	05/01/23 06:24	05/15/23 08:01	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	05/01/23 06:24	05/15/23 08:01	7440-41-7	
Boron	**20.1**	ug/L	10.0	3.0	1	05/01/23 06:24	05/15/23 08:01	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	05/01/23 06:24	05/15/23 08:01	7440-43-9	
Calcium	**120000**	ug/L	254	76.2	1	05/01/23 06:24	05/15/23 08:01	7440-70-2	
Chromium	**<1.0**	ug/L	3.4	1.0	1	05/01/23 06:24	05/15/23 08:01	7440-47-3	
Cobalt	**<0.12**	ug/L	1.0	0.12	1	05/01/23 06:24	05/15/23 08:01	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	05/01/23 06:24	05/15/23 08:01	7439-92-1	
Lithium	**0.62J**	ug/L	1.0	0.22	1	05/01/23 06:24	05/15/23 08:01	7439-93-2	
Molybdenum	**<0.44**	ug/L	1.5	0.44	1	05/01/23 06:24	05/15/23 08:01	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	05/01/23 06:24	05/15/23 08:01	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	05/01/23 06:24	05/15/23 08:01	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	05/08/23 10:55	05/09/23 09:00	7439-97-6	M0
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**6.65**	Std. Units			1		04/27/23 12:20		
Field Specific Conductance	**857.0**	umhos/cm			1		04/27/23 12:20		
Oxygen, Dissolved	**6.50**	mg/L			1		04/27/23 12:20	7782-44-7	
REDOX	**95.3**	mV			1		04/27/23 12:20		
Turbidity	**0.00**	NTU			1		04/27/23 12:20		
Static Water Level	**787.57**	feet			1		04/27/23 12:20		
Temperature, Water (C)	**8.0**	deg C			1		04/27/23 12:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**526**	mg/L	20.0	8.7	1		05/01/23 10:51		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**6.9**	Std. Units	0.10	0.010	1		05/02/23 16:48		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**1.5J**	mg/L	2.0	0.43	1		05/12/23 16:00	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		05/12/23 16:00	16984-48-8	
Sulfate	**12.3**	mg/L	2.0	0.44	1		05/12/23 16:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

Sample: MW-84A **Lab ID: 40261460002** Collected: 04/27/23 14:05 Received: 04/28/23 08:40 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	05/01/23 06:24	05/15/23 08:08	7440-36-0	
Arsenic	**<0.28**	ug/L	1.0	0.28	1	05/01/23 06:24	05/15/23 08:08	7440-38-2	
Barium	**12.6**	ug/L	2.3	0.70	1	05/01/23 06:24	05/15/23 08:08	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	05/01/23 06:24	05/15/23 08:08	7440-41-7	
Boron	**10.3**	ug/L	10.0	3.0	1	05/01/23 06:24	05/15/23 08:08	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	05/01/23 06:24	05/15/23 08:08	7440-43-9	
Calcium	**68600**	ug/L	254	76.2	1	05/01/23 06:24	05/15/23 08:08	7440-70-2	
Chromium	**1.7J**	ug/L	3.4	1.0	1	05/01/23 06:24	05/15/23 08:08	7440-47-3	
Cobalt	**<0.12**	ug/L	1.0	0.12	1	05/01/23 06:24	05/15/23 08:08	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	05/01/23 06:24	05/15/23 08:08	7439-92-1	
Lithium	**0.71J**	ug/L	1.0	0.22	1	05/01/23 06:24	05/15/23 08:08	7439-93-2	
Molybdenum	**<0.44**	ug/L	1.5	0.44	1	05/01/23 06:24	05/15/23 08:08	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	05/01/23 06:24	05/15/23 08:08	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	05/01/23 06:24	05/15/23 08:08	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	05/08/23 10:55	05/09/23 09:12	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.01**	Std. Units			1		04/27/23 14:05		
Field Specific Conductance	**556.6**	umhos/cm			1		04/27/23 14:05		
Field Oxidation Potential	**103.4**	mV			1		04/27/23 14:05		
Oxygen, Dissolved	**9.37**	mg/L			1		04/27/23 14:05	7782-44-7	
Turbidity	**0.72**	NTU			1		04/27/23 14:05		
Static Water Level	**786.97**	feet			1		04/27/23 14:05		
Temperature, Water (C)	**10.7**	deg C			1		04/27/23 14:05		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**326**	mg/L	20.0	8.7	1		05/01/23 10:51		
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		05/02/23 16:52		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**3.0**	mg/L	2.0	0.43	1		05/12/23 16:59	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		05/12/23 16:59	16984-48-8	
Sulfate	**1.3J**	mg/L	2.0	0.44	1		05/12/23 16:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(920)469-2436

QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

QC Batch: 444256
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40261460001, 40261460002

METHOD BLANK: 2550653 Matrix: Water
Associated Lab Samples: 40261460001, 40261460002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.066	0.20	05/09/23 08:56	

LABORATORY CONTROL SAMPLE: 2550654

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.5	110	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2550655 2550656

Parameter	Units	40261460001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.066	5	5	5.8	5.9	115	119	85-115	3	20	M0

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

QC Batch: 443628
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40261460001, 40261460002

METHOD BLANK: 2547530 Matrix: Water
Associated Lab Samples: 40261460001, 40261460002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	05/11/23 17:42	
Arsenic	ug/L	<0.28	1.0	05/11/23 17:42	
Barium	ug/L	<0.70	2.3	05/11/23 17:42	
Beryllium	ug/L	<0.25	1.0	05/11/23 17:42	
Boron	ug/L	<3.0	10.0	05/11/23 17:42	
Cadmium	ug/L	<0.15	1.0	05/11/23 17:42	
Calcium	ug/L	<76.2	254	05/11/23 17:42	
Chromium	ug/L	<1.0	3.4	05/11/23 17:42	
Cobalt	ug/L	<0.12	1.0	05/11/23 17:42	
Lead	ug/L	<0.24	1.0	05/11/23 17:42	
Lithium	ug/L	<0.22	1.0	05/11/23 17:42	
Molybdenum	ug/L	<0.44	1.5	05/11/23 17:42	
Selenium	ug/L	<0.32	1.1	05/11/23 17:42	
Thallium	ug/L	<0.14	1.0	05/11/23 17:42	

LABORATORY CONTROL SAMPLE: 2547531

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	250	250	100	80-120	
Arsenic	ug/L	250	255	102	80-120	
Barium	ug/L	250	234	94	80-120	
Beryllium	ug/L	250	233	93	80-120	
Boron	ug/L	250	220	88	80-120	
Cadmium	ug/L	250	254	102	80-120	
Calcium	ug/L	10000	10200	102	80-120	
Chromium	ug/L	250	241	96	80-120	
Cobalt	ug/L	250	241	96	80-120	
Lead	ug/L	250	241	96	80-120	
Lithium	ug/L	250	237	95	80-120	
Molybdenum	ug/L	250	245	98	80-120	
Selenium	ug/L	250	257	103	80-120	
Thallium	ug/L	250	227	91	80-120	

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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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2547532 2547533

Parameter	Units	40261434001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.52J	250	250	268	263	107	105	75-125	2	20	
Arsenic	ug/L	12.4	250	250	264	262	100	100	75-125	1	20	
Barium	ug/L	128	250	250	405	384	111	102	75-125	5	20	
Beryllium	ug/L	0.83J	250	250	261	259	104	103	75-125	1	20	
Boron	ug/L	43.8	250	250	309	302	106	103	75-125	2	20	
Cadmium	ug/L	0.56J	250	250	249	243	99	97	75-125	3	20	
Calcium	ug/L	147000	10000	10000	163000	156000	157	94	75-125	4	20	P6
Chromium	ug/L	30.1	250	250	279	274	100	98	75-125	2	20	
Cobalt	ug/L	19.2	250	250	257	254	95	94	75-125	1	20	
Lead	ug/L	26.6	250	250	280	274	102	99	75-125	2	20	
Lithium	ug/L	23.9	250	250	277	276	101	101	75-125	0	20	
Molybdenum	ug/L	1.3J	250	250	246	241	98	96	75-125	2	20	
Selenium	ug/L	1.9J	250	250	267	264	106	105	75-125	1	20	
Thallium	ug/L	0.44J	250	250	250	251	100	100	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

QC Batch: 443675
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40261460001, 40261460002

METHOD BLANK: 2547666 Matrix: Water
Associated Lab Samples: 40261460001, 40261460002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	05/01/23 10:47	

LABORATORY CONTROL SAMPLE: 2547667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	582	552	95	80-120	

SAMPLE DUPLICATE: 2547668

Parameter	Units	40261457001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	448	464	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

QC Batch: 443847
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40261460001, 40261460002

SAMPLE DUPLICATE: 2548305

Parameter	Units	40261459003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.3	0	20	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

QC Batch: 444310
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: 40261460001, 40261460002

METHOD BLANK: 2550800 Matrix: Water
Associated Lab Samples: 40261460001, 40261460002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.43	2.0	05/12/23 14:40	
Fluoride	mg/L	<0.095	0.32	05/12/23 14:40	
Sulfate	mg/L	<0.44	2.0	05/12/23 14:40	

LABORATORY CONTROL SAMPLE: 2550801

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	19.5	98	90-110	
Fluoride	mg/L	2	2.0	101	90-110	
Sulfate	mg/L	20	19.7	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2550802 2550803

Parameter	Units	40261459001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.3	20	20	22.6	22.7	102	102	90-110	0	15	
Fluoride	mg/L	<0.095	2	2	2.1	2.1	105	104	90-110	0	15	
Sulfate	mg/L	11.0	20	20	31.5	31.5	103	103	90-110	0	15	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

Sample: MW-301 **Lab ID: 40261460001** Collected: 04/27/23 12:20 Received: 04/28/23 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.000 ± 0.387 (0.805) C:NA T:99%**	pCi/L	05/18/23 14:53	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.417 ± 0.322 (0.623) C:80% T:87%**	pCi/L	05/15/23 15:22	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.417 ± 0.709 (1.43)**	pCi/L	05/22/23 12:45	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

Sample: MW-84A **Lab ID: 40261460002** Collected: 04/27/23 14:05 Received: 04/28/23 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.000 ± 0.365 (0.772) C:NA T:95%**	pCi/L	05/18/23 15:08	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.326 ± 0.316 (0.647) C:79% T:93%**	pCi/L	05/15/23 15:22	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.326 ± 0.681 (1.42)**	pCi/L	05/22/23 12:45	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

QC Batch: 585758
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40261460001, 40261460002

METHOD BLANK: 2845167
Matrix: Water
Associated Lab Samples: 40261460001, 40261460002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.356 ± 0.319 (0.642) C:76% T:89%	pCi/L	05/15/23 15:19	

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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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

QC Batch: 585757
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40261460001, 40261460002

METHOD BLANK: 2845166 Matrix: Water
Associated Lab Samples: 40261460001, 40261460002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0428 ± 0.195 (0.397) C:NA T:94%	pCi/L	05/18/23 14:53	

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

QUALIFIERS

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

DEFINITIONS

Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
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.
DL - Adjusted Method Detection Limit.
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.
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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25223067 COLUMBIA CCR BCKGRND
Pace Project No.: 40261460

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40261460001	**MW-301**	EPA 3010A	443628	EPA 6020B	443733
40261460002	**MW-84A**	EPA 3010A	443628	EPA 6020B	443733
40261460001	**MW-301**	EPA 7470	444256	EPA 7470	444285
40261460002	**MW-84A**	EPA 7470	444256	EPA 7470	444285
40261460001	**MW-301**				
40261460002	**MW-84A**				
40261460001	**MW-301**	EPA 903.1	585757		
40261460002	**MW-84A**	EPA 903.1	585757		
40261460001	**MW-301**	EPA 904.0	585758		
40261460002	**MW-84A**	EPA 904.0	585758		
40261460001	**MW-301**	Total Radium Calculation	589747		
40261460002	**MW-84A**	Total Radium Calculation	589747		
40261460001	**MW-301**	SM 2540C	443675		
40261460002	**MW-84A**	SM 2540C	443675		
40261460001	**MW-301**	EPA 9040	443847		
40261460002	**MW-84A**	EPA 9040	443847		
40261460001	**MW-301**	EPA 300.0	444310		
40261460002	**MW-84A**	EPA 300.0	444310		

40261460

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.	
Email.	mblodgett@scsengineers com	Purchase Order #		Pace Quote	
Phone	608-216-7362 Fax	Project Name	25223067 Columbia CCR Background	Pace Project Manager	dan milewsky@pacelabs com,
Requested Due Date		Project #	25223067	Pace Profile #:	

Regulatory Agency

State / Location: 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	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Radium 226	Radium 228	Metals	TDS and pH	Chloride,Fluoride,Sulfate	Residual Chlorine (Y/N)	
	MATRIX CODE: 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	N		
1	MW-301	WT		4/27	1220				4		X	X							X	X	X	X	X		001
2	MW-84A	WT		4/27	1405				4		X	X							X	X	X	X	X		002
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Full List Metals = B, Ca, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li Hg, Mo, Se, Tl ALL SAMPLES UNFILTERED	Bridget Russell	4/27	1600							
	CS Logistics	4/28/23	0840	Pace	4/28/23	0840	2.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER:	Bridget Russell				
SIGNATURE of SAMPLER:	Bridget Russell	DATE Signed:	4/27/2023	TEMP in C	Received on Ice (Y/N) / Custody Sealed Cooler (Y/N) / Samples Intact (Y/N)

DC#_Title: ENV-FRM-GBAY-0035 v03_Sample Preservation Receipt Form
Effective Date: 8/16/2022

Client Name: SCS Engineers

Sample Preservation Receipt Form

Project # 402614460

All containers needing preservation have been checked and noted below: ☑Yes ☐No ☐N/A

Lab Lot# of pH paper: LOT00722 Lab Std #ID of preservation (if pH adjusted):

Initial when completed: SG Date/Time:

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																						2.5 / 5
002									2																	2					X		2.5 / 5
003																										2					X		2.5 / 5
004																																	2.5 / 5
005																																	2.5 / 5
006																																	2.5 / 5
007																																	2.5 / 5
008																																	2.5 / 5
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019																																	2.5 / 5
020																																	2.5 / 5

4/28/23 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
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4
BP2Z	500 mL plastic NaOH + Zn

VG9C	40 mL clear ascorbic w/ HCl
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN 1	1L poly HNO3
GN 2	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40261460

40261460

Client Name: SLS 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: 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: 4/28/23 Initials: SG

Labeled By Initials: mt

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:	☑Yes ☐No	9.
Correct Type: (Pace Green Bay) Pace IR, Non-Pace		
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. 002 time "1045" 4/28/23 SG
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: client used white out on bottle types 4/28/23 SG

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

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

May 31, 2023

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 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
- Pace Analytical Services - Greensburg

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

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(920)469-2436

CERTIFICATIONS

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40261457001	**MW-306**	Water	04/24/23 10:50	04/28/23 08:40
40261457002	**MW-307**	Water	04/25/23 10:45	04/28/23 08:40
40261457003	**MW-308**	Water	04/24/23 16:40	04/28/23 08:40
40261457004	**FIELD BLANK-SCPOND**	Water	04/24/23 15:35	04/28/23 08:40

REPORT OF LABORATORY ANALYSIS

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(920)469-2436

SAMPLE ANALYTE COUNT

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40261457001	**MW-306**	EPA 6020B	TXW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	7	PASI-G
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	HNT	1	PASI-G
		EPA 9040	YER	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40261457002	**MW-307**	EPA 6020B	TXW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	7	PASI-G
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	HNT	1	PASI-G
		EPA 9040	YER	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40261457003	**MW-308**	EPA 6020B	TXW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	7	PASI-G
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	HNT	1	PASI-G
		EPA 9040	YER	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40261457004	**FIELD BLANK-SCPOND**	EPA 6020B	TXW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	HNT	1	PASI-G
		EPA 9040	YER	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

PASI-G = Pace Analytical Services - Green Bay
PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Sample: MW-306 **Lab ID: 40261457001** Collected: 04/24/23 10:50 Received: 04/28/23 08:40 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								
Antimony	**0.16J**	ug/L	1.0	0.15	1	05/01/23 06:24	05/15/23 06:35	7440-36-0	
Arsenic	**<0.28**	ug/L	1.0	0.28	1	05/01/23 06:24	05/15/23 06:35	7440-38-2	
Barium	**14.9**	ug/L	2.3	0.70	1	05/01/23 06:24	05/15/23 06:35	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	05/01/23 06:24	05/15/23 06:35	7440-41-7	
Boron	**102**	ug/L	10.0	3.0	1	05/01/23 06:24	05/15/23 06:35	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	05/01/23 06:24	05/15/23 06:35	7440-43-9	
Calcium	**106000**	ug/L	254	76.2	1	05/01/23 06:24	05/15/23 06:35	7440-70-2	
Chromium	**2.1J**	ug/L	3.4	1.0	1	05/01/23 06:24	05/15/23 06:35	7440-47-3	
Cobalt	**<0.12**	ug/L	1.0	0.12	1	05/01/23 06:24	05/15/23 06:35	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	05/01/23 06:24	05/15/23 06:35	7439-92-1	
Lithium	**8.9**	ug/L	1.0	0.22	1	05/01/23 06:24	05/15/23 06:35	7439-93-2	
Molybdenum	**6.6**	ug/L	1.5	0.44	1	05/01/23 06:24	05/15/23 06:35	7439-98-7	
Selenium	**1.1**	ug/L	1.1	0.32	1	05/01/23 06:24	05/15/23 06:35	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	05/01/23 06:24	05/15/23 06:35	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	05/01/23 10:55	05/02/23 07:37	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.10**	Std. Units			1		04/24/23 10:50		
Field Specific Conductance	**706.2**	umhos/cm			1		04/24/23 10:50		
Oxygen, Dissolved	**7.76**	mg/L			1		04/24/23 10:50	7782-44-7	
REDOX	**71.6**	mV			1		04/24/23 10:50		
Turbidity	**4.51**	NTU			1		04/24/23 10:50		
Static Water Level	**784.82**	feet			1		04/24/23 10:50		
Temperature, Water (C)	**8.8**	deg C			1		04/24/23 10:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**448**	mg/L	20.0	8.7	1		05/01/23 10:48		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.5**	Std. Units	0.10	0.010	1		05/02/23 11:40		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**40.6**	mg/L	2.0	0.43	1		05/12/23 07:35	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		05/12/23 07:35	16984-48-8	
Sulfate	**10.3**	mg/L	2.0	0.44	1		05/12/23 07:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(920)469-2436

ANALYTICAL RESULTS

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Sample: MW-307 **Lab ID: 40261457002** Collected: 04/25/23 10:45 Received: 04/28/23 08:40 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	05/01/23 06:24	05/15/23 07:24	7440-36-0	
Arsenic	**1.3**	ug/L	1.0	0.28	1	05/01/23 06:24	05/15/23 07:24	7440-38-2	
Barium	**11.8**	ug/L	2.3	0.70	1	05/01/23 06:24	05/15/23 07:24	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	05/01/23 06:24	05/15/23 07:24	7440-41-7	
Boron	**202**	ug/L	10.0	3.0	1	05/01/23 06:24	05/15/23 07:24	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	05/01/23 06:24	05/15/23 07:24	7440-43-9	
Calcium	**72200**	ug/L	254	76.2	1	05/01/23 06:24	05/15/23 07:24	7440-70-2	
Chromium	**<1.0**	ug/L	3.4	1.0	1	05/01/23 06:24	05/15/23 07:24	7440-47-3	
Cobalt	**16.0**	ug/L	1.0	0.12	1	05/01/23 06:24	05/15/23 07:24	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	05/01/23 06:24	05/15/23 07:24	7439-92-1	
Lithium	**<0.22**	ug/L	1.0	0.22	1	05/01/23 06:24	05/15/23 07:24	7439-93-2	
Molybdenum	**<0.44**	ug/L	1.5	0.44	1	05/01/23 06:24	05/15/23 07:24	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	05/01/23 06:24	05/15/23 07:24	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	05/01/23 06:24	05/15/23 07:24	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	05/01/23 10:55	05/02/23 07:44	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**6.69**	Std. Units			1		04/25/23 10:45		
Field Specific Conductance	**449.0**	umhos/cm			1		04/25/23 10:45		
Oxygen, Dissolved	**0.19**	mg/L			1		04/25/23 10:45	7782-44-7	
REDOX	**-69.2**	mV			1		04/25/23 10:45		
Turbidity	**1.01**	NTU			1		04/25/23 10:45		
Static Water Level	**784.25**	feet			1		04/25/23 10:45		
Temperature, Water (C)	**8.0**	deg C			1		04/25/23 10:45		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**364**	mg/L	20.0	8.7	1		05/01/23 10:48		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**6.7**	Std. Units	0.10	0.010	1		05/02/23 11:43		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**32.8**	mg/L	10.0	2.2	5		05/12/23 07:50	16887-00-6	
Fluoride	**<0.48**	mg/L	1.6	0.48	5		05/12/23 07:50	16984-48-8	D3
Sulfate	**47.5**	mg/L	10.0	2.2	5		05/12/23 07:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Sample: MW-308 **Lab ID: 40261457003** Collected: 04/24/23 16:40 Received: 04/28/23 08:40 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	05/01/23 06:24	05/15/23 07:31	7440-36-0	
Arsenic	**4.9**	ug/L	1.0	0.28	1	05/01/23 06:24	05/15/23 07:31	7440-38-2	
Barium	**77.7**	ug/L	2.3	0.70	1	05/01/23 06:24	05/15/23 07:31	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	05/01/23 06:24	05/15/23 07:31	7440-41-7	
Boron	**288**	ug/L	10.0	3.0	1	05/01/23 06:24	05/15/23 07:31	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	05/01/23 06:24	05/15/23 07:31	7440-43-9	
Calcium	**130000**	ug/L	254	76.2	1	05/01/23 06:24	05/15/23 07:31	7440-70-2	
Chromium	**<1.0**	ug/L	3.4	1.0	1	05/01/23 06:24	05/15/23 07:31	7440-47-3	
Cobalt	**1.7**	ug/L	1.0	0.12	1	05/01/23 06:24	05/15/23 07:31	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	05/01/23 06:24	05/15/23 07:31	7439-92-1	
Lithium	**<0.22**	ug/L	1.0	0.22	1	05/01/23 06:24	05/15/23 07:31	7439-93-2	
Molybdenum	**9.0**	ug/L	1.5	0.44	1	05/01/23 06:24	05/15/23 07:31	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	05/01/23 06:24	05/15/23 07:31	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	05/01/23 06:24	05/15/23 07:31	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	05/01/23 10:55	05/02/23 07:46	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**6.99**	Std. Units			1		04/24/23 16:40		
Field Specific Conductance	**938.0**	umhos/cm			1		04/24/23 16:40		
Oxygen, Dissolved	**0.14**	mg/L			1		04/24/23 16:40	7782-44-7	
REDOX	**-125.5**	mV			1		04/24/23 16:40		
Turbidity	**3.72**	NTU			1		04/24/23 16:40		
Static Water Level	**787.75**	feet			1		04/24/23 16:40		
Temperature, Water (C)	**8.2**	deg C			1		04/24/23 16:40		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**580**	mg/L	20.0	8.7	1		05/01/23 10:49		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.1**	Std. Units	0.10	0.010	1		05/02/23 11:47		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**3.0J**	mg/L	10.0	2.2	5		05/12/23 08:04	16887-00-6	D3
Fluoride	**<0.48**	mg/L	1.6	0.48	5		05/12/23 08:04	16984-48-8	D3
Sulfate	**47.6**	mg/L	10.0	2.2	5		05/12/23 08:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Sample: FIELD BLANK-SCPOND **Lab ID: 40261457004** Collected: 04/24/23 15:35 Received: 04/28/23 08:40 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	05/01/23 06:24	05/15/23 06:20	7440-36-0	
Arsenic	**<0.28**	ug/L	1.0	0.28	1	05/01/23 06:24	05/15/23 06:20	7440-38-2	
Barium	**<0.70**	ug/L	2.3	0.70	1	05/01/23 06:24	05/15/23 06:20	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	05/01/23 06:24	05/15/23 06:20	7440-41-7	
Boron	**<3.0**	ug/L	10.0	3.0	1	05/01/23 06:24	05/15/23 06:20	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	05/01/23 06:24	05/15/23 06:20	7440-43-9	
Calcium	**<76.2**	ug/L	254	76.2	1	05/01/23 06:24	05/15/23 06:20	7440-70-2	
Chromium	**<1.0**	ug/L	3.4	1.0	1	05/01/23 06:24	05/15/23 06:20	7440-47-3	
Cobalt	**<0.12**	ug/L	1.0	0.12	1	05/01/23 06:24	05/15/23 06:20	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	05/01/23 06:24	05/15/23 06:20	7439-92-1	
Lithium	**<0.22**	ug/L	1.0	0.22	1	05/01/23 06:24	05/15/23 06:20	7439-93-2	
Molybdenum	**<0.44**	ug/L	1.5	0.44	1	05/01/23 06:24	05/15/23 06:20	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	05/01/23 06:24	05/15/23 06:20	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	05/01/23 06:24	05/15/23 06:20	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	05/01/23 10:55	05/02/23 07:49	7439-97-6	
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		05/01/23 10:49		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**6.9**	Std. Units	0.10	0.010	1		05/02/23 11:57		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		05/12/23 08:19	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		05/12/23 08:19	16984-48-8	
Sulfate	**<0.44**	mg/L	2.0	0.44	1		05/12/23 08:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

QC Batch: 443687 | Analysis Method: EPA 7470
QC Batch Method: EPA 7470 | Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40261457001, 40261457002, 40261457003, 40261457004

METHOD BLANK: 2547707 Matrix: Water
Associated Lab Samples: 40261457001, 40261457002, 40261457003, 40261457004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.066	0.20	05/02/23 06:58	

LABORATORY CONTROL SAMPLE: 2547708

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2547709 2547710

Parameter	Units	40261076001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.066	5	5	5.1	5.1	101	101	85-115	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

QC Batch: 443628
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40261457001, 40261457002, 40261457003, 40261457004

METHOD BLANK: 2547530 Matrix: Water
Associated Lab Samples: 40261457001, 40261457002, 40261457003, 40261457004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	05/11/23 17:42	
Arsenic	ug/L	<0.28	1.0	05/11/23 17:42	
Barium	ug/L	<0.70	2.3	05/11/23 17:42	
Beryllium	ug/L	<0.25	1.0	05/11/23 17:42	
Boron	ug/L	<3.0	10.0	05/11/23 17:42	
Cadmium	ug/L	<0.15	1.0	05/11/23 17:42	
Calcium	ug/L	<76.2	254	05/11/23 17:42	
Chromium	ug/L	<1.0	3.4	05/11/23 17:42	
Cobalt	ug/L	<0.12	1.0	05/11/23 17:42	
Lead	ug/L	<0.24	1.0	05/11/23 17:42	
Lithium	ug/L	<0.22	1.0	05/11/23 17:42	
Molybdenum	ug/L	<0.44	1.5	05/11/23 17:42	
Selenium	ug/L	<0.32	1.1	05/11/23 17:42	
Thallium	ug/L	<0.14	1.0	05/11/23 17:42	

LABORATORY CONTROL SAMPLE: 2547531

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	250	250	100	80-120	
Arsenic	ug/L	250	255	102	80-120	
Barium	ug/L	250	234	94	80-120	
Beryllium	ug/L	250	233	93	80-120	
Boron	ug/L	250	220	88	80-120	
Cadmium	ug/L	250	254	102	80-120	
Calcium	ug/L	10000	10200	102	80-120	
Chromium	ug/L	250	241	96	80-120	
Cobalt	ug/L	250	241	96	80-120	
Lead	ug/L	250	241	96	80-120	
Lithium	ug/L	250	237	95	80-120	
Molybdenum	ug/L	250	245	98	80-120	
Selenium	ug/L	250	257	103	80-120	
Thallium	ug/L	250	227	91	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2547532 2547533

Parameter	Units	40261434001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.52J	250	250	268	263	107	105	75-125	2	20	
Arsenic	ug/L	12.4	250	250	264	262	100	100	75-125	1	20	
Barium	ug/L	128	250	250	405	384	111	102	75-125	5	20	
Beryllium	ug/L	0.83J	250	250	261	259	104	103	75-125	1	20	
Boron	ug/L	43.8	250	250	309	302	106	103	75-125	2	20	
Cadmium	ug/L	0.56J	250	250	249	243	99	97	75-125	3	20	
Calcium	ug/L	147000	10000	10000	163000	156000	157	94	75-125	4	20	P6
Chromium	ug/L	30.1	250	250	279	274	100	98	75-125	2	20	
Cobalt	ug/L	19.2	250	250	257	254	95	94	75-125	1	20	
Lead	ug/L	26.6	250	250	280	274	102	99	75-125	2	20	
Lithium	ug/L	23.9	250	250	277	276	101	101	75-125	0	20	
Molybdenum	ug/L	1.3J	250	250	246	241	98	96	75-125	2	20	
Selenium	ug/L	1.9J	250	250	267	264	106	105	75-125	1	20	
Thallium	ug/L	0.44J	250	250	250	251	100	100	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

QC Batch: 443675
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40261457001, 40261457002, 40261457003, 40261457004

METHOD BLANK: 2547666 Matrix: Water
Associated Lab Samples: 40261457001, 40261457002, 40261457003, 40261457004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	05/01/23 10:47	

LABORATORY CONTROL SAMPLE: 2547667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	582	552	95	80-120	

SAMPLE DUPLICATE: 2547668

Parameter	Units	40261457001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	448	464	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

QC Batch: 443778
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40261457001, 40261457002, 40261457003, 40261457004

SAMPLE DUPLICATE: 2547973

Parameter	Units	40261401001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	8.0	1	20	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

QC Batch: 444304
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: 40261457001, 40261457002, 40261457003, 40261457004

METHOD BLANK: 2550775 Matrix: Water
Associated Lab Samples: 40261457001, 40261457002, 40261457003, 40261457004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.43	2.0	05/12/23 00:39	
Fluoride	mg/L	<0.095	0.32	05/12/23 00:39	
Sulfate	mg/L	<0.44	2.0	05/12/23 00:39	

LABORATORY CONTROL SAMPLE: 2550776

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.7	104	90-110	
Fluoride	mg/L	2	2.1	107	90-110	
Sulfate	mg/L	20	21.0	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2550777 2550778

Parameter	Units	40261416005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	28.3	100	100	131	131	103	102	90-110	1	15	
Fluoride	mg/L	0.84J	10	10	11.5	11.4	106	106	90-110	1	15	
Sulfate	mg/L	132	100	100	230	228	98	96	90-110	1	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2550779 2550780

Parameter	Units	40261456001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	139	100	100	230	232	90	92	90-110	1	15	
Fluoride	mg/L	<0.48	10	10	10.4	10.8	104	108	90-110	4	15	
Sulfate	mg/L	91.1	100	100	187	191	96	99	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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Sample: MW-306 **Lab ID: 40261457001** Collected: 04/24/23 10:50 Received: 04/28/23 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0639 ± 0.452 (0.959) C:NA T:94%**	pCi/L	05/19/23 14:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.341 ± 0.388 (0.816) C:80% T:87%**	pCi/L	05/12/23 15:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.341 ± 0.840 (1.78)**	pCi/L	05/22/23 12:37	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Sample: MW-307 **Lab ID: 40261457002** Collected: 04/25/23 10:45 Received: 04/28/23 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.120 ± 0.372 (0.845) C:NA T:88%**	pCi/L	05/19/23 14:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.608 ± 0.441 (0.868) C:78% T:87%**	pCi/L	05/12/23 15:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.608 ± 0.813 (1.71)**	pCi/L	05/22/23 12:37	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Sample: MW-308 **Lab ID: 40261457003** Collected: 04/24/23 16:40 Received: 04/28/23 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.703 ± 0.632 (0.960) C:NA T:94%**	pCi/L	05/19/23 14:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.773 ± 0.585 (1.14) C:78% T:85%**	pCi/L	05/12/23 19:19	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.48 ± 1.22 (2.10)**	pCi/L	05/22/23 12:37	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Sample: FIELD BLANK-SCPOND **Lab ID: 40261457004** Collected: 04/24/23 15:35 Received: 04/28/23 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0653 ± 0.462 (0.981) C:NA T:93%**	pCi/L	05/19/23 14:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**-0.0616 ± 0.471 (1.12) C:85% T:76%**	pCi/L	05/12/23 19:19	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.000 ± 0.933 (2.10)**	pCi/L	05/22/23 12:37	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

QC Batch: 585857
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40261457001, 40261457002, 40261457003, 40261457004

METHOD BLANK: 2845633 Matrix: Water
Associated Lab Samples: 40261457001, 40261457002, 40261457003, 40261457004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0964 ± 0.220 (0.131) C:NA T:86%	pCi/L	05/19/23 14:12	

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 - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

QC Batch: 585859
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40261457001, 40261457002, 40261457003, 40261457004

METHOD BLANK: 2845642 Matrix: Water
Associated Lab Samples: 40261457001, 40261457002, 40261457003, 40261457004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.159 ± 0.298 (0.655) C:87% T:85%	pCi/L	05/12/23 15:53	

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: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

DEFINITIONS

Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
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.
DL - Adjusted Method Detection Limit.
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.
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
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25223067 COLUMBIA CCR SEC POND
Pace Project No.: 40261457

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40261457001	**MW-306**	EPA 3010A	443628	EPA 6020B	443733
40261457002	**MW-307**	EPA 3010A	443628	EPA 6020B	443733
40261457003	**MW-308**	EPA 3010A	443628	EPA 6020B	443733
40261457004	**FIELD BLANK-SCPOND**	EPA 3010A	443628	EPA 6020B	443733
40261457001	**MW-306**	EPA 7470	443687	EPA 7470	443719
40261457002	**MW-307**	EPA 7470	443687	EPA 7470	443719
40261457003	**MW-308**	EPA 7470	443687	EPA 7470	443719
40261457004	**FIELD BLANK-SCPOND**	EPA 7470	443687	EPA 7470	443719
40261457001	**MW-306**				
40261457002	**MW-307**				
40261457003	**MW-308**				
40261457001	**MW-306**	EPA 903.1	585857		
40261457002	**MW-307**	EPA 903.1	585857		
40261457003	**MW-308**	EPA 903.1	585857		
40261457004	**FIELD BLANK-SCPOND**	EPA 903.1	585857		
40261457001	**MW-306**	EPA 904.0	585859		
40261457002	**MW-307**	EPA 904.0	585859		
40261457003	**MW-308**	EPA 904.0	585859		
40261457004	**FIELD BLANK-SCPOND**	EPA 904.0	585859		
40261457001	**MW-306**	Total Radium Calculation	589741		
40261457002	**MW-307**	Total Radium Calculation	589741		
40261457003	**MW-308**	Total Radium Calculation	589741		
40261457004	**FIELD BLANK-SCPOND**	Total Radium Calculation	589741		
40261457001	**MW-306**	SM 2540C	443675		
40261457002	**MW-307**	SM 2540C	443675		
40261457003	**MW-308**	SM 2540C	443675		
40261457004	**FIELD BLANK-SCPOND**	SM 2540C	443675		
40261457001	**MW-306**	EPA 9040	443778		
40261457002	**MW-307**	EPA 9040	443778		
40261457003	**MW-308**	EPA 9040	443778		
40261457004	**FIELD BLANK-SCPOND**	EPA 9040	443778		
40261457001	**MW-306**	EPA 300.0	444304		
40261457002	**MW-307**	EPA 300.0	444304		
40261457003	**MW-308**	EPA 300.0	444304		
40261457004	**FIELD BLANK-SCPOND**	EPA 300.0	444304		

40261457

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.

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	25223067 Columbia CCR Secondary Pond	Pace Project Manager	dan.milewsky@pacelabs.com, State / Location: WI
Requested Due Date:		Project #	25223067	Pace Profile #:	

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	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Metals	chloride,fluoride,sulfate	TDS and pH	Radium 226	Radium 228	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																	N	N	N	N	N		
1	MW-306	WT		4/24	1050													X	X	X	X	X		001
2	MW-307	WT		4/25	1045													X	X	X	X	X		002
3	MW-308	WT		4/24	1640													X	X	X	X	X		003
4	FIELD BLANK-SCPOND	WT		4/24	1535													X	X	X	X	X		004
5																								
6																								
7																								
8																								
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)
ALL SAMPLES UNFILTERED Metals=Sb,As,Ba,Be,B,Ca,Cd,Cr,Co,Pb,Li,Hg,Mo,Se,Tl	Bridget Russell	4/24	1630							
	Bridget Russell in Logistics	4/26/23	0840	[signature] Pace	4/26/23	0840	2.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Bridget Russell

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/27/2023

DC#_Title: ENV-FRM-GBAY-0035 v03_Sample Preservation Receipt Form
Effective Date: 8/16/2022

Sample Preservation Receipt Form

Client Name: SCS Engineers Project # 402614457

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

Lab Lot# of pH paper. 10207228 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																	2						X		2.5 / 5
002									2																	2						X		2.5 / 5
003									2																	2						X		2.5 / 5
004									2																	2						X		2.5 / 5
005																																		2.5 / 5
006																																		2.5 / 5
007																																		2.5 / 5
008																																		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

4/28/23 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	1L poly HNO3
						GN 2	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40261457

40261457

Client Name: SLS 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: 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: 4/28/23 Initials: SG

Labeled By Initials: MH

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:	☑Yes ☐No	9.
Correct Type: Pace Green Bay, Pace IR, Non-Pace		
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

C4 October 2023 Assessment Monitoring

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

November 06, 2023

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on October 13, 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
- Pace Analytical Services - Greensburg

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: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

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: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40269529001	**MW-301**	Water	10/11/23 14:15	10/13/23 09:15
40269529002	**MW-84A**	Water	10/11/23 15:00	10/13/23 09:15

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SAMPLE ANALYTE COUNT

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40269529001	**MW-301**	EPA 6020B	KXS	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	7	PASI-G
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	HML	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40269529002	**MW-84A**	EPA 6020B	KXS	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	7	PASI-G
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	HML	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

PASI-G = Pace Analytical Services - Green Bay
PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

Sample: MW-301 **Lab ID: 40269529001** Collected: 10/11/23 14:15 Received: 10/13/23 09:15 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	10/17/23 06:27	10/19/23 01:12	7440-36-0	
Arsenic	**<0.28**	ug/L	1.0	0.28	1	10/17/23 06:27	10/19/23 01:12	7440-38-2	
Barium	**7.3**	ug/L	2.3	0.70	1	10/17/23 06:27	10/19/23 01:12	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	10/17/23 06:27	10/19/23 01:12	7440-41-7	
Boron	**36.2**	ug/L	10.0	3.0	1	10/17/23 06:27	10/19/23 01:12	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	10/17/23 06:27	10/19/23 01:12	7440-43-9	
Calcium	**52300**	ug/L	254	76.2	1	10/17/23 06:27	10/19/23 01:12	7440-70-2	
Chromium	**<1.0**	ug/L	3.4	1.0	1	10/17/23 06:27	10/19/23 01:12	7440-47-3	
Cobalt	**0.13J**	ug/L	1.0	0.12	1	10/17/23 06:27	10/19/23 01:12	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	10/17/23 06:27	10/19/23 01:12	7439-92-1	
Lithium	**0.43J**	ug/L	1.0	0.22	1	10/17/23 06:27	10/19/23 01:12	7439-93-2	
Molybdenum	**<0.44**	ug/L	1.5	0.44	1	10/17/23 06:27	10/19/23 01:12	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	10/17/23 06:27	10/19/23 01:12	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	10/17/23 06:27	10/19/23 01:12	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	10/18/23 10:55	10/19/23 06:31	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.06**	Std. Units			1		10/11/23 14:15		
Field Specific Conductance	**536**	umhos/cm			1		10/11/23 14:15		
Oxygen, Dissolved	**0.16**	mg/L			1		10/11/23 14:15	7782-44-7	
REDOX	**23.8**	mV			1		10/11/23 14:15		
Turbidity	**0.34**	NTU			1		10/11/23 14:15		
Static Water Level	**784.67**	feet			1		10/11/23 14:15		
Temperature, Water (C)	**10.7**	deg C			1		10/11/23 14:15		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**300**	mg/L	20.0	8.7	1		10/15/23 21:57		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.010	1		10/18/23 16:04		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**2.1**	mg/L	2.0	0.59	1		10/26/23 16:25	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		10/26/23 16:25	16984-48-8	M0
Sulfate	**11.8**	mg/L	2.0	0.44	1		10/26/23 16:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

Sample: MW-84A **Lab ID: 40269529002** Collected: 10/11/23 15:00 Received: 10/13/23 09:15 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	10/17/23 06:27	10/19/23 01:19	7440-36-0	
Arsenic	**<0.28**	ug/L	1.0	0.28	1	10/17/23 06:27	10/19/23 01:19	7440-38-2	
Barium	**12.7**	ug/L	2.3	0.70	1	10/17/23 06:27	10/19/23 01:19	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	10/17/23 06:27	10/19/23 01:19	7440-41-7	
Boron	**14.0**	ug/L	10.0	3.0	1	10/17/23 06:27	10/19/23 01:19	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	10/17/23 06:27	10/19/23 01:19	7440-43-9	
Calcium	**65100**	ug/L	254	76.2	1	10/17/23 06:27	10/19/23 01:19	7440-70-2	
Chromium	**1.6J**	ug/L	3.4	1.0	1	10/17/23 06:27	10/19/23 01:19	7440-47-3	
Cobalt	**<0.12**	ug/L	1.0	0.12	1	10/17/23 06:27	10/19/23 01:19	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	10/17/23 06:27	10/19/23 01:19	7439-92-1	
Lithium	**0.54J**	ug/L	1.0	0.22	1	10/17/23 06:27	10/19/23 01:19	7439-93-2	
Molybdenum	**<0.44**	ug/L	1.5	0.44	1	10/17/23 06:27	10/19/23 01:19	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	10/17/23 06:27	10/19/23 01:19	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	10/17/23 06:27	10/19/23 01:19	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	10/18/23 10:55	10/19/23 06:33	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.51**	Std. Units			1		10/11/23 15:00		
Field Specific Conductance	**599.9**	umhos/cm			1		10/11/23 15:00		
Oxygen, Dissolved	**8.44**	mg/L			1		10/11/23 15:00	7782-44-7	
REDOX	**91.2**	mV			1		10/11/23 15:00		
Turbidity	**0.03**	NTU			1		10/11/23 15:00		
Static Water Level	**784.39**	feet			1		10/11/23 15:00		
Temperature, Water (C)	**12.3**	deg C			1		10/11/23 15:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**324**	mg/L	20.0	8.7	1		10/15/23 21:58		
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		10/18/23 16:13		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**3.1**	mg/L	2.0	0.59	1		10/26/23 17:51	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		10/26/23 17:51	16984-48-8	
Sulfate	**1.4J**	mg/L	2.0	0.44	1		10/26/23 17:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

QC Batch: 457855
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269529001, 40269529002

METHOD BLANK: 2629305 Matrix: Water
Associated Lab Samples: 40269529001, 40269529002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.066	0.20	10/19/23 05:49	

LABORATORY CONTROL SAMPLE: 2629306

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2629307 2629308

Parameter	Units	40269479001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.066	5	5	5.2	4.9	103	98	85-115	6	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

QC Batch: 457669
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269529001, 40269529002

METHOD BLANK: 2628366 Matrix: Water
Associated Lab Samples: 40269529001, 40269529002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	10/18/23 21:17	
Arsenic	ug/L	<0.28	1.0	10/18/23 21:17	
Barium	ug/L	<0.70	2.3	10/18/23 21:17	
Beryllium	ug/L	<0.25	1.0	10/18/23 21:17	
Boron	ug/L	<3.0	10.0	10/18/23 21:17	
Cadmium	ug/L	<0.15	1.0	10/18/23 21:17	
Calcium	ug/L	<76.2	254	10/18/23 21:17	
Chromium	ug/L	<1.0	3.4	10/18/23 21:17	
Cobalt	ug/L	<0.12	1.0	10/18/23 21:17	
Lead	ug/L	<0.24	1.0	10/18/23 21:17	
Lithium	ug/L	<0.22	1.0	10/18/23 21:17	
Molybdenum	ug/L	<0.44	1.5	10/18/23 21:17	
Selenium	ug/L	<0.32	1.1	10/18/23 21:17	
Thallium	ug/L	<0.14	1.0	10/18/23 21:17	

LABORATORY CONTROL SAMPLE: 2628367

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	250	242	97	80-120	
Arsenic	ug/L	250	242	97	80-120	
Barium	ug/L	250	236	94	80-120	
Beryllium	ug/L	250	260	104	80-120	
Boron	ug/L	250	240	96	80-120	
Cadmium	ug/L	250	245	98	80-120	
Calcium	ug/L	10000	10400	104	80-120	
Chromium	ug/L	250	232	93	80-120	
Cobalt	ug/L	250	237	95	80-120	
Lead	ug/L	250	243	97	80-120	
Lithium	ug/L	250	239	95	80-120	
Molybdenum	ug/L	250	238	95	80-120	
Selenium	ug/L	250	251	100	80-120	
Thallium	ug/L	250	240	96	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2628368 2628369

Parameter	Units	40269514001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.22J	250	250	240	241	96	96	75-125	0	20	
Arsenic	ug/L	0.42J	250	250	241	245	96	98	75-125	2	20	
Barium	ug/L	18.3	250	250	251	252	93	94	75-125	0	20	
Beryllium	ug/L	<0.25	250	250	254	258	102	103	75-125	2	20	
Boron	ug/L	106	250	250	338	335	93	92	75-125	1	20	
Cadmium	ug/L	<0.15	250	250	241	241	96	96	75-125	0	20	
Calcium	ug/L	110000	10000	10000	120000	121000	97	105	75-125	1	20	
Chromium	ug/L	2.3J	250	250	230	233	91	92	75-125	2	20	
Cobalt	ug/L	0.17J	250	250	228	232	91	93	75-125	2	20	
Lead	ug/L	<0.24	250	250	241	243	96	97	75-125	1	20	
Lithium	ug/L	13.9	250	250	250	252	95	95	75-125	1	20	
Molybdenum	ug/L	7.4	250	250	244	243	94	94	75-125	0	20	
Selenium	ug/L	1.4	250	250	247	252	98	100	75-125	2	20	
Thallium	ug/L	0.15J	250	250	238	242	95	97	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

QC Batch: 457507
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269529001, 40269529002

METHOD BLANK: 2627853 Matrix: Water
Associated Lab Samples: 40269529001, 40269529002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	10/15/23 21:53	

LABORATORY CONTROL SAMPLE: 2627854

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	587	580	99	80-120	

SAMPLE DUPLICATE: 2627855

Parameter	Units	40269478001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	200	214	7	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

QC Batch: 457892
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269529001, 40269529002

SAMPLE DUPLICATE: 2629567

Parameter	Units	40269529001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	20	H6

SAMPLE DUPLICATE: 2629568

Parameter	Units	40269609008 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.6	7.8	2	20	1q,H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

QC Batch: 458622
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: 40269529001, 40269529002

METHOD BLANK: 2633879 Matrix: Water
Associated Lab Samples: 40269529001, 40269529002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.59	2.0	10/26/23 15:42	
Fluoride	mg/L	<0.095	0.32	10/26/23 15:42	
Sulfate	mg/L	<0.44	2.0	10/26/23 15:42	

LABORATORY CONTROL SAMPLE: 2633880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	21.9	109	90-110	
Fluoride	mg/L	2	2.2	108	90-110	
Sulfate	mg/L	20	21.7	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2633881 2633882

Parameter	Units	40269529001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.1	20	20	23.4	23.6	107	108	90-110	1	15	
Fluoride	mg/L	<0.095	2	2	2.4	2.4	115	116	90-110	1	15	M0
Sulfate	mg/L	11.8	20	20	33.6	33.6	109	109	90-110	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2633883 2633884

Parameter	Units	40269593002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	523	400	400	935	935	103	103	90-110	0	15	
Sulfate	mg/L	277	400	400	697	694	105	104	90-110	0	15	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

Sample: MW-301 **Lab ID: 40269529001** Collected: 10/11/23 14:15 Received: 10/13/23 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0576 ± 0.492 (1.00) C:NA T:85%**	pCi/L	11/01/23 14:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.611 ± 0.377 (0.692) C:84% T:85%**	pCi/L	10/25/23 14:33	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.611 ± 0.869 (1.69)**	pCi/L	11/02/23 11:24	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

Sample: MW-84A **Lab ID: 40269529002** Collected: 10/11/23 15:00 Received: 10/13/23 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.292 ± 0.445 (0.766) C:NA T:84%**	pCi/L	11/01/23 14:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.552 ± 0.360 (0.676) C:83% T:84%**	pCi/L	10/25/23 14:33	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.844 ± 0.805 (1.44)**	pCi/L	11/02/23 11:24	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

QC Batch: 622852
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40269529001, 40269529002

METHOD BLANK: 3036014 Matrix: Water
Associated Lab Samples: 40269529001, 40269529002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0951 ± 0.264 (0.512) C:NA T:83%	pCi/L	11/01/23 14:15	

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
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Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

QC Batch: 622853
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40269529001, 40269529002

METHOD BLANK: 3036016
Matrix: Water
Associated Lab Samples: 40269529001, 40269529002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.399 ± 0.328 (0.647) C:82% T:83%	pCi/L	10/25/23 14:31	

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: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

DEFINITIONS

Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
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.
DL - Adjusted Method Detection Limit.
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

1q	Due to the sample matrix, DI water was added to this sample on a one to one basis and the sample was stirred before analysis.
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.

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25223067 COLUMBIA CCR BACKGRND
Pace Project No.: 40269529

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40269529001	**MW-301**	EPA 3010A	457669	EPA 6020B	457769
40269529002	**MW-84A**	EPA 3010A	457669	EPA 6020B	457769
40269529001	**MW-301**	EPA 7470	457855	EPA 7470	457902
40269529002	**MW-84A**	EPA 7470	457855	EPA 7470	457902
40269529001	**MW-301**				
40269529002	**MW-84A**				
40269529001	**MW-301**	EPA 903.1	622852		
40269529002	**MW-84A**	EPA 903.1	622852		
40269529001	**MW-301**	EPA 904.0	622853		
40269529002	**MW-84A**	EPA 904.0	622853		
40269529001	**MW-301**	Total Radium Calculation	626730		
40269529002	**MW-84A**	Total Radium Calculation	626730		
40269529001	**MW-301**	SM 2540C	457507		
40269529002	**MW-84A**	SM 2540C	457507		
40269529001	**MW-301**	EPA 9040	457892		
40269529002	**MW-84A**	EPA 9040	457892		
40269529001	**MW-301**	EPA 300.0	458622		
40269529002	**MW-84A**	EPA 300.0	458622		

40269529

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

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	25223067 Columbia CCR Background	Pace Project Manager	dan.milewsky@pacelabs.com,
Requested Due Date		Project #	25223067	Pace Profile #:	

Regulatory Agency	
State / Location	WI

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	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	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Radium 226	Radium 228	Metals	TDS and pH	Chloride,Fluoride,Sulfate	Residual Chlonne (Y/N)	
1	MW-301	WT		10/11	1415				6									N	X	X	X	X	X		001
2	MW-84A	WT		10/11	1500				6									N	X	X	X	X	X		002
3																									
4																									
5																									
6																									
7																									
8																									
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)
Full List Metals = B, Ca, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li Hg, Mo, Se, Tl ALL SAMPLES UNFILTERED	Bridget Russell SCS Engr	10/12	1100							
	CS Blodgett SCS	10/13/23	0915	[signature] Pace	10/13/23	0915	1.0	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Bridget Russell

SIGNATURE of SAMPLER: [signature] DATE Signed: 10/12/2023

DC#_Title: ENV-FRM-GBAY-0035 v03_Sample Preservation Receipt Form
Effective Date: 8/16/2022

Sample Preservation Receipt Form

Client Name: SCS

Project # 402695 29

All containers needing preservation have been checked and noted below ☑Yes ☐No ☐N/A

Lab Lot# of pH paper 10027723 Lab Std #ID of preservation (if pH adjusted).

Initial when completed SB Date/Time.

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		2															2	2					X		2.5 / 5
002									2		2															2	2					X		2.5 / 5
003																																		2.5 / 5
004																																		2.5 / 5
005																																		2.5 / 5
006																																		2.5 / 5
007																																		2.5 / 5
008																																		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

10/13/23 SB

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	1 Body HNO3
						GN 2	

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40269529

40269529

Client Name: SLS

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 - 109 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr. 1.0 /Corr: 1.0

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

Person examining contents:
Date: 12/13/22 Initials: SG

Labeled By Initials: SG

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

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:	☑Yes ☐No	9.
Correct Type: Pace Green Bay, Pace IR, Non-Pace		
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: WT	☑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

November 06, 2023

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on October 13, 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
- Pace Analytical Services - Greensburg

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: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

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: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40269514001	**MW-306**	Water	10/10/23 12:00	10/13/23 09:15
40269514002	**MW-307**	Water	10/10/23 16:00	10/13/23 09:15
40269514003	**MW-308**	Water	10/10/23 14:20	10/13/23 09:15
40269514004	**FIELD BLANK-SCPOND**	Water	10/10/23 14:30	10/13/23 09:15

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40269514001	**MW-306**	EPA 6020B	KXS	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	6	PASI-G
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TXW	1	PASI-G
		EPA 9040	HML	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40269514002	**MW-307**	EPA 6020B	KXS	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	6	PASI-G
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TXW	1	PASI-G
		EPA 9040	HML	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40269514003	**MW-308**	EPA 6020B	KXS	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			LB	7	PASI-G
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TXW	1	PASI-G
		EPA 9040	HML	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40269514004	**FIELD BLANK-SCPOND**	EPA 6020B	KXS	14	PASI-G
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TXW	1	PASI-G
		EPA 9040	HML	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

PASI-G = Pace Analytical Services - Green Bay
PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Sample: MW-306 **Lab ID: 40269514001** Collected: 10/10/23 12:00 Received: 10/13/23 09:15 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								
Antimony	**0.22J**	ug/L	1.0	0.15	1	10/17/23 06:27	10/18/23 23:07	7440-36-0	
Arsenic	**0.42J**	ug/L	1.0	0.28	1	10/17/23 06:27	10/18/23 23:07	7440-38-2	
Barium	**18.3**	ug/L	2.3	0.70	1	10/17/23 06:27	10/18/23 23:07	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	10/17/23 06:27	10/18/23 23:07	7440-41-7	
Boron	**106**	ug/L	10.0	3.0	1	10/17/23 06:27	10/18/23 23:07	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	10/17/23 06:27	10/18/23 23:07	7440-43-9	
Calcium	**110000**	ug/L	2540	762	10	10/17/23 06:27	10/18/23 22:23	7440-70-2	
Chromium	**2.3J**	ug/L	3.4	1.0	1	10/17/23 06:27	10/18/23 23:07	7440-47-3	
Cobalt	**0.17J**	ug/L	1.0	0.12	1	10/17/23 06:27	10/18/23 23:07	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	10/17/23 06:27	10/18/23 23:07	7439-92-1	
Lithium	**13.9**	ug/L	1.0	0.22	1	10/17/23 06:27	10/18/23 23:07	7439-93-2	
Molybdenum	**7.4**	ug/L	1.5	0.44	1	10/17/23 06:27	10/18/23 23:07	7439-98-7	
Selenium	**1.4**	ug/L	1.1	0.32	1	10/17/23 06:27	10/18/23 23:07	7782-49-2	
Thallium	**0.15J**	ug/L	1.0	0.14	1	10/17/23 06:27	10/18/23 23:07	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	10/18/23 10:55	10/19/23 06:21	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.09**	Std. Units			1		10/10/23 12:00		
Field Specific Conductance	**832**	umhos/cm			1		10/10/23 12:00		
Oxygen, Dissolved	**6.72**	mg/L			1		10/10/23 12:00	7782-44-7	
REDOX	**116.3**	mV			1		10/10/23 12:00		
Turbidity	**4.14**	NTU			1		10/10/23 12:00		
Temperature, Water (C)	**13.0**	deg C			1		10/10/23 12:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**566**	mg/L	20.0	8.7	1		10/16/23 14:07		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.4**	Std. Units	0.10	0.010	1		10/17/23 17:03		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**21.7**	mg/L	10.0	3.0	5		10/28/23 13:55	16887-00-6	
Fluoride	**<0.48**	mg/L	1.6	0.48	5		10/28/23 13:55	16984-48-8	D3,M0
Sulfate	**103**	mg/L	10.0	2.2	5		10/28/23 13:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Sample: MW-307 **Lab ID: 40269514002** Collected: 10/10/23 16:00 Received: 10/13/23 09:15 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	10/17/23 06:27	10/18/23 23:36	7440-36-0	
Arsenic	**2.1**	ug/L	1.0	0.28	1	10/17/23 06:27	10/18/23 23:36	7440-38-2	
Barium	**17.5**	ug/L	2.3	0.70	1	10/17/23 06:27	10/18/23 23:36	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	10/17/23 06:27	10/18/23 23:36	7440-41-7	
Boron	**252**	ug/L	10.0	3.0	1	10/17/23 06:27	10/18/23 23:36	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	10/17/23 06:27	10/18/23 23:36	7440-43-9	
Calcium	**96000**	ug/L	254	76.2	1	10/17/23 06:27	10/18/23 23:36	7440-70-2	
Chromium	**<1.0**	ug/L	3.4	1.0	1	10/17/23 06:27	10/18/23 23:36	7440-47-3	
Cobalt	**5.7**	ug/L	1.0	0.12	1	10/17/23 06:27	10/18/23 23:36	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	10/17/23 06:27	10/18/23 23:36	7439-92-1	
Lithium	**0.49J**	ug/L	1.0	0.22	1	10/17/23 06:27	10/18/23 23:36	7439-93-2	
Molybdenum	**<0.44**	ug/L	1.5	0.44	1	10/17/23 06:27	10/18/23 23:36	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	10/17/23 06:27	10/18/23 23:36	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	10/17/23 06:27	10/18/23 23:36	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	10/18/23 10:55	10/19/23 06:24	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**6.82**	Std. Units			1		10/10/23 16:00		
Field Specific Conductance	**837**	umhos/cm			1		10/10/23 16:00		
Oxygen, Dissolved	**0.27**	mg/L			1		10/10/23 16:00	7782-44-7	
REDOX	**-93.1**	mV			1		10/10/23 16:00		
Turbidity	**0.86**	NTU			1		10/10/23 16:00		
Temperature, Water (C)	**14.4**	deg C			1		10/10/23 16:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**506**	mg/L	20.0	8.7	1		10/16/23 14:08		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.1**	Std. Units	0.10	0.010	1		10/17/23 17:05		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**35.8**	mg/L	10.0	3.0	5		10/28/23 14:40	16887-00-6	
Fluoride	**<0.48**	mg/L	1.6	0.48	5		10/28/23 14:40	16984-48-8	D3
Sulfate	**77.6**	mg/L	10.0	2.2	5		10/28/23 14:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Sample: MW-308 **Lab ID: 40269514003** Collected: 10/10/23 14:20 Received: 10/13/23 09:15 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	10/17/23 06:27	10/18/23 23:51	7440-36-0	
Arsenic	**4.5**	ug/L	1.0	0.28	1	10/17/23 06:27	10/18/23 23:51	7440-38-2	
Barium	**66.9**	ug/L	2.3	0.70	1	10/17/23 06:27	10/18/23 23:51	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	10/17/23 06:27	10/18/23 23:51	7440-41-7	
Boron	**663**	ug/L	10.0	3.0	1	10/17/23 06:27	10/18/23 23:51	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	10/17/23 06:27	10/18/23 23:51	7440-43-9	
Calcium	**127000**	ug/L	254	76.2	1	10/17/23 06:27	10/18/23 23:51	7440-70-2	
Chromium	**2.7J**	ug/L	3.4	1.0	1	10/17/23 06:27	10/18/23 23:51	7440-47-3	
Cobalt	**0.53J**	ug/L	1.0	0.12	1	10/17/23 06:27	10/18/23 23:51	7440-48-4	
Lead	**0.70J**	ug/L	1.0	0.24	1	10/17/23 06:27	10/18/23 23:51	7439-92-1	
Lithium	**0.77J**	ug/L	1.0	0.22	1	10/17/23 06:27	10/18/23 23:51	7439-93-2	
Molybdenum	**0.63J**	ug/L	1.5	0.44	1	10/17/23 06:27	10/18/23 23:51	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	10/17/23 06:27	10/18/23 23:51	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	10/17/23 06:27	10/18/23 23:51	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	10/18/23 10:55	10/19/23 06:26	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.05**	Std. Units			1		10/10/23 14:20		
Field Specific Conductance	**940**	umhos/cm			1		10/10/23 14:20		
Oxygen, Dissolved	**0.18**	mg/L			1		10/10/23 14:20	7782-44-7	
REDOX	**-154.1**	mV			1		10/10/23 14:20		
Turbidity	**25.06**	NTU			1		10/10/23 14:20		
Static Water Level	**783.09**	feet			1		10/10/23 14:20		
Temperature, Water (C)	**15.7**	deg C			1		10/10/23 14:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**542**	mg/L	20.0	8.7	1		10/16/23 14:08		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**7.4**	Std. Units	0.10	0.010	1		10/17/23 17:08		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**2.4**	mg/L	2.0	0.59	1		10/30/23 12:31	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		10/30/23 12:31	16984-48-8	
Sulfate	**0.59J**	mg/L	2.0	0.44	1		10/30/23 12:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Sample: FIELD BLANK-SCPOND **Lab ID: 40269514004** Collected: 10/10/23 14:30 Received: 10/13/23 09:15 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	10/17/23 06:27	10/19/23 00:13	7440-36-0	
Arsenic	**<0.28**	ug/L	1.0	0.28	1	10/17/23 06:27	10/19/23 00:13	7440-38-2	
Barium	**<0.70**	ug/L	2.3	0.70	1	10/17/23 06:27	10/19/23 00:13	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	10/17/23 06:27	10/19/23 00:13	7440-41-7	
Boron	**<3.0**	ug/L	10.0	3.0	1	10/17/23 06:27	10/19/23 00:13	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	10/17/23 06:27	10/19/23 00:13	7440-43-9	
Calcium	**81.5J**	ug/L	254	76.2	1	10/17/23 06:27	10/19/23 00:13	7440-70-2	
Chromium	**<1.0**	ug/L	3.4	1.0	1	10/17/23 06:27	10/19/23 00:13	7440-47-3	
Cobalt	**<0.12**	ug/L	1.0	0.12	1	10/17/23 06:27	10/19/23 00:13	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	10/17/23 06:27	10/19/23 00:13	7439-92-1	
Lithium	**<0.22**	ug/L	1.0	0.22	1	10/17/23 06:27	10/19/23 00:13	7439-93-2	
Molybdenum	**<0.44**	ug/L	1.5	0.44	1	10/17/23 06:27	10/19/23 00:13	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	10/17/23 06:27	10/19/23 00:13	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	10/17/23 06:27	10/19/23 00:13	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	10/18/23 10:55	10/19/23 06:28	7439-97-6	
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		10/16/23 14:08		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**6.3**	Std. Units	0.10	0.010	1		10/17/23 17:17		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**<0.59**	mg/L	2.0	0.59	1		10/30/23 12:46	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		10/30/23 12:46	16984-48-8	
Sulfate	**<0.44**	mg/L	2.0	0.44	1		10/30/23 12:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

QC Batch: 457855
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269514001, 40269514002, 40269514003, 40269514004

METHOD BLANK: 2629305 Matrix: Water
Associated Lab Samples: 40269514001, 40269514002, 40269514003, 40269514004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.066	0.20	10/19/23 05:49	

LABORATORY CONTROL SAMPLE: 2629306

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2629307 2629308

Parameter	Units	40269479001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.066	5	5	5.2	4.9	103	98	85-115	6	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

QC Batch: 457669
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269514001, 40269514002, 40269514003, 40269514004

METHOD BLANK: 2628366 Matrix: Water
Associated Lab Samples: 40269514001, 40269514002, 40269514003, 40269514004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	10/18/23 21:17	
Arsenic	ug/L	<0.28	1.0	10/18/23 21:17	
Barium	ug/L	<0.70	2.3	10/18/23 21:17	
Beryllium	ug/L	<0.25	1.0	10/18/23 21:17	
Boron	ug/L	<3.0	10.0	10/18/23 21:17	
Cadmium	ug/L	<0.15	1.0	10/18/23 21:17	
Calcium	ug/L	<76.2	254	10/18/23 21:17	
Chromium	ug/L	<1.0	3.4	10/18/23 21:17	
Cobalt	ug/L	<0.12	1.0	10/18/23 21:17	
Lead	ug/L	<0.24	1.0	10/18/23 21:17	
Lithium	ug/L	<0.22	1.0	10/18/23 21:17	
Molybdenum	ug/L	<0.44	1.5	10/18/23 21:17	
Selenium	ug/L	<0.32	1.1	10/18/23 21:17	
Thallium	ug/L	<0.14	1.0	10/18/23 21:17	

LABORATORY CONTROL SAMPLE: 2628367

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	250	242	97	80-120	
Arsenic	ug/L	250	242	97	80-120	
Barium	ug/L	250	236	94	80-120	
Beryllium	ug/L	250	260	104	80-120	
Boron	ug/L	250	240	96	80-120	
Cadmium	ug/L	250	245	98	80-120	
Calcium	ug/L	10000	10400	104	80-120	
Chromium	ug/L	250	232	93	80-120	
Cobalt	ug/L	250	237	95	80-120	
Lead	ug/L	250	243	97	80-120	
Lithium	ug/L	250	239	95	80-120	
Molybdenum	ug/L	250	238	95	80-120	
Selenium	ug/L	250	251	100	80-120	
Thallium	ug/L	250	240	96	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2628368 2628369

Parameter	Units	40269514001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.22J	250	250	240	241	96	96	75-125	0	20	
Arsenic	ug/L	0.42J	250	250	241	245	96	98	75-125	2	20	
Barium	ug/L	18.3	250	250	251	252	93	94	75-125	0	20	
Beryllium	ug/L	<0.25	250	250	254	258	102	103	75-125	2	20	
Boron	ug/L	106	250	250	338	335	93	92	75-125	1	20	
Cadmium	ug/L	<0.15	250	250	241	241	96	96	75-125	0	20	
Calcium	ug/L	110000	10000	10000	120000	121000	97	105	75-125	1	20	
Chromium	ug/L	2.3J	250	250	230	233	91	92	75-125	2	20	
Cobalt	ug/L	0.17J	250	250	228	232	91	93	75-125	2	20	
Lead	ug/L	<0.24	250	250	241	243	96	97	75-125	1	20	
Lithium	ug/L	13.9	250	250	250	252	95	95	75-125	1	20	
Molybdenum	ug/L	7.4	250	250	244	243	94	94	75-125	0	20	
Selenium	ug/L	1.4	250	250	247	252	98	100	75-125	2	20	
Thallium	ug/L	0.15J	250	250	238	242	95	97	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

QC Batch: 457628
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269514001, 40269514002, 40269514003, 40269514004

METHOD BLANK: 2628234 Matrix: Water
Associated Lab Samples: 40269514001, 40269514002, 40269514003, 40269514004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	10/16/23 14:07	

LABORATORY CONTROL SAMPLE: 2628235

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	587	564	96	80-120	

SAMPLE DUPLICATE: 2628236

Parameter	Units	40269514003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	542	550	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

QC Batch: 457729
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40269514001, 40269514002, 40269514003, 40269514004

SAMPLE DUPLICATE: 2628588

Parameter	Units	40269023001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	4.7	4.7	0	20	1q,H6

SAMPLE DUPLICATE: 2628589

Parameter	Units	40269506001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.7	7.7	0	20	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

QC Batch: 458621
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: 40269514001, 40269514002, 40269514003, 40269514004

METHOD BLANK: 2633857 Matrix: Water
Associated Lab Samples: 40269514001, 40269514002, 40269514003, 40269514004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.59	2.0	10/27/23 03:40	
Fluoride	mg/L	<0.095	0.32	10/28/23 12:26	
Sulfate	mg/L	<0.44	2.0	10/27/23 03:40	

LABORATORY CONTROL SAMPLE: 2633858

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.7	104	90-110	
Fluoride	mg/L	2	2.0	100	90-110	
Sulfate	mg/L	20	20.3	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2633859 2633860

Parameter	Units	40269506003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.0J	20	20	21.7	21.8	99	99	90-110	1	15	
Fluoride	mg/L	<0.095	2	2	2.3	2.3	113	114	90-110	1	15	M0
Sulfate	mg/L	10.8	20	20	30.2	30.3	97	98	90-110	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2633861 2633862

Parameter	Units	40269514001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	21.7	100	100	119	121	98	99	90-110	1	15	
Fluoride	mg/L	<0.48	10	10	11.0	11.2	110	112	90-110	1	15	M0
Sulfate	mg/L	103	100	100	200	200	96	97	90-110	0	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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Sample: MW-306 **Lab ID: 40269514001** Collected: 10/10/23 12:00 Received: 10/13/23 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.336 ± 0.271 (0.152) C:NA T:78%**	pCi/L	11/01/23 14:40	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**-0.157 ± 0.309 (0.770) C:82% T:78%**	pCi/L	10/25/23 14:34	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.336 ± 0.580 (0.922)**	pCi/L	11/02/23 11:24	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Sample: MW-307 **Lab ID: 40269514002** Collected: 10/10/23 16:00 Received: 10/13/23 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0985 ± 0.305 (0.591) C:NA T:81%**	pCi/L	11/01/23 14:40	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.453 ± 0.390 (0.784) C:80% T:81%**	pCi/L	10/25/23 14:34	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.552 ± 0.695 (1.38)**	pCi/L	11/02/23 11:24	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Sample: MW-308 **Lab ID: 40269514003** Collected: 10/10/23 14:20 Received: 10/13/23 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.427 ± 0.503 (0.826) C:NA T:84%**	pCi/L	11/01/23 14:40	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.217 ± 0.306 (0.655) C:85% T:84%**	pCi/L	10/25/23 14:34	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.644 ± 0.809 (1.48)**	pCi/L	11/02/23 11:24	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Sample: FIELD BLANK-SCPOND **Lab ID: 40269514004** Collected: 10/10/23 14:30 Received: 10/13/23 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.416 ± 0.481 (0.781) C:NA T:78%**	pCi/L	11/01/23 14:40	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.182 ± 0.340 (0.748) C:81% T:78%**	pCi/L	10/25/23 14:34	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.598 ± 0.821 (1.53)**	pCi/L	11/02/23 11:24	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

QC Batch: 622852
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40269514001, 40269514002, 40269514003, 40269514004

METHOD BLANK: 3036014 Matrix: Water
Associated Lab Samples: 40269514001, 40269514002, 40269514003, 40269514004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0951 ± 0.264 (0.512) C:NA T:83%	pCi/L	11/01/23 14:15	

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

QC Batch: 622853
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40269514001, 40269514002, 40269514003, 40269514004

METHOD BLANK: 3036016 Matrix: Water
Associated Lab Samples: 40269514001, 40269514002, 40269514003, 40269514004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.399 ± 0.328 (0.647) C:82% T:83%	pCi/L	10/25/23 14:31	

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: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

DEFINITIONS

Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
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.
DL - Adjusted Method Detection Limit.
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

1q	Due to the sample matrix, DI water was added to this sample on a one to one basis and the sample was stirred before analysis.
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.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25223067 COLUMBIA CCR SECOND
Pace Project No.: 40269514

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40269514001	**MW-306**	EPA 3010A	457669	EPA 6020B	457769
40269514002	**MW-307**	EPA 3010A	457669	EPA 6020B	457769
40269514003	**MW-308**	EPA 3010A	457669	EPA 6020B	457769
40269514004	**FIELD BLANK-SCPOND**	EPA 3010A	457669	EPA 6020B	457769
40269514001	**MW-306**	EPA 7470	457855	EPA 7470	457902
40269514002	**MW-307**	EPA 7470	457855	EPA 7470	457902
40269514003	**MW-308**	EPA 7470	457855	EPA 7470	457902
40269514004	**FIELD BLANK-SCPOND**	EPA 7470	457855	EPA 7470	457902
40269514001	**MW-306**				
40269514002	**MW-307**				
40269514003	**MW-308**				
40269514001	**MW-306**	EPA 903.1	622852		
40269514002	**MW-307**	EPA 903.1	622852		
40269514003	**MW-308**	EPA 903.1	622852		
40269514004	**FIELD BLANK-SCPOND**	EPA 903.1	622852		
40269514001	**MW-306**	EPA 904.0	622853		
40269514002	**MW-307**	EPA 904.0	622853		
40269514003	**MW-308**	EPA 904.0	622853		
40269514004	**FIELD BLANK-SCPOND**	EPA 904.0	622853		
40269514001	**MW-306**	Total Radium Calculation	626730		
40269514002	**MW-307**	Total Radium Calculation	626730		
40269514003	**MW-308**	Total Radium Calculation	626730		
40269514004	**FIELD BLANK-SCPOND**	Total Radium Calculation	626730		
40269514001	**MW-306**	SM 2540C	457628		
40269514002	**MW-307**	SM 2540C	457628		
40269514003	**MW-308**	SM 2540C	457628		
40269514004	**FIELD BLANK-SCPOND**	SM 2540C	457628		
40269514001	**MW-306**	EPA 9040	457729		
40269514002	**MW-307**	EPA 9040	457729		
40269514003	**MW-308**	EPA 9040	457729		
40269514004	**FIELD BLANK-SCPOND**	EPA 9040	457729		
40269514001	**MW-306**	EPA 300.0	458621		
40269514002	**MW-307**	EPA 300.0	458621		
40269514003	**MW-308**	EPA 300.0	458621		
40269514004	**FIELD BLANK-SCPOND**	EPA 300.0	458621		

402629514

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

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	25223067 Columbia CCR Secondary Pond	Pace Project Manager.	dan milewsky@pacelabs com,
Requested Due Date		Project #	25223067	Pace Profile #:	

Regulatory Agency
State / Location
WI

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Other OT Tissue TS	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	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Metals	chloride,fluoride,sulfate	TDS and pH	Radium 226	Radium 228	Residual Chlorine (Y/N)	
																			Y/N	N	N	N	N	N		
1	MW-306		WT		10/10	1200				5										X	X	X	X	X		001
2	MW-307		WT		10/10	1600				5										X	X	X	X	X		002
3	MW-308		WT		10/10	1420				5										X	X	X	X	X		003
4	FIELD BLANK-SCPOND		WT		10/10	1430				5										X	X	X	X	X		004
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
ALL SAMPLES UNFILTERED Metals=Sb,As,Ba,Be,B,Ca,Cd,Cr,Co,Pb,Li,Hg,Mo,Se,Tl	Bridget Russell SCS Engg	10/12	1100							
	CS Logistics	10/13/23	0915	Pace	10/13/23	0915	1.0	Y	N	Y

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Bridget Russell		
SIGNATURE of SAMPLER:	Bridget Russell	DATE Signed:	10/12/2023

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

DC#_Title: ENV-FRM-GBAY-0035 v03_Sample Preservation Receipt Form
Effective Date: 8/16/2022

Sample Preservation Receipt Form

Client Name: SCS Project # 40269514

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

Lab Lot# of pH paper. 102723 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		1															2						X		2.5 / 5
002									2		1															2						X		2.5 / 5
003									2		1															2						X		2.5 / 5
004									2		1															2						X		2.5 / 5
005																																		2.5 / 5
006																																		2.5 / 5
007																																		2.5 / 5
008																																		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/B23 TW

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	1 liter Poly HNO3
						GN 2	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40269514

40269514

Client Name: SCS

Courier: ☒ CS Logistics ☒ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☐ Client ☐ Pace Other: 10/13/23 TW

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-129 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 1.0 /Corr: 1.0

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: 10/13/23 Initials: TW

Labeled By Initials: MH

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

Page 2 of 2

C5 November 2023 Supplemental Assessment Monitoring

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

December 19, 2023

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on November 21, 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
- Pace Analytical Services - Greensburg

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: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

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: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40271314001	**MW-306**	Water	11/20/23 14:15	11/21/23 09:35
40271314002	**MW-307**	Water	11/20/23 10:50	11/21/23 09:35
40271314003	**MW-308**	Water	11/20/23 12:45	11/21/23 09:35
40271314004	**FIELD BLANK**	Water	11/20/23 14:25	11/21/23 09:35

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40271314001	**MW-306**	EPA 6020B	KXS, TXW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			AG1	7	PASI-G
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TXW	1	PASI-G
		EPA 9040	HML	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40271314002	**MW-307**	EPA 6020B	KXS, TXW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			AG1	7	PASI-G
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TXW	1	PASI-G
		EPA 9040	HML	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40271314003	**MW-308**	EPA 6020B	KXS, TXW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			AG1	7	PASI-G
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TXW	1	PASI-G
		EPA 9040	HML	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40271314004	**FIELD BLANK**	EPA 6020B	KXS, TXW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TXW	1	PASI-G
		EPA 9040	HML	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

PASI-G = Pace Analytical Services - Green Bay
PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Sample: MW-306 **Lab ID: 40271314001** Collected: 11/20/23 14:15 Received: 11/21/23 09:35 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	11/29/23 06:21	12/01/23 00:40	7440-36-0	
Arsenic	**<0.28**	ug/L	1.0	0.28	1	11/29/23 06:21	12/01/23 00:40	7440-38-2	
Barium	**20.2**	ug/L	2.3	0.70	1	11/29/23 06:21	12/01/23 00:40	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	11/29/23 06:21	12/01/23 00:40	7440-41-7	
Boron	**108**	ug/L	10.0	3.0	1	11/29/23 06:21	12/01/23 00:40	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	11/29/23 06:21	12/01/23 00:40	7440-43-9	
Calcium	**118000**	ug/L	2540	762	10	11/29/23 06:21	12/01/23 00:20	7440-70-2	P6
Chromium	**2.5J**	ug/L	3.4	1.0	1	11/29/23 06:21	12/01/23 00:40	7440-47-3	
Cobalt	**<0.12**	ug/L	1.0	0.12	1	11/29/23 06:21	12/01/23 00:40	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	11/29/23 06:21	12/01/23 00:40	7439-92-1	
Lithium	**15.2**	ug/L	1.0	0.22	1	11/29/23 06:21	12/01/23 00:40	7439-93-2	
Molybdenum	**8.5**	ug/L	1.5	0.44	1	11/29/23 06:21	12/01/23 00:40	7439-98-7	
Selenium	**1.1**	ug/L	1.1	0.32	1	11/29/23 06:21	12/01/23 00:40	7782-49-2	
Thallium	**0.43J**	ug/L	1.0	0.14	1	11/29/23 06:21	12/01/23 11:11	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	11/29/23 11:15	11/30/23 08:28	7439-97-6	M0
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.42**	Std. Units			1		11/20/23 14:15		
Field Specific Conductance	**765**	umhos/cm			1		11/20/23 14:15		
Oxygen, Dissolved	**8.69**	mg/L			1		11/20/23 14:15	7782-44-7	
REDOX	**209.1**	mV			1		11/20/23 14:15		
Turbidity	**0.00**	NTU			1		11/20/23 14:15		
Static Water Level	**781.97**	feet			1		11/20/23 14:15		
Temperature, Water (C)	**12.1**	deg C			1		11/20/23 14:15		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**538**	mg/L	20.0	8.7	1		11/22/23 10:33		
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		11/21/23 17:28		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**21.2**	mg/L	2.0	0.59	1		12/06/23 15:17	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		12/06/23 15:17	16984-48-8	
Sulfate	**123**	mg/L	10.0	2.2	5		12/06/23 22:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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ANALYTICAL RESULTS

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Sample: MW-307 **Lab ID: 40271314002** Collected: 11/20/23 10:50 Received: 11/21/23 09:35 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	11/29/23 06:21	12/01/23 01:11	7440-36-0	
Arsenic	**2.4**	ug/L	1.0	0.28	1	11/29/23 06:21	12/01/23 01:11	7440-38-2	
Barium	**22.2**	ug/L	2.3	0.70	1	11/29/23 06:21	12/01/23 01:11	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	11/29/23 06:21	12/01/23 01:11	7440-41-7	
Boron	**307**	ug/L	10.0	3.0	1	11/29/23 06:21	12/01/23 01:11	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	11/29/23 06:21	12/01/23 01:11	7440-43-9	
Calcium	**109000**	ug/L	254	76.2	1	11/29/23 06:21	12/01/23 01:11	7440-70-2	
Chromium	**<1.0**	ug/L	3.4	1.0	1	11/29/23 06:21	12/01/23 01:11	7440-47-3	
Cobalt	**4.8**	ug/L	1.0	0.12	1	11/29/23 06:21	12/01/23 01:11	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	11/29/23 06:21	12/01/23 01:11	7439-92-1	
Lithium	**<0.22**	ug/L	1.0	0.22	1	11/29/23 06:21	12/01/23 01:11	7439-93-2	
Molybdenum	**0.49J**	ug/L	1.5	0.44	1	11/29/23 06:21	12/01/23 01:11	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	11/29/23 06:21	12/01/23 01:11	7782-49-2	
Thallium	**0.42J**	ug/L	1.0	0.14	1	11/29/23 06:21	12/01/23 11:32	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	11/29/23 11:15	11/30/23 08:35	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**7.08**	Std. Units			1		11/20/23 10:50		
Field Specific Conductance	**791**	umhos/cm			1		11/20/23 10:50		
Oxygen, Dissolved	**0.25**	mg/L			1		11/20/23 10:50	7782-44-7	
REDOX	**17.9**	mV			1		11/20/23 10:50		
Turbidity	**0.00**	NTU			1		11/20/23 10:50		
Static Water Level	**781.45**	feet			1		11/20/23 10:50		
Temperature, Water (C)	**12.3**	deg C			1		11/20/23 10:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**518**	mg/L	20.0	8.7	1		11/22/23 10:34		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**6.9**	Std. Units	0.10	0.010	1		11/21/23 17:29		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**42.6**	mg/L	10.0	3.0	5		12/06/23 15:32	16887-00-6	
Fluoride	**<0.48**	mg/L	1.6	0.48	5		12/06/23 15:32	16984-48-8	D3
Sulfate	**103**	mg/L	10.0	2.2	5		12/06/23 15:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Sample: MW-308 **Lab ID: 40271314003** Collected: 11/20/23 12:45 Received: 11/21/23 09:35 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								
Antimony	**0.21J**	ug/L	1.0	0.15	1	11/29/23 06:21	12/01/23 01:22	7440-36-0	
Arsenic	**5.7**	ug/L	1.0	0.28	1	11/29/23 06:21	12/01/23 01:22	7440-38-2	
Barium	**92.2**	ug/L	2.3	0.70	1	11/29/23 06:21	12/01/23 01:22	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	11/29/23 06:21	12/01/23 01:22	7440-41-7	
Boron	**742**	ug/L	10.0	3.0	1	11/29/23 06:21	12/01/23 01:22	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	11/29/23 06:21	12/01/23 01:22	7440-43-9	
Calcium	**127000**	ug/L	254	76.2	1	11/29/23 06:21	12/01/23 01:22	7440-70-2	
Chromium	**6.4**	ug/L	3.4	1.0	1	11/29/23 06:21	12/01/23 01:22	7440-47-3	
Cobalt	**2.2**	ug/L	1.0	0.12	1	11/29/23 06:21	12/01/23 01:22	7440-48-4	
Lead	**1.7**	ug/L	1.0	0.24	1	11/29/23 06:21	12/01/23 01:22	7439-92-1	
Lithium	**1.6**	ug/L	1.0	0.22	1	11/29/23 06:21	12/01/23 01:22	7439-93-2	
Molybdenum	**12.9**	ug/L	1.5	0.44	1	11/29/23 06:21	12/01/23 01:22	7439-98-7	
Selenium	**0.65J**	ug/L	1.1	0.32	1	11/29/23 06:21	12/01/23 01:22	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	11/29/23 06:21	12/01/23 11:42	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	11/29/23 11:15	11/30/23 08:42	7439-97-6	
Field Data	Analytical Method: Pace Analytical Services - Green Bay								
Field pH	**6.89**	Std. Units			1		11/20/23 12:45		
Field Specific Conductance	**956**	umhos/cm			1		11/20/23 12:45		
Oxygen, Dissolved	**0.18**	mg/L			1		11/20/23 12:45	7782-44-7	
REDOX	**-123.8**	mV			1		11/20/23 12:45		
Turbidity	**18.3**	NTU			1		11/20/23 12:45		
Static Water Level	**782.85**	feet			1		11/20/23 12:45		
Temperature, Water (C)	**10.7**	deg C			1		11/20/23 12:45		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Green Bay								
Total Dissolved Solids	**490**	mg/L	20.0	8.7	1		11/22/23 10:34		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**6.8**	Std. Units	0.10	0.010	1		11/21/23 17:32		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**5.7J**	mg/L	10.0	3.0	5		12/06/23 15:47	16887-00-6	
Fluoride	**<0.48**	mg/L	1.6	0.48	5		12/06/23 15:47	16984-48-8	D3
Sulfate	**2.5J**	mg/L	10.0	2.2	5		12/06/23 15:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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ANALYTICAL RESULTS

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Sample: FIELD BLANK **Lab ID: 40271314004** Collected: 11/20/23 14:25 Received: 11/21/23 09:35 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								
Antimony	**<0.15**	ug/L	1.0	0.15	1	11/29/23 06:21	12/01/23 01:27	7440-36-0	
Arsenic	**<0.28**	ug/L	1.0	0.28	1	11/29/23 06:21	12/01/23 01:27	7440-38-2	
Barium	**<0.70**	ug/L	2.3	0.70	1	11/29/23 06:21	12/01/23 01:27	7440-39-3	
Beryllium	**<0.25**	ug/L	1.0	0.25	1	11/29/23 06:21	12/01/23 01:27	7440-41-7	
Boron	**<3.0**	ug/L	10.0	3.0	1	11/29/23 06:21	12/01/23 01:27	7440-42-8	
Cadmium	**<0.15**	ug/L	1.0	0.15	1	11/29/23 06:21	12/01/23 01:27	7440-43-9	
Calcium	**77.0J**	ug/L	254	76.2	1	11/29/23 06:21	12/01/23 01:27	7440-70-2	
Chromium	**<1.0**	ug/L	3.4	1.0	1	11/29/23 06:21	12/01/23 01:27	7440-47-3	
Cobalt	**<0.12**	ug/L	1.0	0.12	1	11/29/23 06:21	12/01/23 01:27	7440-48-4	
Lead	**<0.24**	ug/L	1.0	0.24	1	11/29/23 06:21	12/01/23 01:27	7439-92-1	
Lithium	**<0.22**	ug/L	1.0	0.22	1	11/29/23 06:21	12/01/23 01:27	7439-93-2	
Molybdenum	**<0.44**	ug/L	1.5	0.44	1	11/29/23 06:21	12/01/23 01:27	7439-98-7	
Selenium	**<0.32**	ug/L	1.1	0.32	1	11/29/23 06:21	12/01/23 01:27	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	11/29/23 06:21	12/01/23 11:47	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Green Bay								
Mercury	**<0.066**	ug/L	0.20	0.066	1	11/29/23 11:15	11/30/23 08:45	7439-97-6	
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		11/22/23 10:35		
9040 pH	Analytical Method: EPA 9040 Pace Analytical Services - Green Bay								
pH at 25 Degrees C	**5.6**	Std. Units	0.10	0.010	1		11/21/23 17:36		H6
300.0 IC Anions	Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay								
Chloride	**<0.59**	mg/L	2.0	0.59	1		12/06/23 16:46	16887-00-6	
Fluoride	**<0.095**	mg/L	0.32	0.095	1		12/08/23 14:18	16984-48-8	
Sulfate	**<0.44**	mg/L	2.0	0.44	1		12/06/23 16:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

QC Batch: 461488
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40271314001, 40271314002, 40271314003, 40271314004

METHOD BLANK: 2649262 Matrix: Water
Associated Lab Samples: 40271314001, 40271314002, 40271314003, 40271314004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.066	0.20	11/30/23 08:24	

LABORATORY CONTROL SAMPLE: 2649263

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2649264 2649265

Parameter	Units	40271314001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.066	5	5	4.2	4.8	84	96	85-115	13	20	M0

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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QUALITY CONTROL DATA

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

QC Batch: 461460
QC Batch Method: EPA 3010A
Analysis Method: EPA 6020B
Analysis Description: 6020B MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40271314001, 40271314002, 40271314003, 40271314004

METHOD BLANK: 2649136 Matrix: Water
Associated Lab Samples: 40271314001, 40271314002, 40271314003, 40271314004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	12/01/23 00:09	
Arsenic	ug/L	<0.28	1.0	12/01/23 00:09	
Barium	ug/L	<0.70	2.3	12/01/23 00:09	
Beryllium	ug/L	<0.25	1.0	12/01/23 00:09	
Boron	ug/L	<3.0	10.0	12/01/23 00:09	
Cadmium	ug/L	<0.15	1.0	12/01/23 00:09	
Calcium	ug/L	<76.2	254	12/01/23 00:09	
Chromium	ug/L	<1.0	3.4	12/01/23 00:09	
Cobalt	ug/L	<0.12	1.0	12/01/23 00:09	
Lead	ug/L	<0.24	1.0	12/01/23 00:09	
Lithium	ug/L	<0.22	1.0	12/01/23 00:09	
Molybdenum	ug/L	<0.44	1.5	12/01/23 00:09	
Selenium	ug/L	<0.32	1.1	12/01/23 00:09	
Thallium	ug/L	<0.14	1.0	12/01/23 11:01	

LABORATORY CONTROL SAMPLE: 2649137

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	250	251	100	80-120	
Arsenic	ug/L	250	253	101	80-120	
Barium	ug/L	250	250	100	80-120	
Beryllium	ug/L	250	256	102	80-120	
Boron	ug/L	250	241	97	80-120	
Cadmium	ug/L	250	260	104	80-120	
Calcium	ug/L	10000	9590	96	80-120	
Chromium	ug/L	250	254	102	80-120	
Cobalt	ug/L	250	259	104	80-120	
Lead	ug/L	250	248	99	80-120	
Lithium	ug/L	250	249	100	80-120	
Molybdenum	ug/L	250	256	102	80-120	
Selenium	ug/L	250	256	102	80-120	
Thallium	ug/L	250	234	94	80-120	

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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QUALITY CONTROL DATA

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2649138 2649139

Parameter	Units	40271314001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.15	250	250	247	253	99	101	75-125	2	20	
Arsenic	ug/L	<0.28	250	250	247	254	99	102	75-125	3	20	
Barium	ug/L	20.2	250	250	263	270	97	100	75-125	3	20	
Beryllium	ug/L	<0.25	250	250	243	252	97	101	75-125	4	20	
Boron	ug/L	108	250	250	345	358	95	100	75-125	4	20	
Cadmium	ug/L	<0.15	250	250	251	257	100	103	75-125	3	20	
Calcium	ug/L	118000	10000	10000	122000	132000	39	138	75-125	8	20	P6
Chromium	ug/L	2.5J	250	250	241	249	95	99	75-125	3	20	
Cobalt	ug/L	<0.12	250	250	235	244	94	97	75-125	4	20	
Lead	ug/L	<0.24	250	250	248	256	99	103	75-125	3	20	
Lithium	ug/L	15.2	250	250	256	266	96	101	75-125	4	20	
Molybdenum	ug/L	8.5	250	250	264	274	102	106	75-125	4	20	
Selenium	ug/L	1.1	250	250	247	253	98	101	75-125	3	20	
Thallium	ug/L	0.43J	250	250	237	245	94	98	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

QC Batch: 461108
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40271314001, 40271314002, 40271314003, 40271314004

METHOD BLANK: 2647565 Matrix: Water
Associated Lab Samples: 40271314001, 40271314002, 40271314003, 40271314004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	11/22/23 10:28	

LABORATORY CONTROL SAMPLE: 2647566

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	606	536	88	80-120	

SAMPLE DUPLICATE: 2647584

Parameter	Units	40271314001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	538	538	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

QC Batch: 461057
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40271314001, 40271314002, 40271314003, 40271314004

SAMPLE DUPLICATE: 2647385

Parameter	Units	40270998009 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	4.2	4.1	2	20	1q,H6

SAMPLE DUPLICATE: 2647400

Parameter	Units	40271270001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.7	7.7	0	20	H6

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REPORT OF LABORATORY ANALYSIS

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(920)469-2436

QUALITY CONTROL DATA

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

QC Batch: 461869
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: 40271314001, 40271314002, 40271314003, 40271314004

METHOD BLANK: 2651047 Matrix: Water
Associated Lab Samples: 40271314001, 40271314002, 40271314003, 40271314004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.59	2.0	12/06/23 13:48	
Fluoride	mg/L	<0.095	0.32	12/05/23 17:35	
Sulfate	mg/L	<0.44	2.0	12/05/23 17:35	

LABORATORY CONTROL SAMPLE: 2651048

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	21.9	110	90-110	
Fluoride	mg/L	2	2.1	103	90-110	
Sulfate	mg/L	20	20.2	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2651049 2651050

Parameter	Units	40271275002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	21.0	20	20	42.0	43.0	105	110	90-110	2	15	
Fluoride	mg/L	<0.095	2	2	2.2	2.3	112	115	90-110	3	15	M0
Sulfate	mg/L	6.7	20	20	29.0	28.8	112	111	90-110	1	15	M0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2651051 2651052

Parameter	Units	40271387002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	251	1000	1000	1350	1250	110	100	90-110	8	15	
Sulfate	mg/L	956	1000	1000	2030	1920	107	96	90-110	5	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Sample: MW-306 **Lab ID: 40271314001** Collected: 11/20/23 14:15 Received: 11/21/23 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.109 ± 0.338 (0.654) C:NA T:86%**	pCi/L	12/18/23 11:55	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.358 ± 0.433 (0.917) C:82% T:80%**	pCi/L	12/12/23 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.467 ± 0.771 (1.57)**	pCi/L	12/19/23 13:39	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(920)469-2436

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Sample: MW-307 **Lab ID: 40271314002** Collected: 11/20/23 10:50 Received: 11/21/23 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.241 ± 0.285 (0.725) C:NA T:97%**	pCi/L	12/18/23 11:55	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.501 ± 0.466 (0.956) C:77% T:79%**	pCi/L	12/12/23 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.501 ± 0.751 (1.68)**	pCi/L	12/19/23 13:39	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Sample: MW-308 **Lab ID: 40271314003** Collected: 11/20/23 12:45 Received: 11/21/23 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.196 ± 0.430 (0.778) C:NA T:90%**	pCi/L	12/18/23 11:55	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.303 ± 0.474 (1.03) C:76% T:82%**	pCi/L	12/12/23 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.499 ± 0.904 (1.81)**	pCi/L	12/19/23 13:39	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Sample: FIELD BLANK **Lab ID: 40271314004** Collected: 11/20/23 14:25 Received: 11/21/23 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0530 ± 0.375 (0.796) C:NA T:86%**	pCi/L	12/18/23 12:08	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**-0.134 ± 0.339 (0.818) C:80% T:80%**	pCi/L	12/12/23 14:56	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.000 ± 0.714 (1.61)**	pCi/L	12/19/23 13:39	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

QC Batch: 632704
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40271314001, 40271314002, 40271314003, 40271314004

METHOD BLANK: 3084337 Matrix: Water
Associated Lab Samples: 40271314001, 40271314002, 40271314003, 40271314004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.462 ± 0.415 (0.840) C:81% T:73%	pCi/L	12/12/23 14:58	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

QC Batch: 632703
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 40271314001, 40271314002, 40271314003, 40271314004

METHOD BLANK: 3084336 Matrix: Water
Associated Lab Samples: 40271314001, 40271314002, 40271314003, 40271314004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0768 ± 0.175 (0.282) C:NA T:95%	pCi/L	12/18/23 11:55	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

DEFINITIONS

Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
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 - The reported result is an estimated value.
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.
DL - Adjusted Method Detection Limit.
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 - Analyte was not detected and is reported as less than the LOD or as defined by the customer.
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

1q	Due to the sample matrix, DI water was added to this sample on a one to one basis and the sample was stirred before analysis.
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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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25223067 ALLIANT COLUMBIA CCR
Pace Project No.: 40271314

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40271314001	**MW-306**	EPA 3010A	461460	EPA 6020B	461518
40271314002	**MW-307**	EPA 3010A	461460	EPA 6020B	461518
40271314003	**MW-308**	EPA 3010A	461460	EPA 6020B	461518
40271314004	**FIELD BLANK**	EPA 3010A	461460	EPA 6020B	461518
40271314001	**MW-306**	EPA 7470	461488	EPA 7470	461521
40271314002	**MW-307**	EPA 7470	461488	EPA 7470	461521
40271314003	**MW-308**	EPA 7470	461488	EPA 7470	461521
40271314004	**FIELD BLANK**	EPA 7470	461488	EPA 7470	461521
40271314001	**MW-306**				
40271314002	**MW-307**				
40271314003	**MW-308**				
40271314001	**MW-306**	EPA 903.1	632703		
40271314002	**MW-307**	EPA 903.1	632703		
40271314003	**MW-308**	EPA 903.1	632703		
40271314004	**FIELD BLANK**	EPA 903.1	632703		
40271314001	**MW-306**	EPA 904.0	632704		
40271314002	**MW-307**	EPA 904.0	632704		
40271314003	**MW-308**	EPA 904.0	632704		
40271314004	**FIELD BLANK**	EPA 904.0	632704		
40271314001	**MW-306**	Total Radium Calculation	637034		
40271314002	**MW-307**	Total Radium Calculation	637034		
40271314003	**MW-308**	Total Radium Calculation	637034		
40271314004	**FIELD BLANK**	Total Radium Calculation	637034		
40271314001	**MW-306**	SM 2540C	461108		
40271314002	**MW-307**	SM 2540C	461108		
40271314003	**MW-308**	SM 2540C	461108		
40271314004	**FIELD BLANK**	SM 2540C	461108		
40271314001	**MW-306**	EPA 9040	461057		
40271314002	**MW-307**	EPA 9040	461057		
40271314003	**MW-308**	EPA 9040	461057		
40271314004	**FIELD BLANK**	EPA 9040	461057		
40271314001	**MW-306**	EPA 300.0	461869		
40271314002	**MW-307**	EPA 300.0	461869		
40271314003	**MW-308**	EPA 300.0	461869		
40271314004	**FIELD BLANK**	EPA 300.0	461869		

Pace® Location Requested (City/State):
Pace Analytical Green Bay
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

40271314

Scan QR Code for instructions

Company Name:	SCS ENGINEERS	Contact/Report To.	Meghan Blodgett
Street Address:	2830 Dairy Drive, Madison, WI 53718	Phone #:	608-216-7362
		E-Mail:	mblodgett@scsengineers.com
		Cc E-Mail:	
Customer Project #:		Invoice To:	Accounts Payable
Project Name:	25223067 ALLIANT COLUMBIA CCR SEC POND	Invoice E-Mail	aradunzel@scsengineers.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable).	
		Quote #:	
Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET		County / State origin of sample(s).	Wisconsin

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other_____

Regulatory Program (DW, RCRA, etc) as applicable:

Rush (Pre-approval required):
[ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other_____

Date Results Requested:

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [x] No
Analysis:

Specify Container Size **: 3 1 3
Identify Container Preservative Type***: 2 2 1
Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other

*** Preservative Types. (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only
Proj Mgr: Dan Milewsky
AcctNum / Client ID:
Table #.
Profile / Template: 3946
Prelog / Bottle Ord. ID. EZ 3023290

* Matrix Codes (Insert in Matrix box below) Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res. Cl2	Number & Type of Containers Plastic	Number & Type of Containers Glass	Metals	Radium 226 & 228	TDS,pH,Cl/F/SO4	Sample Comment	Preservation non-conformance identified for sample.
MW-306	WT	G	11/20	1415				4		X	X	X	001	
MW-307	WT	G	11/20	1050				4		X	X	X	002	
MW-308	WT	G	11/20	1245				4		X	X	X	003	
FIELD BLANK	WT	G	11/20	1425				4		X	X	X	004	

Customer Remarks / Special Conditions / Possible Hazards:
Metals =6020 Sb,As,Ba,B,Be,Ca,Cd,Cr,Co,Pb,Li,Mo,Se,Tl and 7470 Hg

Collected By:
Printed Name:
Signature:

Additional Instructions from Pace®:

# Coolers:	Thermometer ID.	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)

Relinquished by/Company (Signature)	SCS	Date/Time 11/20/23 1630	Received by/Company (Signature)	Date/Time:	Tracking Number:
Relinquished by/Company. (Signature) CS Logistics		Date/Time 11/21/23 0935	Received by/Company (Signature) pace	Date/Time. 11/21/23 0935	Delivered by: [ ] In- Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)		Date/Time	Received by/Company (Signature)	Date/Time.	
Relinquished by/Company: (Signature)		Date/Time	Received by/Company (Signature)	Date/Time.	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

DC#_Title: ENV-FRM-GBAY-0035 v03_Sample Preservation Receipt Form
Effective Date: 8/16/2022

Sample Preservation Receipt Form

Client Name: SCS Engineers Project # 40271314

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

Lab Lot# of pH paper. 10D0134 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																																		2.5 / 5
006																																		2.5 / 5
007																																		2.5 / 5
008																																		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					11/21/23 NK																													2.5 / 5
017																																		2.5 / 5
018																																		2.5 / 5
019																																		2.5 / 5
020																																		2.5 / 5

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	1 liter poly HNO3
						GN 2	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO#: 40271314

40271314

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 - 134 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 2.5 /Corr: 2.5

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: 11/21/23 /Initials: NK

Labeled By Initials: TJW

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☒No ☐N/A	2. proj. # 11/21/23 NK
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:	☒Yes ☐No	9.
Correct Type: ~~Pace Green Bay~~, Pace IR, Non-Pace		
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 - Columbia

Location ID: MW-84A
Number of Sampling Dates: 25

Parameter Name	Units	12/22/2015	4/5/2016	7/8/2016	7/28/2016	10/13/2016	12/29/2016	1/25/2017	4/11/2017	6/6/2017	8/8/2017	10/24/2017	4/25/2018	8/8/2018	10/24/2018	4/3/2019	10/9/2019	2/3/2020	5/29/2020	10/8/2020	4/14/2021	10/14/2021	4/13/2022	10/27/2022	4/27/2023	10/11/2023
Boron	ug/L	11.9	14	14.7	--	11.1	14.7	16.1	12.9	14.8	22.9	13.8	25	12.8	10.1	13.6	12	15.7	10	9.7	14.3	11.1	10.5	12.2	10.3	14
Calcium	ug/L	74000	72200	67600	--	74000	76000	70800	73200	76100	74900	77500	76600	76000	74000	80100	73500	72700	77600	69200	69100	75300	75100	78400	68600	65100
Chloride	mg/L	4.9	4.7	5.1	--	4.3	4.7	4.6	4.9	5.5	5.5	5.1	4.8	4.9	4.2	3.6	3.9	3.7	3.7	4.3	4.4	3.5	5.2	3.4	3	3.1
Fluoride	mg/L	<0.2	<0.2	<0.2	--	<0.1	<0.1	0.12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095
Field pH	Std. Units	7.6	7.61	7.45	7.34	7.91	7.25	6.99	7.8	7.28	7.23	7.68	7.45	7.38	7.24	7.03	7.23	7.51	7.34	7.49	7.34	7.42	7.34	7.31	7.01	7.51
Sulfate	mg/L	4.9	4.3	3.7	--	2.6	2.7	3	2.8	2.7	2	2.2	2.8	1.9	1.6	1.4	1.3	<2.2	1.5	1.3	1.4	1.3	1.4	1.1	1.3	1.4
Total Dissolved Solids	mg/L	316	322	316	--	324	316	328	342	344	342	314	328	372	330	318	310	316	340	320	328	326	334	302	326	324
Antimony	ug/L	<0.073	0.084	0.1	--	<0.073	<0.073	<0.073	<0.073	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	<0.15	0.55	<0.15	<0.15	<0.15	<0.15	<0.15
Arsenic	ug/L	0.15	0.29	0.14	--	0.35	0.19	0.35	<0.099	<0.28	0.28	--	<0.28	<0.28	0.33	<0.28	0.46	0.38	0.34	0.49	0.91	0.41	0.31	0.72	<0.28	<0.28
Barium	ug/L	15.3	12.7	12.2	--	14.2	18.4	13.8	14.1	13.4	14	--	14.6	13.7	14.5	14.7	13.2	14	13.9	12.6	13.4	12.9	13.5	13.7	12.6	12.7
Beryllium	ug/L	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.18	<0.18	--	<0.18	<0.18	<0.18	<0.18	<0.25	--	<0.25	<0.25	0.47	<0.25	<0.25	<0.25	<0.25	<0.25
Cadmium	ug/L	<0.089	<0.089	<0.089	--	<0.089	<0.089	<0.089	<0.089	<0.081	<0.081	--	<0.081	--	<0.15	<0.15	<0.15	--	<0.15	<0.15	0.53	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	ug/L	2.5	1.9	1.8	--	2	2	1.9	2.4	2	1.6	--	2.4	1.5	1.6	1.8	1.6	1.6	1.7	1.6	2.6	1.9	2.2	2.2	1.7	1.6
Cobalt	ug/L	0.095	<0.036	0.053	--	<0.036	<0.036	<0.036	<0.036	<0.085	<0.085	--	<0.085	<0.085	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	0.52	0.12	<0.12	<0.12	<0.12	<0.12
Lead	ug/L	0.16	<0.04	0.39	--	0.049	0.11	<0.04	0.041	<0.2	<0.2	--	<0.2	--	<0.24	<0.24	<0.24	--	<0.24	<0.24	0.55	<0.24	<0.24	<0.24	<0.24	<0.24
Lithium	ug/L	0.72	0.44	0.5	--	0.56	0.56	0.56	0.55	0.46	0.58	--	0.5	0.4	0.49	0.56	0.52	0.58	0.4	0.39	1	0.28	0.36	0.41	0.71	0.54
Mercury	ug/L	<0.1	<0.1	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	--	<0.084	<0.084	<0.084	--	<0.084	<0.066	<0.066	<0.093	<0.066	<0.066	<0.066	<0.066
Molybdenum	ug/L	<0.07	<0.07	0.073	--	0.12	<0.07	<0.07	<0.07	<0.44	<0.44	--	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	0.62	<0.44	<0.44	<0.44	<0.44	<0.44
Selenium	ug/L	<0.21	<0.21	<0.21	--	<0.21	<0.21	<0.21	<0.21	<0.32	<0.32	--	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.48	<0.32	<0.32	<0.32	<0.32	<0.32
Thallium	ug/L	<0.14	<0.14	<0.14	--	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	0.66	0.19	<0.14	<0.14	<0.14	<0.14
Total Radium	pCi/L	0.593	0.0809	--	1.37	0.825	0.404	1.39	0.0929	0.676	0.509	--	0.526	0.529	0.62	0.681	0.247	0.1	0.395	0.39	0.285	0.243	0.611	0.673	0.326	0.844
Radium-226	pCi/L	0.156	-0.088	--	-0.058	0.132	0.168	0.624	0.0768	0.27	0.242	--	0.155	-0.203	0.313	0.199	0.247	0.1	0.368	0	-0.289	0	0.254	0.267	0	0.292
Radium-228	pCi/L	0.437	0.0809	--	1.37	0.693	0.236	0.766	0.0161	0.406	0.267	--	0.371	0.529	0.307	0.482	-0.024	-0.153	0.0273	0.39	0.285	0.243	0.357	0.406	0.326	0.552
Field Specific Conductance	umhos/cm	599	427	574.8	579.3	1002	578.2	489	948	535.3	557.2	491	581.7	617.1	609	637.2	614.1	618.4	613.7	610.1	610.9	598.9	600.2	585.2	556.6	599.9
Oxygen, Dissolved	mg/L	9.7	9.37	3.78	5.11	9.61	8.94	6.48	9.28	9.46	7.5	9.3	3.94	8.84	10.01	9.49	11.36	8.43	9.81	9.39	9.8	9.25	9.33	8.31	9.37	8.44
Field Oxidation Potential	mV	154	165.1	139.9	138.3	82.7	87	192.9	102	123.6	204.7	210	53.3	142.7	71.5	103.4	181.7	121.5	135	153.2	95.6	89.7	200.6	39.9	103.4	91.2
Groundwater Elevation	feet	785.31	786.3	785.89	785.61	787.22	786.63	786.7	787.16	787.63	786.68	785.32	785.88	786.55	788.32	787.35	787.79	786.5	787.02	786.1	785.84	784.96	785.02	784.57	786.97	784.39
Temperature	deg C	10.4	10.2	11.3	11	11.5	10.8	10.9	10.6	11.3	11.2	11.1	10.2	12	11.6	10.2	11.8	10.3	10.6	11.9	10.2	12.5	9.9	11.7	10.7	12.3
Turbidity	NTU	--	0.86	2.75	0.17	0.3	0.25	0.33	0.04	0.56	0.08	2.93	0.81	0.71	3.79	1.9	2.41	1.23	2.15	0	2.45	3.41	0	0	0.72	0.03
pH at 25 Degrees C	Std. Units	7.5	7.4	7.4	--	7.3	7.4	7.3	7.7	7.6	7.4	7.6	7.6	7.4	7.5	7.4	7.5	7.4	7.6	7.6	7.6	7.8	7.6	7.4	7.6	7.6

Single Location

Name: WPL - Columbia

Location ID: MW-301
Number of Sampling Dates: 24

Parameter Name	Units	12/22/2015	4/5/2016	7/8/2016	10/13/2016	12/29/2016	1/25/2017	4/11/2017	6/6/2017	8/8/2017	10/23/2017	4/25/2018	8/8/2018	10/24/2018	4/2/2019	10/9/2019	2/3/2020	5/29/2020	10/8/2020	4/14/2021	10/14/2021	4/13/2022	10/27/2022	4/27/2023	10/11/2023
Boron	ug/L	26.5	25.2	23.6	30.6	32.8	32.6	28.8	21.3	30.6	34.3	24.3	22.8	27.8	26.9	35.9	27.9	21.3	28.8	22.2	31.4	28.7	37.5	20.1	36.2
Calcium	ug/L	126000	115000	108000	118000	129000	124000	120000	111000	108000	87200	112000	105000	101000	126000	114000	113000	112000	93000	117000	67800	97300	62800	120000	52300
Chloride	mg/L	3.7	4	3.5	2.2	2	1.5	2	3.5	5.5	4	2.3	5.2	3.2	0.79	1.7	1.3	2	3.4	1.5	2.7	1.9	2.3	1.5	2.1
Fluoride	mg/L	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095	<0.095
Field pH	Std. Units	6.85	7.01	6.87	7.28	6.63	7.1	7.11	6.7	6.75	7.37	6.76	6.91	6.79	6.62	6.67	6.89	6.73	6.95	6.66	7.01	6.6	6.8	6.65	7.06
Sulfate	mg/L	9.3	15.3	15	13.9	12.3	6.5	10.3	17.1	31.6	27.5	8.6	21.6	19.2	4.4	8.4	7.2	11.5	25.1	8.5	17.4	12.7	11.6	12.3	11.8
Total Dissolved Solids	mg/L	478	486	464	490	444	514	502	458	462	362	464	502	424	462	418	462	452	412	472	334	422	282	526	300
Antimony	ug/L	0.15	0.094	0.13	<0.073	0.4	<0.073	<0.073	<0.15	<0.15	--	<0.15	0.36	<0.15	0.32	<0.15	--	<0.15	0.33	<0.15	<0.15	0.31	<0.15	<0.15	<0.15
Arsenic	ug/L	0.26	0.26	0.19	0.24	0.4	0.13	0.18	<0.28	<0.28	--	<0.28	0.45	<0.28	0.4	0.42	<0.28	0.33	0.62	<0.28	0.35	0.47	0.3	<0.28	<0.28
Barium	ug/L	20.2	11.1	11.6	15.6	15	13.5	13.2	11.3	11.8	--	9.3	10.2	11.5	11.8	10	10.9	9.8	9.4	8.9	7.7	7.8	7.5	9.8	7.3
Beryllium	ug/L	<0.13	<0.13	<0.13	<0.13	0.19	<0.13	<0.13	<0.18	<0.18	--	<0.18	0.37	<0.18	0.28	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Cadmium	ug/L	<0.089	<0.089	<0.089	<0.089	0.32	<0.089	<0.089	<0.081	<0.081	--	<0.081	--	<0.15	0.21	<0.15	--	<0.15	0.19	<0.15	<0.15	0.3	<0.15	<0.15	<0.15
Chromium	ug/L	2.1	0.58	0.59	<0.39	0.7	0.53	0.7	2.3	<1	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt	ug/L	1.4	0.25	0.22	0.041	0.38	0.071	0.064	0.13	0.12	--	<0.085	0.28	<0.12	0.35	<0.12	0.17	<0.12	0.29	<0.12	0.34	0.32	0.52	<0.12	0.13
Lead	ug/L	0.9	0.077	0.48	<0.04	0.34	<0.04	<0.04	<0.2	<0.2	--	<0.2	--	<0.24	0.3	<0.24	--	<0.24	0.25	<0.24	<0.24	3.1	<0.24	<0.24	<0.24
Lithium	ug/L	1.3	0.58	0.69	0.6	0.87	0.67	0.68	0.62	0.6	--	0.55	0.85	0.52	0.9	0.61	0.67	0.47	0.46	0.58	0.46	0.56	0.37	0.62	0.43
Mercury	ug/L	<0.1	<0.1	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	--	<0.084	<0.084	<0.084	--	<0.084	<0.066	<0.066	<0.093	<0.066	<0.066	<0.066	<0.066
Molybdenum	ug/L	0.35	0.15	0.14	0.12	0.38	<0.07	<0.07	<0.44	<0.44	--	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44
Selenium	ug/L	0.3	0.21	0.39	<0.21	0.26	<0.21	<0.21	<0.32	<0.32	--	<0.32	0.71	<0.32	0.49	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32
Thallium	ug/L	<0.14	<0.14	<0.14	<0.14	0.48	<0.14	<0.14	<0.14	<0.14	--	<0.14	0.3	<0.14	0.48	<0.14	<0.14	<0.14	0.3	<0.14	0.17	0.32	<0.14	<0.14	<0.14
Total Radium	pCi/L	1.31	1.11	0.89	0.631	1.01	2.42	1.35	1.3	1.74	--	0.882	0.0351	0.652	0.552	0.701	0.502	0.193	0.38	1.16	0.172	0.179	0.00292	0.417	0.611
Radium-226	pCi/L	0.655	0.294	0.404	-0.067	0.108	1.46	0.513	0.287	1.09	--	0.122	-0.06	0.247	0	0.252	0.136	0	0.0511	0.418	0.172	0	-0.169	0	-0.0576
Radium-228	pCi/L	0.651	0.82	0.486	0.631	0.905	0.964	0.833	1.01	0.647	--	0.76	0.0351	0.405	0.552	0.449	0.366	0.193	0.329	0.739	-0.0327	0.179	0.00292	0.417	0.611
Field Specific Conductance	umhos/cm	897	573	796	1464	859	1018	1354	698.4	691.7	561	774	799	767	883	801	868	797	760	857	597.2	747	507.5	857	536
Oxygen, Dissolved	mg/L	1.7	2.71	1.47	1.99	1.34	1.24	1.44	1.81	1.43	1.1	2.35	2.14	2.49	2.2	1.67	1.07	2	1.22	3.9	0.25	2.47	0.1	6.5	0.16
Field Oxidation Potential	mV	135	123.7	133.9	100.8	95.8	226.1	100.9	115.1	187.4	204	74.3	126.5	77.9	152.1	173	132.3	118.7	183.9	102.9	57.8	207.5	80.9	95.3	23.8
Groundwater Elevation	feet	785.56	768.12	786.31	787.64	787.37	787.27	787.89	788.25	787.34	785.89	785.29	787.06	788.98	787.04	788.47	787.24	787.77	786.53	786.5	785.28	785.44	784.91	787.57	784.67
Temperature	deg C	9.7	7.7	10	11.2	10.1	8.8	7.7	8.9	10.2	11.1	7.4	10.6	11.1	7.5	11.3	8.5	8.1	11	7.4	11.1	7.1	10.8	8	10.7
Turbidity	NTU	--	1.52	3.89	0.59	0.74	0.42	0.1	0.22	0.18	1.52	1.12	0.46	3.3	2.02	2.12	1.41	0	0	2.41	3.21	0	0	0	0.34
pH at 25 Degrees C	Std. Units	7	7	6.8	6.8	6.9	6.9	7.1	7	7	7.3	7	7	7.1	6.8	7	6.8	7	7.2	6.9	7.3	7	7.1	6.9	7.2

Single Location

Name: WPL - Columbia

Location ID: MW-306
Number of Sampling Dates: 22

Parameter Name	Units	1/26/2017	4/10/2017	6/5/2017	8/8/2017	10/23/2017	5/24/2018	10/24/2018	4/1/2019	10/8/2019	12/13/2019	2/3/2020	5/28/2020	10/7/2020	4/12/2021	10/12/2021	4/12/2022	10/26/2022	1/20/2023	2/20/2023	4/24/2023	10/10/2023	11/20/2023
Boron	ug/L	138	128	129	136	145	92	166	119	134	121	120	108	108	101	114	114	--	107	113	102	106	108
Calcium	ug/L	81200	83500	85200	84800	90700	78400	86700	87300	92800	83800	81900	84600	77900	80400	77000	77600	--	90400	94500	106000	110000	118000
Chloride	mg/L	1.7	1.1	2.3	1.7	1	1.8	1.3	1.7	0.64	0.76	0.88	0.76	0.63	0.71	0.98	0.82	--	12.4	22	40.6	21.7	21.2
Fluoride	mg/L	0.15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.095	--	<0.095	<0.095	<0.095	<0.095	<0.095	--	0.27	<0.095	<0.095	<0.48	<0.095
Field pH	Std. Units	8.98	7.56	7.22	6.96	7.7	7.25	7.09	7.31	7.28	7.29	7.08	6.97	7.25	7.22	7.4	7.06	--	7.63	7.12	7.1	7.09	7.42
Sulfate	mg/L	8.2	6.8	10.1	7.3	8.7	6.3	14.4	9.2	7.8	7.6	7.2	6.9	8.4	7.2	8.5	9.4	--	6.2	7.7	10.3	103	123
Total Dissolved Solids	mg/L	310	326	324	338	310	314	322	310	328	326	310	306	322	310	282	318	--	350	370	448	566	538
Antimony	ug/L	0.074	0.21	<0.15	<0.15	0.17	<0.15	<0.15	--	--	<0.15	--	<0.15	--	<0.15	<0.15	<0.15	--	<0.15	0.19	0.16	0.22	<0.15
Arsenic	ug/L	0.14	0.25	<0.28	<0.28	0.29	<0.28	<0.28	--	--	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	--	<0.28	0.37	<0.28	0.42	<0.28
Barium	ug/L	19.2	14.9	8.2	11.8	16.1	11.3	8.5	--	--	9	10.2	9.7	10.5	11	11.5	10.4	--	17.1	14	14.9	18.3	20.2
Beryllium	ug/L	<0.13	0.14	<0.18	<0.18	<0.18	<0.18	<0.18	--	--	<0.25	--	<0.25	--	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25
Cadmium	ug/L	<0.089	0.11	<0.081	<0.081	<0.081	<0.081	<0.15	--	--	<0.15	--	<0.15	--	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	ug/L	1.6	2.2	1.8	2	2.9	2.2	1.7	--	--	4.1	2.1	2.1	2	2.7	2.8	3.4	--	3.3	3	2.1	2.3	2.5
Cobalt	ug/L	0.054	0.15	<0.085	<0.085	0.2	<0.085	<0.12	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	--	0.49	0.14	<0.12	0.17	<0.12
Lead	ug/L	<0.04	0.15	<0.2	<0.2	<0.2	<0.2	0.26	--	--	<0.24	--	<0.24	--	<0.24	<0.24	<0.24	--	0.68	<0.24	<0.24	<0.24	<0.24
Lithium	ug/L	13.9	6.8	1.6	5.7	8.6	3.8	0.51	--	--	2.2	3.1	2.7	4.4	7.2	9.2	7.8	--	12.3	12.7	8.9	13.9	15.2
Mercury	ug/L	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.084	--	--	<0.084	--	<0.084	--	<0.066	<0.066	<0.066	--	<0.066	<0.066	<0.066	<0.066	<0.066
Molybdenum	ug/L	11.4	8.4	5	6.7	9.6	7.2	4	--	--	5.8	6.1	6.5	7.1	8.3	9.7	8.7	--	9.3	8.3	6.6	7.4	8.5
Selenium	ug/L	0.52	0.77	0.48	0.58	0.84	0.58	0.59	--	--	0.54	0.81	0.85	0.69	0.87	1	0.7	--	1.4	1.4	1.1	1.4	1.1
Thallium	ug/L	<0.14	0.28	<0.14	<0.14	<0.14	<0.14	<0.14	--	--	0.17	<0.14	<0.14	--	<0.14	<0.14	<0.14	--	0.16	0.21	<0.14	0.15	0.43
Total Radium	pCi/L	0.653	0.886	1.4	0.435	0.502	0.5	0.291	--	--	0.323	0.759	0.49	0.721	0.18	0.784	0.45	--	0.721	0.156	0.341	0.336	0.467
Radium-226	pCi/L	-0.148	0.567	0.329	0.0606	0.271	0.31	0.291	--	--	0	-0.0492	0.182	0.304	0.13	0.399	0.0716	--	0.441	-0.31	-0.0639	0.336	0.109
Radium-228	pCi/L	0.653	0.319	1.07	0.374	0.231	0.19	-0.378	--	--	0.323	0.759	0.308	0.417	0.0499	0.385	0.378	--	0.28	0.156	0.341	-0.157	0.358
Field Specific Conductance	umhos/cm	531.8	899	495.7	524.4	477	583	598	592.3	583	662	588	572.1	565.4	552.4	543.1	548.1	--	634	578	706.2	832	765
Oxygen, Dissolved	mg/L	5.91	7.81	9.6	6.27	5	8.91	8.02	8.46	9.8	8.34	8.26	9.08	7.71	8.91	7.97	8.62	--	8.27	8.03	7.76	6.72	8.69
Field Oxidation Potential	mV	-16.1	97.6	84.3	196.2	234	92.8	40.3	150	109.1	56	226.5	227.7	103.8	116.7	90.9	201.9	--	114.9	111.9	71.6	116.3	209.1
Groundwater Elevation	feet	785.5	786.22	786.85	785.69	783.97	785.79	787.66	786.72	787.47	787.03	785.77	785.77	785.39	784.32	782.93	783.11	778.32	782.15	783.04	784.82	--	781.97
Temperature	deg C	10.1	9.8	10	12.1	13.4	9.6	13.5	9.1	13.1	11.6	9.9	10.2	13.1	9.7	12.7	8.6	--	7	9.6	8.8	13	12.1
Turbidity	NTU	0.41	0.34	0.55	0.34	32.64	3.96	4.89	1.61	1.27	0	0.65	0.32	1.29	5.52	0.51	0.42	--	58.36	4.82	4.51	4.14	0
pH at 25 Degrees C	Std. Units	7.5	7.4	7.4	7.3	7.4	7.4	7.5	7.4	7.3	7.3	7.4	7.6	7.6	7.5	7.7	7.4	--	7.6	--	7.5	7.4	7.3

Single Location

Name: WPL - Columbia

Location ID: MW-307
Number of Sampling Dates: 22

Parameter Name	Units	1/26/2017	4/10/2017	6/5/2017	8/8/2017	10/23/2017	5/24/2018	10/24/2018	4/1/2019	10/7/2019	12/13/2019	2/3/2020	5/27/2020	10/8/2020	4/12/2021	10/12/2021	4/12/2022	10/26/2022	1/20/2023	2/20/2023	4/25/2023	10/10/2023	11/20/2023
Boron	ug/L	319	175	178	373	434	313	338	154	242	281	246	231	307	201	327	318	--	232	226	202	252	307
Calcium	ug/L	70300	68300	70600	72500	83700	107000	17400	76500	75800	78700	72600	77800	67800	61900	74600	103000	--	127000	123000	72200	96000	109000
Chloride	mg/L	8.7	4.1	5.4	8.3	12.9	52.8	19.3	13.8	9.3	16	13.8	12.9	12.1	7	9.8	10.2	--	51.3	57.6	32.8	35.8	42.6
Fluoride	mg/L	<0.5	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.48	--	<0.095	<0.48	<0.48	<0.48	<0.48	--	<0.095	<0.095	<0.48	<0.48	<0.48
Field pH	Std. Units	6.89	7.52	7.26	6.9	7.75	6.83	6.94	7.14	7.24	7.18	7.19	7.07	7.28	7.32	7.11	6.85	--	7.4	6.76	6.69	6.82	7.08
Sulfate	mg/L	14.2	33.1	32.6	6.7	10.7	115	47.7	38.2	27.8	15.5	15.3	13.2	10.3	16.9	92.9	141	--	208	127	47.5	77.6	103
Total Dissolved Solids	mg/L	318	324	324	350	362	576	398	350	336	354	340	356	334	312	388	528	--	630	588	364	506	518
Antimony	ug/L	<0.073	0.29	<0.15	<0.15	<0.15	0.39	<0.15	--	--	<0.15	--	<0.15	--	<0.15	<0.15	<0.15	--	<0.15	0.19	<0.15	<0.15	<0.15
Arsenic	ug/L	2	0.73	0.42	1.5	3	0.7	<0.28	--	--	1.1	1.7	0.76	2.7	2	1.8	2.7	--	3.5	1.8	1.3	2.1	2.4
Barium	ug/L	10.7	9.3	7.8	13.7	15.1	13.6	4.8	--	--	15.9	13.5	13.7	13.8	7.8	13.1	19	--	39	19.4	11.8	17.5	22.2
Beryllium	ug/L	<0.13	<0.13	<0.18	<0.18	<0.18	<0.18	<0.18	--	--	<0.25	--	<0.25	--	<0.25	<0.25	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25
Cadmium	ug/L	<0.089	0.27	<0.081	<0.081	<0.081	<0.081	0.21	--	--	<0.15	--	<0.15	--	<0.15	<0.15	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	ug/L	<0.39	1.6	<1	<1	<1	<1	<1	--	--	<1	<1	<1	<1	<1	<1	<1	--	2.8	<1	<1	<1	<1
Cobalt	ug/L	0.33	0.58	0.19	0.6	0.43	2.7	0.45	--	--	0.46	1	0.55	0.61	0.26	0.68	1	--	8.7	20.2	16	5.7	4.8
Lead	ug/L	<0.04	0.41	<0.2	0.21	<0.2	<0.2	0.33	--	--	<0.24	--	<0.24	--	<0.24	<0.24	<0.24	--	1.6	<0.24	<0.24	<0.24	<0.24
Lithium	ug/L	<0.11	0.3	<0.14	0.21	<0.14	0.2	0.5	--	--	0.24	0.53	<0.22	<0.22	<0.22	<0.22	<0.22	--	1.3	0.82	<0.22	0.49	<0.22
Mercury	ug/L	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.084	--	--	<0.084	--	<0.084	--	<0.066	<0.066	<0.066	--	<0.066	<0.066	<0.066	<0.066	<0.066
Molybdenum	ug/L	1	0.8	0.44	0.74	1.5	0.94	<0.44	--	--	0.72	1.2	0.7	0.64	0.83	0.91	0.61	--	0.62	0.6	<0.44	<0.44	0.49
Selenium	ug/L	<0.21	0.4	<0.32	<0.32	<0.32	<0.32	<0.32	--	--	<0.32	0.78	<0.32	<0.32	<0.32	<0.32	<0.32	--	0.4	<0.32	<0.32	<0.32	<0.32
Thallium	ug/L	<0.14	0.37	<0.14	<0.14	<0.14	<0.14	<0.14	--	--	0.21	0.65	<0.14	--	<0.14	<0.14	<0.14	--	<0.14	0.22	<0.14	<0.14	0.42
Total Radium	pCi/L	0.864	1.39	2.26	0.676	0.742	0.505	0.416	--	--	0.188	0.706	0.309	0.636	0.241	0.842	0.35	--	0.356	0.791	0.608	0.552	0.501
Radium-226	pCi/L	-0.523	0.233	0.914	0.309	0.511	0.309	0.251	--	--	-0.0613	-0.228	0.203	0.108	-0.179	0.154	0.0634	--	-0.179	0.228	-0.12	0.0985	-0.241
Radium-228	pCi/L	0.864	1.16	1.35	0.367	0.231	0.196	0.165	--	--	0.188	0.706	0.106	0.528	0.241	0.688	0.287	--	0.356	0.563	0.608	0.453	0.501
Field Specific Conductance	umhos/cm	570.2	898	503.9	589.9	591	915	731	662.5	618.2	752	638.3	615.2	644	575.7	709	832	--	739	853	449	837	791
Oxygen, Dissolved	mg/L	0.23	0.28	0.19	0.14	0.3	0.2	0.07	0.12	0.11	0.33	0.07	0.13	0.03	0.17	--	2.59	--	5.44	0.13	0.19	0.27	0.25
Field Oxidation Potential	mV	-119.6	-19.6	-12.9	-51.1	101	-34	-68.2	-0.8	-98.7	-102.7	-80.5	-26.3	-141.8	-120.4	-85	-80.5	--	39.5	-32.3	-69.2	-93.1	17.9
Groundwater Elevation	feet	785.36	785.64	786.07	785.19	784.79	785.09	786.57	786.71	786.99	785.68	785.57	785.35	784.71	784.21	782.44	783.32	777.89	782.11	782.91	784.25	--	781.45
Temperature	deg C	10.1	9.2	10.5	15	14.5	9.5	14.6	8.2	14.3	12	10	10.8	14	9.4	14.2	9.7	--	6.7	9.5	8	14.4	12.3
Turbidity	NTU	1.9	1.28	1.85	1.78	3.87	6.64	6.07	2.27	1.83	0	1.32	0.74	0	2.83	2.18	1.86	--	242.4	0.5	1.01	0.86	0
pH at 25 Degrees C	Std. Units	7.5	7.6	7.4	7.3	7.4	7	7.4	7.3	7.5	7.2	7.2	7.5	7.3	7.2	7.4	7	--	7.3	--	6.7	7.1	6.9

Single Location

Name: WPL - Columbia

Location ID: MW-308
Number of Sampling Dates: 22

Parameter Name	Units	1/26/2017	4/10/2017	6/5/2017	8/9/2017	10/23/2017	4/24/2018	10/24/2018	4/1/2019	10/7/2019	12/13/2019	2/3/2020	5/27/2020	10/7/2020	4/12/2021	10/12/2021	4/11/2022	10/25/2022	1/20/2023	2/20/2023	4/24/2023	10/10/2023	11/20/2023
Boron	ug/L	740	614	565	644	707	584	430	587	694	647	606	476	563	463	704	503	667	536	561	288	663	742
Calcium	ug/L	132000	129000	140000	131000	134000	126000	144000	132000	131000	130000	124000	132000	123000	120000	115000	136000	125000	135000	150000	130000	127000	127000
Chloride	mg/L	7.5	5.8	5.8	3.7	5.6	3.7	<2.5	1.8	1.6	2.3	1.5	1.2	1.1	0.96	3.6	0.9	1.7	1.1	1.1	3	2.4	5.7
Fluoride	mg/L	<0.5	<0.5	<0.5	0.11	<0.5	<0.5	<0.5	<0.1	<0.1	<0.48	--	<0.095	0.12	<0.095	<0.48	<0.095	<0.095	<0.095	<0.095	<0.48	<0.095	<0.48
Field pH	Std. Units	7.38	7.56	7.09	7.25	7.51	7.1	6.78	7.39	7.48	7.25	7.29	7.1	7.09	7.25	7.11	6.93	7.15	7.14	7.15	6.99	7.05	6.89
Sulfate	mg/L	6.1	5.5	14.8	1.7	<5	<5	70.7	1.1	<1	<2.2	<2.2	2.8	0.52	<0.44	<2.2	7.3	0.55	4.3	2.5	47.6	0.59	2.5
Total Dissolved Solids	mg/L	544	526	508	546	486	512	566	484	470	504	468	510	490	470	460	502	492	538	562	580	542	490
Antimony	ug/L	<0.073	0.12	<0.15	<0.15	<0.15	<0.15	<0.15	--	--	<0.15	--	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.21
Arsenic	ug/L	3.4	3.5	2.3	2.6	5.1	4.9	6.8	--	--	3.5	3.6	3.1	3.7	2.8	6.3	3.3	4.5	2.8	3.3	4.9	4.5	5.7
Barium	ug/L	70.8	95.1	66.7	75	86.6	85.4	84.8	--	--	62.4	55.6	59.1	61.5	52.6	59.2	63.6	54	63.3	66.2	77.7	66.9	92.2
Beryllium	ug/L	<0.13	0.17	<0.18	<0.18	<0.18	<0.18	<0.18	--	--	<0.25	--	<0.25	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Cadmium	ug/L	<0.089	<0.089	<0.081	<0.081	<0.081	<0.081	<0.15	--	--	<0.15	--	<0.15	--	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	ug/L	0.97	9.3	<1	1.1	4	7.9	<1	--	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.7	6.4
Cobalt	ug/L	0.28	1.6	0.21	0.26	0.85	1.7	1	--	--	<0.12	<0.12	<0.12	<0.12	<0.12	0.22	0.22	<0.12	<0.12	0.24	1.7	0.53	2.2
Lead	ug/L	0.28	2.5	<0.2	0.37	1.2	2.5	<0.24	--	--	<0.24	--	<0.24	--	<0.24	0.24	<0.24	<0.24	<0.24	<0.24	<0.24	0.7	1.7
Lithium	ug/L	0.28	2.2	0.18	0.26	0.96	2.1	<0.19	--	--	<0.22	0.35	<0.22	<0.22	<0.22	0.23	<0.22	<0.22	<0.22	<0.22	<0.22	0.77	1.6
Mercury	ug/L	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.084	--	--	<0.084	--	<0.084	--	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066
Molybdenum	ug/L	1.2	1.4	2.2	0.91	1.2	0.54	3.2	--	--	3	1.2	0.9	1.1	0.86	7.1	0.92	0.87	1.2	1	9	0.63	12.9
Selenium	ug/L	<0.21	0.72	<0.32	<0.32	0.35	0.45	<0.32	--	--	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.65
Thallium	ug/L	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	--	--	<0.14	<0.14	<0.14	--	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Total Radium	pCi/L	1.67	0.78	1.44	1.18	0.318	0.581	0.274	--	--	0.733	0.257	0.569	1.03	0.151	0.517	0.407	0.8	0.88	0.0103	1.48	0.644	0.499
Radium-226	pCi/L	0	0.295	0	0.454	-0.077	0.411	0.274	--	--	0.0522	-0.053	0.249	0.21	0.0739	-0.114	-0.31	0.05	0.253	-0.159	0.703	0.427	0.196
Radium-228	pCi/L	1.67	0.485	1.44	0.722	0.318	0.17	-0.042	--	--	0.681	0.257	0.32	0.815	0.0768	0.517	0.407	0.75	0.627	0.0103	0.773	0.217	0.303
Field Specific Conductance	umhos/cm	920	1457	819	864	810	902	987	924	896	1051	909	897	916	864	894	942	900	866	890	938	940	956
Oxygen, Dissolved	mg/L	1.15	0.19	0.16	0.08	0.2	0.11	0.08	0.15	0.07	0.4	0.08	0.21	0.45	0.13	--	0.25	0.05	0.1	0.08	0.14	0.18	0.18
Field Oxidation Potential	mV	-105.4	-106.4	-76.1	-71.4	100	-184	-147.8	-137.7	-170	-154.9	-151.7	-91.5	-123.5	-136.9	-110.8	202.4	-28.3	-154.1	-113.8	-125.5	-154.1	-123.8
Groundwater Elevation	feet	785.73	786.51	786.46	785.37	784.17	782.65	787.81	787.53	787.18	786.43	786.48	786.28	785.68	785.55	783.76	784.19	784.16	784.98	785.32	787.75	783.09	782.85
Temperature	deg C	11.5	9	10.6	14.9	14.6	10.5	15.1	8.9	15	12	10.4	12.1	15.5	9.8	15.8	10.5	13.5	10	9.1	8.2	15.7	10.7
Turbidity	NTU	14.9	113.1	9.85	16.81	38.62	133.7	9.3	3.44	6.75	0	1.52	4.44	0	1.87	11.07	2.15	1.92	1.09	4.41	3.72	25.06	18.3
pH at 25 Degrees C	Std. Units	7.4	7.4	7.2	7.3	7.3	7.2	7.3	7.4	7.4	7.2	7.3	7.3	7.4	7.4	7.4	7.2	7.2	7.2	--	7.1	7.4	6.8

Appendix E

Statistical Evaluations

E1 January 2023 LCL Evaluation

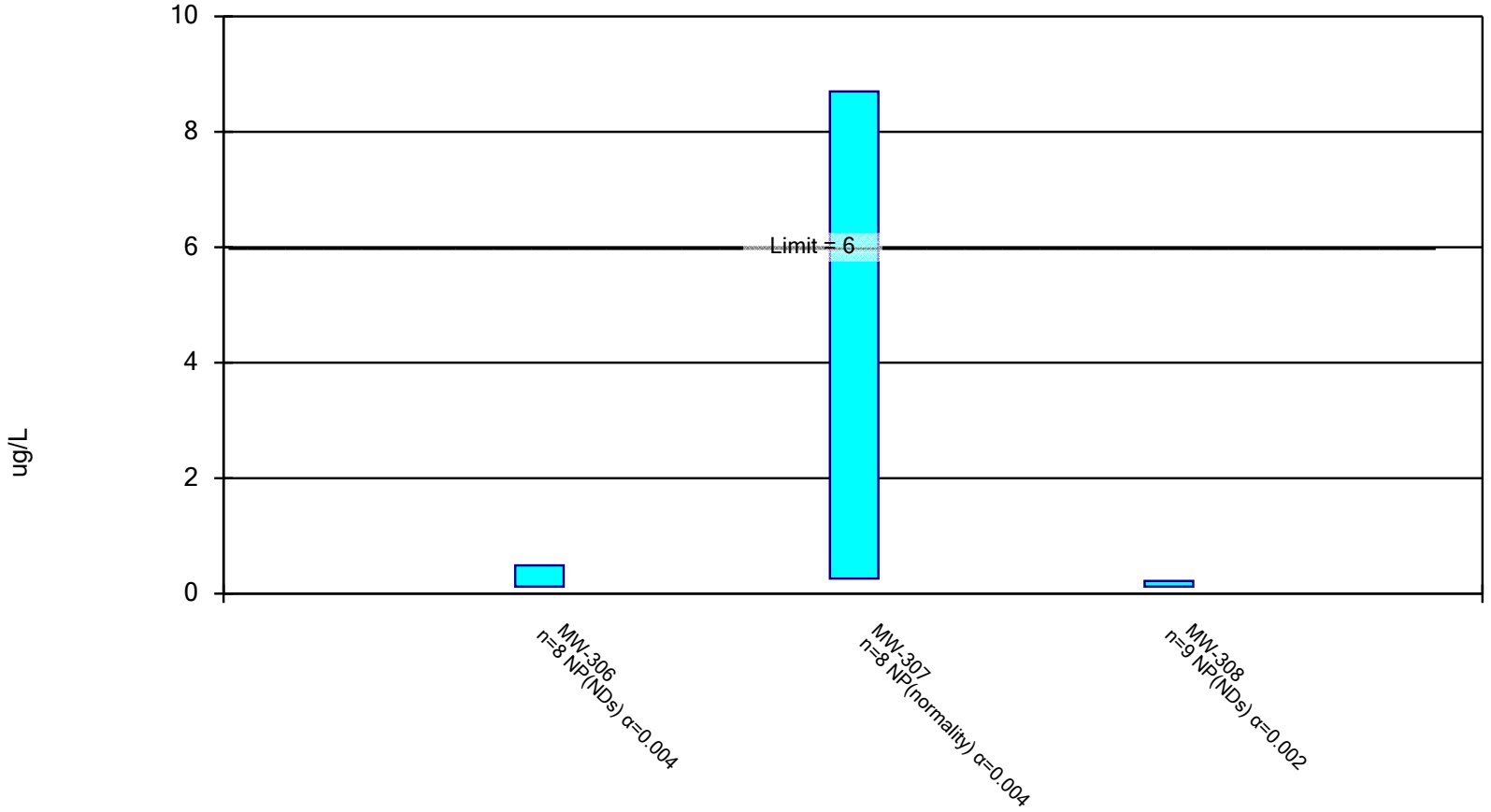
Confidence Interval

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020 Printed 5/8/2023, 1:37 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	ND Adj.	Transform	Alpha	Method
Cobalt (ug/L)	MW-306	0.49	0.12	6	No	8	87.5	None	No	0.004	NP (NDs)
Cobalt (ug/L)	MW-307	8.7	0.26	6	No	8	0	None	No	0.004	NP (normality)
Cobalt (ug/L)	MW-308	0.22	0.12	6	No	9	77.78	None	No	0.002	NP (NDs)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Cobalt Analysis Run 5/8/2023 1:36 PM View: COL Primary Pond

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

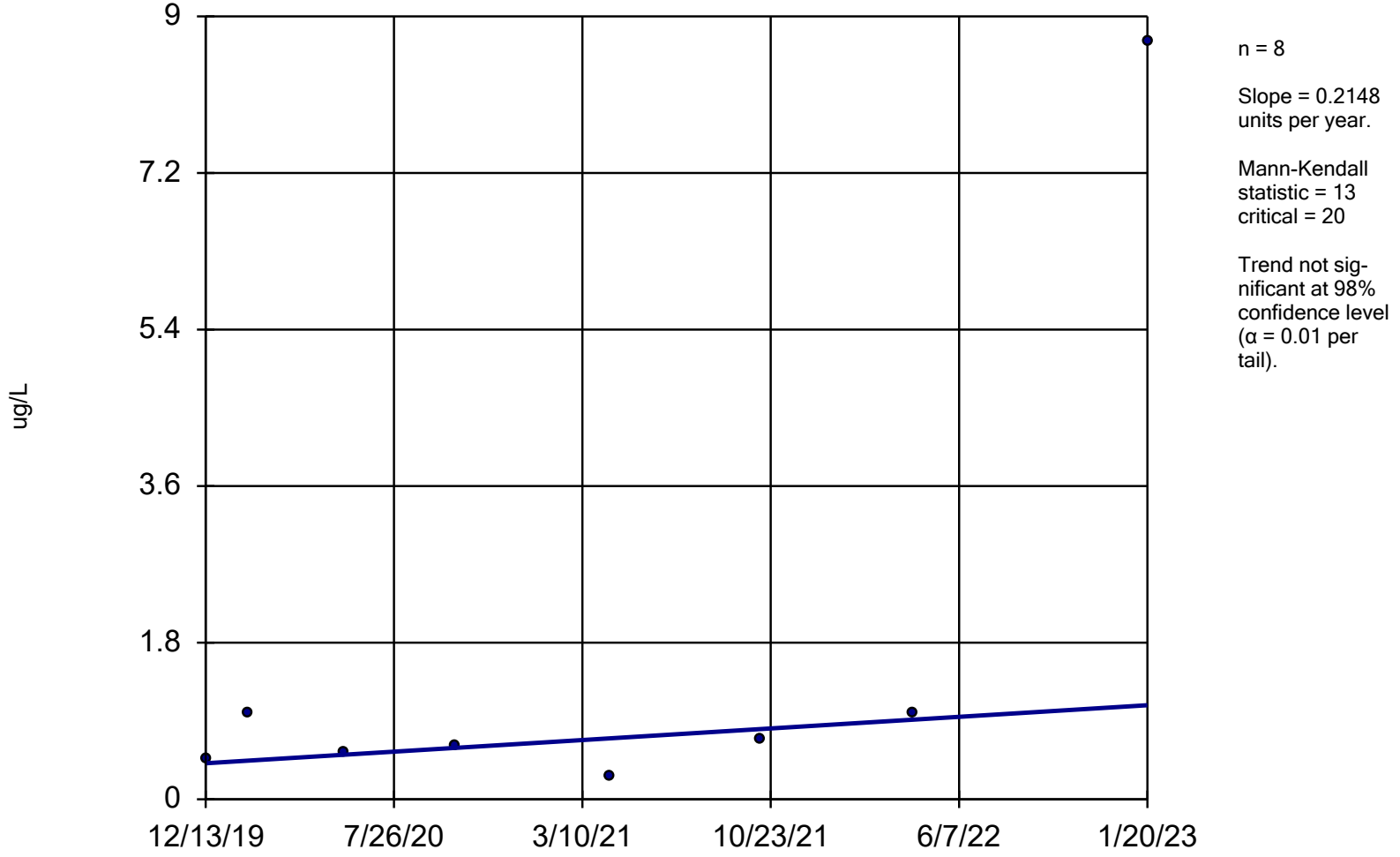
Confidence Interval

Constituent: Cobalt (ug/L) Analysis Run 5/8/2023 1:38 PM View: COL Primary Pond
Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

	MW-306	MW-307	MW-308
12/13/2019	<0.12 (U)	0.46 (J)	<0.12 (U)
2/3/2020	<0.12 (U)	1	<0.12 (U)
5/27/2020		0.55 (J)	<0.12 (U)
5/28/2020	<0.12 (U)		
10/7/2020	<0.12 (U)		<0.12 (U)
10/8/2020		0.61 (J)	
4/12/2021	<0.12 (U)	0.26 (J)	<0.12 (U)
10/12/2021	<0.12 (U)	0.68 (J)	0.22 (J)
4/11/2022			0.22 (J)
4/12/2022	<0.12 (U)	1	
10/25/2022			<0.12 (U)
1/20/2023	0.49 (J)	8.7	<0.12 (U)
Mean	0.1662	1.658	0.1422
Std. Dev.	0.1308	2.857	0.0441
Upper Lim.	0.49	8.7	0.22
Lower Lim.	0.12	0.26	0.12

Cobalt

MW-307



Sen's Slope and 98% Confidence Band Analysis Run 5/8/2023 1:41 PM View: COL Primary Pond

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 5/8/2023 1:45 PM View: COL Primary Pond

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

	MW-307
12/13/2019	0.46 (J)
2/3/2020	1
5/27/2020	0.55 (J)
10/8/2020	0.61 (J)
4/12/2021	0.26 (J)
10/12/2021	0.68 (J)
4/12/2022	1
1/20/2023	8.7

E2 February 2023 LCL Evaluation

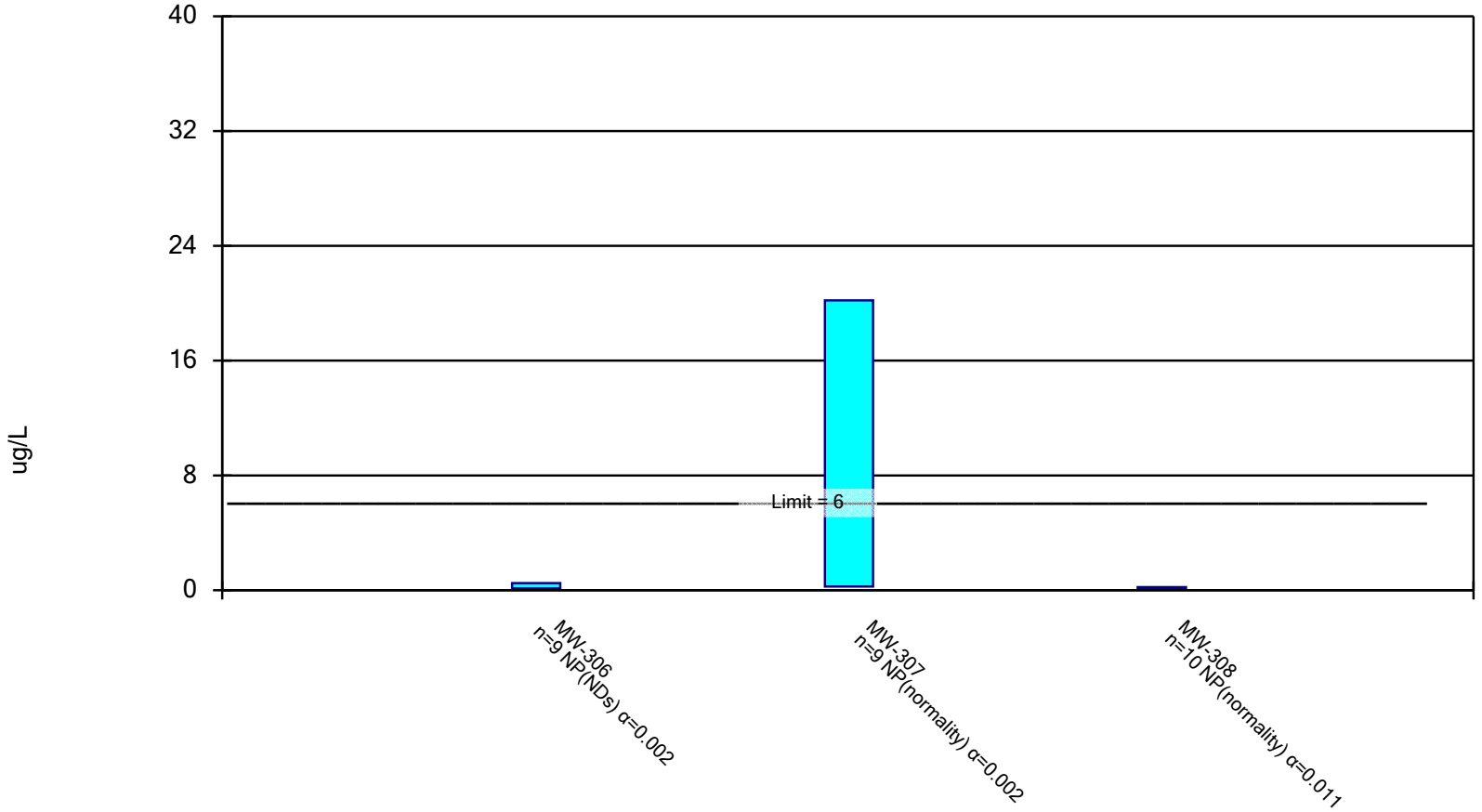
Confidence Interval

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020 Printed 6/19/2023, 10:01 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	ND Adj.	Transform	Alpha	Method
Cobalt (ug/L)	MW-306	0.49	0.12	6	No	9	77.78	None	No	0.002	NP (NDs)
Cobalt (ug/L)	MW-307	20.2	0.26	6	No	9	0	None	No	0.002	NP (normality)
Cobalt (ug/L)	MW-308	0.22	0.12	6	No	10	70	None	No	0.011	NP (normality)

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Cobalt Analysis Run 6/19/2023 10:00 AM View: COL Secondary Pond

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

Confidence Interval

Constituent: Cobalt (ug/L) Analysis Run 6/19/2023 10:01 AM View: COL Secondary Pond
Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

	MW-306	MW-307	MW-308
12/13/2019	<0.12 (U)	0.46 (J)	<0.12 (U)
2/3/2020	<0.12 (U)	1	<0.12 (U)
5/27/2020		0.55 (J)	<0.12 (U)
5/28/2020	<0.12 (U)		
10/7/2020	<0.12 (U)		<0.12 (U)
10/8/2020		0.61 (J)	
4/12/2021	<0.12 (U)	0.26 (J)	<0.12 (U)
10/12/2021	<0.12 (U)	0.68 (J)	0.22 (J)
4/11/2022			0.22 (J)
4/12/2022	<0.12 (U)	1	
10/25/2022			<0.12 (U)
1/20/2023	0.49 (J)	8.7	<0.12 (U)
2/20/2023	0.14 (J)	20.2	0.24 (J)
Mean	0.1633	3.718	0.152
Std. Dev.	0.1227	6.734	0.05181
Upper Lim.	0.49	20.2	0.22
Lower Lim.	0.12	0.26	0.12

ND substitution: RL or RL/2 if <15% NDs.

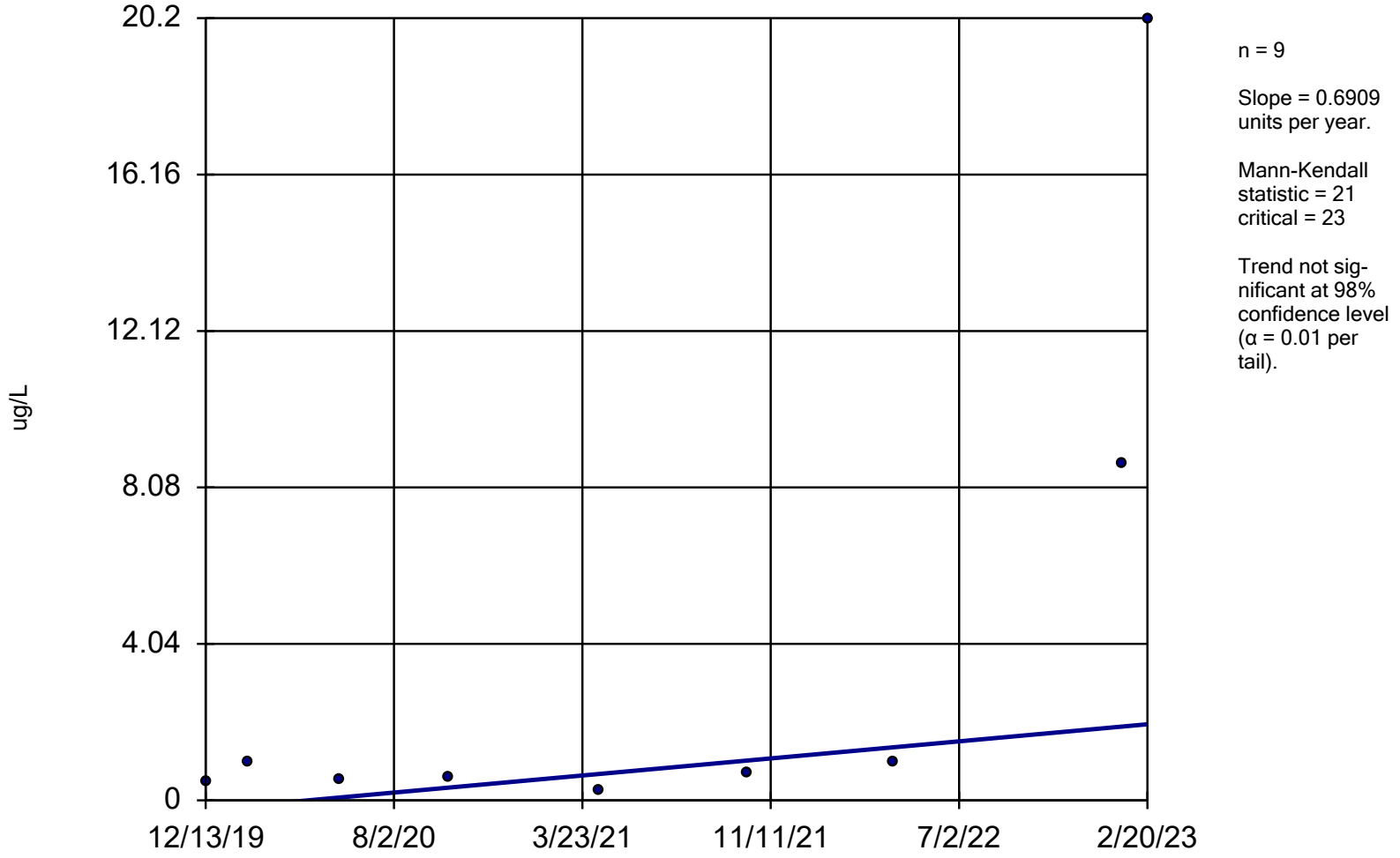
Trend Test

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020 Printed 6/19/2023, 10:04 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Cobalt (ug/L)	MW-307	0.6909	21	23	No	9	0	n/a	n/a	0.02	NP

Cobalt

MW-307



n = 9

Slope = 0.6909 units per year.

Mann-Kendall statistic = 21 critical = 23

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope and 95% Confidence Band Analysis Run 6/19/2023 10:03 AM View: COL Secondary Pond

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 6/19/2023 10:04 AM View: COL Secondary Pond
Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

	MW-307
12/13/2019	0.46 (J)
2/3/2020	1
5/27/2020	0.55 (J)
10/8/2020	0.61 (J)
4/12/2021	0.26 (J)
10/12/2021	0.68 (J)
4/12/2022	1
1/20/2023	8.7
2/20/2023	20.2

E3 April 2023 LCL Evaluation

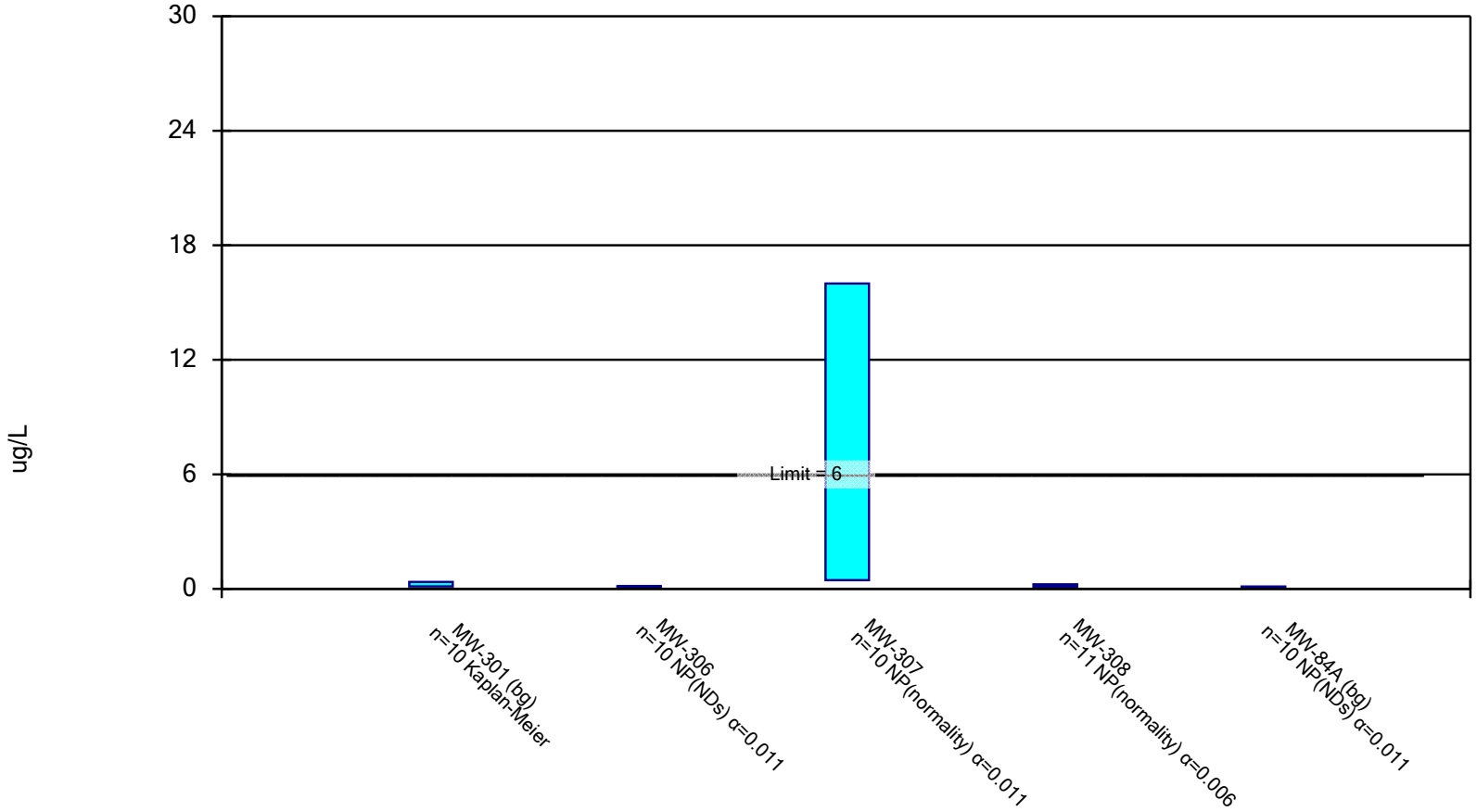
Confidence Interval

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020 Printed 8/15/2023, 10:33 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	ND Adj.	Transform	Alpha	Method
Cobalt (ug/L)	MW-301 (bg)	0.3638	0.1302	6	No	10	40	Kapla...	No	0.01	Param.
Cobalt (ug/L)	MW-306	0.14	0.12	6	No	10	80	Kapla...	No	0.011	NP (NDs)
Cobalt (ug/L)	MW-307	16	0.46	6	No	10	0	None	No	0.011	NP (normality)
Cobalt (ug/L)	MW-308	0.24	0.12	6	No	11	63.64	None	No	0.006	NP (normality)
Cobalt (ug/L)	MW-84A (bg)	0.12	0.12	6	No	10	80	None	No	0.011	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 8/15/2023 10:31 AM View: COL Secondary Pond

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

Confidence Interval

Constituent: Cobalt (ug/L) Analysis Run 8/15/2023 10:33 AM View: COL Secondary Pond
Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

	MW-301 (bg)	MW-306	MW-307	MW-308	MW-84A (bg)
4/2/2019	0.35 (J)				
4/3/2019					<0.12 (U)
10/9/2019	<0.12 (U)				<0.12 (U)
12/13/2019		<0.12 (U)	0.46 (J)	<0.12 (U)	
2/3/2020	0.17 (J)	<0.12 (U)	1	<0.12 (U)	<0.12 (U)
5/27/2020			0.55 (J)	<0.12 (U)	
5/28/2020		<0.12 (U)			
5/29/2020	<0.12 (U)				<0.12 (U)
10/7/2020		<0.12 (U)		<0.12 (U)	
10/8/2020	0.29 (J)		0.61 (J)		<0.12 (U)
4/12/2021		<0.12 (U)	0.26 (J)	<0.12 (U)	
4/14/2021	<0.12 (U)				0.52 (J)
10/12/2021		<0.12 (U)	0.68 (J)	0.22 (J)	
10/14/2021	0.34 (J)				0.12 (J)
4/11/2022				0.22 (J)	
4/12/2022		<0.12 (U)	1		
4/13/2022	0.32 (J)				<0.12 (U)
10/25/2022				<0.12 (U)	
10/27/2022	0.52 (J)				<0.12 (U)
1/20/2023		0.49 (J)	8.7	<0.12 (U)	
2/20/2023		0.14 (J)	20.2	0.24 (J)	
4/24/2023		<0.12 (U)		1.7	
4/25/2023			16		
4/27/2023	<0.12 (U)				<0.12 (U)
Mean	0.247	0.159	4.946	0.2927	0.16
Std. Dev.	0.138	0.1165	7.442	0.4693	0.1265
Upper Lim.	0.3638	0.14	16	0.24	0.12
Lower Lim.	0.1302	0.12	0.46	0.12	0.12

ND substitution: RL or RL/2 if <15% NDs.

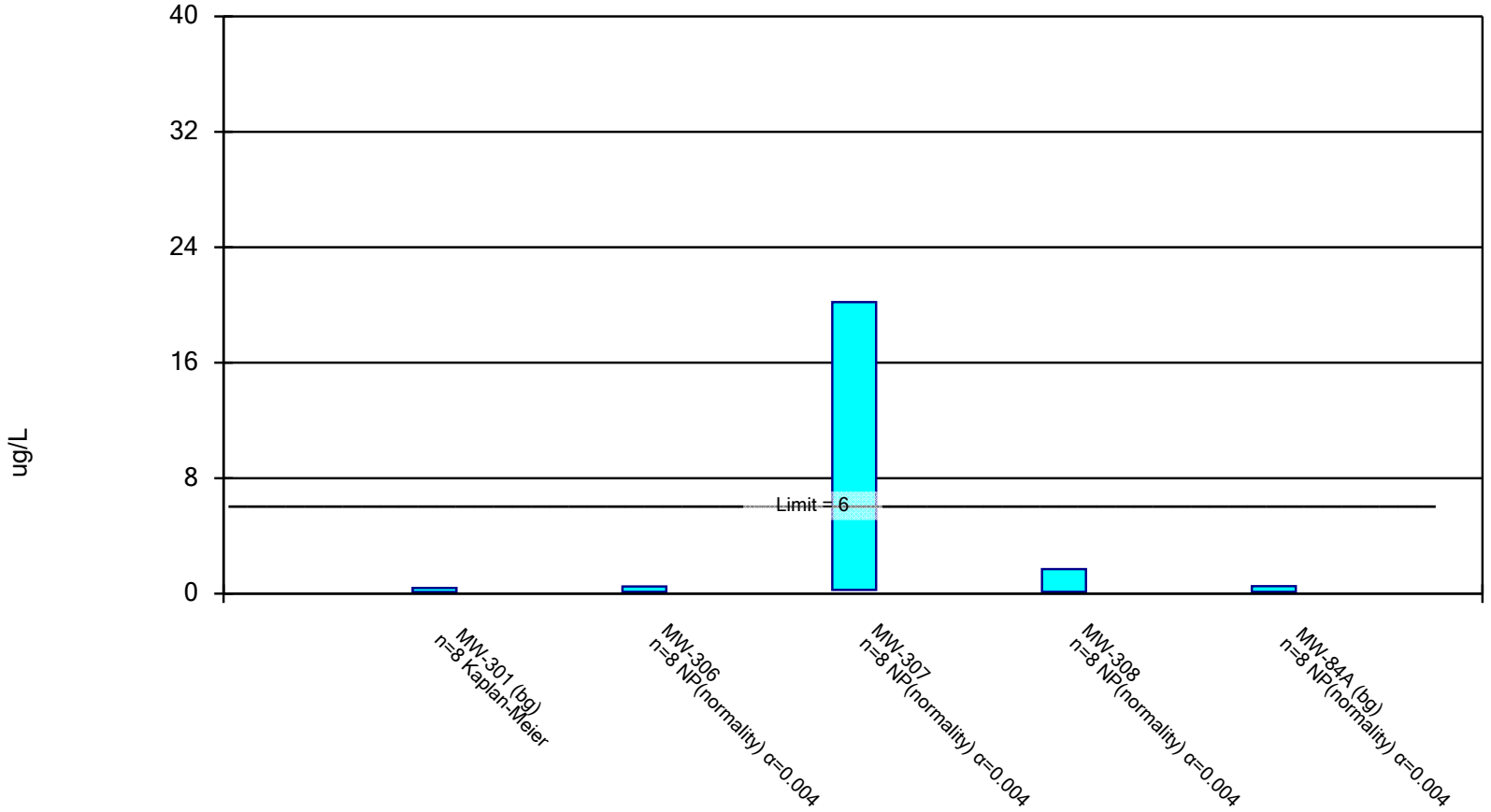
Confidence Interval

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020 Printed 8/15/2023, 10:34 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	ND Adj.	Transform	Alpha	Method
Cobalt (ug/L)	MW-301 (bg)	0.3925	0.1075	6	No	8	37.5	Kapla...	No	0.01	Param.
Cobalt (ug/L)	MW-306	0.49	0.12	6	No	8	75	None	No	0.004	NP (normality)
Cobalt (ug/L)	MW-307	20.2	0.26	6	No	8	0	None	No	0.004	NP (normality)
Cobalt (ug/L)	MW-308	1.7	0.12	6	No	8	50	None	No	0.004	NP (normality)
Cobalt (ug/L)	MW-84A (bg)	0.52	0.12	6	No	8	75	None	No	0.004	NP (normality)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 8/15/2023 10:34 AM View: COL Secondary Pond

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

Confidence Interval

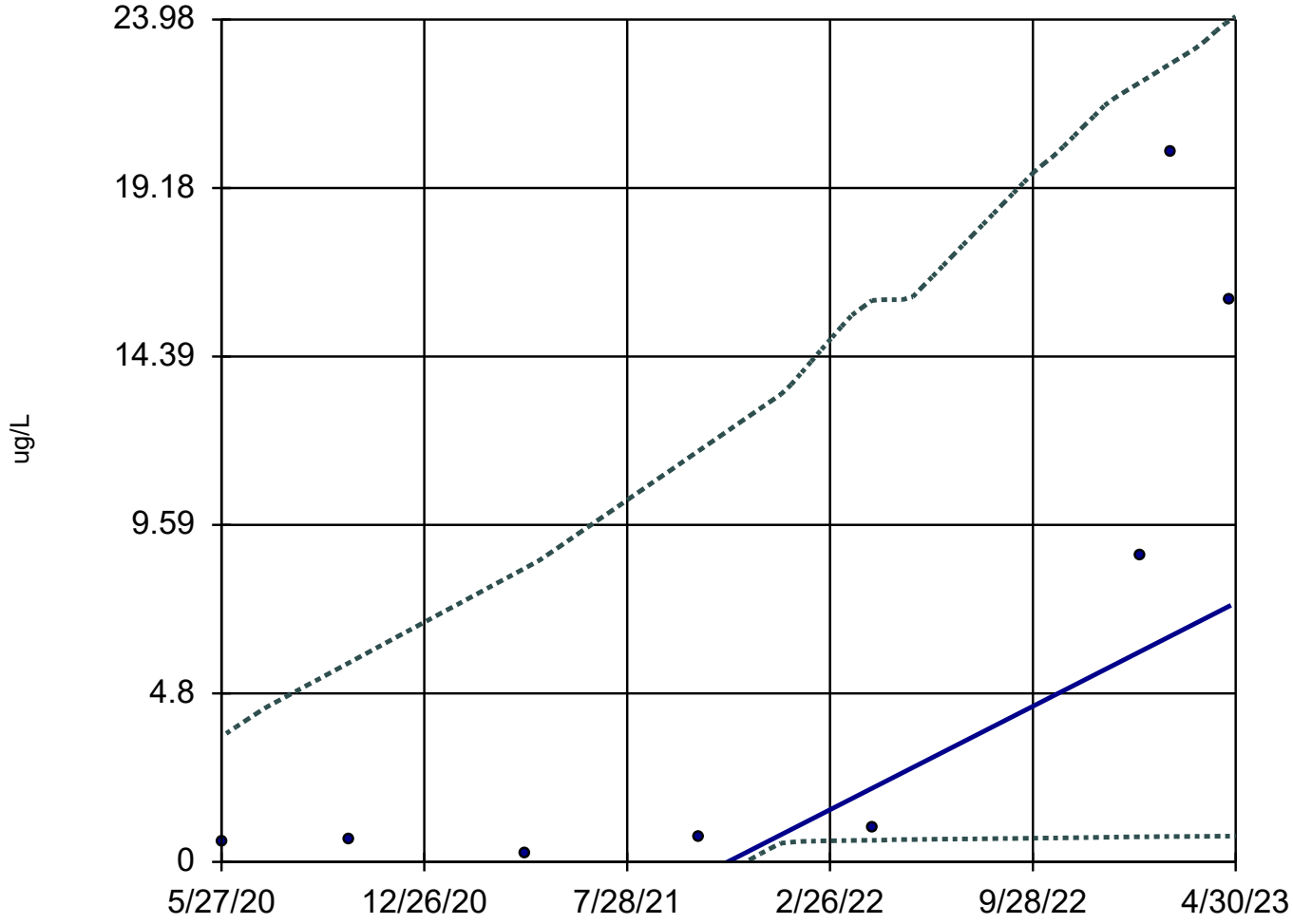
Constituent: Cobalt (ug/L) Analysis Run 8/15/2023 10:34 AM View: COL Secondary Pond
Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

	MW-301 (bg)	MW-306	MW-307	MW-308	MW-84A (bg)
2/3/2020	0.17 (J)				<0.12 (U)
5/27/2020			0.55 (J)		
5/28/2020		<0.12 (U)			
5/29/2020	<0.12 (U)				<0.12 (U)
10/7/2020		<0.12 (U)		<0.12 (U)	
10/8/2020	0.29 (J)		0.61 (J)		<0.12 (U)
4/12/2021		<0.12 (U)	0.26 (J)	<0.12 (U)	
4/14/2021	<0.12 (U)				0.52 (J)
10/12/2021		<0.12 (U)	0.68 (J)	0.22 (J)	
10/14/2021	0.34 (J)				0.12 (J)
4/11/2022				0.22 (J)	
4/12/2022		<0.12 (U)	1		
4/13/2022	0.32 (J)				<0.12 (U)
10/25/2022				<0.12 (U)	
10/27/2022	0.52 (J)				<0.12 (U)
1/20/2023		0.49 (J)	8.7	<0.12 (U)	
2/20/2023		0.14 (J)	20.2	0.24 (J)	
4/24/2023		<0.12 (U)		1.7	
4/25/2023			16		
4/27/2023	<0.12 (U)				<0.12 (U)
Mean	0.25	0.1687	6	0.3575	0.17
Std. Dev.	0.1437	0.13	8.053	0.545	0.1414
Upper Lim.	0.3925	0.49	20.2	1.7	0.52
Lower Lim.	0.1075	0.12	0.26	0.12	0.12

ND substitution: RL or RL/2 if <15% NDs.

Cobalt

MW-307



n = 8

Slope = 5.03 units per year.

Mann-Kendall statistic = 22
critical = 20

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope and 95% Confidence Band Analysis Run 8/15/2023 10:38 AM View: COL Secondary Pond

Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 8/15/2023 10:39 AM View: COL Secondary Pond
Columbia Energy Center Client: SCS Engineers Data: December - Chem- export-Dec2020

	MW-307	LCL	UCL
12/13/2019	0.46 (J)		
2/3/2020	1		
5/27/2020	0.55 (J)	-10.96	3.567
10/8/2020	0.61 (J)	-7.858	5.664
4/12/2021	0.26 (J)	-4.316	8.368
10/12/2021	0.68 (J)	-0.8214	11.71
4/12/2022	1	0.6164	15.98
1/20/2023	8.7	0.714	22.2
2/20/2023	20.2	0.7218	22.71
4/25/2023	16	0.734	23.98

E4 October 2023 LCL Evaluation

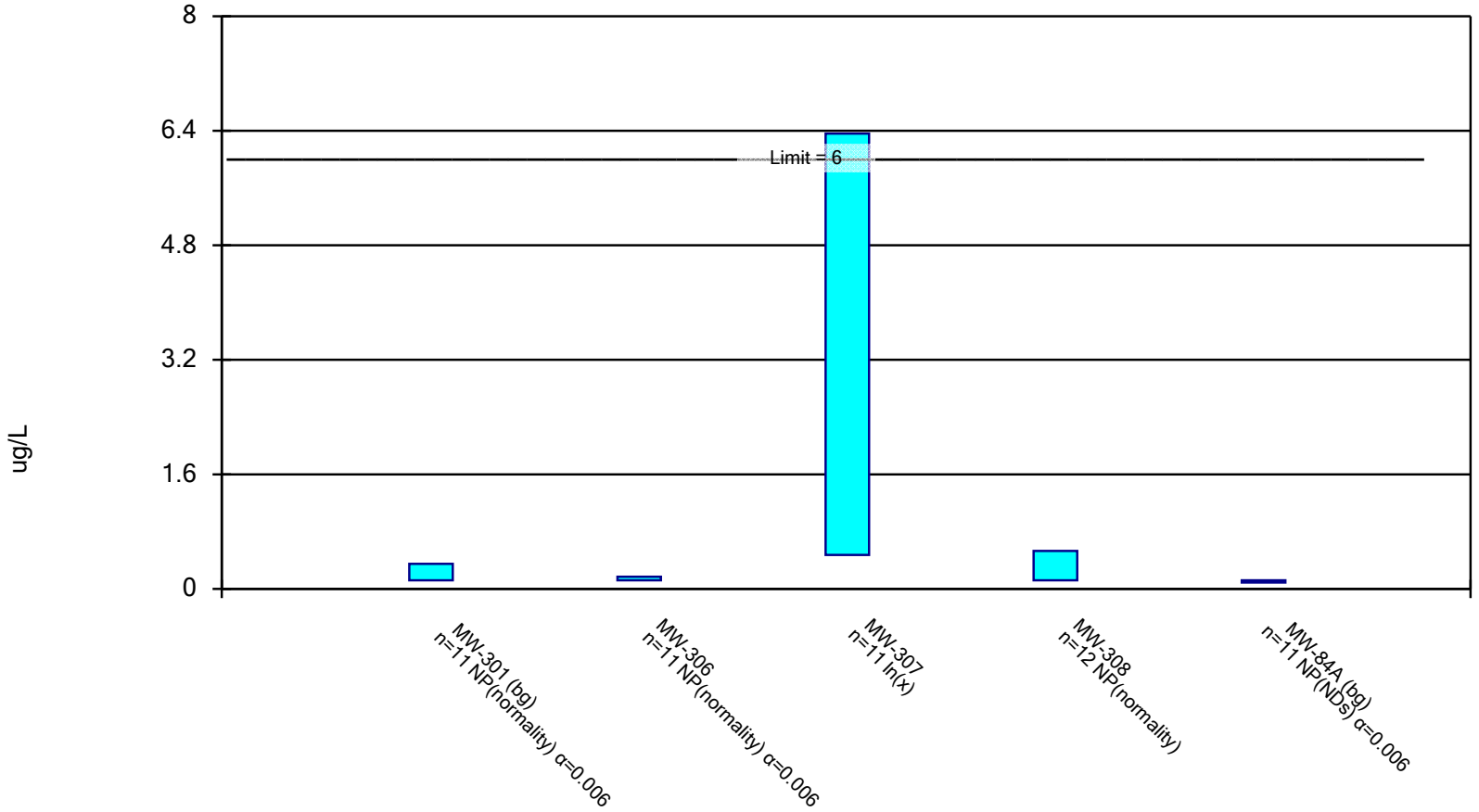
Confidence Interval

Columbia Energy Center Data: December - Chem- export-Dec2020 Printed 1/10/2024, 9:55 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Cobalt (ug/L)	MW-301 (bg)	0.35	0.12	6	No	11	36.36	No	0.006	NP (normality)
Cobalt (ug/L)	MW-306	0.17	0.12	6	No	11	72.73	No	0.006	NP (normality)
Cobalt (ug/L)	MW-307	6.361	0.475	6	No	11	0	ln(x)	0.01	Param.
Cobalt (ug/L)	MW-308	0.53	0.12	6	No	12	58.33	No	0.01	NP (normality)
Cobalt (ug/L)	MW-84A (bg)	0.12	0.12	6	No	11	81.82	No	0.006	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 1/10/2024 9:54 AM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

Confidence Interval

Constituent: Cobalt (ug/L) Analysis Run 1/10/2024 9:55 AM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

	MW-301 (bg)	MW-306	MW-307	MW-308	MW-84A (bg)
4/2/2019	0.35 (J)				
4/3/2019					<0.12 (U)
10/9/2019	<0.12 (U)				<0.12 (U)
12/13/2019		<0.12 (U)	0.46 (J)	<0.12 (U)	
2/3/2020	0.17 (J)	<0.12 (U)	1	<0.12 (U)	<0.12 (U)
5/27/2020			0.55 (J)	<0.12 (U)	
5/28/2020		<0.12 (U)			
5/29/2020	<0.12 (U)				<0.12 (U)
10/7/2020		<0.12 (U)		<0.12 (U)	
10/8/2020	0.29 (J)		0.61 (J)		<0.12 (U)
4/12/2021		<0.12 (U)	0.26 (J)	<0.12 (U)	
4/14/2021	<0.12 (U)				0.52 (J)
10/12/2021		<0.12 (U)	0.68 (J)	0.22 (J)	
10/14/2021	0.34 (J)				0.12 (J)
4/11/2022				0.22 (J)	
4/12/2022		<0.12 (U)	1		
4/13/2022	0.32 (J)				<0.12 (U)
10/25/2022				<0.12 (U)	
10/27/2022	0.52 (J)				<0.12 (U)
1/20/2023		0.49 (J)	8.7	<0.12 (U)	
2/20/2023		0.14 (J)	20.2	0.24 (J)	
4/24/2023		<0.12 (U)		1.7	
4/25/2023			16		
4/27/2023	<0.12 (U)				<0.12 (U)
10/10/2023		0.17 (J)	5.7	0.53 (J)	
10/11/2023	0.13 (J)				<0.12
Mean	0.2364	0.16	5.015	0.3125	0.1564
Std. Dev.	0.1356	0.1105	7.064	0.4527	0.1206
Upper Lim.	0.35	0.17	6.361	0.53	0.12
Lower Lim.	0.12	0.12	0.475	0.12	0.12

ND substitution: RL or RL/2 if <15% NDs.

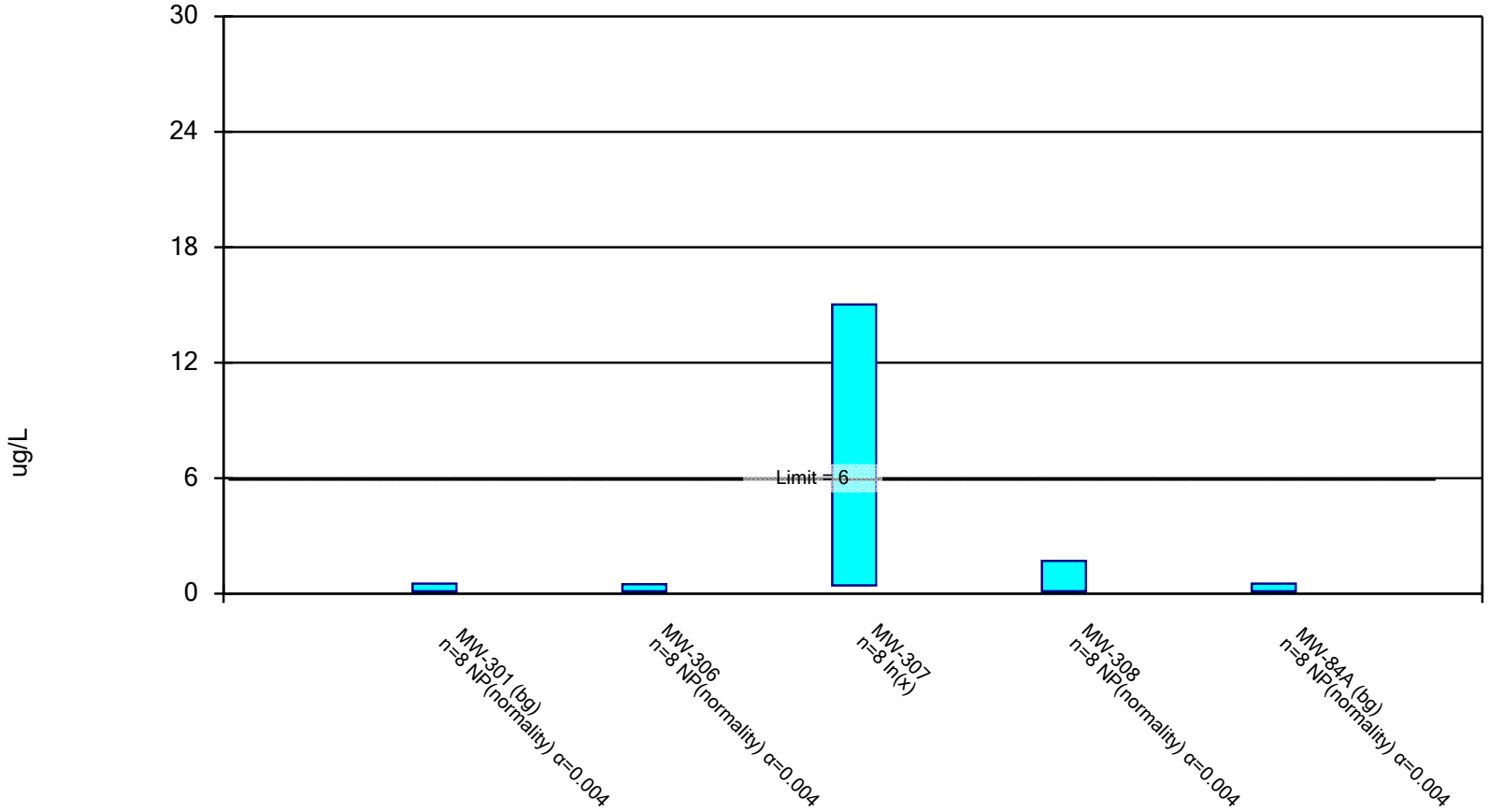
Confidence Interval

Columbia Energy Center Data: December - Chem- export-Dec2020 Printed 1/10/2024, 10:01 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Cobalt (ug/L)	MW-301 (bg)	0.52	0.12	6	No	8	37.5	No	0.004	NP (normality)
Cobalt (ug/L)	MW-306	0.49	0.12	6	No	8	62.5	No	0.004	NP (normality)
Cobalt (ug/L)	MW-307	15.02	0.4292	6	No	8	0	ln(x)	0.01	Param.
Cobalt (ug/L)	MW-308	1.7	0.12	6	No	8	37.5	No	0.004	NP (normality)
Cobalt (ug/L)	MW-84A (bg)	0.52	0.12	6	No	8	75	No	0.004	NP (normality)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 1/10/2024 10:00 AM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

Confidence Interval

Constituent: Cobalt (ug/L) Analysis Run 1/10/2024 10:01 AM View: COL Secondary Pond

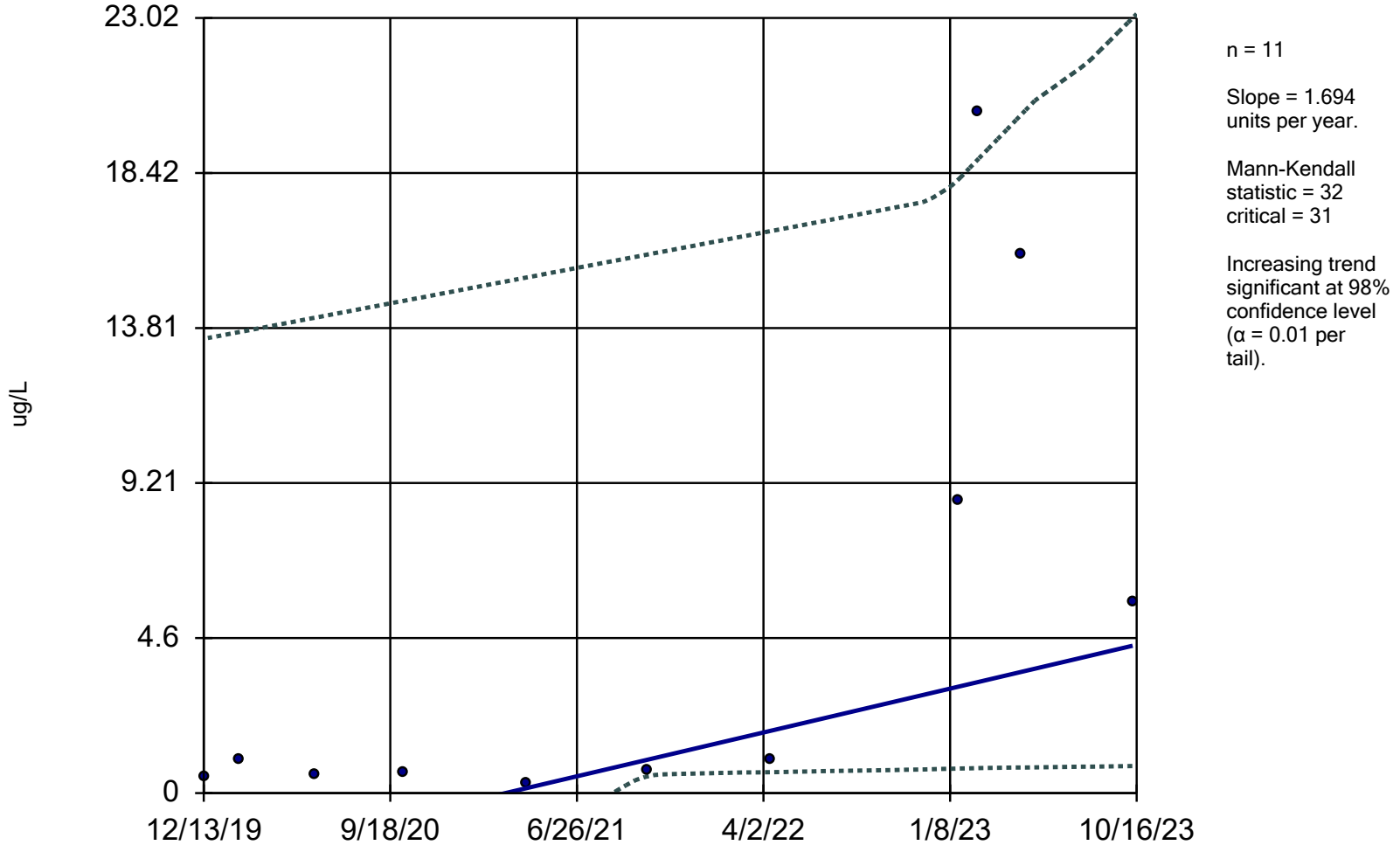
Columbia Energy Center Data: December - Chem- export-Dec2020

	MW-301 (bg)	MW-306	MW-307	MW-308	MW-84A (bg)
5/29/2020	<0.12 (U)				<0.12 (U)
10/7/2020		<0.12 (U)			
10/8/2020	0.29 (J)		0.61 (J)		<0.12 (U)
4/12/2021		<0.12 (U)	0.26 (J)	<0.12 (U)	
4/14/2021	<0.12 (U)				0.52 (J)
10/12/2021		<0.12 (U)	0.68 (J)	0.22 (J)	
10/14/2021	0.34 (J)				0.12 (J)
4/11/2022				0.22 (J)	
4/12/2022		<0.12 (U)	1		
4/13/2022	0.32 (J)				<0.12 (U)
10/25/2022				<0.12 (U)	
10/27/2022	0.52 (J)				<0.12 (U)
1/20/2023		0.49 (J)	8.7	<0.12 (U)	
2/20/2023		0.14 (J)	20.2	0.24 (J)	
4/24/2023		<0.12 (U)		1.7	
4/25/2023			16		
4/27/2023	<0.12 (U)				<0.12 (U)
10/10/2023		0.17 (J)	5.7	0.53 (J)	
10/11/2023	0.13 (J)				<0.12
Mean	0.245	0.175	6.644	0.4087	0.17
Std. Dev.	0.1476	0.1285	7.755	0.5388	0.1414
Upper Lim.	0.52	0.49	15.02	1.7	0.52
Lower Lim.	0.12	0.12	0.4292	0.12	0.12

ND substitution: RL or RL/2 if <15% NDs.

Cobalt

MW-307



Sen's Slope and 98% Confidence Band Analysis Run 1/21/2024 2:21 PM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 1/21/2024 2:23 PM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

	MW-307	LCL	UCL
12/13/2019	0.46 (J)	-9.69	13.49
2/3/2020	1	-8.871	13.69
5/27/2020	0.55 (J)	-7.077	14.11
10/8/2020	0.61 (J)	-4.968	14.62
4/12/2021	0.26 (J)	-2.04	15.31
10/12/2021	0.68 (J)	0.505	16
4/12/2022	1	0.6207	16.68
1/20/2023	8.7	0.729	18.2
2/20/2023	20.2	0.7426	18.83
4/25/2023	16	0.7602	20.14
10/10/2023	5.7	0.8038	23.02

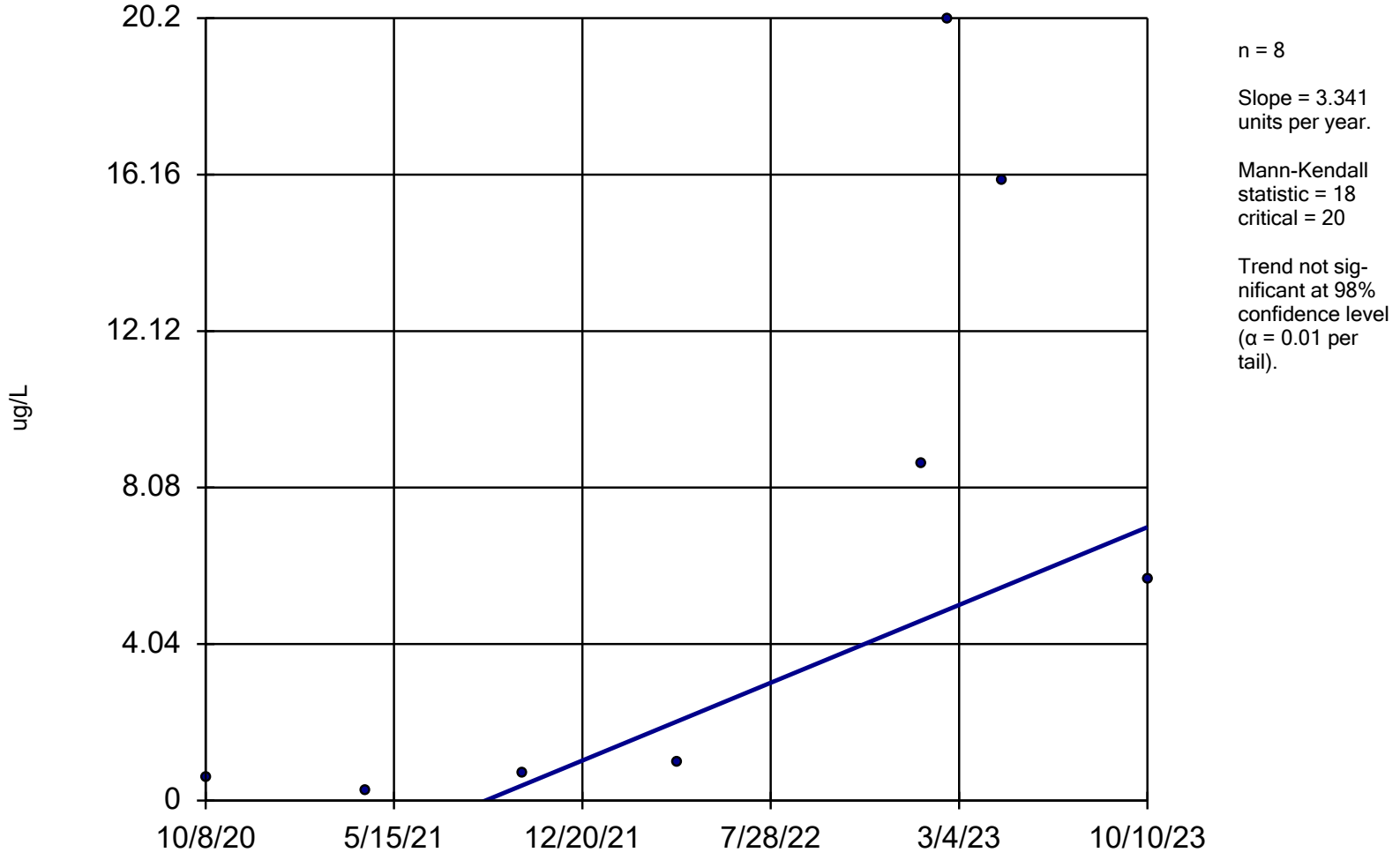
Trend Test

Columbia Energy Center Data: December - Chem- export-Dec2020 Printed 1/21/2024, 2:23 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Cobalt (ug/L)	**MW-307**	**1.694**	**32**	**31**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.02**	**NP**

Cobalt

MW-307



Sen's Slope and 98% Confidence Band Analysis Run 1/21/2024 2:24 PM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 1/21/2024 2:25 PM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

	MW-307
12/13/2019	0.46 (J)
2/3/2020	1
5/27/2020	0.55 (J)
10/8/2020	0.61 (J)
4/12/2021	0.26 (J)
10/12/2021	0.68 (J)
4/12/2022	1
1/20/2023	8.7
2/20/2023	20.2
4/25/2023	16
10/10/2023	5.7

Trend Test

Columbia Energy Center Data: December - Chem- export-Dec2020 Printed 1/21/2024, 2:25 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Cobalt (ug/L)	MW-307	3.341	18	20	No	8	0	n/a	n/a	0.02	NP

E5 November 2023 LCL Evaluation

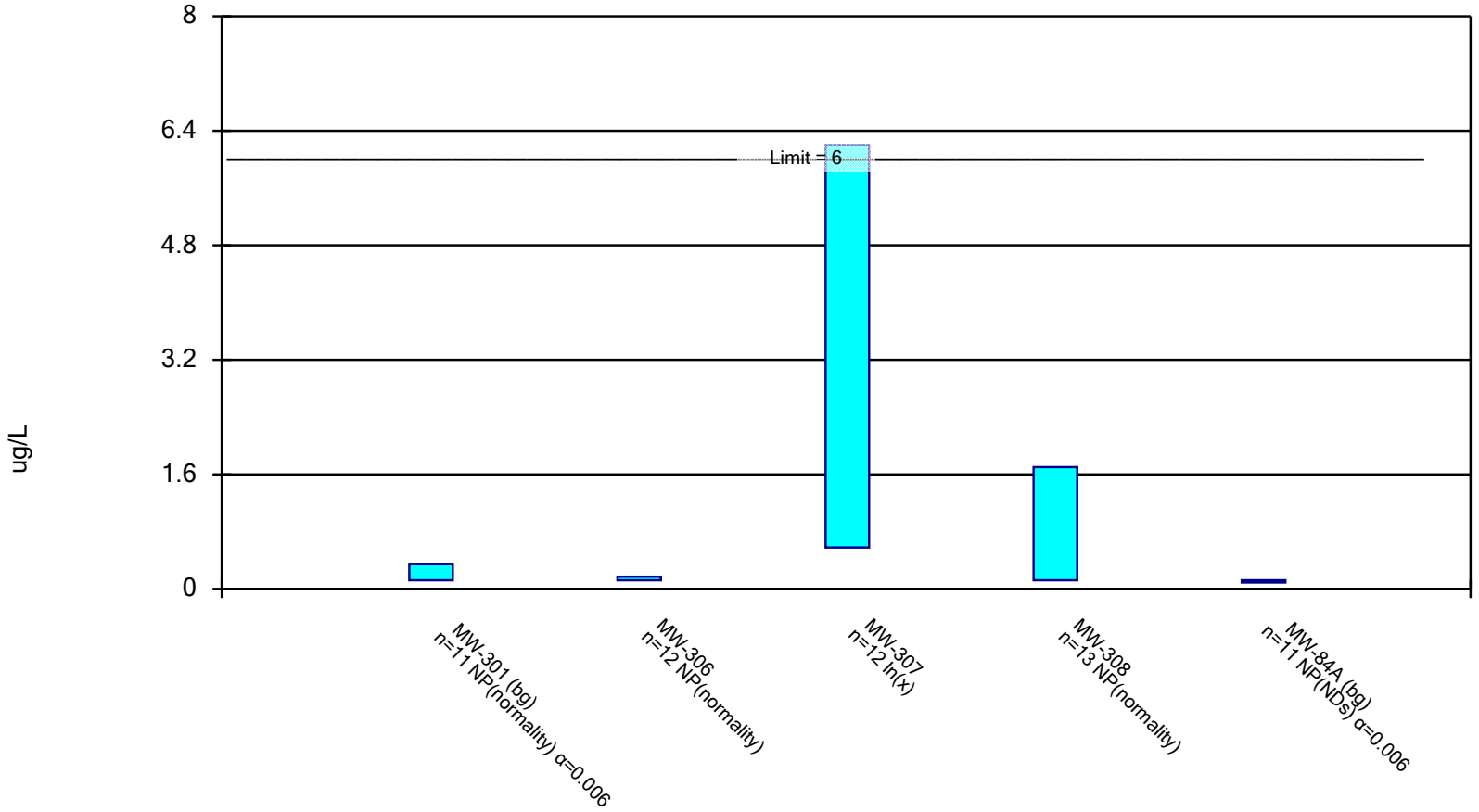
Confidence Interval

Columbia Energy Center Data: December - Chem- export-Dec2020 Printed 2/1/2024, 12:02 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Cobalt (ug/L)	MW-301 (bg)	0.35	0.12	6	No	11	36.36	No	0.006	NP (normality)
Cobalt (ug/L)	MW-306	0.17	0.12	6	No	12	75	No	0.01	NP (normality)
Cobalt (ug/L)	MW-307	6.201	0.5771	6	No	12	0	ln(x)	0.01	Param.
Cobalt (ug/L)	MW-308	1.7	0.12	6	No	13	53.85	No	0.01	NP (normality)
Cobalt (ug/L)	MW-84A (bg)	0.12	0.12	6	No	11	81.82	No	0.006	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 2/1/2024 12:01 PM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

Confidence Interval

Constituent: Cobalt (ug/L) Analysis Run 2/1/2024 12:02 PM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

	MW-301 (bg)	MW-306	MW-307	MW-308	MW-84A (bg)
4/2/2019	0.35 (J)				
4/3/2019					<0.12 (U)
10/9/2019	<0.12 (U)				<0.12 (U)
12/13/2019		<0.12 (U)	0.46 (J)	<0.12 (U)	
2/3/2020	0.17 (J)	<0.12 (U)	1	<0.12 (U)	<0.12 (U)
5/27/2020			0.55 (J)	<0.12 (U)	
5/28/2020		<0.12 (U)			
5/29/2020	<0.12 (U)				<0.12 (U)
10/7/2020		<0.12 (U)		<0.12 (U)	
10/8/2020	0.29 (J)		0.61 (J)		<0.12 (U)
4/12/2021		<0.12 (U)	0.26 (J)	<0.12 (U)	
4/14/2021	<0.12 (U)				0.52 (J)
10/12/2021		<0.12 (U)	0.68 (J)	0.22 (J)	
10/14/2021	0.34 (J)				0.12 (J)
4/11/2022				0.22 (J)	
4/12/2022		<0.12 (U)	1		
4/13/2022	0.32 (J)				<0.12 (U)
10/25/2022				<0.12 (U)	
10/27/2022	0.52 (J)				<0.12 (U)
1/20/2023		0.49 (J)	8.7	<0.12 (U)	
2/20/2023		0.14 (J)	20.2	0.24 (J)	
4/24/2023		<0.12 (U)		1.7	
4/25/2023			16		
4/27/2023	<0.12 (U)				<0.12 (U)
10/10/2023		0.17 (J)	5.7	0.53 (J)	
10/11/2023	0.13 (J)				<0.12
11/20/2023		<0.12 (U)	4.8	2.2	
Mean	0.2364	0.1567	4.997	0.4577	0.1564
Std. Dev.	0.1356	0.106	6.736	0.6796	0.1206
Upper Lim.	0.35	0.17	6.201	1.7	0.12
Lower Lim.	0.12	0.12	0.5771	0.12	0.12

ND substitution: RL or RL/2 if <15% NDs.

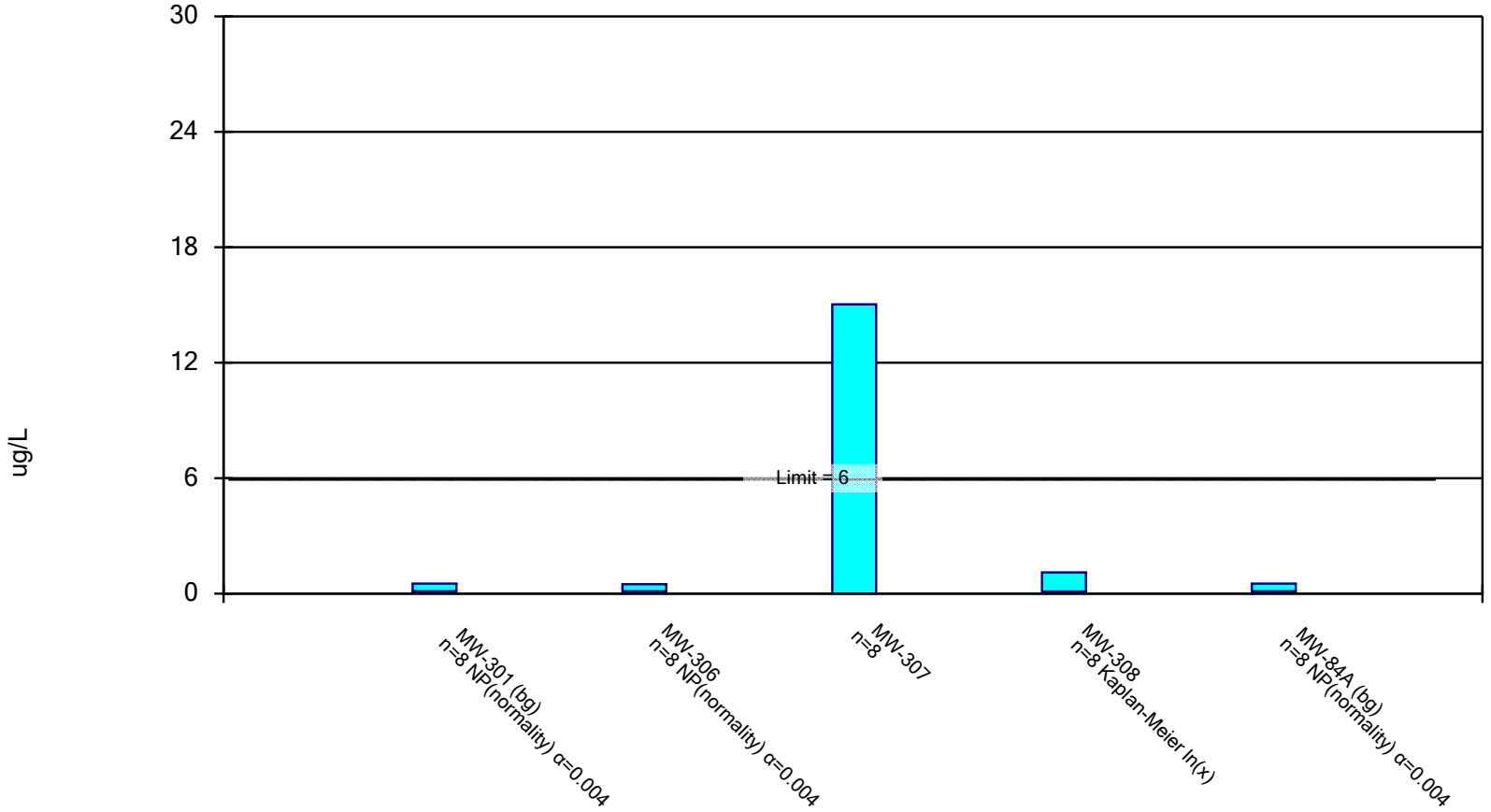
Confidence Interval

Columbia Energy Center Data: December - Chem- export-Dec2020 Printed 2/1/2024, 12:03 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Cobalt (ug/L)	MW-301 (bg)	0.52	0.12	6	No	8	37.5	No	0.004	NP (normality)
Cobalt (ug/L)	MW-306	0.49	0.12	6	No	8	62.5	No	0.004	NP (normality)
Cobalt (ug/L)	MW-307	15.04	0	6	No	8	0	No	0.01	Param.
Cobalt (ug/L)	MW-308	1.103	0.1051	6	No	8	25	ln(x)	0.01	Param.
Cobalt (ug/L)	MW-84A (bg)	0.52	0.12	6	No	8	75	No	0.004	NP (normality)

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 2/1/2024 12:02 PM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

Confidence Interval

Constituent: Cobalt (ug/L) Analysis Run 2/1/2024 12:03 PM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

	MW-301 (bg)	MW-306	MW-307	MW-308	MW-84A (bg)
5/29/2020	<0.12 (U)				<0.12 (U)
10/8/2020	0.29 (J)				<0.12 (U)
4/12/2021		<0.12 (U)	0.26 (J)		
4/14/2021	<0.12 (U)				0.52 (J)
10/12/2021		<0.12 (U)	0.68 (J)	0.22 (J)	
10/14/2021	0.34 (J)				0.12 (J)
4/11/2022				0.22 (J)	
4/12/2022		<0.12 (U)	1		
4/13/2022	0.32 (J)				<0.12 (U)
10/25/2022				<0.12 (U)	
10/27/2022	0.52 (J)				<0.12 (U)
1/20/2023		0.49 (J)	8.7	<0.12 (U)	
2/20/2023		0.14 (J)	20.2	0.24 (J)	
4/24/2023		<0.12 (U)		1.7	
4/25/2023			16		
4/27/2023	<0.12 (U)				<0.12 (U)
10/10/2023		0.17 (J)	5.7	0.53 (J)	
10/11/2023	0.13 (J)				<0.12
11/20/2023		<0.12 (U)	4.8	2.2	
Mean	0.245	0.175	7.168	0.6687	0.17
Std. Dev.	0.1476	0.1285	7.424	0.8121	0.1414
Upper Lim.	0.52	0.49	15.04	1.103	0.52
Lower Lim.	0.12	0.12	0	0.1051	0.12

ND substitution: RL or RL/2 if <15% NDs.

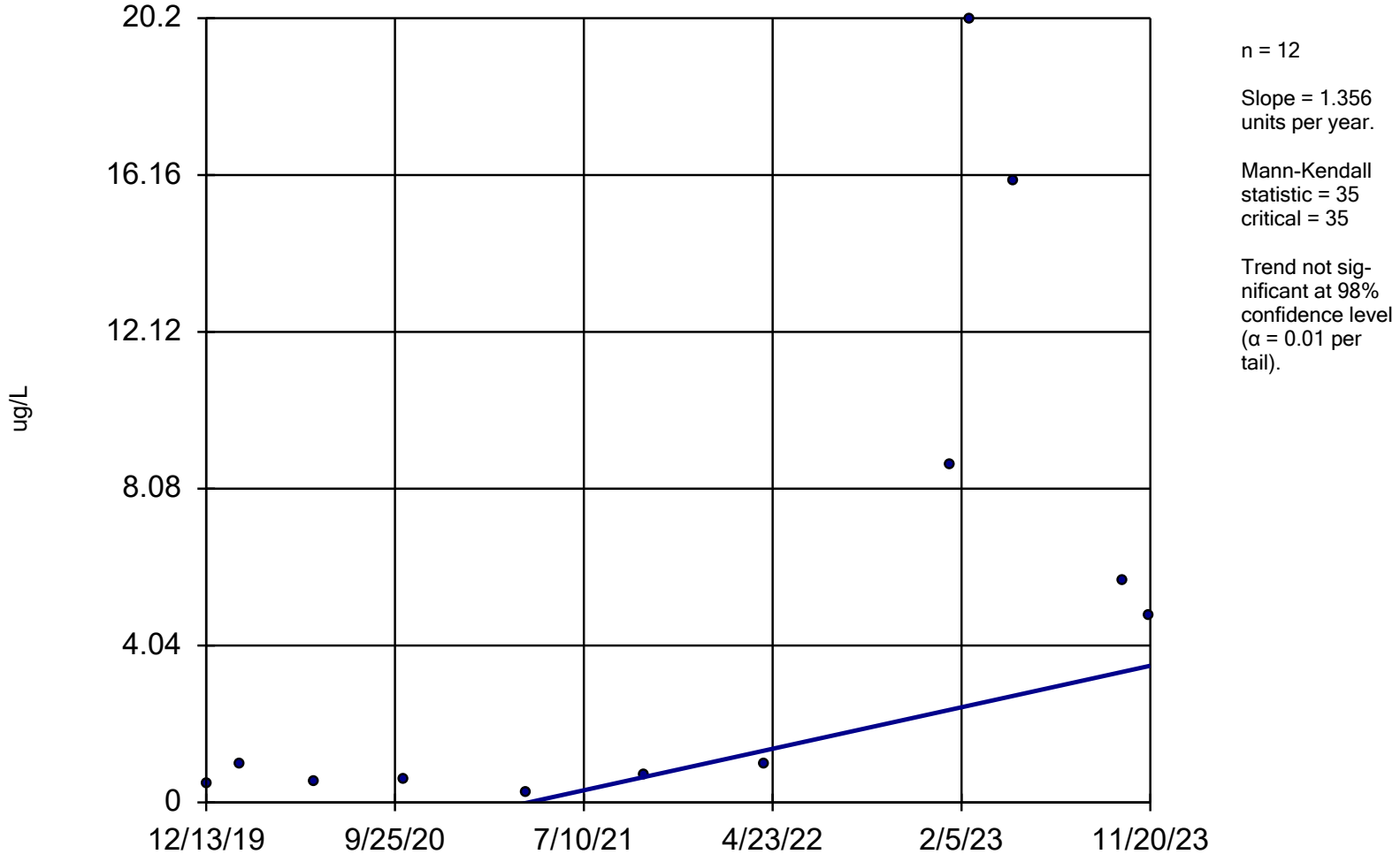
Trend Test

Columbia Energy Center Data: December - Chem- export-Dec2020 Printed 2/1/2024, 12:30 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Cobalt (ug/L)	MW-307	1.356	35	35	No	12	0	n/a	n/a	0.02	NP

Cobalt

MW-307



n = 12

Slope = 1.356 units per year.

Mann-Kendall statistic = 35
critical = 35

Trend not significant at 98% confidence level (α = 0.01 per tail).

Sen's Slope Estimator Analysis Run 2/1/2024 12:29 PM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 2/1/2024 12:30 PM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

	MW-307
12/13/2019	0.46 (J)
2/3/2020	1
5/27/2020	0.55 (J)
10/8/2020	0.61 (J)
4/12/2021	0.26 (J)
10/12/2021	0.68 (J)
4/12/2022	1
1/20/2023	8.7
2/20/2023	20.2
4/25/2023	16
10/10/2023	5.7
11/20/2023	4.8

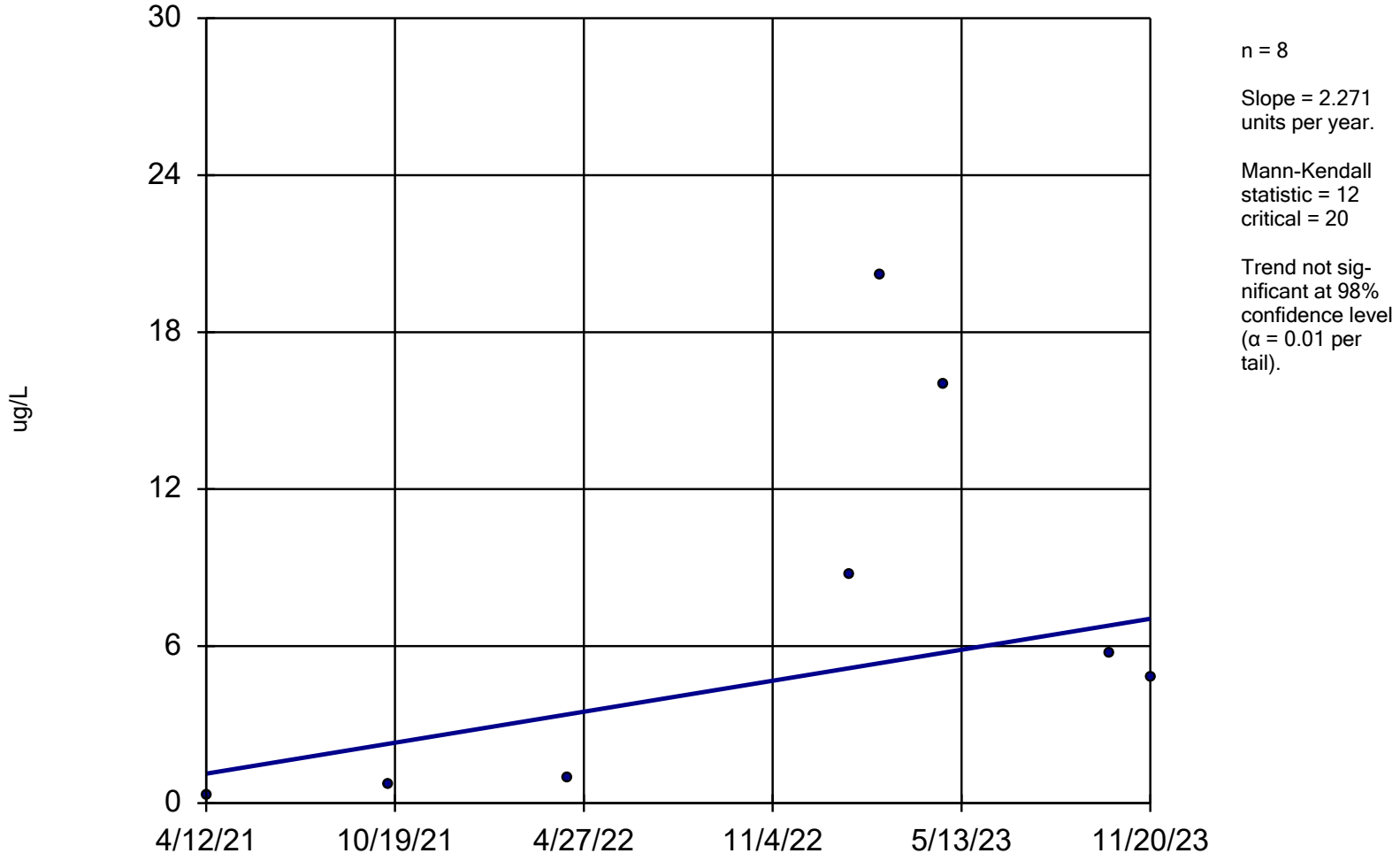
Trend Test

Columbia Energy Center Data: December - Chem- export-Dec2020 Printed 2/1/2024, 12:31 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Cobalt (ug/L)	MW-307	2.271	12	20	No	8	0	n/a	n/a	0.02	NP

Cobalt

MW-307



Sen's Slope Estimator Analysis Run 2/1/2024 12:30 PM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

Sen's Slope Estimator

Constituent: Cobalt (ug/L) Analysis Run 2/1/2024 12:31 PM View: COL Secondary Pond

Columbia Energy Center Data: December - Chem- export-Dec2020

	MW-307
12/13/2019	0.46 (J)
2/3/2020	1
5/27/2020	0.55 (J)
10/8/2020	0.61 (J)
4/12/2021	0.26 (J)
10/12/2021	0.68 (J)
4/12/2022	1
1/20/2023	8.7
2/20/2023	20.2
4/25/2023	16
10/10/2023	5.7
11/20/2023	4.8