DOMINION ENERGY SOUTH CAROLINA

WATEREE STATION ASH POND

RICHLAND COUNTY, SOUTH CAROLINA

EPA CCR RULE COMPLIANCE

2023 CCR ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

January 31, 2024

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Table of Contents

Executive Summary iii

1. Introduction 1-1
   - 1.1 Site Location 1-1
   - 1.2 Site History 1-1
   - 1.3 Key Actions 1-2
   - 1.4 Monitoring Program Concerns 1-3

2. Site Information 2-1
   - 2.1 Monitoring Well Network 2-1
   - 2.2 Monitoring Well Installation and Decommissioning Activities 2-1
   - 2.3 Groundwater Potentiometric Surface Evaluation 2-1
     - 2.3.1 First Semiannual 2023 Assessment Monitoring Program 2-2
     - 2.3.2 Second Semiannual 2023 Assessment Monitoring Program 2-3

3. Field Activities 3-1
   - 3.1 Compliance Monitoring Program Sampling Activities 3-1

4. Laboratory Analytical Results 4-1
   - 4.1 First Semiannual 2023 Assessment Monitoring Program Event 4-1
   - 4.2 Second Semiannual 2023 Assessment Monitoring Program Event 4-1

5. Data Quality Validation 5-1
   - 5.1 First Semiannual 2023 Compliance Event Findings 5-1
   - 5.2 Second Semiannual 2023 Compliance Event Findings 5-1

6. Statistical Evaluation of Groundwater Data 6-1
   - 6.1 Site-Specific Background Evaluation 6-1
     - 6.1.1 First Semiannual 2023 Data Evaluations 6-1
     - 6.1.2 Second Semiannual 2023 Data Evaluations 6-1
   - 6.2 Comparison to Groundwater Protection Standards 6-2
     - 6.2.1 First Semiannual 2023 Data Evaluations 6-2
     - 6.2.2 Second Semiannual 2023 Data Evaluations 6-2

7. Conclusions 7-1
7.1 Findings 7-1
7.2 Planned Activities 7-1
8. References 8-1
9. Signature Page 9-1

List of Tables

Table 1 Summary of Historical CCR Static Water Level Data
Table 2 Summary of First Semiannual 2023 Assessment Monitoring Program Sampling Event Data
Table 3 Summary of Second Semiannual 2023 Assessment Monitoring Program Sampling Event Data

List of Figures

Figure 1 Site Location Map
Figure 2 CCR Rule Compliance Monitoring Well Network
Figure 3 Groundwater Potentiometric Surface Map – March 10, 2023
Figure 4 Groundwater Potentiometric Surface Map – October 10, 2023

List of Appendices

Appendix A First Semiannual Assessment Monitoring Program Event Field Data Sheets, Laboratory Reports, and Data Validation Forms
Appendix B Second Semiannual Assessment Monitoring Program Event Field Data Sheets, Laboratory Reports, and Data Validation Forms
Appendix C First Semiannual Assessment Monitoring Program Statistical Evaluation
Appendix D Second Semiannual Assessment Monitoring Program Statistical Evaluation

Executive Summary

Dominion Energy South Carolina (DESC) operated a coal ash surface impoundment (Ash Pond) (Unit) for the management of coal combustion residuals (CCR) at the Wateree Generating Station (Station) located in Eastover, Richland County, South Carolina. Historically, the Unit received low volume wastewater and sluiced bottom ash and fly ash generated from the combustion of coal at the Station. In accordance with the 2013 Closure Plan, coal ash and the underlying two feet of soil was removed from the Unit via excavation and subsequently backfilled with clean fill. Complete removal of CCR material was completed in September 2019. Management of the Unit is performed pursuant to national criteria established in Title 40 of the Code of Federal Regulations (40 CFR), Part 257 (CCR Rule), effective April 19, 2015, and subsequent revisions to the CCR Rule. Pursuant to the CCR Rule, the Station operator is required to complete an *Annual Groundwater Monitoring and Corrective Action Report* for the Unit by January 31st, annually.

This report documents the status of the CCR groundwater monitoring program for the Unit, summarizes key actions completed, describes issues encountered, actions taken to resolve identified concerns, and planned key activities for the upcoming year.

In accordance with 40 CFR Part 257.90(e)(6), the following information is being provided as an overview of the current status of groundwater monitoring and corrective action for the Unit:

i. At the start of the current annual reporting period, indicate whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95.

- At the start of 2023, the Unit was operating under the assessment monitoring program in accordance with §257.95.

ii. At the end of the current annual reporting period, indicate whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95.

- At the end of 2023, the Unit was operating under the assessment monitoring program in accordance with §257.95.

iii. If it was determined that there was a statistically significant increase 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.

- In 2023, there were statistically significant increases above site-specific background levels for the following Appendix III constituents at the following wells:
  - Boron – MW-AP-01, MW-AP-03, and MW-AP-04
  - Calcium – MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08
  - Chloride – MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08
  - Fluoride – MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08
  - pH – MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08
  - Sulfate – MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08
  - Total Dissolved Solids (TDS) – MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08

b. Provide the date when the assessment program was initiated for the CCR unit.

- The Unit initiated the assessment monitoring program in March 2018.

iv. If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in Appendix IV to this part pursuant to §257.95(g).

a. *Identify those constituents listed in Appendix IV to this part and the names of the monitoring wells associated with such an increase.*

- In 2023, there were statistically significant levels over the groundwater protection standard for the following Appendix IV constituents at the following wells:
  - Arsenic – MW-AP-02, MW-AP-03, and MW-AP-04
  - Lithium – MW-AP-03

b. *Provide the date when the assessment of corrective measures was initiated for the CCR unit.*

   - The Unit initiated assessment of corrective measures in November 2018.

c. *Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit.*

   - A public meeting has not been held yet for the assessment of corrective measures.

d. *Provide the date when the assessment of corrective measures was completed for the CCR unit.*

   - The Unit completed the assessment of corrective measures in June 2019.

v. *Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of the remedy selection.*

   — A remedy was not selected during the current annual reporting period.

vi. *Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.*

   — Remedial activities were not initiated or are not ongoing during this current annual reporting period.

Section 1
Introduction

This *2023 CCR Annual Groundwater Monitoring and Corrective Action Report* (Report) was prepared on behalf of Dominion Energy South Carolina (DESC) for the former coal ash storage pond (Ash Pond) (Unit) at the Wateree Generating Station (Station) located in Eastover, Richland County, South Carolina. The Unit received low volume wastewater and sluiced bottom ash and fly ash generated from the combustion of coal at the Station. In accordance with the 2013 Closure Plan, coal ash and the underlying two feet of soil was removed from the Unit via excavation and subsequently backfilled with clean fill. Closure by removal was completed in September 2019. Management of the Unit is performed in accordance with the national criteria established by the CCR Rule.

DESC installed a groundwater monitoring system at the Unit that is subject to the groundwater monitoring and corrective action requirements provided under 40 CFR §257.90 through §257.98. In accordance with 40 CFR §257.90(e), DESC must prepare an annual report that provides information regarding the groundwater monitoring and corrective action program at the Unit. This Report provides the monitoring and corrective action data and data evaluations for the semiannual CCR monitoring compliance events performed in March and October 2023.

1.1 Site Location

The Station is operated by DESC and is located at 142 Wateree Station Road in Richland County, South Carolina (**Figure 1**). The Station is located approximately 5 miles southeast of Eastover, South Carolina. The Unit is located on the southern portion of the Station property approximately 1,000 feet from the generating plant.

1.2 Site History

The Wateree Generating Station is an active coal-fired power station that includes two identical generating units. Units 1 and 2, which began operation in 1970 and 1971, respectively, each have a gross generating capacity of 372 megawatts. Station operations included the use of a former coal ash storage pond (Ash Pond) (Unit), that received both bottom ash and coal ash. Since 2013, ash generated at the Station has been either disposed of in the onsite Landfill or transported offsite to the cement industry to be used as beneficial use material.

Additionally, the Unit is monitored and permitted under a National Pollutant Discharge System (NPDES) permit (Permit No. SC0002038) issued by South Carolina Department of Health and Environmental Control (SC DHEC).

1.3 Key Actions

Key actions for the Unit to date are as follows:

- Initiated the Detection Monitoring Program (DMP) on May 11, 2016, with the collection of eight (8) baseline/background samples and completed the background monitoring activities on July 10, 2017, pursuant to 40 CFR §257.94(b).
- Conducted the initial DMP compliance sampling event on September 26, 2017, pursuant to 40 CFR §257.94.
- Placed a copy of the Unit's Groundwater Monitoring Plan (GMP) documenting the design information for the monitoring wells pursuant to 40 CFR §257.91(e)(1) in the Station's operating record on October 17, 2017, pursuant to 40 CFR §257.105(h)(2).
- Certified the groundwater monitoring system pursuant to 40 CFR §257.91(f) and posted the Certification in the Station's operating record on October 17, 2017, pursuant to 40 CFR §257.105(h)(3).
- Certified the selection of a statistical method pursuant to 40 CFR §257.93(f)(6) and posted the Certification in the Station's operating record on October 17, 2017, pursuant to 40 CFR §257.105(h)(4).
- Placed a notification of a Statistically Significant Increase (SSI) over the Unit's background concentrations under the DMP in the Station's operating record in January 2018.
- Conducted the initial Assessment Monitoring Program (AMP) compliance sampling event on March 5-6, 2018, pursuant to 40 CFR §257.95(b).
- Established groundwater protection standards (GWPS) for detected constituents in Appendix IV of Part 257 on October 17, 2018, pursuant to 40 CFR §257.95(d)(2).
- Background concentrations of Appendix III and IV constituents were updated using United States Environmental Protection Agency-approved statistical procedures in August 2021.
- Conducted the first semiannual 2023 AMP event on March 14-16, 2023, and completed analysis on April 20, 2023.
- Place a copy of the Semiannual Remedy Selection Progress Report No. 8 in the Unit's operating record on June 11, 2023.
- As required by 40 CFR §257.105(h)(8), notification of GWPS exceedances for arsenic and lithium was posted in the Station's operating record on June 27, 2023.
- Conducted the second semiannual AMP event on October 11, 2023, and completed analysis on November 10, 2023.
- Placed a copy of the Semiannual Remedy Selection Progress Report No. 9 in the Unit's operating record on December 8, 2023.

1.4 Monitoring Program Concerns

There were no monitoring program concerns identified during 2023.

Section 2
Site Information

2.1 Monitoring Well Network

Groundwater monitoring wells (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, and MW-AP-05) were installed in March 2016 at the Unit to serve as the CCR Compliance Monitoring Well Network. Existing monitoring wells MW-AP-01A and MW-AP-08, utilized for other monitoring programs for the Unit, were incorporated into the CCR Compliance Monitoring Well Network in May 2016.

In March 2018, Assessment Monitoring at the Unit was initiated due to detections of Appendix III constituents over site background levels during the second 2017 semiannual detection monitoring program (DMP) event. In accordance with the requirements of 40 CFR Part 257.95(g)(1), a Release Characterization was subsequently initiated in November 2018 due to detections of Appendix IV constituents over the GWPS. As part of the Release Characterization, an additional ten groundwater monitoring wells were installed in the vicinity of the Unit in November/December 2018 and February 2019. The additional monitoring wells included five shallow (MW-AP-09, MW-AP-10, MW-AP-11, MW-AP-12, and MW-AP-13) and five deep (MW-AP-03D, MW-AP-03D2, MW-AP-09D, MW-AP-11D, and MW-AP-11D2) monitoring wells.

The Compliance Monitoring Well Network consists of the following monitoring wells:

- Background monitoring well - MW-AP-01A.
- Downgradient monitoring wells - MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08.

The distribution and location of the CCR Compliance Monitoring Well Network and assessment monitoring support wells is presented in **Figure 2**.

2.2 Monitoring Well Installation and Decommissioning Activities

No groundwater monitoring wells were installed or decommissioned during 2023.

2.3 Groundwater Potentiometric Surface Evaluation

Current and historical static water level data for the Station are summarized in **Table 1**. Per requirements of the CCR Rule 40 CFR 257.93(c), the rate and direction of groundwater flow within the uppermost aquifer beneath the Unit must be determined after each sampling event. Groundwater potentiometric surface maps were prepared using water level data obtained from both semiannual sampling events in

March and October 2023. Using the groundwater contours from March (**Figure 3**) and October (**Figure 4**), the average horizontal hydraulic gradient was calculated using the following equation:

$$i = (h^1 - h^2)/S$$

Where:

i = horizontal hydraulic gradient (unitless)
h^1 = water elevation in well 1 (feet)
h^2 = water elevation in well 2 (feet)
S = horizontal distance between well 1 and well 2 (feet)

The groundwater seepage velocity was calculated using the following formula:

$$Vs = ki/n_e$$

Where:

Vs = Groundwater seepage velocity (feet/day)
k = hydraulic conductivity (feet/day)
i = horizontal hydraulic gradient (unitless)
n_e = effective porosity (percent)

The result for each semiannual event is presented separately in Sections 2.3.1 and 2.3.2. As presented, the estimated groundwater seepage velocity in the uppermost aquifer beneath the Unit is approximately 43 to 65 ft/year. Furthermore, the overall interpreted data indicates that the groundwater flow direction and velocity remain consistent with previous calculations for the Unit. The groundwater monitoring network continues to monitor the uppermost aquifer in accordance with the CCR Rule.

2.3.1 First Semiannual 2023 Assessment Monitoring Program

The groundwater potentiometric surface map for March 2023 is presented in **Figure 3**. Using an estimated effective porosity value of 24% and estimated average hydraulic conductivity value of 8.07 ft/day, the average rate of groundwater flow for the uppermost aquifer beneath the Unit was calculated to be 43.61 ft/year.

Well 1	Well 2	h^1 (ft)	h^2 (ft)	S (ft)	i	K (ft/day)	n_e	Vs (ft/day)	Vs (ft/yr.)
MW-AP-13	MW-AP-05	95.14	90.28	1,120	0.0043	8.07	24	0.1459	53.25
MW-AP-09	MW-AP-12	95.53	90.98	1,230	0.0037			0.1244	45.40
98' Contour	MW-AP-01	98.00	92.36	2,150	0.0026			0.0882	32.19
						Average		0.1195	43.61

1) Hydraulic conductivity and effective porosity values from February 2021: Analysis of Groundwater Flow Rate and Direction – Ash Pond Wells (Nautilus 2021).

2.3.2 Second Semiannual 2023 Assessment Monitoring Program

The groundwater potentiometric surface map for October 2023 is presented in **Figure 4**. Using an estimated effective porosity value of 24% and estimated average hydraulic conductivity value of 8.07 ft/day, the average rate of groundwater flow for the uppermost aquifer beneath the Unit was calculated to be 64.63 ft/year.

Well 1	Well 2	h^1 (ft)	h^2 (ft)	S (ft)	i	K (ft/day)	n_e	Vs (ft/day)	Vs (ft/yr.)
MW-AP-13	MW-AP-05	91.31	81.98	1,120	0.0083	8.07	24	0.2801	102.23
MW-AP-09	MW-AP-12	92.09	86.88	1,230	0.0042			0.1424	51.98
96' Contour	MW-AP-01	96.00	89.00	2,165	0.0032			0.1087	39.68
						Average		0.1771	64.63

1) Hydraulic conductivity and effective porosity values from February 2021: Analysis of Groundwater Flow Rate and Direction – Ash Pond Wells (Nautilus 2021).

Section 3
Field Activities

CCR-related groundwater sampling activities that occurred during 2023 are summarized in the following sections.

3.1 Compliance Monitoring Program Sampling Activities

As per 40 CFR §257.95, two semiannual AMP events were completed for the constituents and parameters listed in Appendix III and Appendix IV of the CCR Rule. Summaries of the 2023 AMP sampling events are presented below.

2023 MONITORING EVENT	SAMPLE DATES	FINAL LABORATORY PACKAGE RECEIPT DATE
First Semiannual Assessment Monitoring Program Event	March 14-16, 2023	April 20, 2023
Second Semiannual Assessment Monitoring Program Event	October 11, 2023	November 10, 2023

During each of the AMP sampling events, the compliance monitoring wells were sampled in accordance with the Station's Groundwater Monitoring Program (GMP).

Samples collected during the semiannual sampling events were submitted to GEL Laboratories (GEL) in Charleston, South Carolina under proper chain-of-custody procedures. GEL is a SC DHEC Environmental Laboratory Certification Program (ELCP) accredited laboratory for analysis of CCR Rule constituents (GEL certification #10120001 and #10120002).

Section 4
Laboratory Analytical Results

Laboratory analytical results from the AMP sampling events conducted in 2023 are summarized in the following sections.

4.1 First Semiannual 2023 Assessment Monitoring Program Event

The groundwater samples collected during the first semiannual AMP event were analyzed by GEL for the constituents and parameters listed in Appendix III and Appendix IV of the CCR Rule. The laboratory certificates of analysis, chain-of-custody forms, and field notes for the sampling event are presented in **Appendix A**. A summary of the CCR sampling data for the Unit is included in **Table 2**.

4.2 Second Semiannual 2023 Assessment Monitoring Program Event

The groundwater samples collected during the second semiannual AMP event were analyzed by GEL for constituents and parameters listed in Appendix III and Appendix IV of the CCR Rule. The laboratory certificates of analysis, chain-of-custody forms, and field notes for the sampling event are presented in **Appendix B**. A summary of the CCR sampling data for the Unit is included in **Table 3**.

Section 5
Data Quality Validation

Third-party data validation services were provided by Environmental Standards, Inc. for the AMP sampling events. The reviews were performed with guidance from the United States Environmental Protection Agency (US EPA) data validation guidelines. A discussion of the findings is presented below.

5.1 First Semiannual 2023 Compliance Event Findings

The following field quality assurance (QA) and quality control (QC) samples for this event included:

- One blind duplicate sample was collected from MW-AP-03 on March 15, 2023.
- Additional sample volume was collected at MW-AP-01 on March 16, 2023, to allow for the laboratory to conduct a matrix spike (MS) and matrix spike duplicate (MSD) quality control check.
- A field blank was collected at MW-AP-03 on March 15, 2023, using laboratory provided deionized water. The field blank was used to assess for potential contaminants from field conditions during sampling activities.
- A field blank was collected at MW-AP-04 on March 16, 2023, using laboratory provided deionized water. The field blank was used to assess for potential contaminants from field conditions during sampling activities.

These QA/QC samples were analyzed for the same constituents as the groundwater samples. Based on review of the laboratory-provided QC data and Environmental Standards recommendations, the data for this sampling event were determined to meet the data quality objectives for the project. A copy of the data validation report is included in **Appendix A**.

5.2 Second Semiannual 2023 Compliance Event Findings

The following field QA/QC samples for this event included:

- One blind duplicate sample was collected from MW-AP-02 on October 11, 2023.
- Additional sample volume was collected at MW-AP-03 on October 11, 2023, to allow for the laboratory to conduct a MS/MSD quality control check.
- A field blank was collected at MW-AP-05 on October 11, 2023, using laboratory provided deionized water. The field blank was used to assess for potential contaminants from field conditions during sampling activities.

These QA/QC samples were analyzed for the same constituents as the groundwater samples. Based on review of the laboratory-provided QC data and Environmental Standards recommendations, the data for this sampling event were determined to meet the data quality objectives for the project. A copy of the data validation report is included in **Appendix B**.

Section 6
Statistical Evaluation of Groundwater Data

Statistical evaluation of the semiannual AMP data was performed in accordance with the statistical method certified by a qualified South Carolina-registered professional engineer. The certified statistical method has been posted to the Unit's operating record. Statistical evaluations completed in 2023 are summarized in the following sections.

6.1 Site-Specific Background Evaluation

Consistent with the provisions of 40 CFR §257.93(h), 2023 Appendix III results were evaluated against site-specific background values to determine if there is a statistically insignificant increase (SSI) over background water quality.

6.1.1 First Semiannual 2023 Data Evaluations

First semiannual Appendix III groundwater monitoring results were compared to previously established background threshold values using a value-to-value comparison. As presented in **Table 2**, the following SSIs over background were identified:

- Boron (MW-AP-01, MW-AP-03, and MW-AP-04)
- Calcium (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08)
- Chloride (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08)
- Fluoride (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08)
- pH (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08)
- Sulfate (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08)
- TDS (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08)

6.1.2 Second Semiannual 2023 Data Evaluations

Second semiannual Appendix III groundwater monitoring results were compared to previously established background threshold values using a value-to-value comparison. As presented in **Table 3**, the following SSIs over background were identified:

- Boron (MW-AP-01, MW-AP-03, and MW-AP-04)
- Calcium (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08)
- Chloride (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08)

- Fluoride (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, and MW-AP-08)
- pH (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08)
- Sulfate (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08)
- TDS (MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08)

As DESC already is monitoring groundwater for this Unit under the AMP, no additional actions are required.

6.2 Comparison to Groundwater Protection Standards

Consistent with the provisions of 40 CFR §257.95(d)(2), GWPS for the detected Appendix IV constituents listed in 40 CFR §257 were established on October 17, 2018. Assessment monitoring data for the March and October 2023 AMP events were evaluated against established GWPS for the Unit from the downgradient compliance monitoring wells.

6.2.1 First Semiannual 2023 Data Evaluations

TRC evaluated Appendix IV constituent detections against the GWPS that were established for the AMP (**Appendix C**). Based on that evaluation, the following Appendix IV constituents were found to exceed the GWPS for the first semiannual 2023 groundwater monitoring event based on a value-to-standard comparison (**Table 2**):

- Arsenic (MW-AP-02, MW-AP-03, and MW-AP-04)
- Lithium (MW-AP-03)

6.2.2 Second Semiannual 2023 Data Evaluations

Pursuant to 40 CFR §257.95, TRC evaluated Appendix IV constituent detections against the GWPS that were established for the AMP (**Appendix D**). Based on that evaluation, the following Appendix IV constituents were found to exceed the GWPS for the second semiannual 2023 groundwater monitoring event based on a value-to-standard comparison (**Table 3**):

- Arsenic (MW-AP-02, MW-AP-03, and MW-AP-04)
- Lithium (MW-AP-03)

Section 7
Conclusions

7.1 Findings

The first semiannual 2023 AMP compliance sampling event was conducted on March 14-16, 2023, with sample analyses completed on April 20, 2023. The second semiannual 2023 AMP compliance sampling event was conducted on October 11, 2023, with sample analyses complete on November 10, 2023. These groundwater sampling and analysis activities were performed in general accordance with the requirements of the Unit's GMP for the CCR Rule network.

Evaluation of the monitoring results from the first and second 2023 semiannual events identified an exceedance above established GWPS for arsenic in MW-AP-02, MW-AP-03, and MW-AP-04, and lithium in MW-AP-03. DESC completed an ACM for the Unit for arsenic and lithium in June 2019.

7.2 Planned Activities

Based on the results from the 2023 monitoring activities, DESC intends to continue with semiannual groundwater monitoring activities in 2024 that are consistent with the provisions in the CCR Rule [Part 257.95]. Additional site characterization activities are planned in 2024 to further refine the site conceptual model. Also, pending selection of the final remedy and consistent with the provisions of the CCR Rule [parts 257.95(a) and 257.105(h)(12)], DESC will continue to prepare semiannual progress reports for remedy design and selection.

Section 8
References

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Section 9
Signature Page

This *2023 CCR Annual Groundwater Monitoring and Corrective Action Report* (Report) has been prepared by a qualified groundwater scientist on behalf of Dominion Energy South Carolina (DESC) for the former coal ash storage pond (Ash Pond) at Wateree Generating Station. This Report satisfied the reporting requirements specified in Title 40 CFR §257.90(e) *et seq.* [Disposal of Coal Combustion Residuals (CCR) from Electric Utilities (CCR Rule; Federal Register Vol. 80, No. 74, 21302-21501 on April 17, 2015, as amended)].

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Expiration Date: June 30, 2025

Company: TRC Environmental Corporation

Date: January 31, 2024

(SEAL)

Tables

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Wateree Station Ash Pond
Eastover, Richland County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-AP-01A	127.85	5/11/2016	12.41	115.44
		7/11/2016	13.91	113.94
		9/19/2016	13.78	114.07
		11/15/2016	14.28	113.57
		1/17/2017	12.60	115.25
		3/20/2017	13.58	114.27
		5/22/2017	13.78	114.07
		7/10/2017	13.91	113.94
		9/26/2017	14.04	113.81
		3/5/2018	14.64	113.21
		6/4/2018	14.76	113.09
		9/10/2018	14.74	113.11
		11/20/2018	13.37	114.48
		12/11/2018	12.72	115.13
		3/6/2019	11.71	116.14
		8/28/2019	15.14	112.71
		3/9/2020	11.00	116.85
		9/14/2020	14.67	113.18
		3/8/2021	11.69	116.16
		9/15/2021	14.26	113.59
		3/15/2022	14.10	113.75
		9/6/2022	15.01	112.84
		3/10/2023	13.47	114.38
		10/10/2023	14.64	113.21
MW-AP-01	108.21	5/11/2016	18.75	89.46
		7/11/2016	20.53	87.68
		9/19/2016	20.35	87.86
		11/16/2016	20.84	87.37
		1/18/2017	19.56	88.65
		3/21/2017	20.25	87.96
		5/23/2017	18.64	89.57
		7/10/2017	19.60	88.61
		9/26/2017	20.38	87.83
		3/5/2018	18.56	89.65
		6/5/2018	17.02	91.19
		9/10/2018	20.54	87.67
		12/11/2018	16.65	91.56
		3/6/2019	16.86	91.35
		8/27/2019	18.93	89.28
		3/9/2020	15.33	92.88
		9/14/2020	17.18	91.03
		3/8/2021	15.27	92.94
		9/15/2021	18.64	89.57
		3/15/2022	15.63	92.58
		9/6/2022	18.97	89.24
		3/10/2023	15.85	92.36
		10/10/2023	19.21	89.00

Notes:
1) ft AMSL = feet above mean sea level.

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Wateree Station Ash Pond
Eastover, Richland County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-AP-02	111.00	5/11/2016	23.45	87.55
		7/11/2016	25.94	85.06
		9/19/2016	26.38	84.62
		11/15/2016	27.00	84.00
		1/18/2017	25.31	85.69
		3/21/2017	26.10	84.90
		5/23/2017	22.23	88.77
		7/10/2017	24.83	86.17
		9/26/2017	26.08	84.92
		3/5/2018	23.01	87.99
		6/5/2018	20.75	90.25
		9/10/2018	25.91	85.09
		12/11/2018	19.62	91.38
		3/6/2019	19.77	91.23
		8/27/2019	24.18	86.82
		3/9/2020	19.13	91.87
		9/14/2020	21.57	89.43
		3/8/2021	19.35	91.65
		9/15/2021	24.48	86.52
		3/15/2022	20.60	90.40
		9/6/2022	25.60	85.40
		3/10/2023	20.06	90.94
		10/10/2023	25.40	85.60
MW-AP-03	110.37	5/11/2016	21.60	88.77
		7/11/2016	23.48	86.89
		9/19/2016	23.90	86.47
		11/15/2016	24.80	85.57
		1/18/2017	23.77	86.60
		3/21/2017	24.82	85.55
		5/23/2017	22.18	88.19
		7/10/2017	23.22	87.15
		9/26/2017	23.71	86.66
		3/5/2018	22.30	88.07
		6/5/2018	20.82	89.55
		9/10/2018	24.21	86.16
		12/11/2018	18.85	91.52
		3/7/2019	18.76	91.61
		8/27/2019	22.78	87.59
		3/9/2020	17.34	93.03
		9/14/2020	19.39	90.98
		3/8/2021	17.50	92.87
		9/15/2021	21.62	88.75
		3/15/2022	19.59	90.78
		9/6/2022	22.56	87.81
		3/10/2023	18.43	91.94
		10/10/2023	22.38	87.99

Notes:
1) ft AMSL = feet above mean sea level.

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Wateree Station Ash Pond
Eastover, Richland County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-AP-3D	110.61	12/11/2018	19.85	90.76
		3/7/2019	19.70	90.91
		8/27/2019	26.20	84.41
		3/9/2020	19.50	91.11
		9/14/2020	20.87	89.74
		3/8/2021	17.50	93.11
		9/15/2021	27.06	83.55
		3/15/2022	19.85	90.76
		3/10/2023	23.80	86.81
		10/10/2023	27.92	82.69
MW-AP-3D2	110.68	3/29/2019	18.62	92.06
		8/27/2019	22.55	88.13
		3/9/2020	17.10	93.58
		9/14/2020	19.04	91.64
		3/8/2021	19.63	91.05
		9/15/2021	22.32	88.36
		3/15/2022	18.51	92.17
		9/6/2022	23.88	86.80
		3/10/2023	18.32	92.36
		10/10/2023	23.27	87.41
MW-AP-04	99.02	5/11/2016	10.37	88.65
		7/11/2016	13.36	85.66
		9/19/2016	12.41	86.61
		11/15/2016	13.80	85.22
		1/18/2017	12.81	86.21
		3/21/2017	13.74	85.28
		5/22/2017	11.66	87.36
		7/10/2017	12.51	86.51
		9/26/2017	12.80	86.22
		3/6/2018	10.89	88.13
		6/5/2018	9.12	89.90
		9/10/2018	12.60	86.42
		12/11/2018	7.92	91.10
		3/11/2019	8.41	90.61
		8/28/2019	11.60	87.42
		3/9/2020	6.85	92.17
		9/14/2020	8.71	90.31
		3/8/2021	6.75	92.27
		9/15/2021	10.76	88.26
		3/15/2022	8.33	90.69
		9/6/2022	11.93	87.09
		3/10/2023	7.41	91.61
		10/10/2023	11.70	87.32

Notes:
1) ft AMSL = feet above mean sea level.

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Wateree Station Ash Pond
Eastover, Richland County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-AP-05	106.03	5/11/2016	21.06	84.97
		7/11/2016	23.62	82.41
		9/19/2016	24.69	81.34
		11/15/2016	25.96	80.07
		1/18/2017	23.75	82.28
		3/21/2017	23.19	82.84
		5/22/2017	19.38	86.65
		7/6/2017	19.11	86.92
		9/26/2017	23.95	82.08
		3/6/2018	19.28	86.75
		6/4/2018	14.94	91.09
		9/10/2018	23.58	82.45
		12/11/2018	14.79	91.24
		3/11/2019	14.85	91.18
		8/28/2019	23.20	82.83
		3/9/2020	14.83	91.20
		9/14/2020	16.15	89.88
		3/8/2021	15.01	91.02
		9/15/2021	22.91	83.12
		3//15/2022	14.98	91.05
		9/6/2022	24.66	81.37
		3/10/2023	15.75	90.28
		10/10/2023	24.05	81.98
MW-AP-08	104.68	5/11/2016	24.21	85.28
		7/11/2016	26.88	82.61
		9/19/2016	27.85	81.64
		11/15/2016	29.20	80.29
		1/18/2017	26.45	83.04
		3/21/2017	26.48	83.01
		5/22/2017	22.71	86.78
		7/6/2017	22.52	86.97
		9/26/2017	27.23	82.26
		3/6/2018	22.59	82.09
		6/4/2018	18.01	86.67
		9/10/2018	27.32	77.36
		12/11/2018	18.10	86.58
		3/11/2019	18.19	86.49
		8/28/2019	26.51	78.17
		3/9/2020	13.30	91.38
		9/14/2020	14.66	90.02
		3/8/2021	13.02	91.66
		9/15/2021	21.31	83.37
		3/15/2022	13.52	91.16
		9/6/2022	23.13	81.55
		3/10/2023	14.23	90.45
		10/10/2023	22.49	82.19

Notes:
1) ft AMSL = feet above mean sea level.

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Wateree Station Ash Pond
Eastover, Richland County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-AP-09	112.48	12/11/2018	18.12	94.36
		3/8/2019	17.92	94.56
		8/28/2019	21.87	90.61
		3/9/2020	16.06	96.42
		9/14/2020	17.59	94.89
		3/8/2021	15.85	96.63
		9/15/2021	19.37	93.11
		3/15/2022	17.75	94.73
		9/6/2022	20.62	91.86
		3/10/2023	16.95	95.53
		10/10/2023	20.39	92.09
MW-AP-09D	112.23	12/11/2018	17.72	94.51
		3/8/2019	17.47	94.76
		8/28/2019	21.87	90.36
		3/9/2020	16.51	95.72
		9/14/2020	18.24	93.99
		3/8/2021	16.33	95.90
		9/15/2021	20.36	91.87
		3/15/2022	18.10	94.13
		9/6/2022	21.83	90.40
		3/10/2023	17.56	94.67
		10/10/2023	21.39	90.84
MW-AP-10	110.80	12/11/2018	19.65	91.15
		3/7/2019	19.63	91.17
		8/27/2019	23.72	87.08
		3/9/2020	18.55	92.25
		9/14/2020	21.04	89.76
		3/8/2021	18.93	91.87
		9/15/2021	23.16	87.64
		3/15/2022	20.76	90.04
		9/6/2022	24.08	86.72
		3/10/2023	19.68	91.12
		10/10/2023	23.90	86.90
MW-AP-11	102.93	12/11/2018	11.80	91.13
		3/7/2019	11.69	91.24
		8/27/2019	16.40	86.53
		3/9/2020	10.90	92.03
		9/14/2020	12.89	90.04
		3/8/2021	11.05	91.88
		9/15/2021	15.82	87.11
		3/15/2022	13.01	89.92
		9/6/2022	16.79	86.14
		3/10/2023	12.14	90.79
		10/10/2023	16.51	86.42

Notes:
1) ft AMSL = feet above mean sea level.

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Wateree Station Ash Pond
Eastover, Richland County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-AP-11D	102.98	12/12/2018	12.10	90.88
		3/7/2019	12.10	90.88
		8/27/2019	18.93	84.05
		3/9/2020	12.05	90.93
		9/14/2020	13.55	89.43
		3/8/2021	12.25	90.73
		9/15/2021	19.77	83.21
		3/15/2022	12.29	90.69
		9/6/2022	21.58	81.40
		3/10/2023	12.98	90.00
		10/10/2023	20.98	82.00
MW-AP-11D2	103.90	3/7/2019	10.70	93.20
		8/27/2019	15.40	88.50
		3/9/2020	17.10	86.80
		9/14/2020	12.45	91.45
		3/8/2021	10.50	93.40
		9/15/2021	15.63	88.27
		3/15/2022	11.88	92.02
		9/6/2022	17.21	86.69
		3/10/2023	11.66	92.24
		10/10/2023	16.60	87.30
MW-AP-12	106.06	12/12/2018	15.19	90.87
		3/11/2019	14.86	91.20
		8/28/2019	19.48	86.58
		3/9/2020	14.04	92.02
		9/14/2020	16.31	89.75
		3/8/2021	14.14	91.92
		9/15/2021	18.38	87.68
		3/15/2022	15.74	90.32
		9/6/2022	19.42	86.64
		3/10/2023	15.08	90.98
		10/10/2023	19.18	86.88
MW-AP-13	109.91	3/8/2019	15.32	94.59
		8/28/2019	19.36	90.55
		3/9/2020	13.68	96.23
		9/14/2020	15.39	94.52
		3/8/2021	13.60	96.31
		9/15/2021	17.40	92.51
		3/15/2022	15.74	94.17
		9/6/2022	18.13	91.78
		3/10/2023	14.77	95.14
		10/10/2023	18.60	91.31

Notes:
1) ft AMSL = feet above mean sea level.

Table 2
Summary of First Semiannual 2023 Assessment Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Wateree Station Ash Pond
Eastover, Richland County, South Carolina

				Background Well				Downgradient Wells																							
		Sample ID:	Sample ID:	MW-AP-01A				MW-AP-01				MW-AP-02				MW-AP-03				MW-AP-03 Duplicate				MW-AP-04				MW-AP-05				MW-AP-08			
		Sample Date:	Sample Date:	03/14/2023				03/16/2023				03/15/2023				03/15/2023				03/15/2023				03/16/2023				03/15/2023				03/14/2023			
Parameter Name	Units	Background Threshold Values	CCR Groundwater Protection Standard	Result	Qual	MDL	QL	Result	Qual	MDL	QL	Result	Qual	MDL	QL	Result	Qual	MDL	QL	Result	Qual	MDL	QL	Result	Qual	MDL	QL	Result	Qual	MDL	QL	Result	Qual	MDL	QL
CCR Appendix III																																			
Boron	µg/L	1,000	--	13.5	U	13.5	15.0	**1,560**		80.0	300	**570**		40.0	150	**1,660**		80.0	300	**1,740**		80.0	300	**2,000**		80.0	300	**228**		20.0	75.0	**233**		20.0	75.0
Calcium	µg/L	1,910	--	**695**		30.0	100	**64,900**		600	2,000	**53,500**		300	1,000	**68,900**		600	2,000	**70,000**		600	2,000	**138,000**		600	2,000	**16,500**		30.0	100	**20,900**		30.0	100
Chloride	mg/L	7.67	--	**5.87**		0.0670	0.200	**194**		3.35	10.0	**47.7**		0.670	2.00	**146**		1.68	5.00	**145**		1.68	5.00	**22.1**		0.335	1.00	**15.2**		0.670	2.00	**19.6**		0.670	2.00
Fluoride	mg/L	0.1	4	0.0330	U	0.0330	0.100	**0.343**		0.0330	0.100	**0.211**		0.0330	0.100	**0.671**		0.0330	0.100	**0.676**		0.0330	0.100	**0.582**		0.0330	0.100	**0.148**		0.0330	0.100	**0.777**		0.0330	0.100
pH	SU	3.66 - 5.27	--	4.91		0.01	0.01	6.42		0.01	0.01	6.02		0.01	0.01	6.37		0.01	0.01	--		--	--	6.49		0.01	0.01	6.06		0.01	0.01	5.89		0.01	0.01
Sulfate	mg/L	0.83	--	**0.274**	J	0.133	0.400	**1.58**		0.133	0.400	**11.3**		1.33	4.00	**72.1**		1.33	4.00	**71.4**		1.33	4.00	**56.8**		0.665	2.00	**28.8**		1.33	4.00	**78.3**		1.33	4.00
Total Dissolved Solids	mg/L	44	--	**21.0**		2.38	10.0	**317**		2.38	10.0	**277**		2.38	10.0	**411**		2.38	10.0	**410**		2.38	10.0	**512**		4.76	20.0	**198**		2.38	10.0	**311**		2.38	10.0
CCR Appendix IV																																			
Antimony	µg/L	--	6	0.600	U	0.600	2.00	0.600	U	0.600	2.00	0.600	U	0.600	2.00	0.600	U	0.600	2.00	0.600	U	0.600	2.00	0.600	U	0.600	2.00	0.600	U	0.600	2.00	0.600	U	0.600	2.00
Arsenic	µg/L	--	10	1.66	U	1.66	5.00	1.66	U	1.66	5.00	**43.6**		1.66	5.00	**964**		33.2	100	**972**		33.2	100	**25.3**		1.66	5.00	1.66	U	1.66	5.00	**2.42**	J	1.66	5.00
Barium	µg/L	--	2,000	**58.3**		0.500	2.00	**214**		0.500	2.00	**205**		0.500	2.00	**195**		0.500	2.00	**191**		0.500	2.00	**163**		0.500	2.00	**146**		0.500	2.00	**154**		0.500	2.00
Beryllium	µg/L	--	4	**0.221**	J	0.200	0.500	0.200	U	0.200	0.500	0.200	U	0.200	0.500	0.200	U	0.200	0.500	0.200	U	0.200	0.500	0.200	U	0.200	0.500	0.200	U	0.200	0.500	**3.81**		0.200	0.500
Cadmium	µg/L	--	5	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100
Chromium	µg/L	--	100	1.00	U	1.00	3.00	1.00	U	1.00	3.00	1.00	U	1.00	3.00	1.00	U	1.00	3.00	1.00	U	1.00	3.00	1.00	U	1.00	3.00	1.00	U	1.00	3.00	1.00	U	1.00	3.00
Cobalt	µg/L	--	6	**0.620**	J	0.100	1.00	**0.124**	J	0.100	1.00	**0.157**	J	0.100	1.00	**0.213**	J	0.100	1.00	**0.216**	J	0.100	1.00	0.100	U	0.100	1.00	**0.639**	J	0.100	1.00	**2.46**		0.100	1.00
Fluoride	mg/L	0.1	4	0.0330	U	0.0330	0.100	**0.343**		0.0330	0.100	**0.211**		0.0330	0.100	**0.671**		0.0330	0.100	**0.676**		0.0330	0.100	**0.582**		0.0330	0.100	**0.148**		0.0330	0.100	**0.777**		0.0330	0.100
Lead	µg/L	--	15	**0.874**	J	0.500	2.00	0.500	U	0.500	2.00	0.500	U	0.500	2.00	0.500	U	0.500	2.00	0.500	U	0.500	2.00	0.500	U	0.500	2.00	0.500	U	0.500	2.00	0.500	U	0.500	2.00
Lithium	µg/L	--	40	2.00	U	2.00	10.0	2.00	U	2.00	10.0	**2.01**	J	2.00	10.0	**62.7**		2.00	10.0	**62.0**		2.00	10.0	2.00	U	2.00	10.0	2.00	U	2.00	10.0	**10.2**		2.00	10.0
Mercury	µg/L	--	2	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200
Molybdenum	µg/L	--	100	0.167	U	0.167	1.00	**2.17**		0.167	1.00	**3.92**		0.167	1.00	**19.5**		0.167	1.00	**18.9**		0.167	1.00	**3.82**		0.167	1.00	0.167	U	0.167	1.00	0.167	U	0.167	1.00
Radium-226/228	pCi/L	--	5	**9.14**				**2.53**	J			**1.99**	J			**8.28**	J			**3.27**	J			**2.59**	J			**2.57**	J			**7.52**	J		
Selenium	µg/L	--	50	1.50	U	1.50	5.00	1.50	U	1.50	5.00	1.50	U	1.50	5.00	1.50	U	1.50	5.00	1.50	U	1.50	5.00	1.50	U	1.50	5.00	1.50	U	1.50	5.00	**6.39**		1.50	5.00
Thallium	µg/L	--	2	**0.247**	J	0.125	0.500	0.125	U	0.125	0.500	0.125	U	0.125	0.500	0.125	U	0.125	0.500	0.125	U	0.125	0.500	0.125	U	0.125	0.500	0.125	U	0.125	0.500	0.125	U	0.125	0.500
Field Parameters																																			
Conductivity	µS/cm	--	--	42.17		0.1	0.1	1,004.6		0.1	0.1	705.14		0.1	0.1	895.78		0.1	0.1	--		--	--	925.96		0.1	0.1	438.60		0.1	0.1	603.99		0.1	0.1
Dissolved Oxygen	mg/L	--	--	1.76		0.01	0.01	0.49		0.01	0.01	0.18		0.01	0.01	0.26		0.01	0.01	--		--	--	0.13		0.01	0.01	0.15		0.01	0.01	0.16		0.01	0.01
Oxidation Reduction Potential	millivolts	--		179.9		0.1	0.1	-113.5		0.1	0.1	-77.3		0.1	0.1	-102.8		0.1	0.1	--		--	--	-144.8		0.1	0.1	-60.2		0.1	0.1	8.4		0.1	0.1
Temperature	C	--	--	18.40		0.01	0.01	18.56		0.01	0.01	19.97		0.01	0.01	20.04		0.01	0.01	--		--	--	14.22		0.01	0.01	19.98		0.01	0.01	18.27		0.01	0.01
Turbidity	NTU	--	--	2.06		0.1	0.1	3.55		0.1	0.1	1.90		0.1	0.1	1.24		0.1	0.1	--		--	--	1.41		0.1	0.1	2.24		0.1	0.1	4.13		0.1	0.1

Notes:
MDL = Method Detection Limit
QL = Quantitation Limit
mg/L = Milligram per liter
pCi/L = Picocurries per liter
µg/L = Microgram per liter
µS/cm = MicroSiemen per centimeter
SU = Standard Units
C = Degrees Celsius
NTU = Nephelometric Turbidity Unit
ft btoc = feet below top of casing
ft msl = feet above mean sea level
CCR = Coal Combustion Residuals
GWPS = Groundwater Protection Standards

Qualifiers (Qual)
J = Estimated Results
U = Samples reported below their respective MDL
UJ = Sample reporting limit is approximate and may be inaccurate.
= Concentration greater than Background Threshold Values
= Concentration greater than GWPS

Bold font = Detected constituent

Table 3
Summary of Second Semiannual 2023 Assessment Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Wateree Station Ash Pond
Eastover, Richland County, South Carolina

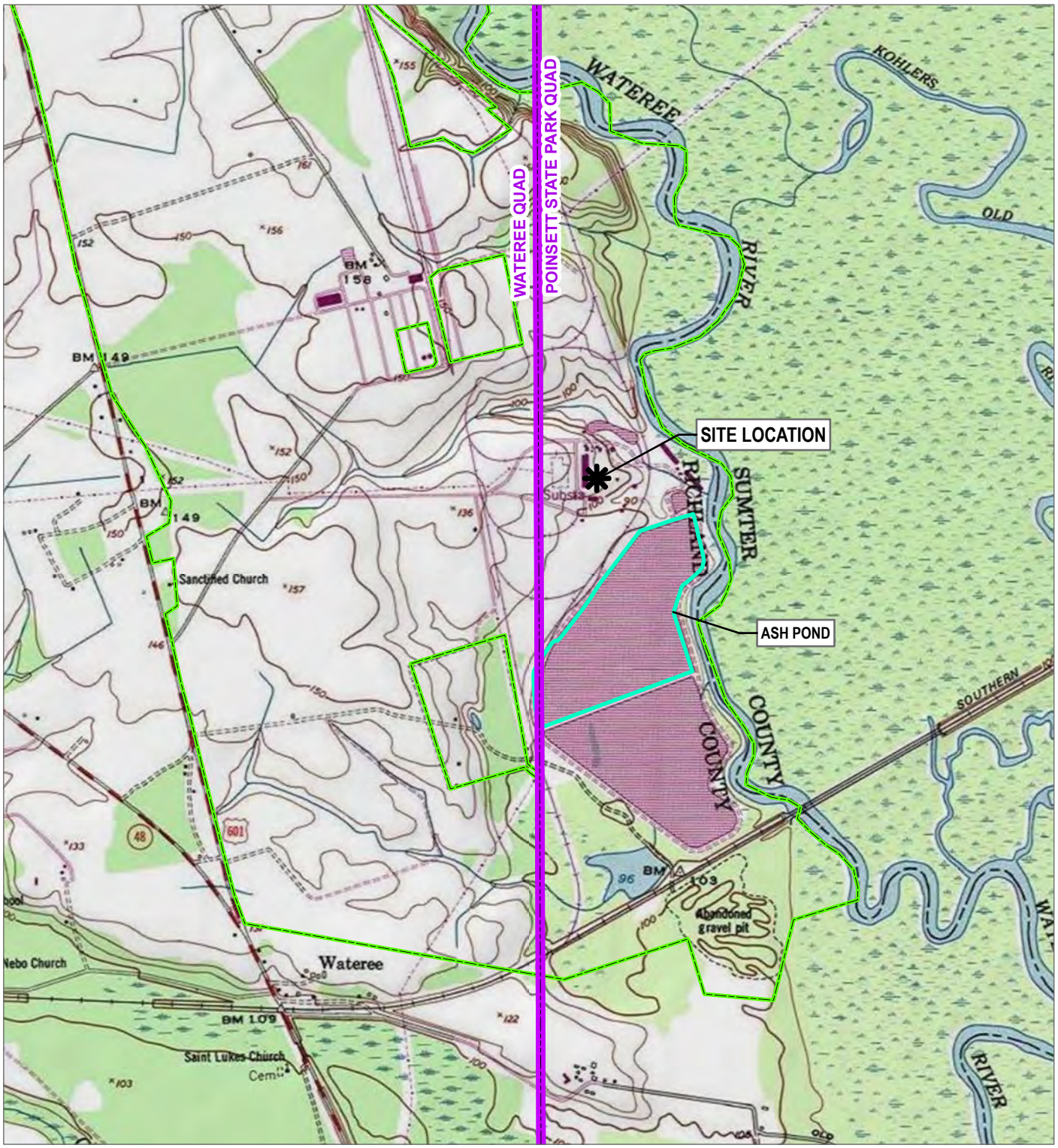
				Background Well				Downgradient Wells																							
		Sample ID:	Sample ID:	MW-AP-01A				MW-AP-01				MW-AP-02				MW-AP-02 Duplicate				MW-AP-03				MW-AP-04				MW-AP-05				MW-AP-08			
		Sample Date:	Sample Date:	10/11/2023				10/11/2023				10/11/2023				10/11/2023				10/11/2023				10/11/2023				10/11/2023				10/11/2023			
Parameter Name	**Units**	**Background Threshold Values**	**CCR Groundwater Protection Standard**	**Result**	**Qual**	**MDL**	**QL**	**Result**	**Qual**	**MDL**	**QL**	**Result**	**Qual**	**MDL**	**QL**	**Result**	**Qual**	**MDL**	**QL**	**Result**	**Qual**	**MDL**	**QL**	**Result**	**Qual**	**MDL**	**QL**	**Result**	**Qual**	**MDL**	**QL**	**Result**	**Qual**	**MDL**	**QL**
CCR Appendix III																																			
Boron	µg/L	1,000	--	**10.1**	J	4.00	15.0	**2,220**		80.0	300	**668**	J	40.0	150	**989**	J	40.0	150	**1,310**		40.0	150	**2,040**		80.0	300	**180**		20.0	75.0	**294**		20.0	75.0
Calcium	µg/L	1,910	--	**580**		30.0	100	**74,000**		600	2,000	**55,000**	J	300	1,000	**78,600**	J	300	1,000	**63,600**		300	1,000	**149,000**		600	2,000	**16,400**		30.0	100	**23,100**		30.0	100
Chloride	mg/L	7.67	--	**6.49**		0.0670	0.200	**198**		2.68	8.00	**48.7**		0.670	2.00	**49.0**		0.670	2.00	**114**		1.34	4.00	**21.2**		0.670	2.00	**14.9**		0.670	2.00	**16.4**		0.670	2.00
Fluoride	mg/L	0.1	4	0.0330	U	0.0330	0.100	**0.383**		0.0330	0.100	**0.217**		0.0330	0.100	**0.130**		0.0330	0.100	**0.524**		0.0330	0.100	**1.01**		0.330	1.00	**0.0612**	J	0.0330	0.100	**1.25**		0.330	1.00
pH	SU	3.66 - 5.27	--	4.83		0.01	0.01	5.63		0.01	0.01	5.67		0.01	0.01	--		--	--	5.80		0.01	0.01	6.34		0.01	0.01	5.91		0.01	0.01	5.65		0.01	0.01
Sulfate	mg/L	0.83	--	**0.222**	J	0.133	0.400	**11.0**		0.133	0.400	**17.3**		1.33	4.00	**17.0**		1.33	4.00	**55.4**		1.33	4.00	**63.1**		1.33	4.00	**33.4**		1.33	4.00	**110**		1.33	4.00
Total Dissolved Solids	mg/L	44	--	2.38	U	2.38	10.0	**458**		2.38	10.0	**298**		2.38	10.0	**299**		2.38	10.0	**403**		2.38	10.0	**532**		2.38	10.0	**234**		2.38	10.0	**369**		2.38	10.0
CCR Appendix IV																																			
Antimony	µg/L	--	6	0.600	U	0.600	2.00	0.600	U	0.600	2.00	0.600	U	0.600	2.00	0.600	U	0.600	2.00	0.600	U	0.600	2.00	0.600	U	0.600	2.00	0.600	U	0.600	2.00	0.600	U	0.600	2.00
Arsenic	µg/L	--	10	1.66	U	1.66	5.00	1.66	U	1.66	5.00	**46.6**		1.66	5.00	**47.1**		1.66	5.00	**638**		1.66	5.00	**30.9**		1.66	5.00	1.66	U	1.66	5.00	**2.54**	J	1.66	5.00
Barium	µg/L	--	2,000	**64.8**		0.500	2.00	**248**		0.500	2.00	**200**		0.500	2.00	**207**		0.500	2.00	**198**		0.500	2.00	**205**		0.500	2.00	**173**		0.500	2.00	**151**		0.500	2.00
Beryllium	µg/L	--	4	**0.259**	J	0.200	0.500	0.200	U	0.200	0.500	0.200	U	0.200	0.500	0.200	U	0.200	0.500	0.200	U	0.200	0.500	0.200	U	0.200	0.500	0.200	U	0.200	0.500	**7.12**		0.200	0.500
Cadmium	µg/L	--	5	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100	0.0300	U	0.0300	0.100
Chromium	µg/L	--	100	1.00	U	1.00	3.00	1.00	U	1.00	3.00	1.00	U	1.00	3.00	1.00	U	1.00	3.00	1.00	U	1.00	3.00	1.00	U	1.00	3.00	1.00	U	1.00	3.00	1.00	U	1.00	3.00
Cobalt	µg/L	--	6	**0.838**	J	0.100	1.00	**0.100**	U	0.100	1.00	**0.115**	J	0.100	1.00	**0.138**	J	0.100	1.00	**0.182**	J	0.100	1.00	0.100	U	0.100	1.00	**0.493**	J	0.100	1.00	**19.3**		0.100	1.00
Fluoride	mg/L	0.1	4	0.0330	U	0.0330	0.100	**0.383**		0.0330	0.100	**0.217**		0.0330	0.100	**0.130**		0.0330	0.100	**0.524**		0.0330	0.100	**1.01**		0.330	1.00	**0.0612**	J	0.0330	0.100	**1.25**		0.330	1.00
Lead	µg/L	--	15	**1.34**	J	0.500	2.00	0.500	U	0.500	2.00	0.500	U	0.500	2.00	0.500	U	0.500	2.00	0.500	U	0.500	2.00	0.500	U	0.500	2.00	0.500	U	0.500	2.00	0.500	U	0.500	2.00
Lithium	µg/L	--	40	2.00	U	2.00	10.0	2.00	U	2.00	10.0	**5.06**	J	2.00	10.0	**5.23**	J	2.00	10.0	**36.4**		2.00	10.0	2.00	U	2.00	10.0	2.00	U	2.00	10.0	**16.5**		2.00	10.0
Mercury	µg/L	--	2	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200	0.0670	UJ	0.0670	0.200
Molybdenum	µg/L	--	100	0.178	U	0.178	1.00	**3.09**		0.167	1.00	**5.73**		0.167	1.00	**5.78**		0.167	1.00	**12.9**		0.167	1.00	**4.62**		0.167	1.00	0.167	U	0.167	1.00	0.167	U	0.167	1.00
Radium-226/228	pCi/L	--	5	**6.39**	J			**1.07**	J			**3.79**	J			0.885	UJ			**3.33**	J			**3.28**	J			**3.38**	J			**3.45**	J		
Selenium	µg/L	--	50	1.50	U	1.50	5.00	1.50	U	1.50	5.00	1.50	U	1.50	5.00	1.50	U	1.50	5.00	1.50	U	1.50	5.00	1.50	U	1.50	5.00	1.50	U	1.50	5.00	**9.19**		1.50	5.00
Thallium	µg/L	--	2	0.125	U	0.125	0.500	0.125	U	0.125	0.500	0.125	U	0.125	0.500	0.125	U	0.125	0.500	0.125	U	0.125	0.500	0.125	U	0.125	0.500	0.125	U	0.125	0.500	0.125	U	0.125	0.500
Field Parameters																																			
Conductivity	µS/cm	--	--	43.34		0.1	0.1	926.23		0.1	0.1	645.64		0.1	0.1	--		--	--	766.3		0.1	0.1	905.32		0.1	0.1	413.29		0.1	0.1	511.33		0.1	0.1
Dissolved Oxygen	mg/L	--	--	1.59		0.01	0.01	0.25		0.01	0.01	0.07		0.01	0.01	--		--	--	0.06		0.01	0.01	0.02		0.01	0.01	0.06		0.01	0.01	0.1		0.01	0.01
Oxidation Reduction Potential	millivolts	--		102.8		0.1	0.1	-47.4		0.1	0.1	-63.4		0.1	0.1	--		--	--	-79.7		0.1	0.1	-286.8		0.1	0.1	-101.2		0.1	0.1	-60.5		0.1	0.1
Temperature	C	--	--	23.61		0.01	0.01	23.42		0.01	0.01	22.89		0.01	0.01	--		--	--	23.31		0.01	0.01	22.66		0.01	0.01	22.81		0.01	0.01	23.27		0.01	0.01
Turbidity	NTU	--	--	4.81		0.1	0.1	1.90		0.1	0.1	1.48		0.1	0.1	--		--	--	0.08		0.1	0.1	0.07		0.1	0.1	1.79		0.1	0.1	3.6		0.1	0.1

Notes:
MDL = Method Detection Limit
QL = Quantitation Limit
mg/L = Milligram per liter
pCi/L = Picocurries per liter
µg/L = Microgram per liter
µS/cm = MicroSiemen per centimeter
SU = Standard Units
C = Degrees Celsius
NTU = Nephelometric Turbidity Unit
ft btoc = feet below top of casing
ft msl = feet above mean sea level
CCR = Coal Combustion Residuals
GWPS = Groundwater Protection Standards

Qualifiers (Qual)
J = Estimated Results
U = Samples reported below their respective MDL
UJ = Sample reporting limit is approximate and may be inaccurate.
= Concentration greater than Background Threshold Values
= Concentration greater than GWPS

Bold font = Detected constituent

Figures



LEGEND

- SITE LOCATION
- USGS 24K QUAD BOUNDARY
- ASH POND BOUNDARY
- PROPERTY BOUNDARY

BASE MAP: USA TOPO MAPS MAP SERVICE
DATA SOURCES: TRC

N

0 1,000 2,000
FEET
1:24,000 1" = 2,000'

PROJECT: DOMINION ENERGY SOUTH CAROLINA
WATEREE STATION
142 WATEREE STATION ROAD
EASTOVER, SOUTH CAROLINA 29044

TITLE: SITE LOCATION MAP

DRAWN BY:	L. LILL	PROJ. NO.:	416559.0005.0000
CHECKED BY:	J. YONTS		FIGURE 1
APPROVED BY:	R. MAYER		
DATE:	JANUARY 2024		

TRC
50 INTERNATIONAL DRIVE
PATEWOOD PLAZA THREE, SUITE 150
GREENVILLE, SC 29615
PHONE: 864.281.0030

FILE: 2023_FIGURES

LEGEND

- CCR BACKGROUND MONITORING WELL
- CCR DOWNGRADIENT MONITORING WELL
- CCR CORRECTIVE ACTION MONITORING WELL
- BACKFILLED CLEAN CLOSED ASH POND AREA BOUNDARY
- PROPERTY BOUNDARY

NOTES:

1. AERIAL IMAGE FROM ESRI WORLD IMAGERY DATED APRIL, 2021.

N

1:5,400

1" = 450'

0 225 450 FEET

PROJECT:
DESC WATEREE STATION
BACKFILLED CLEAN CLOSED ASH POND AREA
EASTOVER, SOUTH CAROLINA

TITLE:
CCR RULE COMPLIANCE
MONITORING WELL NETWORK

DRAWN BY:	L. LILL	PROJ. NO.:	416559.0005.0000
CHECKED BY:	J. YONTS		**FIGURE 2**
APPROVED BY:	R. MAYER		
DATE:	JANUARY 2024		

TRC
50 INTERNATIONAL DRIVE
PATEWOOD PLAZA THREE, SUITE 150
GREENVILLE, SC 29615
PHONE: 864.281.0030

FILE: 2023_Figures.aprx

Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet - Map Rotation: 0
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MW-AP-01A
114.38

MW-FGD-06
114.72

MW-FGD-05
107.99

AS-FGD-01
109.80

MW-FGD-04
107.13

AS-FGD-03
104.44

MW-FGD-03
105.44

AS-FGD-02
104.38

MW-FGD-02
103.78

MW-AP-09
95.53

(MW-AP-09D)

MW-AP-13
95.14

MW-AP-08
90.45

MW-AP-05
90.28

MW-AP-04
91.61

(MW-AP-03D2)

(MW-AP-03D)

MW-AP-12
90.98

MW-AP-11
90.79

MW-AP-03
91.94

(MW-AP-11D)

(MW-AP-11D2)

MW-AP-10
91.12

MW-AP-02
90.94

MW-AP-01
92.36

LEGEND

- CCR BACKGROUND MONITORING WELL
- CCR DOWNGRADIENT MONITORING WELL
- CCR CORRECTIVE ACTION MONITORING WELL
- EVENT PIEZOMETER
- BACKFILLED CLEAN CLOSED ASH POND AREA
- PROPERTY BOUNDARY
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- WATER TABLE ELEVATION IN FEET ABOVE MEAN SEA LEVEL (2' CONTOUR INTERVALS) - DASHED WHERE INFERRED
- **92.36** WATER ELEVATION (FT. MSL)

NOTES:

1. AERIAL IMAGE FROM ESRI WORLD IMAGERY DATED SEPTEMBER, 2022.
2. WELLS IN PARENTHESES NOT USED FOR CONTOURING.

N

1:5,400
1" = 450'
0 225 450 FEET

PROJECT:
DESC WATEREE STATION
BACKFILLED CLEAN CLOSED ASH POND AREA
EASTOVER, SOUTH CAROLINA

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP - MARCH 10, 2023

DRAWN BY:	L. LILL	PROJ. NO.:	416559.0005.0000
CHECKED BY:	J. YONTS		
APPROVED BY:	R. MAYER		**FIGURE 3**
DATE:	JANUARY 2024		

TRC
50 INTERNATIONAL DRIVE
PATEWOOD PLAZA THREE, SUITE 150
GREENVILLE, SC 29615
PHONE: 864.281.0030

FILE: 2023_Figures.aprx

Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet; Map Rotation: 0
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Figures.aprx; Layout Name: Fig03_Wateree_CCR_AP_WT_03102023

MW-AP-01A
113.21

MW-FGD-06
112.82

MW-FGD-05
107.48

MW-FGD-04
106.84

AS-FGD-01
109.49

MW-FGD-03
105.44

AS-FGD-03
104.48

MW-FGD-02
104.84

AS-FGD-02
104.48

MW-AP-13
91.31

MW-AP-08
82.19

MW-AP-05
81.98

MW-AP-09D
90.84

MW-AP-09
92.09

MW-AP-04
87.32

MW-AP-12
86.88

MW-AP-03D2
87.41

MW-AP-03D
82.69

MW-AP-03
87.99

MW-AP-11
86.42

MW-AP-11D
82.00

MW-AP-11D2
87.30

MW-AP-10
86.90

MW-AP-02
85.60

MW-AP-01
89.00

112 110 108 106 104 102 100 98 96 94 92 90 88 86 84 82

LEGEND

- CCR BACKGROUND MONITORING WELL
- CCR DOWNGRADIENT MONITORING WELL
- CCR CORRECTIVE ACTION MONITORING WELL
- EVENT PIEZOMETER
- BACKFILLED CLEAN CLOSED ASH POND AREA
- PROPERTY BOUNDARY
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- WATER TABLE ELEVATION IN FEET ABOVE MEAN SEA LEVEL (2' CONTOUR INTERVALS) - DASHED WHERE INFERRED
- **92.36** WATER ELEVATION (FT. MSL)

NOTES:

1. AERIAL IMAGE FROM ESRI WORLD IMAGERY DATED SEPTEMBER, 2022.
2. WELLS IN PARENTHESES NOT USED FOR CONTOURING.

1:5,400
1" = 450'
0 225 450 FEET

PROJECT:
DESC WATEREE STATION
BACKFILLED CLEAN CLOSED ASH POND AREA
EASTOVER, SOUTH CAROLINA

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP - OCTOBER 10, 2023

DRAWN BY:	L. LILL	PROJ. NO.:	416559.0005.0000
CHECKED BY:	J. YONTS		
APPROVED BY:	R. MAYER		**FIGURE 4**
DATE:	JANUARY 2024		

TRC
50 INTERNATIONAL DRIVE
PATEWOOD PLAZA THREE, SUITE 150
GREENVILLE, SC 29615
PHONE: 864.281.0030

FILE: 2023_Figures.aprx

Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet; Map Rotation: 0
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Appendix A
First Semiannual Assessment Monitoring Program Event Field Data Sheets, Laboratory Reports, and Data Validation Forms

GROUNDWATER LEVEL MEASUREMENT FORM

PROGRAM:	CCR/NPDES	**FACILITY:**	Wateree Generating Station
DATE:	03/10/2023	**PROJECT NUMBER:**	416559.0005.0000
SAMPLER(S) NAME(S):	J. Bradley, A. Misiunas, R. Culp, C. Serowik		

Well ID	Well Type	Time (hhmm)	Depth to GW (btoc,ft)	Depth to Bottom (btoc,ft)	Notes/Remarks
WAT-AS-FGD-01	2" PVC	1030	16.49	25.94	
WAT-AS-FGD-02	2" PVC	1034	16.05	25.54	
WAT-AS-FGD-03	2" PVC	1029	14.97	26.45	
WAT-MW-AP-01	2" PVC	0923	15.85	23.41	
WAT-MW-AP-01A	2" PVC	1026	13.47	23.81	
WAT-MW-AP-02	2" PVC	0929	20.06	23.82	
WAT-MW-AP-03	2" PVC	0947	18.43	33.58	
WAT-MW-AP-03D	2" PVC	0950	23.80	49.27	
WAT-MW-AP-03D2	2" PVC	0953	18.32	73.48	
WAT-MW-AP-04	2" PVC	0958	7.41	25.69	
WAT-MW-AP-05	2" PVC	1005	15.75	39.47	
WAT-MW-AP-08	2" PVC	1007	14.23	42.39	
WAT-MW-AP-09	2" PVC	0842	16.95	32.42	
WAT-MW-AP-09D	2" PVC	0846	17.56	57.03	
WAT-MW-AP-10	2" PVC	0931	19.68	32.66	
WAT-MW-AP-11	2" PVC	0937	12.14	20.48	
WAT-MW-AP-11D	2" PVC	0940	12.98	40.54	
WAT-MW-AP-11D2	2" PVC	0942	11.66	61.45	
WAT-MW-AP-12	2" PVC	1001	15.08	32.57	
WAT-MW-AP-13	2" PVC	0851	14.77	31.33	
WAT-MW-FGD-02	2" PVC	1038	17.46	21.25	
WAT-MW-FGD-03	2" PVC	1038	17.85	20.83	
WAT-MW-FGD-04	2" PVC	1042	15.66	21.39	
WAT-MW-FGD-05	2" PVC	1042	15.36	19.25	
MW-FGD-06	2" PVC	1024	15.00	28.22	

Notes:

Field Team Leader Signature:	Jason A. Yonts Digitally signed by Jason A. Yonts Date: 2023.03.22 13:22:06 -04'00'	**Signature Date:**	03/22/2023

Clear All Values | Print | Submit

TRC

WATER SAMPLE LOG

PROJECT NAME:	Wateree Station AP-NPDES	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0005.0000.6.2	BY: JMB	DATE: 3-14-23	BY: JAV	DATE: 3/20/23

SAMPLE ID: MW-1A/MW-AP-01A WELL DIAMETER: ☑ 2" ☐ 4" ☐ 6" ☐ OTHER

WELL MATERIAL: ☑ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER

PURGING	TIME: 1343	DATE: 3-14-23

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 13.62 T/ PVC

DEPTH TO BOTTOM: 23.82 T/ PVC

WELL VOLUME: 1.68 ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 3.6 ☐ LITERS ☑ GALLONS

COLOR: clear ODOR: none

TURBIDITY

☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

SAMPLE	TIME: 1630	DATE: 3-14-23

PH: 4.91 SU CONDUCTIVITY: 42.17 umhos/cm

ORP: 179.9 mV DO: 1.76 mg/L

TURBIDITY: 2.06 NTU

☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 18.40 °C OTHER:

COLOR: clear ODOR: none

FILTRATE (0.45 um) ☐ YES ☒ NO

FILTRATE COLOR FILTRATE ODOR:

QC SAMPLE: ☐ MS/MSD ☐ DUP-

POST TURBIDITY: 2.21 NTU TIME: 1653

COMMENTS:

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1547	240	5.13	44.33	106.5	1.25	12.75	18.01	13.69	INITIAL
1600		4.96	42.23	144.6	1.21	7.52	18.09	13.69	
1605		4.96	41.91	153.8	1.26	4.07	18.08	13.69	
1610		4.94	41.91	164.3	1.33	3.72	18.04	13.69	
1615		4.94	42.50	172.1	1.53	3.19	18.04	13.69	
1620		4.91	42.11	176.7	1.68	2.82	18.16	13.69	
1625		4.90	42.15	180.5	1.73	2.56	18.41	13.69	
1630		4.91	42.17	179.9	1.76	2.06	18.40	13.69	3.6

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- **0.1** COND.: +/- **3 %** ORP: +/- D.O.: +/- TURB: +/- **10 %** or </= **5** TEMP.: +/-

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
2	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
2	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
2	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	250 mL	AMBER	C	☐ Y ☑ N					☐ Y ☐ N
1	2 L	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N

SHIPPING METHOD:		DATE SHIPPED:		AIRBILL NUMBER:	
COC NUMBER:		SIGNATURE:		DATE SIGNED:	

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TRC

WATER SAMPLE LOG

PROJECT NAME:	Wateree Station Ash Pond-CCR	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0005.0000.5.2	BY: CS	DATE: 3/16/23	BY: JAH	DATE: 3/20/23

SAMPLE ID: MW-AP-01 WELL DIAMETER: ☑ 2" ☐ 4" ☐ 6" ☐ OTHER

WELL MATERIAL: ☑ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER

PURGING	TIME: 0920	DATE: 3/16/23	SAMPLE	TIME: 1030	DATE: 3/16/23

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 17.05 T/ PVC

DEPTH TO BOTTOM: 23.35 T/ PVC

WELL VOLUME: 2.5 ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 1.04 ☐ LITERS ☑ GALLONS

COLOR: clear/rusty color tint ODOR: N/A

TURBIDITY ☐ NONE ☐ SLIGHT ☒ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

PH: 6.42 SU CONDUCTIVITY: 1004.6 umhos/cm

ORP: -113.5 mV DO: 0.49 mg/L

TURBIDITY: 3.55 NTU

☑ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 18.56 °C OTHER:

COLOR: clear ODOR: N/A

FILTRATE (0.45 um) ☐ YES ☒ NO

FILTRATE COLOR: FILTRATE ODOR:

QC SAMPLE: ☒ MS/MSD ☐ DUP-

POST TURBIDITY: 2.77 NTU TIME: 1105

COMMENTS:

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
0925	240	6.03	493.33	56.2	1.50	36.6	12.45	17.17	INITIAL
0930		6.08	522.08	32.8	0.87	43.1	14.71	17.17	
0935		6.12	644.08	16.7	0.75	56.4	15.48	17.17	
0940		6.28	918.85	-20.4	0.65	26.1	15.79	17.17	
0945		6.30	935.72	-40.0	0.64	22.9	16.02	17.17	
0950		6.35	983.96	-66.6	0.61	19.6	16.25	17.17	
0955		6.41	1011.7	-92.2	0.61	16.4	16.63	17.17	
1010		6.42	1019.4	-107.2	0.51	6.57	17.80	17.17	
1015		6.43	985.85	-108.3	0.50	5.32	18.11	17.17	
1020		6.44	1015.7	-114.7	0.50	4.30	18.42	17.17	2.5

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- **0.1** COND.: +/- **3 %** ORP: +/- **10** D.O.: +/- **10 %** TURB: +/- **10 %** or </= **5** TEMP.: +/- **3 %**

BOTTLES FILLED PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D.- NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
1	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
1	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	2 L	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD:	DATE SHIPPED:	AIRBILL NUMBER:
COC NUMBER:	SIGNATURE:	DATE SIGNED:

TRC

WATER SAMPLE LOG

(CONTINUED FROM PREVIOUS PAGE)

PROJECT NAME:	Wateree Station Ash Pond-CCR	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0005.0000.5.2	BY: JB / RC / CS	DATE: 3/16/23	BY: [illegible]	DATE: 3/20/23

SAMPLE ID: MW-AP-01

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1025	240	6.42	1006.4	-110.8	0.49	3.97	18.49	17.17	
1030		6.42	1004.6	-113.5	0.49	3.55	18.56	17.17	2.5

SIGNATURE: [signature]

DATE SIGNED: 3/16/23

TRC WATER SAMPLE LOG

PROJECT NAME:	Wateree Station Ash Pond-CCI	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0005.0000.5.2	BY: CS	DATE: 3/15/23	BY: JNH	DATE: 3/20/23

SAMPLE ID: MW-AP-02 WELL DIAMETER: ☑ 2" ☐ 4" ☐ 6" ☐ OTHER

WELL MATERIAL: ☑ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER

PURGING	TIME: 1425	DATE: 3/15/23	SAMPLE	TIME: 1455	DATE: 3/15/23

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 21.46 T/ PVC

DEPTH TO BOTTOM: 32.75 T/ PVC

WELL VOLUME: 1.86 ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 1.0 ☐ LITERS ☑ GALLONS

COLOR: clear ODOR: none

TURBIDITY ☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

PH: 6.02 SU CONDUCTIVITY: 705.14 umhos/cm

ORP: -77.3 mV DO: 0.18 mg/L

TURBIDITY: 1.90 NTU

☑ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 19.97 °C OTHER:

COLOR: clear ODOR: N/A

FILTRATE (0.45 um) ☐ YES ☒ NO

FILTRATE COLOR: FILTRATE ODOR:

QC SAMPLE: ☐ MS/MSD ☐ DUP-

POST TURBIDITY: 1.25 NTU TIME: 1320

COMMENTS:

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1430	140	5.91	814.18	-66.2	0.41	6.60	20.14	21.60	INITIAL
1435	1	5.99	693.19	-46.1	0.28	3.65	19.27	21.64	|
1440	|	6.01	701.75	-60.4	0.24	1.81	19.23	21.71	|
1445	|	6.01	702.27	-72.3	0.20	1.71	19.81	21.71	|
1450	|	6.02	702.68	-75.0	0.19	2.24	19.88	21.71	|
1455	|	6.02	705.14	-77.3	0.18	1.90	19.97	21.71	1 gal

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- **0.1** COND.: +/- **3 %** ORP: +/- **10** D.O.: +/- **10 %** TURB: +/- **10 %** or </= **5** TEMP.: +/- **3 %**

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
1	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
1	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	2 L	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD:	DATE SHIPPED:	AIRBILL NUMBER:
COC NUMBER:	SIGNATURE:	DATE SIGNED:

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WATER SAMPLE LOG

PROJECT NAME: Wateree Station Ash Pond-CCR	PREPARED		CHECKED	
PROJECT NUMBER: 416559.0005.0000.5.2	BY: JMB	DATE: 3-15-23	BY: JAH	DATE: 3/20/23

SAMPLE ID: MW-AP-03 WELL DIAMETER: ☑ 2" ☐ 4" ☐ 6" ☐ OTHER

WELL MATERIAL: ☑ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER

PURGING	TIME: 1426	DATE: 3-15-23

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 19.25 T/ PVC

DEPTH TO BOTTOM: 33.53 T/ PVC

WELL VOLUME: 2.36 ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 2.2 ☐ LITERS ☑ GALLONS

COLOR: clear ODOR: none

TURBIDITY ☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

SAMPLE	TIME: 1500	DATE: 3-15-23

PH: 6.37 SU CONDUCTIVITY: 895.78 umhos/cm

ORP: -102.8 mV DO: 0.26 mg/L

TURBIDITY: 1.24 NTU

☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 20.04 °C OTHER:

COLOR: clear ODOR: none

FILTRATE (0.45 um) ☐ YES ☒ NO

FILTRATE COLOR: FILTRATE ODOR:

QC SAMPLE: ☐ MS/MSD ☒ DUP WAT-CCR-AP-23101

POST TURBIDITY: 1.27 NTU TIME: 1530

COMMENTS: FBLK-WAT-CCR-AP-23101 collected @1516

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1428	250	5.59	909.05	45.6	4.81	5.17	18.90	19.25	INITIAL
1445	|	6.34	889.47	-102.9	0.30	4.12	19.99	19.25	|
1450	|	6.36	890.85	-103.7	0.25	3.25	19.98	19.25	|
1455	|	6.36	892.24	-103.2	0.27	2.00	19.97	19.25	|
1500		6.37	895.78	-102.8	0.26	1.24	20.04	19.25	2.2

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- **0.1** COND.: +/- **3 %** ORP: +/- **10** D.O.: +/- **10 %** TURB: +/- **10 %** or </= **5** TEMP.: +/- **3 %**

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
1	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
1	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	2 L	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD:	DATE SHIPPED:	AIRBILL NUMBER:
COC NUMBER:	SIGNATURE:	DATE SIGNED:

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TRC

WATER SAMPLE LOG

PROJECT NAME:	Wateree Station Ash Pond-CCR	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0005.0000.5.2	BY: RPC	DATE: 03/16/23	BY: JAY	DATE: 3/20/23

SAMPLE ID: MW-AP-04 | WELL DIAMETER: ☑ 2" ☐ 4" ☐ 6" ☐ OTHER

WELL MATERIAL: ☑ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER

PURGING	TIME: 0930	DATE: 03/16/23	SAMPLE	TIME: 1001	DATE: 03/16

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 8.92 T/ PVC

DEPTH TO BOTTOM: 25.65 T/ PVC

WELL VOLUME: 2.76 ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 1.80 ☐ LITERS ☑ GALLONS

COLOR: clear ODOR: slight sulfur

TURBIDITY ☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

PH: 6.49 SU CONDUCTIVITY: 925.96 umhos/cm

ORP: -144.8 mV DO: 0.13 mg/L

TURBIDITY: 1.41 NTU

☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 14.22 °C OTHER: —

COLOR: clear ODOR: slight sulfur

FILTRATE (0.45 um) ☐ YES ☒ NO

FILTRATE COLOR: — FILTRATE ODOR: —

QC SAMPLE: ☐ MS/MSD ☐ DUP-

POST TURBIDITY: 1.58 NTU TIME: 1027

COMMENTS: FBLK-WAT-CCR-AP-23102@1015

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
0935	130	6.43	940.95	-18.3	0.30	2.17	12.95	9.11	INITIAL
0940	130	6.45	936.76	-48.0	0.23	2.29	13.76	9.21	
0945	130	6.46	922.82	-93.7	0.17	1.86	14.22	9.32	
0950	130	6.46	928.20	-122.0	0.15	1.64	14.22	9.33	
0955	130	6.47	924.13	-135.5	0.14	1.57	14.18	9.33	
0958	130	6.47	928.58	-138.7	0.14	1.40	14.22	9.33	
1001 (per 0901)	130	6.49	925.96	-144.8	0.13	1.41	14.22	9.33	1.8

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- **0.1** COND.: +/- **3 %** ORP: +/- **10** D.O.: +/- **10 %** TURB: +/- **10 %** or </= **5** TEMP.: +/- **3 %**

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
1	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
1	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	2 L	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD:	DATE SHIPPED:	AIRBILL NUMBER:
COC NUMBER:	SIGNATURE:	DATE SIGNED:

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WATER SAMPLE LOG

PROJECT NAME:	Wateree Station Ash Pond-CCI	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0005.0000.5.2	BY: RPC	DATE: 3/15/23	BY: JAH	DATE: 3/20/23

SAMPLE ID: MW-AP-05 | WELL DIAMETER: ☑ 2" ☐ 4" ☐ 6" ☐ OTHER

WELL MATERIAL: ☑ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER

PURGING	TIME: 1500	DATE: 3/15/23	SAMPLE	TIME: 1535	DATE: 03/15

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 18.43 T/ PVC

DEPTH TO BOTTOM: 39.38 T/ PVC

WELL VOLUME: 3.46 ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 1.4 ☐ LITERS ☑ GALLONS

COLOR: clear ODOR: Light Sulfur

TURBIDITY ☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

PH: 6.06 SU CONDUCTIVITY: 438.60 umhos/cm

ORP: -60.2 mV DO: 0.15 mg/L

TURBIDITY: 2.24 NTU

☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 19.98 °C OTHER: —

COLOR: clear ODOR: Slight Sulfur

FILTRATE (0.45 um) ☐ YES ☒ NO

FILTRATE COLOR: — FILTRATE ODOR: —

QC SAMPLE: ☐ MS/MSD ☐ DUP-

POST TURBIDITY: 7.14 NTU TIME: 1557

COMMENTS:

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1505	150	5.94	432.76	-16.2	0.34	5.59	20.24	18.43	INITIAL
1510	150	6.00	438.87	-42.9	0.25	4.76	19.97	18.43	
1515	170	6.03	438.03	-53.2	0.17	4.18	19.95	18.43	
1520	170	6.04	438.74	-56.1	0.19	2.44	19.89	18.43	
1525	170	6.05	438.22	-58.3	0.15	2.20	19.86	18.43	
1530	170	6.05	438.41	-59.5	0.15	2.27	19.97	18.43	
1535	170	6.06	438.60	-60.2	0.15	2.24	19.98	18.43	1.4

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- **0.1** COND.: +/- **3 %** ORP: +/- **10** D.O.: +/- **10 %** TURB: +/- **10 %** or </= **5** TEMP.: +/- **3 %**

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
1	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
1	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	2 L	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD:	DATE SHIPPED:	AIRBILL NUMBER:
COC NUMBER:	SIGNATURE:	DATE SIGNED:

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WATER SAMPLE LOG

PROJECT NAME:	Wateree Station AP-NPDES	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0005.0000.6.2	BY: CS	DATE: 3/14/23	BY: JAY	DATE: 3/21/23

SAMPLE ID: MW-8 / MW-AP-08 | WELL DIAMETER: ☑ 2" ☐ 4" ☐ 6" ☐ OTHER

WELL MATERIAL: ☑ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER

SAMPLE TYPE: ☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER

PURGING	TIME: 1105	DATE: 3/14/23	SAMPLE	TIME: 1140	DATE: 3/14/23

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 16.83 T/ PVC

DEPTH TO BOTTOM: 42.39 T/ PVC

WELL VOLUME: 4.22 ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 1.0 ☐ LITERS ☑ GALLONS

COLOR: Clear - SLIGHT ODOR: N/A

TURBIDITY ☐ NONE ☑ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

PH: 5.89 SU CONDUCTIVITY: 603.99 umhos/cm

ORP: 8.4 mV DO: 0.16 mg/L

TURBIDITY: 4.13 NTU

☑ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 18.27 °C OTHER:

COLOR: clear w/ed tint ODOR: N/A

FILTRATE (0.45 um) ☐ YES ☑ NO

FILTRATE COLOR FILTRATE ODOR:

QC SAMPLE: ☐ MS/MSD ☐ DUP-

POST TURBIDITY: 3.82 NTU TIME: 1220

COMMENTS:

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GALLONS)
1110	125	5.76	640.26	42.2	0.41	5.61	17.09	16.87	INITIAL
1115	|	5.78	632.12	34.1	0.27	5.78	17.49	16.89	|
1120	|	5.76	627.4	29.4	0.25	5.21	17.77	16.89	|
1125	|	5.88	601.83	14.5	0.17	4.51	18.66	16.89	|
1130	|	5.86	610.09	11.7	0.16	4.42	18.61	16.89	|
1135		5.89	603.99	8.4	0.16	4.13	18.27	16.89	1.0

NOTE: STABILIZATION TEST IS COMPLETE WHEN 3 SUCCESSIVE READINGS ARE WITHIN THE FOLLOWING LIMITS:

pH: +/- **0.1** COND.: +/- **3 %** ORP: +/- D.O.: +/- TURB: +/- **10 %** or </= **5** TEMP.: +/-

BOTTLES FILLED — PRESERVATIVE CODES A - NONE B - HNO3 C - H2SO4 D - NaOH E - HCL F - _____

NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED	NUMBER	SIZE	TYPE	PRESERVATIVE	FILTERED
1	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
1	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	250 mL	AMBER	C	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

SHIPPING METHOD:	DATE SHIPPED:	AIRBILL NUMBER:
COC NUMBER:	SIGNATURE:	DATE SIGNED:

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Wateree Station	MODEL:	Aquatroll 400	SAMPLER:	JB / RC (CS)
PROJECT NO.:	416559.0005.0000	SERIAL #:	851425	DATE:	3/14/23

PH CALIBRATION CHECK

pH 7 (LOT #): 2216893 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): Auto Cal / 21326202 (EXP. DATE): Auto Cal / 12/23 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
7.11 / 7.00	9.91 / 10.00	☐ WITHIN RANGE	0856
/	4.33 / 4.00	☐ WITHIN RANGE	0858
post 7.02 / 7.00	9.98 / 10.00	☒ WITHIN RANGE	0858
/	3.99 / 4.00	☒ WITHIN RANGE	0859

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 22250153 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4335.7 / 4490	11.76	☐ WITHIN RANGE	
/		☐ WITHIN RANGE	
post 4492.4 / 4490	11.70	☒ WITHIN RANGE	0900
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21390144 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
232.7 / 228	11.19	☐ WITHIN RANGE	
post 227.6 / 228	11.24	☒ WITHIN RANGE	0855
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Temp - 15.52	☒ WITHIN RANGE	0905
Pressure - 762.69	☐ WITHIN RANGE	
Oxygen Sol - 9.30	☐ WITHIN RANGE	
Actual - 10.08	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): 1511-4111 (EXP. DATE): n/a PRE-CAL. READING / STANDARD	CALIBRATION READING (NTU) (LOT #): n/a (EXP. DATE): n/a POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.02 / 0.00	0.02 / 0.00	☒ WITHIN RANGE	0905
0.71 / 1.00	0.98 / 1.00	☒ WITHIN RANGE	0906
9.33 / 10.00	9.92 / 10.00	☒ WITHIN RANGE	0907
/	/	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): 22250153 (EXP. DATE): 11/23

☐ STANDARD SOLUTION (S)

LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK

CALIBRATED PARAMETERS	CALIBRATION RANGES (1)	
☒ pH (4)	pH:	+/- 0.2 S.U.
☒ COND	COND:	+/- 1% OF CAL. STANDARD
☐ ORP	ORP:	+/- 25 mV
☐ D.O.	D.O.:	VARIES
☐ TURB	TURB:	+/- 5% OF CAL. STANDARD
☐ _____	(1) CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER	
☐ _____		

NOTES

none

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
none	none

SIGNED _____ 3/14/23 DATE

CHECKED BY _____ 3/21/23 DATE

REVISED 06/2011

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Wateree Station	MODEL:	Aqua Troll	SAMPLER:	JB / RC / CS
PROJECT NO.:	416559.0005.0000	SERIAL #:	909268	DATE:	03/14/2023

PH CALIBRATION CHECK

CAL

pH 7 (LOT #): 2216893 (EXP. DATE): 11/2023 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): 21320202 (EXP. DATE): 12/2023 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
6.65 / 7.00	4.36 / 4.00	☒ WITHIN RANGE	0859
/	9.95 / 10.00	☐ WITHIN RANGE	
7.02 / 7.00	4.00 / 4.00	☒ WITHIN RANGE	0852
/	10.05 / 10.00	☒ WITHIN RANGE	0856

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21390144 (EXP. DATE): 11/2023 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
229.3 / 228	18.70	☐ WITHIN RANGE	
228 / 228	18.20	☒ WITHIN RANGE	0920
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): — (EXP. DATE): — PRE-CAL. READING / STANDARD	(LOT #): — (EXP. DATE): — POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.06 / 0.00	0.06 / 0.00	☒ WITHIN RANGE	0918
0.91 / 1.00	0.98 / 1.00	☒ WITHIN RANGE	0920
11.17 / 10.00	10.06 / 10.00	☒ WITHIN RANGE	0922
/	/	☐ WITHIN RANGE	

NOTES

n/a

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 22250153 (EXP. DATE): 11/2023 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4428 / 4490	18.50	☐ WITHIN RANGE	
4491.0 / 4490	14.30	☒ WITHIN RANGE	0902
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Temp: 20.29	☐ WITHIN RANGE	
Baro: 763.12	☐ WITHIN RANGE	
Calc: 11.30	☒ WITHIN RANGE	0917
Act: 10.02	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): 21470032 (EXP. DATE): 4/23

☐ STANDARD SOLUTION (S)

LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK

CALIBRATED PARAMETERS		CALIBRATION RANGES [1]	
☒	pH	pH:	+/- 0.2 S.U.
☒	COND	COND:	+/- 1% OF CAL. STANDARD
☐	ORP	ORP:	+/- 25 mV
☐	D.O.	D.O.:	VARIES
☐	TURB	TURB:	+/- 5% OF CAL. STANDARD
☐	_____	[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER	
☐	_____		

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
none	none

SIGNED _____ 3/14/23 DATE

CHECKED BY _____ 3/21/23 DATE

REVISED 06/2011

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Wateree Station	MODEL: Aqua Troll	SAMPLER: JB / RC / CS
PROJECT NO.:	416559.0005.0000	SERIAL #: 883546	DATE: 03/14/2023

PH CALIBRATION CHECK

pH 7 (LOT #): 2216893 (EXP. DATE): 11/2023 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): 21320202 (EXP. DATE): 12/2023 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
6.83 / 7.00	4.17 / 4.00	☒ WITHIN RANGE	0900
/	10.08 / 10.00	☐ WITHIN RANGE	
7.05 / 7.00	3.99 / 4.00	☒ WITHIN RANGE	0853
/	10.16 / 10.00	☒ WITHIN RANGE	0857

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 22250153 (EXP. DATE): 11/2023 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
~~3453.0~~ RC / 4490	9.98	☐ WITHIN RANGE	
4485.1 / ~~4490~~ RC	~~9.92~~ RC	☐ WITHIN RANGE	
4494.8 / 4490	9.92	☒ WITHIN RANGE	0905
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21390144 (EXP. DATE): 11/2023 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
238.6 / 228	11.38	☐ WITHIN RANGE	
227.9 / 228	11.03	☒ WITHIN RANGE	0914
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Temp: 12.07	☐ WITHIN RANGE	
Baro: 763.54	☐ WITHIN RANGE	
Calc: 10.60	☒ WITHIN RANGE	0912
Act: 12.67	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): ~~~ (EXP. DATE): ~~~ PRE-CAL. READING / STANDARD	(LOT #): ~~~ (EXP. DATE): ~~~ POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.03 / 0.00	0.03 0.00	☒ WITHIN RANGE	0925
0.81 / 1.00	0.98 / 1.00	☒ WITHIN RANGE	0927
12.01 / 10.00	10.17 / 10.00	☒ WITHIN RANGE	0929
/	/	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): 21470032 (EXP. DATE): 04/2023

☐ STANDARD SOLUTION (S) — LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK

CALIBRATED PARAMETERS		CALIBRATION RANGES [1]	
☒	pH	pH:	+/- 0.2 S.U.
☒	COND	COND:	+/- 1% OF CAL. STANDARD
☐	ORP	ORP:	+/- 25 mV
☐	D.O.	D.O.:	VARIES
☐	TURB	TURB:	+/- 5% OF CAL. STANDARD
☐	_____	[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER	
☐	_____		

NOTES

n/a

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
none	none

SIGNED _____ 3/14/23 DATE

CHECKED BY _____ 3/21/23 DATE

REVISED 06/2011

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Wateree Station	MODEL: Aqua Troll 400	SAMPLER: (JB) / RC / CS
PROJECT NO.:	416559.0005.0000	SERIAL #: 883546	DATE: 3-15-23

PH CALIBRATION CHECK

pH 7 (LOT #): 2216893 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): 21320202 (EXP. DATE): 12/23 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
6.89 / 7.00	10.02 / 10.00	[X] WITHIN RANGE	0856
/	4.26 / 4.00	[ ] WITHIN RANGE	0902
7.07 / 7.00	10.02 / 10.00	[X] WITHIN RANGE	0857
/	4.00 / 4.00	[X] WITHIN RANGE	0903

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 21470032 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4414.3 / 4490.0	13.66	[X] WITHIN RANGE	0904
4481.6 / 4490.0	13.37	[X] WITHIN RANGE	0905
/		[ ] WITHIN RANGE	
/		[ ] WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 2139044 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
231.0 / 228.0	10.42	[X] WITHIN RANGE	0908
227.7 / 228.0	10.14	[X] WITHIN RANGE	0909
/		[ ] WITHIN RANGE	
/		[ ] WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Baro: 767.04 mmHg Temp: 10.50°C Act: 11.21 mg/L Calc: 11.2 mg/L	[X] WITHIN RANGE	0853
	[ ] WITHIN RANGE	
	[ ] WITHIN RANGE	
	[ ] WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): n/a (EXP. DATE): n/a PRE-CAL. READING / STANDARD	(LOT #): n/a (EXP. DATE): n/a POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.02 / 0.00	0.01 / 0.00	[X] WITHIN RANGE	0854
1.04 / 1.00	1.02 / 1.00	[X] WITHIN RANGE	855
10.10 / 10.00	10.00 / 10.00	[X] WITHIN RANGE	0856
/	/	[ ] WITHIN RANGE	

COMMENTS

[X] AUTOCAL SOLUTION (LOT #): 21470032 (EXP. DATE): 4/23

[ ] STANDARD SOLUTION (S)

LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK

CALIBRATED PARAMETERS		CALIBRATION RANGES [1]	
[X]	pH	pH:	+/- 0.2 S.U.
[X]	COND	COND:	+/- 1% OF CAL. STANDARD
[ ]	ORP	ORP:	+/- 25 mV
[ ]	D.O.	D.O.:	VARIES
[ ]	TURB	TURB:	+/- 5% OF CAL. STANDARD
[ ]	_____	[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER	
[ ]	_____		

NOTES

none

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
n/a	n/a

Jacob Bradley — SIGNED — 3/15/23 — DATE

CHECKED BY — 3/21/23 — DATE

REVISED 06/2011

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Wateree Station	MODEL: Aqua Troll 400	SAMPLER: JB / RC / CS
PROJECT NO.:	416559.0005.0000	SERIAL #: 851425	DATE: 3/15/23

PH CALIBRATION CHECK

pH 7 (LOT #): 221689 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): Auto Cal / 21320202 (EXP. DATE): 1123 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
7.01 / 7.00	9.88 / 10.00	☐ WITHIN RANGE	
/	4.36 / 4.06	☐ WITHIN RANGE	
Post 7.01 / 7.00	10.03 / 10.00	☑ WITHIN RANGE	0825
/	4.01 / 4.00	☑ WITHIN RANGE	0828

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 21470032 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4536.1 / 4490	9.80	☐ WITHIN RANGE	
Post 4492.2 / 4490	8.97	☑ WITHIN RANGE	0835
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21340144 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
240.8 / 228.0	9.07	☐ WITHIN RANGE	837
Post 227.9 / 228.0	9.13	☑ WITHIN RANGE	0838
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Temp - 6.87°C Pressure - 786.02 mmHg Oxygen Sol - 11.43 mg/L Calculated - 11.98 mg/L	☑ WITHIN RANGE	0925
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): n/a (EXP. DATE): n/a PRE-CAL. READING / STANDARD	CALIBRATION READING (NTU) (LOT #): n/a (EXP. DATE): n/a POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.09 / 0.00	0.09 / 0.00	☒ WITHIN RANGE	0841
0.83 / 1.00	1.04 / 1.00	☑ WITHIN RANGE	0842
8.99 / 10.00	9.96 / 10.00	☒ WITHIN RANGE	0845
/	/	☐ WITHIN RANGE	

COMMENTS

☑ AUTOCAL SOLUTION (LOT #): 2225153 (EXP. DATE): 11/23	☐ STANDARD SOLUTION (S) LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK
CALIBRATED PARAMETERS	CALIBRATION RANGES [1]
☑ pH	pH: +/- 0.2 S.U.
☑ COND	COND: +/- 1% OF CAL. STANDARD
☐ ORP	ORP: +/- 25 mV
☐ D.O.	D.O.: VARIES
☐ TURB	TURB: +/- 5% OF CAL. STANDARD
☐ _____	[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER
☐ _____	

NOTES

n/a

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
none	none

SIGNED 3/15/23 DATE

CHECKED BY 3/21/23 DATE

REVISED 06/2011

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Wateree Station	MODEL:	AquaTroll	SAMPLER:	JB / (RC) / CS
PROJECT NO.:	416559.0005.0000	SERIAL #:	909268	DATE:	03/15/23

PH CALIBRATION CHECK

pH 7 (LOT #): 2216893 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): 21320202 (EXP. DATE): 12/23 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
6.80 / 7.00	9.94 / 10.00	☒ WITHIN RANGE	0840
/	4.38 / 4.00	☐ WITHIN RANGE	
7.01 / 7.00	10.09 / 10.00	☒ WITHIN RANGE	0839
/	4.00 / 4.00	☒ WITHIN RANGE	0845

ORP CALIBRATION CHECK

CAL. READING (LOT #): 2139044 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
239.5 / 228	15.40	☐ WITHIN RANGE	
228.1 / 228	15.65	☒ WITHIN RANGE	0901
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): n/a (EXP. DATE): n/a PRE-CAL. READING / STANDARD	(LOT #): n/a (EXP. DATE): n/a POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.10 / 0.00	0.10 / 0.00	☒ WITHIN RANGE	0852
0.84 / 1.00	0.97 / 1.00	☒ WITHIN RANGE	0853
10.18 / 10.00	10.07 / 10.00	☒ WITHIN RANGE	0854
/	/	☐ WITHIN RANGE	

NOTES

none

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 21470032 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4620.6 / 4490	17.37	☐ WITHIN RANGE	
4475.1 / 4490	17.42	☒ WITHIN RANGE	0847
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
RC Temp: ~~16.65~~ 15.23 °C Baro: 766.67 mmHg Calc: 10.1 mg/L Act: 10.04 mg/L	☒ WITHIN RANGE	0903
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): 21470032 (EXP. DATE): 4/23

☐ STANDARD SOLUTION (S)

LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK

CALIBRATED PARAMETERS		CALIBRATION RANGES (1)	
☒	pH	pH:	+/- 0.2 S.U.
☒	COND	COND:	+/- 1% OF CAL. STANDARD
☐	ORP	ORP:	+/- 25 mV
☐	D.O.	D.O.:	VARIES
☐	TURB	TURB:	+/- 5% OF CAL. STANDARD
☐	_____	(1) CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER	
☐	_____		

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
n/a	n/a

SIGNED _____ 3/15/23 DATE

CHECKED BY _____ 3/21/23 DATE

REVISED 06/2011

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Wateree Station	MODEL:	AquaTroll	SAMPLER:	JB / (RC) / CS
PROJECT NO.:	416559.0005.0000	SERIAL #:	909268	DATE:	03/16/23

PH CALIBRATION CHECK

pH 7 (LOT #): 2216893 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): 21326202 (EXP. DATE): 12/23 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
7.02 / 7.00	9.95 / 10.00	[X] WITHIN RANGE	0847
/	4.25 / 4.00	[ ] WITHIN RANGE	
7.06 / 7.00	10.14 / 10.00	[X] WITHIN RANGE	0852
/	3.99 / 4.00	[X] WITHIN RANGE	0855

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 21470032 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4512.5 / 4490	7.69	[ ] WITHIN RANGE	
4493.4 / 4490	7.66	[X] WITHIN RANGE	0856
/		[ ] WITHIN RANGE	
/		[ ] WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 2139044 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
244.1 / 228	6.74	[ ] WITHIN RANGE	
228.1 / 228	6.69	[X] WITHIN RANGE	0909
/		[ ] WITHIN RANGE	
/		[ ] WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Temp: 7.25 °C Baro: 767.03 mmHg Calc: 12.3 mg/L Act: 12.22 mg/L	[X] WITHIN RANGE	0915
	[ ] WITHIN RANGE	
	[ ] WITHIN RANGE	
	[ ] WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): (EXP. DATE): PRE-CAL. READING / STANDARD	(LOT #): (EXP. DATE): POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.00 / 0.00	0.00 / 0.00	[X] WITHIN RANGE	0911
1.16 / 1.00	0.98 / 1.00	[X] WITHIN RANGE	0912
9.17 / 10.00	10.04 / 10.00	[X] WITHIN RANGE	0913
/	/	[ ] WITHIN RANGE	

COMMENTS

[X] AUTOCAL SOLUTION (LOT #): 21470032 (EXP. DATE): 4/23

[ ] STANDARD SOLUTION (S)

LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK

CALIBRATED PARAMETERS		CALIBRATION RANGES (1)	
[X]	pH	pH:	+/- 0.2 S.U.
[X]	COND	COND:	+/- 1% OF CAL. STANDARD
[ ]	ORP	ORP:	+/- 25 mV
[ ]	D.O.	D.O.:	VARIES
[ ]	TURB	TURB:	+/- 5% OF CAL. STANDARD
[ ]	_____	(1) CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER	
[ ]	_____		

NOTES

n/a

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
n/a	n/a

SIGNED _____ DATE 3/16/23

CHECKED BY _____ DATE 3/21/23

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Wateree Station	MODEL:	Aqua Troll 400	SAMPLER:	JB / RC / CS
PROJECT NO.:	416559.0005.0000	SERIAL #:	851425	DATE:	3/16/23

PH CALIBRATION CHECK

pH 7 (LOT #): 2216893 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): AC/ 2320202 (EXP. DATE): AC/ 12/23 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
6.79 / 7.00	4.22 / 4.00	☐ WITHIN RANGE	
/	9.99 / 10.00	☐ WITHIN RANGE	
Post 7.07 / 7.00	4.00 / 4.00	☒ WITHIN RANGE	0840
/	9.99 / 10.00	☒ WITHIN RANGE	0842

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 2470032 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4509.7 / 4490	9.30	☐ WITHIN RANGE	0843
Post 4489.4 / 4490	9.53	☒ WITHIN RANGE	0845
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21390144 (EXP. DATE): 11/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
225.6 / 228	9.61	☐ WITHIN RANGE	0849
Post 228.0 / 228	9.53	☒ WITHIN RANGE	0851
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Temp - 6.64°C	☒ WITHIN RANGE	0835
Pressure - ~~752~~ 760. 61 mmHg	☐ WITHIN RANGE	
Concentration - 12.24 mg/L	☐ WITHIN RANGE	
calculated - 12.51 mg/L	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): n/a (EXP. DATE): n/a PRE-CAL. READING / STANDARD	(LOT #): n/a (EXP. DATE): n/a POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.01 / 0.00	0.01 / 0.00	☒ WITHIN RANGE	0854
1.28 / 1.00	1.04 / 1.00	☒ WITHIN RANGE	0856
9.44 / 10.00	10.13 / 10.00	☒ WITHIN RANGE	0859
/	/	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): 2225015 3 (EXP. DATE): 11/23

☐ STANDARD SOLUTION (S)

LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK

CALIBRATED PARAMETERS		CALIBRATION RANGES (1)	
☒	pH (4)	pH:	+/- 0.2 S.U.
☒	COND	COND:	+/- 1% OF CAL. STANDARD
☐	ORP	ORP:	+/- 25 mV
☐	D.O.	D.O.:	VARIES
☐	TURB	TURB:	+/- 5% OF CAL. STANDARD
☐	_____	(1) CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER	
☐	_____		

NOTES

n/a

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
none	none

SIGNED _____ 3/15/23 DATE

CHECKED BY _____ 3/21/23 DATE

REVISED 06/2011

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

April 20, 2023

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, Virginia 23219

Re: CCR Groundwater Monitoring - Level 1 Package
Work Order: 614767

Dear Kelly Hicks:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 16, 2023. This revised data report has been prepared and reviewed in accordance with GEL's standard operating procedures. REV. The client requested a revised report to rerun sample 009 for Ra226.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1648.

Sincerely,

M Boddiford

Meredith Boddiford
Project Manager

Purchase Order: 50149867
Enclosures

Table of Contents

Case Narrative.....1

Chain of Custody and Supporting Documentation.4

Laboratory Certifications.....9

Metals Analysis.....11

Case Narrative.....12

Sample Data Summary.....17

Quality Control Summary.....29

General Chem Analysis.....65

Case Narrative.....66

Sample Data Summary.....71

Quality Control Summary.....82

Radiological Analysis.....86

Case Narrative.....87

Sample Data Summary.....92

Quality Control Data.....104

Case Narrative

REV. The client requested a revised report to rerun sample 009 for Ra226.

Receipt Narrative
for
Dominion Energy (50149867)
SDG: 614767

April 20, 2023

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on March 16, 2023 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

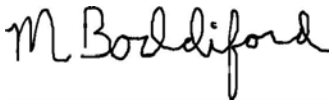
Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
614767001	MW-AP-01A-2023Q1
614767002	MW-AP-01-2023Q1
614767003	MW-AP-02-2023Q1
614767004	MW-AP-03-2023Q1
614767005	MW-AP-04-2023Q1
614767006	MW-AP-05-2023Q1
614767007	MW-AP-08-2023Q1
614767008	DU-WAT-CCR-AP-23101
614767009	FBLK-WAT-CCR-AP-23101
614767010	FBLK-WAT-CCR-AP-23102
614767011	MW-FGD-01-2023Q1

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: General Chemistry, Radiochemistry and Metals.



Meredith Boddiford
Project Manager

Chain of Custody and Supporting Documentation

Page: 1 of 2
Project # 416559.0005.0000.5.2
GEL Quote #:
COC Number [1]: 20230314
PO Number: PO 50149867

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Chemistry | Radiochemistry | Radiobioassay | Specialty Analytics

Chain of Custody and Analytical Request

614767

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

GEL Work Order Number: 206939 **GEL Project Manager: Meredith Boddiford**

Client Name: Dominion Energy Phone # 803-258-1528
Project/Site Name: Wateree Station Ash Pond CCR 2023Q1 Fax #
Address: Wateree, South Carolina
Collected By: J. Bradley, C. Serowik Send Results To: AReed@envstd.com

Sample Analysis Requested [5] (Fill in the number of containers for each test)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive (If yes, please supply isotopic info.)	(7) Known or possible Hazards	Total number of containers	Cl, Fl, SO4 - EPA 300.0	TDS - SM2540C	Total Metals (see list in comments)	Ra-226/228 903.1/904.0	Comments Note: extra sample is required for sample specific QC
<-- Preservative Type (6)											NI	NI	
MW-AP-01A-2023Q1	3-14-23	1630	N	N	GW	N		4	X	X	X	X	EPA 200.8 - Sb, As, Ba, Be
MW-AP-01-2023Q1 ms/msd	3-16-23	1030	N	N	GW	N		8	X	X	X	X	B, Cd, Ca, Cr, Co, Pb, Li,
MW-AP-02-2023Q1	3-15-23	1455	N	N	GW	N		4	X	X	X	X	Mo, Se, Tl
MW-AP-03-2023Q1	3-15-23	1500	N	N	GW	N		4	X	X	X	X	EPA 245.1 - Hg
MW-AP-04-2023Q1	3-16-23	1001	N	N	GW	N		4	X	X	X	X	
MW-AP-05-2023Q1	3-15-23	1535	N	N	GW	N		4	X	X	X	X	
MW-AP-08-2023Q1	3-14-23	1140	N	N	GW	N		4	X	X	X	X	See attached work
DU-WAT-CCR-AP-23301	3-15-23	—	FD	N	GW	N		4	X	X	X	X	order for details
FBLK-WAT-CCR-AP-23301	3-15-23	1516	FB	N	AQ	N		4	X	X	X	X	
FBLK-WAT-CCR-AP-23102	3-16-23	1015	FB	N	AQ	N		4	X	X	X	X	

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 Cam Serowik	3/16/2023	1430	1 [signature]	3/16/23	14:30
2			2		
3			3		

TAT Requested: Normal: X Rush: ____ Specify: ____

Fax Results: [ ] Yes [X] No
Select Deliverable: [ ] C of A [ ] QC Summary [X] level 1 [ ] Level 2 [ ] Level 3 [ ] Level 4
Additional Remarks:
For Lab Receiving Use Only: *Custody Seal Intact?* [ ] *Yes* [ ] *No* ***Cooler Temp:*** ____ °C
Sample Collection Time Zone : [X] Eastern [ ] Pacific [ ] Central [ ] Mountain [ ] Other:

> For sample shipping and delivery details, see Sample Receipt & Review form (SRR.)

1.) Chain of Custody Number = Client Determined

2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite

3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.

4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).

6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

7.) **KNOWN OR POSSIBLE HAZARDS**

RCRA Metals
As = Arsenic **Hg**= Mercury
Ba = Barium **Se**= Selenium
Cd = Cadmium **Ag**= Silver
Cr = Chromium **MR**= Misc. RCRA metals
Pb = Lead

Characteristic Hazards
FL = Flammable/Ignitable
CO = Corrosive
RE = Reactive

TSCA Regulated
PCB = Polychlorinated biphenyls

Listed Waste
LW= Listed Waste
(F,K,P and U-listed wastes.)
Waste code(s):

Other
OT= Other / Unknown
(i.e.: High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.)
Description:

Please provide any additional details below regarding handling and/or disposal concerns. *(i.e.: Origin of sample(s), type of site collected from, odd matrices, etc.)*

Page: 2 of 2
Project # 416559.0005.0000.5.2
GEL Quote #:
COC Number (1): 20230314
PO Number: PO 50149867

Page 9 of 10

SDG: 614767 Rev1

GEL Laboratories LLC
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Chemistry | Radiochemistry | Radiobioassay | Specialty Analytics

Chain of Custody and Analytical Request

GEL Work Order Number: 206939 **GEL Project Manager: Meredith Boddiford**

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: Dominion Energy Phone # 803-258-1528
Project/Site Name: Wateree Station Ash Pond CCR 2023Q1 Fax #
Address: Wateree, South Carolina
Collected By: J. Bradley, C. Serowik Send Results To: AReed@envstd.com

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive (If yes, please supply isotopic info.)	Should this sample be considered: (7) Known or possible Hazards	Total number of containers	NI Total Metals (see list in comments)	NI Ra-226/228 903.1/904.0	<-- Preservative Type (6)	Comments
MW-FGD-01-2023Q1	3-13-23	1500	N	N	GW	N		2	X	X		EPA 200.8 - Sb, As, Ba, Be
												Cd, Cr, Co, Pb, Li,
												Mo, Se, Tl
												EPA 245.1 - Hg
												See attached work
												order for details

Note: extra sample is required for sample specific QC

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 Cassie Serowik	3/16/2023	1430	1 [signature]	3/16/23	1430
2			2		
3			3		

TAT Requested: Normal: X Rush: ____ Specify: ____

Fax Results: [ ] Yes [X] No

Select Deliverable: [ ] C of A [ ] QC Summary [X] level 1 [ ] Level 2 [ ] Level 3 [ ] Level 4

Additional Remarks:

For Lab Receiving Use Only: *Custody Seal Intact?* [ ] *Yes* [ ] *No* ***Cooler Temp:*** ____ °C

> ***For sample shipping and delivery details, see Sample Receipt & Review form (SRR.)***

Sample Collection Time Zone : [X] Eastern [ ] Pacific [ ] Central [ ] Mountain [ ] Other:

1.) Chain of Custody Number = Client Determined

2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite

3.) Field Filtered: For liquid matrices, indicate with a **- Y -** for yes the sample was field filtered or **- N -** for sample was not field filtered.

4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).

6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

7.) **KNOWN OR POSSIBLE HAZARDS**

RCRA Metals
As = Arsenic **Hg**= Mercury
Ba = Barium **Se**= Selenium
Cd = Cadmium **Ag**= Silver
Cr = Chromium **MR**= Misc. RCRA metals
Pb = Lead

Characteristic Hazards
FL = Flammable/Ignitable
CO = Corrosive
RE = Reactive

TSCA Regulated
PCB = Polychlorinated biphenyls

Listed Waste
LW= Listed Waste
(F,K,P and U-listed wastes.)
Waste code(s):

Other
OT= Other / Unknown
(i.e.: High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.)
Description:

Please provide any additional details below regarding handling and/or disposal concerns. *(i.e.: Origin of sample(s), type of site collected from, odd matrices, etc.)*

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: DMNN	**SDG/AR/COC/Work Order:** 614767
Received By: AnnaJohnson	**Date Received:** 03/16/23
Enter one tracking number per line below.	IR temperature gun # IA1-25 Daily Calibration performed? Y/N
Enter courier if applicable and no tracking available.	**Uncorrected temperature readings are to the 0.1 degree with final recorded tepmeratures rounded to the 0.5 degree. Provide individual container details when a cooler requiring 0 </=6oC is identified as out of specification.**

LFCCR cooler 1	Uncorrected Temp: 1.9°C	IR Correction Factor: +/- N/A	Final Recorded Temp: 1.9°C	Within 0.0-6.0C? Y/N	(1)
landfill CCR COOler 2	Uncorrected Temp: 0.7	IR Correction Factor: +/- N/A	Final Recorded Temp: 0.7°	Within 0.0-6.0C? Y/N	(2)
landfill CCR Cooler 3	Uncorrected Temp: 1.1°C	IR Correction Factor: +/- N/A	Final Recorded Temp: 1.1°C	Within 0.0-6.0C? Y/N	(3)
COOler 4	Uncorrected Temp: 0.5°C	IR Correction Factor: +/- N/A	Final Recorded Temp: 0.5	Within 0.0-6.0C? Y/N	(4)
AP CCR COOler 5	Uncorrected Temp: 2.1°C	IR Correction Factor: +/- N/A	Final Recorded Temp: 2.1°C	Within 0.0-6.0C? Y/N	(5)
COOler 6	Uncorrected Temp: 2.4°C	IR Correction Factor: +/- N/A	Final Recorded Temp: 2.4°C	Within 0.0-6.0C? Y/N	(6)

Suspected Hazard Information	Yes	No	
A) Shipped as a DOT Hazardous?		/	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		/	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		/	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): _____CPM / mR/Hr **Classified as: Rad 1 Rad 2 Rad 3**
D) Did the client designate samples are hazardous?		/	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		/	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	/			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Sample containers intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
4	Samples requiring cold preservation were unpacked directly into cold storage?	/			Uncorrected Temp: Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N NA Response = Samples are for radiochemistry testing only
5	Samples requiring chemical preservation at proper pH?	/			Sample ID's and Containers Affected: If Preservative added, Lot#:
6	Do any samples require Volatile Analysis?			/	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
7	Samples received within holding time?	/			ID's and tests affected:
8	Sample ID's on COC match ID's on bottles?	/			ID's and containers affected:
9	Date & time on COC match date & time on bottles?	/			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
10	Number of containers received match number indicated on COC?			/	Circle Applicable: No container count on COC Other (describe) *
11	Are sample containers identifiable as GEL provided by use of GEL labels?	/			
12	COC form is properly signed in relinquished/received sections?	/			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

*(614767)MW-FGD-01-2023Q1 incorrect container count. (anions/Ra226/8 bottles recieved NOT on COC.
AS 3/22/23

PM (or PMA) review: Initials MG Date 3/20/23 Page 1 of 2

GL-CHL-SR-001A Rev 1

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW CONTINUATION FORM

Client: DMNN Received By: Anna Johnson Date Received: 3/16/23 SDG/AR/COC/Work Order: 614767

Additional Cooler/Temperature information if needed:	
Enter one tracking number per line below. Enter courier if applicable and no tracking available.	Uncorrected temperature readings are to the 0.1 degree with final recorded tepmeratures rounded to the 0.5 degree. Provide individual container details when a cooler requiring 0 </=6.0C is identified as out of specification.
AP CCB cooler 7	Uncorrected Temp: 0.5 IR Correction Factor: +/- N/A Final Recorded Temp: 0.5 Within 0.0-6.0C? Y/N (Y circled)
	Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N
	Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N
	Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N
	Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N
	Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N
	Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N
	Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N
	Uncorrected Temp: IR Correction Factor: +/- Final Recorded Temp: Within 0.0-6.0C? Y/N

Additional Comments:

PM (or PMA) review: Initials AJ Date 3/20/23 Page 2 of 2

Laboratory Certifications

List of current GEL Certifications as of 20 April 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
Dominion Energy
SDG #: 614767

Product: **Determination of Metals by ICP-MS**
Analytical Method: EPA 200.8 SC_NPDES
Analytical Procedure: GL-MA-E-014 REV# 35
Analytical Batch: 2400312

Product: **Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer**
Analytical Method: EPA 245.1/245.2
Analytical Procedure: GL-MA-E-010 REV# 39
Analytical Batch: 2400239

Preparation Method: EPA 245.1/245.2 Prep
Preparation Procedure: GL-MA-E-010 REV# 39
Preparation Batch: 2400238

Preparation Method: EPA 200.2
Preparation Procedure: GL-MA-E-016 REV# 18
Preparation Batch: 2400310

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
614767001	MW-AP-01A-2023Q1
614767002	MW-AP-01-2023Q1
614767003	MW-AP-02-2023Q1
614767004	MW-AP-03-2023Q1
614767005	MW-AP-04-2023Q1
614767006	MW-AP-05-2023Q1
614767007	MW-AP-08-2023Q1
614767008	DU-WAT-CCR-AP-23101
614767009	FBLK-WAT-CCR-AP-23101
614767010	FBLK-WAT-CCR-AP-23102
614767011	MW-FGD-01-2023Q1
1205349223	Method Blank (MB)**ICP-MS**
1205349224	Laboratory Control Sample (LCS)
1205349227	614767002(MW-AP-01-2023Q1L) Serial Dilution (SD)
1205349230	614767011(MW-FGD-01-2023Q1L) Serial Dilution (SD)
1205349225	614767002(MW-AP-01-2023Q1D) Sample Duplicate (DUP)
1205349228	614767011(MW-FGD-01-2023Q1D) Sample Duplicate (DUP)
1205349226	614767002(MW-AP-01-2023Q1S) Matrix Spike (MS)
1205349229	614767011(MW-FGD-01-2023Q1S) Matrix Spike (MS)
1205349091	Method Blank (MB)**CVAA**
1205349092	Laboratory Control Sample (LCS)
1205349095	614767002(MW-AP-01-2023Q1L) Serial Dilution (SD)
1205349101	614767011(MW-FGD-01-2023Q1L) Serial Dilution (SD)
1205349093	614767002(MW-AP-01-2023Q1D) Sample Duplicate (DUP)

1205349099	614767011(MW-FGD-01-2023Q1D) Sample Duplicate (DUP)
1205349094	614767002(MW-AP-01-2023Q1S) Matrix Spike (MS)
1205349100	614767011(MW-FGD-01-2023Q1S) Matrix Spike (MS)
1205349102	614767002(MW-AP-01-2023Q1PS) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

ICSA/ICSAB Statement
For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Quality Control (QC) Information

Matrix Spike (MS/MSD) Recovery Statement
The percent recoveries (%R) obtained from the MS/MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS/MSD (See Below) did not meet the recommended quality control acceptance criteria for percent recoveries for the following applicable analyte. The post spike also did not meet the required control limits; thus, confirming matrix interferences and/or sample non-homogeneity.

Sample	Analyte	Value
1205349094 (MW-AP-01-2023Q1MS)	Mercury	61.4* (75%-125%)

Post Spike (PS) Recovery Statement
The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS did not meet the recommended quality control acceptance criteria for percent recoveries for all applicable analytes and verifies the presence of matrix interferences.

Sample	Analyte	Value
1205349102 (MW-AP-01-2023Q1PS)	Mercury	67.7* (80%-120%)

Technical Information

Sample Dilutions
Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range. Samples 614767002 (MW-AP-01-2023Q1), 614767003 (MW-AP-02-2023Q1), 614767004 (MW-AP-03-2023Q1), 614767005 (MW-AP-04-2023Q1), 614767006 (MW-AP-05-2023Q1), 614767007 (MW-AP-08-2023Q1) and 614767008 (DU-WAT-CCR-AP-23101)-ICP-MS were diluted to ensure that the analyte concentrations were within the linear calibration range of the instrument.

Analyte	614767						
	002	**003**	**004**	**005**	**006**	**007**	**008**
Arsenic	1X	1X	20X	1X	1X	1X	20X
Boron	20X	10X	20X	20X	5X	5X	20X
Calcium	20X	10X	20X	20X	1X	1X	20X

Miscellaneous Information

Additional Comments
All method-driven specifications are followed for these analyses except where client-specific SOW requirements are required to be met.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

DMNN001 Dominion Energy (50149867)

Client SDG: 614767 GEL Work Order: 614767

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
B Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
J Value is estimated
N Metals--The Matrix spike sample recovery is not within specified control limits
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Alan Stanley**

Date: 24 MAR 2023 **Title: Team Leader**

Sample Data Summary

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 614767 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 614767001 **BASIS:** As Received **DATE COLLECTED** 14-MAR-23

CLIENT ID: MW-AP-01A-2023Q1 **LEVEL:** Low **DATE RECEIVED:** 16-MAR-23

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	03/21/23 21:40	230321-1	2400312
7440-38-2	Arsenic	1.66	ug/L	U	1.66	5.00	5.00	1	MS	PRB	03/21/23 21:40	230321-1	2400312
7440-39-3	Barium	58.3	ug/L		0.500	2.00	2.00	1	MS	PRB	03/21/23 21:40	230321-1	2400312
7440-41-7	Beryllium	0.221	ug/L	J	0.200	0.500	0.500	1	MS	PRB	03/21/23 21:40	230321-1	2400312
7440-42-8	Boron	13.5	ug/L	J	4.00	15.0	15.0	1	MS	PRB	03/22/23 11:02	230322-2	2400312
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	03/21/23 21:40	230321-1	2400312
7440-70-2	Calcium	695	ug/L		30.0	100	100	1	MS	PRB	03/22/23 11:02	230322-2	2400312
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	03/21/23 21:40	230321-1	2400312
7440-48-4	Cobalt	0.620	ug/L	J	0.100	1.00	1.00	1	MS	PRB	03/21/23 21:40	230321-1	2400312
7439-92-1	Lead	0.874	ug/L	J	0.500	2.00	2.00	1	MS	PRB	03/21/23 21:40	230321-1	2400312
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	03/21/23 21:40	230321-1	2400312
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	03/20/23 10:36	032023W1-4	2400239
7439-98-7	Molybdenum	0.167	ug/L	U	0.167	1.00	1.00	1	MS	PRB	03/22/23 14:11	230322-3	2400312
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	03/21/23 21:40	230321-1	2400312
7440-28-0	Thallium	0.247	ug/L	J	0.125	0.500	0.500	1	MS	PRB	03/22/23 11:02	230322-2	2400312

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2400239	2400238	EPA 245.1/245.2 Prep	20	mL	20	mL	03/17/23	RM4
2400312	2400310	EPA 200.2	50	mL	50	mL	03/17/23	CD3

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

AV **EPA 245.1/245.2**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 614767 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 614767002 **BASIS:** As Received **DATE COLLECTED** 16-MAR-23

CLIENT ID: MW-AP-01-2023Q1 **LEVEL:** Low **DATE RECEIVED:** 16-MAR-23

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	03/21/23 21:44	230321-1	2400312
7440-38-2	Arsenic	1.66	ug/L	U	1.66	5.00	5.00	1	MS	PRB	03/21/23 21:44	230321-1	2400312
7440-39-3	Barium	214	ug/L		0.500	2.00	2.00	1	MS	PRB	03/21/23 21:44	230321-1	2400312
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	03/21/23 21:44	230321-1	2400312
7440-42-8	Boron	1560	ug/L		80.0	300	300	20	MS	PRB	03/22/23 11:04	230322-2	2400312
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	03/21/23 21:44	230321-1	2400312
7440-70-2	Calcium	64900	ug/L		600	2000	2000	20	MS	PRB	03/22/23 11:04	230322-2	2400312
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	03/21/23 21:44	230321-1	2400312
7440-48-4	Cobalt	0.124	ug/L	J	0.100	1.00	1.00	1	MS	PRB	03/21/23 21:44	230321-1	2400312
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	03/21/23 21:44	230321-1	2400312
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	03/21/23 21:44	230321-1	2400312
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	03/20/23 10:37	032023W1-4	2400239
7439-98-7	Molybdenum	2.17	ug/L		0.167	1.00	1.00	1	MS	PRB	03/22/23 14:15	230322-3	2400312
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	03/21/23 21:44	230321-1	2400312
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	03/22/23 12:11	230322-2	2400312

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2400239	2400238	EPA 245.1/245.2 Prep	20	mL	20	mL	03/17/23	RM4
2400312	2400310	EPA 200.2	50	mL	50	mL	03/17/23	CD3

***Analytical Methods:**

AV **EPA 245.1/245.2**

MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 614767 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 614767003 **BASIS:** As Received **DATE COLLECTED** 15-MAR-23

CLIENT ID: MW-AP-02-2023Q1 **LEVEL:** Low **DATE RECEIVED:** 16-MAR-23

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	03/21/23 22:07	230321-1	2400312
7440-38-2	Arsenic	43.6	ug/L		1.66	5.00	5.00	1	MS	PRB	03/21/23 22:07	230321-1	2400312
7440-39-3	Barium	205	ug/L		0.500	2.00	2.00	1	MS	PRB	03/21/23 22:07	230321-1	2400312
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	03/21/23 22:07	230321-1	2400312
7440-42-8	Boron	570	ug/L		40.0	150	150	10	MS	PRB	03/22/23 11:17	230322-2	2400312
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	03/21/23 22:07	230321-1	2400312
7440-70-2	Calcium	53500	ug/L		300	1000	1000	10	MS	PRB	03/22/23 11:17	230322-2	2400312
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	03/21/23 22:07	230321-1	2400312
7440-48-4	Cobalt	0.157	ug/L	J	0.100	1.00	1.00	1	MS	PRB	03/21/23 22:07	230321-1	2400312
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	03/21/23 22:07	230321-1	2400312
7439-93-2	Lithium	2.01	ug/L	J	2.00	10.0	10.0	1	MS	PRB	03/21/23 22:07	230321-1	2400312
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	03/20/23 10:46	032023W1-4	2400239
7439-98-7	Molybdenum	3.92	ug/L		0.167	1.00	1.00	1	MS	PRB	03/22/23 14:40	230322-3	2400312
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	03/21/23 22:07	230321-1	2400312
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	03/22/23 12:27	230322-2	2400312

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2400239	2400238	EPA 245.1/245.2 Prep	20	mL	20	mL	03/17/23	RM4
2400312	2400310	EPA 200.2	50	mL	50	mL	03/17/23	CD3

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**
AV **EPA 245.1/245.2**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 614767 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 614767004 **BASIS:** As Received **DATE COLLECTED** 15-MAR-23

CLIENT ID: MW-AP-03-2023Q1 **LEVEL:** Low **DATE RECEIVED:** 16-MAR-23

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	03/21/23 22:11	230321-1	2400312
7440-38-2	Arsenic	964	ug/L		33.2	100	100	20	MS	PRB	03/22/23 11:19	230322-2	2400312
7440-39-3	Barium	195	ug/L		0.500	2.00	2.00	1	MS	PRB	03/21/23 22:11	230321-1	2400312
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	03/21/23 22:11	230321-1	2400312
7440-42-8	Boron	1660	ug/L		80.0	300	300	20	MS	PRB	03/22/23 11:19	230322-2	2400312
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	03/21/23 22:11	230321-1	2400312
7440-70-2	Calcium	68900	ug/L		600	2000	2000	20	MS	PRB	03/22/23 11:19	230322-2	2400312
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	03/21/23 22:11	230321-1	2400312
7440-48-4	Cobalt	0.213	ug/L	J	0.100	1.00	1.00	1	MS	PRB	03/21/23 22:11	230321-1	2400312
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	03/21/23 22:11	230321-1	2400312
7439-93-2	Lithium	62.7	ug/L		2.00	10.0	10.0	1	MS	PRB	03/21/23 22:11	230321-1	2400312
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	03/20/23 10:47	032023W1-4	2400239
7439-98-7	Molybdenum	19.5	ug/L		0.167	1.00	1.00	1	MS	PRB	03/22/23 14:44	230322-3	2400312
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	03/21/23 22:11	230321-1	2400312
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	03/22/23 12:29	230322-2	2400312

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2400239	2400238	EPA 245.1/245.2 Prep	20	mL	20	mL	03/17/23	RM4
2400312	2400310	EPA 200.2	50	mL	50	mL	03/17/23	CD3

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**
AV **EPA 245.1/245.2**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 614767 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 614767005 **BASIS:** As Received **DATE COLLECTED** 16-MAR-23

CLIENT ID: MW-AP-04-2023Q1 **LEVEL:** Low **DATE RECEIVED:** 16-MAR-23

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	03/21/23 22:14	230321-1	2400312
7440-38-2	Arsenic	25.3	ug/L		1.66	5.00	5.00	1	MS	PRB	03/21/23 22:14	230321-1	2400312
7440-39-3	Barium	163	ug/L		0.500	2.00	2.00	1	MS	PRB	03/21/23 22:14	230321-1	2400312
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	03/21/23 22:14	230321-1	2400312
7440-42-8	Boron	2000	ug/L		80.0	300	300	20	MS	PRB	03/22/23 11:22	230322-2	2400312
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	03/21/23 22:14	230321-1	2400312
7440-70-2	Calcium	138000	ug/L		600	2000	2000	20	MS	PRB	03/22/23 11:22	230322-2	2400312
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	03/21/23 22:14	230321-1	2400312
7440-48-4	Cobalt	0.100	ug/L	U	0.100	1.00	1.00	1	MS	PRB	03/21/23 22:14	230321-1	2400312
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	03/21/23 22:14	230321-1	2400312
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	03/21/23 22:14	230321-1	2400312
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	03/20/23 10:52	032023W1-4	2400239
7439-98-7	Molybdenum	3.82	ug/L		0.167	1.00	1.00	1	MS	PRB	03/22/23 14:47	230322-3	2400312
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	03/21/23 22:14	230321-1	2400312
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	03/22/23 12:31	230322-2	2400312

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2400239	2400238	EPA 245.1/245.2 Prep	20	mL	20	mL	03/17/23	RM4
2400312	2400310	EPA 200.2	50	mL	50	mL	03/17/23	CD3

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

AV **EPA 245.1/245.2**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 614767 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 614767006 **BASIS:** As Received **DATE COLLECTED** 15-MAR-23

CLIENT ID: MW-AP-05-2023Q1 **LEVEL:** Low **DATE RECEIVED:** 16-MAR-23

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	03/21/23 22:17	230321-1	2400312
7440-38-2	Arsenic	1.66	ug/L	U	1.66	5.00	5.00	1	MS	PRB	03/21/23 22:17	230321-1	2400312
7440-39-3	Barium	146	ug/L		0.500	2.00	2.00	1	MS	PRB	03/21/23 22:17	230321-1	2400312
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	03/21/23 22:17	230321-1	2400312
7440-42-8	Boron	228	ug/L		20.0	75.0	75.0	5	MS	PRB	03/22/23 11:24	230322-2	2400312
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	03/21/23 22:17	230321-1	2400312
7440-70-2	Calcium	16500	ug/L		30.0	100	100	1	MS	PRB	03/22/23 12:33	230322-2	2400312
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	03/21/23 22:17	230321-1	2400312
7440-48-4	Cobalt	0.639	ug/L	J	0.100	1.00	1.00	1	MS	PRB	03/21/23 22:17	230321-1	2400312
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	03/21/23 22:17	230321-1	2400312
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	03/21/23 22:17	230321-1	2400312
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	03/20/23 10:54	032023W1-4	2400239
7439-98-7	Molybdenum	0.167	ug/L	U	0.167	1.00	1.00	1	MS	PRB	03/22/23 14:51	230322-3	2400312
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	03/21/23 22:17	230321-1	2400312
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	03/22/23 12:33	230322-2	2400312

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2400239	2400238	EPA 245.1/245.2 Prep	20	mL	20	mL	03/17/23	RM4
2400312	2400310	EPA 200.2	50	mL	50	mL	03/17/23	CD3

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**
AV **EPA 245.1/245.2**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 614767 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 614767007 **BASIS:** As Received **DATE COLLECTED** 14-MAR-23

CLIENT ID: MW-AP-08-2023Q1 **LEVEL:** Low **DATE RECEIVED:** 16-MAR-23

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	03/21/23 22:21	230321-1	2400312
7440-38-2	Arsenic	2.42	ug/L	J	1.66	5.00	5.00	1	MS	PRB	03/21/23 22:21	230321-1	2400312
7440-39-3	Barium	154	ug/L		0.500	2.00	2.00	1	MS	PRB	03/21/23 22:21	230321-1	2400312
7440-41-7	Beryllium	3.81	ug/L		0.200	0.500	0.500	1	MS	PRB	03/21/23 22:21	230321-1	2400312
7440-42-8	Boron	233	ug/L		20.0	75.0	75.0	5	MS	PRB	03/22/23 11:26	230322-2	2400312
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	03/21/23 22:21	230321-1	2400312
7440-70-2	Calcium	20900	ug/L		30.0	100	100	1	MS	PRB	03/22/23 12:37	230322-2	2400312
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	03/21/23 22:21	230321-1	2400312
7440-48-4	Cobalt	2.46	ug/L		0.100	1.00	1.00	1	MS	PRB	03/21/23 22:21	230321-1	2400312
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	03/21/23 22:21	230321-1	2400312
7439-93-2	Lithium	10.2	ug/L		2.00	10.0	10.0	1	MS	PRB	03/21/23 22:21	230321-1	2400312
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	03/20/23 10:55	032023W1-4	2400239
7439-98-7	Molybdenum	0.167	ug/L	U	0.167	1.00	1.00	1	MS	PRB	03/22/23 14:55	230322-3	2400312
7782-49-2	Selenium	6.39	ug/L		1.50	5.00	5.00	1	MS	PRB	03/21/23 22:21	230321-1	2400312
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	03/22/23 12:37	230322-2	2400312

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2400239	2400238	EPA 245.1/245.2 Prep	20	mL	20	mL	03/17/23	RM4
2400312	2400310	EPA 200.2	50	mL	50	mL	03/17/23	CD3

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

AV **EPA 245.1/245.2**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 614767 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 614767008 **BASIS:** As Received **DATE COLLECTED** 15-MAR-23

CLIENT ID: DU-WAT-CCR-AP-23101 **LEVEL:** Low **DATE RECEIVED:** 16-MAR-23

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	03/21/23 22:24	230321-1	2400312
7440-38-2	Arsenic	972	ug/L		33.2	100	100	20	MS	PRB	03/22/23 11:28	230322-2	2400312
7440-39-3	Barium	191	ug/L		0.500	2.00	2.00	1	MS	PRB	03/21/23 22:24	230321-1	2400312
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	03/21/23 22:24	230321-1	2400312
7440-42-8	Boron	1740	ug/L		80.0	300	300	20	MS	PRB	03/22/23 11:28	230322-2	2400312
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	03/21/23 22:24	230321-1	2400312
7440-70-2	Calcium	70000	ug/L		600	2000	2000	20	MS	PRB	03/22/23 11:28	230322-2	2400312
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	03/21/23 22:24	230321-1	2400312
7440-48-4	Cobalt	0.216	ug/L	J	0.100	1.00	1.00	1	MS	PRB	03/21/23 22:24	230321-1	2400312
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	03/21/23 22:24	230321-1	2400312
7439-93-2	Lithium	62.0	ug/L		2.00	10.0	10.0	1	MS	PRB	03/21/23 22:24	230321-1	2400312
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	03/20/23 10:57	032023W1-4	2400239
7439-98-7	Molybdenum	18.9	ug/L		0.167	1.00	1.00	1	MS	PRB	03/22/23 14:58	230322-3	2400312
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	03/21/23 22:24	230321-1	2400312
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	03/22/23 12:39	230322-2	2400312

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2400239	2400238	EPA 245.1/245.2 Prep	20	mL	20	mL	03/17/23	RM4
2400312	2400310	EPA 200.2	50	mL	50	mL	03/17/23	CD3

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**
AV **EPA 245.1/245.2**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 614767 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 614767009 **BASIS:** As Received **DATE COLLECTED** 15-MAR-23

CLIENT ID: FBLK-WAT-CCR-AP-2310 **LEVEL:** Low **DATE RECEIVED:** 16-MAR-23

MATRIX: AQ **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	03/21/23 22:27	230321-1	2400312
7440-38-2	Arsenic	1.66	ug/L	U	1.66	5.00	5.00	1	MS	PRB	03/21/23 22:27	230321-1	2400312
7440-39-3	Barium	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	03/21/23 22:27	230321-1	2400312
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	03/21/23 22:27	230321-1	2400312
7440-42-8	Boron	4.00	ug/L	U	4.00	15.0	15.0	1	MS	PRB	03/22/23 11:30	230322-2	2400312
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	03/21/23 22:27	230321-1	2400312
7440-70-2	Calcium	30.0	ug/L	U	30.0	100	100	1	MS	PRB	03/22/23 11:30	230322-2	2400312
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	03/21/23 22:27	230321-1	2400312
7440-48-4	Cobalt	0.100	ug/L	U	0.100	1.00	1.00	1	MS	PRB	03/21/23 22:27	230321-1	2400312
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	03/21/23 22:27	230321-1	2400312
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	03/21/23 22:27	230321-1	2400312
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	03/20/23 10:59	032023W1-4	2400239
7439-98-7	Molybdenum	0.167	ug/L	U	0.167	1.00	1.00	1	MS	PRB	03/22/23 16:39	230322-3	2400312
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	03/21/23 22:27	230321-1	2400312
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	03/22/23 11:30	230322-2	2400312

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2400239	2400238	EPA 245.1/245.2 Prep	20	mL	20	mL	03/17/23	RM4
2400312	2400310	EPA 200.2	50	mL	50	mL	03/17/23	CD3

***Analytical Methods:**

AV **EPA 245.1/245.2**

MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 614767 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 614767010 **BASIS:** As Received **DATE COLLECTED** 16-MAR-23

CLIENT ID: FBLK-WAT-CCR-AP-2310 **LEVEL:** Low **DATE RECEIVED:** 16-MAR-23

MATRIX: AQ **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	03/21/23 22:31	230321-1	2400312
7440-38-2	Arsenic	1.66	ug/L	U	1.66	5.00	5.00	1	MS	PRB	03/21/23 22:31	230321-1	2400312
7440-39-3	Barium	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	03/21/23 22:31	230321-1	2400312
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	03/21/23 22:31	230321-1	2400312
7440-42-8	Boron	4.00	ug/L	U	4.00	15.0	15.0	1	MS	PRB	03/22/23 11:33	230322-2	2400312
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	03/21/23 22:31	230321-1	2400312
7440-70-2	Calcium	30.0	ug/L	U	30.0	100	100	1	MS	PRB	03/22/23 11:33	230322-2	2400312
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	03/21/23 22:31	230321-1	2400312
7440-48-4	Cobalt	0.100	ug/L	U	0.100	1.00	1.00	1	MS	PRB	03/21/23 22:31	230321-1	2400312
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	03/21/23 22:31	230321-1	2400312
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	03/21/23 22:31	230321-1	2400312
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	03/20/23 11:01	032023W1-4	2400239
7439-98-7	Molybdenum	0.167	ug/L	U	0.167	1.00	1.00	1	MS	PRB	03/22/23 16:42	230322-3	2400312
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	03/21/23 22:31	230321-1	2400312
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	03/22/23 11:33	230322-2	2400312

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2400239	2400238	EPA 245.1/245.2 Prep	20	mL	20	mL	03/17/23	RM4
2400312	2400310	EPA 200.2	50	mL	50	mL	03/17/23	CD3

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**
AV **EPA 245.1/245.2**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 614767 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 614767011 **BASIS:** As Received **DATE COLLECTED** 13-MAR-23

CLIENT ID: MW-FGD-01-2023Q1 **LEVEL:** Low **DATE RECEIVED:** 16-MAR-23

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	03/21/23 22:41	230321-1	2400312
7440-38-2	Arsenic	1.66	ug/L	U	1.66	5.00	5.00	1	MS	PRB	03/21/23 22:41	230321-1	2400312
7440-39-3	Barium	122	ug/L		0.500	2.00	2.00	1	MS	PRB	03/21/23 22:41	230321-1	2400312
7440-41-7	Beryllium	0.596	ug/L		0.200	0.500	0.500	1	MS	PRB	03/21/23 22:41	230321-1	2400312
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	03/21/23 22:41	230321-1	2400312
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	03/21/23 22:41	230321-1	2400312
7440-48-4	Cobalt	1.86	ug/L		0.100	1.00	1.00	1	MS	PRB	03/21/23 22:41	230321-1	2400312
7439-92-1	Lead	1.69	ug/L	J	0.500	2.00	2.00	1	MS	PRB	03/21/23 22:41	230321-1	2400312
7439-93-2	Lithium	2.54	ug/L	J	2.00	10.0	10.0	1	MS	PRB	03/21/23 22:41	230321-1	2400312
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	03/20/23 11:03	032023W1-4	2400239
7439-98-7	Molybdenum	0.167	ug/L	U	0.167	1.00	1.00	1	MS	PRB	03/22/23 16:46	230322-3	2400312
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	03/21/23 22:41	230321-1	2400312
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	03/22/23 11:39	230322-2	2400312

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2400239	2400238	EPA 245.1/245.2 Prep	20	mL	20	mL	03/17/23	RM4
2400312	2400310	EPA 200.2	50	mL	50	mL	03/17/23	CD3

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

AV **EPA 245.1/245.2**

Quality Control Summary

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 614767

Contract: DMNN00101 **Lab Code:** GEL

Instrument ID: ICPMS15,HG7

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Acceptance Window (%R)*	*M**	*Analysis Date/Time*	*Run Number*
ICV01										
	Mercury	5.02	ug/L	5	ug/L	100.5	95.0 - 105.0	AV	20-MAR-23 09:34	032023W1-4
	Antimony	47.4	ug/L	50	ug/L	94.8	90.0 - 110.0	MS	21-MAR-23 19:12	230321-1
	Arsenic	48.9	ug/L	50	ug/L	97.9	90.0 - 110.0	MS	21-MAR-23 19:12	230321-1
	Barium	49.7	ug/L	50	ug/L	99.3	90.0 - 110.0	MS	21-MAR-23 19:12	230321-1
	Beryllium	51.3	ug/L	50	ug/L	102.7	90.0 - 110.0	MS	21-MAR-23 19:12	230321-1
	Cadmium	50.6	ug/L	50	ug/L	101.2	90.0 - 110.0	MS	21-MAR-23 19:12	230321-1
	Chromium	49.9	ug/L	50	ug/L	99.8	90.0 - 110.0	MS	21-MAR-23 19:12	230321-1
	Cobalt	50.9	ug/L	50	ug/L	101.9	90.0 - 110.0	MS	21-MAR-23 19:12	230321-1
	Lead	49.9	ug/L	50	ug/L	99.8	90.0 - 110.0	MS	21-MAR-23 19:12	230321-1
	Lithium	50.3	ug/L	50	ug/L	100.6	90.0 - 110.0	MS	21-MAR-23 19:12	230321-1
	Selenium	49.7	ug/L	50	ug/L	99.3	90.0 - 110.0	MS	21-MAR-23 19:12	230321-1
	Arsenic	48.6	ug/L	50	ug/L	97.2	90.0 - 110.0	MS	22-MAR-23 10:07	230322-2
	Boron	99.8	ug/L	100	ug/L	99.8	90.0 - 110.0	MS	22-MAR-23 10:07	230322-2
	Calcium	5110	ug/L	5000	ug/L	102.2	90.0 - 110.0	MS	22-MAR-23 10:07	230322-2
	Thallium	49.5	ug/L	50	ug/L	99.1	90.0 - 110.0	MS	22-MAR-23 10:07	230322-2
	Molybdenum	50.8	ug/L	50	ug/L	101.5	90.0 - 110.0	MS	22-MAR-23 13:39	230322-3
CCV01										
	Mercury	4.99	ug/L	5	ug/L	99.8	90.0 - 110.0	AV	20-MAR-23 09:39	032023W1-4
	Antimony	47.6	ug/L	50	ug/L	95.1	90.0 - 110.0	MS	21-MAR-23 19:29	230321-1
	Arsenic	48.7	ug/L	50	ug/L	97.3	90.0 - 110.0	MS	21-MAR-23 19:29	230321-1
	Barium	48.8	ug/L	50	ug/L	97.6	90.0 - 110.0	MS	21-MAR-23 19:29	230321-1
	Beryllium	52.2	ug/L	50	ug/L	104.4	90.0 - 110.0	MS	21-MAR-23 19:29	230321-1
	Cadmium	50.9	ug/L	50	ug/L	101.8	90.0 - 110.0	MS	21-MAR-23 19:29	230321-1
	Chromium	50.8	ug/L	50	ug/L	101.5	90.0 - 110.0	MS	21-MAR-23 19:29	230321-1
	Cobalt	51.3	ug/L	50	ug/L	102.6	90.0 - 110.0	MS	21-MAR-23 19:29	230321-1
	Lead	51.4	ug/L	50	ug/L	102.9	90.0 - 110.0	MS	21-MAR-23 19:29	230321-1
	Lithium	52.7	ug/L	50	ug/L	105.4	90.0 - 110.0	MS	21-MAR-23 19:29	230321-1
	Selenium	50.5	ug/L	50	ug/L	101	90.0 - 110.0	MS	21-MAR-23 19:29	230321-1
	Arsenic	49.3	ug/L	50	ug/L	98.5	90.0 - 110.0	MS	22-MAR-23 10:18	230322-2
	Boron	96.7	ug/L	100	ug/L	96.7	90.0 - 110.0	MS	22-MAR-23 10:18	230322-2
	Calcium	5000	ug/L	5000	ug/L	99.9	90.0 - 110.0	MS	22-MAR-23 10:18	230322-2

EPA

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 614767

Contract: DMNN00101 **Lab Code:** GEL

Instrument ID: ICPMS15,HG7

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Acceptance Window (%R)*	*M**	*Analysis Date/Time*	*Run Number*
	Thallium	48.8	ug/L	50	ug/L	97.6	90.0 - 110.0	MS	22-MAR-23 10:18	230322-2
	Molybdenum	53.9	ug/L	50	ug/L	107.8	90.0 - 110.0	MS	22-MAR-23 13:57	230322-3
CCV02										
	Mercury	5.01	ug/L	5	ug/L	100.3	90.0 - 110.0	AV	20-MAR-23 10:28	032023W1-4
	Antimony	48.7	ug/L	50	ug/L	97.4	90.0 - 110.0	MS	21-MAR-23 19:39	230321-1
	Arsenic	48.9	ug/L	50	ug/L	97.8	90.0 - 110.0	MS	21-MAR-23 19:39	230321-1
	Barium	49.7	ug/L	50	ug/L	99.4	90.0 - 110.0	MS	21-MAR-23 19:39	230321-1
	Beryllium	52.2	ug/L	50	ug/L	104.3	90.0 - 110.0	MS	21-MAR-23 19:39	230321-1
	Cadmium	49.9	ug/L	50	ug/L	99.9	90.0 - 110.0	MS	21-MAR-23 19:39	230321-1
	Chromium	49.8	ug/L	50	ug/L	99.6	90.0 - 110.0	MS	21-MAR-23 19:39	230321-1
	Cobalt	50	ug/L	50	ug/L	99.9	90.0 - 110.0	MS	21-MAR-23 19:39	230321-1
	Lead	51	ug/L	50	ug/L	102	90.0 - 110.0	MS	21-MAR-23 19:39	230321-1
	Lithium	51.4	ug/L	50	ug/L	102.7	90.0 - 110.0	MS	21-MAR-23 19:39	230321-1
	Selenium	49.1	ug/L	50	ug/L	98.2	90.0 - 110.0	MS	21-MAR-23 19:39	230321-1
	Arsenic	48.5	ug/L	50	ug/L	97.1	90.0 - 110.0	MS	22-MAR-23 10:25	230322-2
	Boron	92.2	ug/L	100	ug/L	92.2	90.0 - 110.0	MS	22-MAR-23 10:25	230322-2
	Calcium	5090	ug/L	5000	ug/L	101.8	90.0 - 110.0	MS	22-MAR-23 10:25	230322-2
	Thallium	48.8	ug/L	50	ug/L	97.6	90.0 - 110.0	MS	22-MAR-23 10:25	230322-2
	Molybdenum	52	ug/L	50	ug/L	104	90.0 - 110.0	MS	22-MAR-23 14:33	230322-3
CCV03										
	Mercury	5.1	ug/L	5	ug/L	101.9	90.0 - 110.0	AV	20-MAR-23 10:49	032023W1-4
	Antimony	48.3	ug/L	50	ug/L	96.6	90.0 - 110.0	MS	21-MAR-23 21:27	230321-1
	Arsenic	49.7	ug/L	50	ug/L	99.4	90.0 - 110.0	MS	21-MAR-23 21:27	230321-1
	Barium	49.5	ug/L	50	ug/L	98.9	90.0 - 110.0	MS	21-MAR-23 21:27	230321-1
	Beryllium	51	ug/L	50	ug/L	102.1	90.0 - 110.0	MS	21-MAR-23 21:27	230321-1
	Cadmium	50.6	ug/L	50	ug/L	101.1	90.0 - 110.0	MS	21-MAR-23 21:27	230321-1
	Chromium	50.3	ug/L	50	ug/L	100.7	90.0 - 110.0	MS	21-MAR-23 21:27	230321-1
	Cobalt	50.7	ug/L	50	ug/L	101.4	90.0 - 110.0	MS	21-MAR-23 21:27	230321-1
	Lead	50.5	ug/L	50	ug/L	101	90.0 - 110.0	MS	21-MAR-23 21:27	230321-1
	Lithium	51.5	ug/L	50	ug/L	102.9	90.0 - 110.0	MS	21-MAR-23 21:27	230321-1
	Selenium	49.7	ug/L	50	ug/L	99.4	90.0 - 110.0	MS	21-MAR-23 21:27	230321-1

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 614767

Contract: DMNN00101 **Lab Code:** GEL

Instrument ID: ICPMS15,HG7

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Acceptance Window (%R)*	*M**	*Analysis Date/Time*	*Run Number*
	Arsenic	47.9	ug/L	50	ug/L	95.9	90.0 - 110.0	MS	22-MAR-23 10:47	230322-2
	Boron	95.3	ug/L	100	ug/L	95.3	90.0 - 110.0	MS	22-MAR-23 10:47	230322-2
	Calcium	5080	ug/L	5000	ug/L	101.6	90.0 - 110.0	MS	22-MAR-23 10:47	230322-2
	Thallium	49.3	ug/L	50	ug/L	98.6	90.0 - 110.0	MS	22-MAR-23 10:47	230322-2
	Molybdenum	53.5	ug/L	50	ug/L	107	90.0 - 110.0	MS	22-MAR-23 15:16	230322-3
CCV04										
	Mercury	5.08	ug/L	5	ug/L	101.5	90.0 - 110.0	AV	20-MAR-23 11:10	032023W1-4
	Antimony	48.8	ug/L	50	ug/L	97.6	90.0 - 110.0	MS	21-MAR-23 22:00	230321-1
	Arsenic	49.4	ug/L	50	ug/L	98.8	90.0 - 110.0	MS	21-MAR-23 22:00	230321-1
	Barium	50.8	ug/L	50	ug/L	101.6	90.0 - 110.0	MS	21-MAR-23 22:00	230321-1
	Beryllium	50.6	ug/L	50	ug/L	101.3	90.0 - 110.0	MS	21-MAR-23 22:00	230321-1
	Cadmium	49.6	ug/L	50	ug/L	99.2	90.0 - 110.0	MS	21-MAR-23 22:00	230321-1
	Chromium	50.1	ug/L	50	ug/L	100.2	90.0 - 110.0	MS	21-MAR-23 22:00	230321-1
	Cobalt	50.9	ug/L	50	ug/L	101.8	90.0 - 110.0	MS	21-MAR-23 22:00	230321-1
	Lead	50.6	ug/L	50	ug/L	101.2	90.0 - 110.0	MS	21-MAR-23 22:00	230321-1
	Lithium	50.1	ug/L	50	ug/L	100.2	90.0 - 110.0	MS	21-MAR-23 22:00	230321-1
	Selenium	49.6	ug/L	50	ug/L	99.1	90.0 - 110.0	MS	21-MAR-23 22:00	230321-1
	Arsenic	49.3	ug/L	50	ug/L	98.5	90.0 - 110.0	MS	22-MAR-23 11:13	230322-2
	Boron	96.6	ug/L	100	ug/L	96.6	90.0 - 110.0	MS	22-MAR-23 11:13	230322-2
	Calcium	5080	ug/L	5000	ug/L	101.6	90.0 - 110.0	MS	22-MAR-23 11:13	230322-2
	Thallium	49.5	ug/L	50	ug/L	99	90.0 - 110.0	MS	22-MAR-23 11:13	230322-2
	Molybdenum	53.9	ug/L	50	ug/L	107.9	90.0 - 110.0	MS	22-MAR-23 16:25	230322-3
CCV05										
	Antimony	48.5	ug/L	50	ug/L	97	90.0 - 110.0	MS	21-MAR-23 22:34	230321-1
	Arsenic	49.6	ug/L	50	ug/L	99.1	90.0 - 110.0	MS	21-MAR-23 22:34	230321-1
	Barium	50.4	ug/L	50	ug/L	100.8	90.0 - 110.0	MS	21-MAR-23 22:34	230321-1
	Beryllium	51.1	ug/L	50	ug/L	102.3	90.0 - 110.0	MS	21-MAR-23 22:34	230321-1
	Cadmium	49.8	ug/L	50	ug/L	99.6	90.0 - 110.0	MS	21-MAR-23 22:34	230321-1
	Chromium	50.4	ug/L	50	ug/L	100.7	90.0 - 110.0	MS	21-MAR-23 22:34	230321-1
	Cobalt	51.2	ug/L	50	ug/L	102.5	90.0 - 110.0	MS	21-MAR-23 22:34	230321-1
	Lead	50.6	ug/L	50	ug/L	101.1	90.0 - 110.0	MS	21-MAR-23 22:34	230321-1

EPA

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 614767

Contract: DMNN00101 **Lab Code:** GEL

Instrument ID: ICPMS15,HG7

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Acceptance Window (%R)*	*M**	*Analysis Date/Time*	*Run Number*
	Lithium	51.1	ug/L	50	ug/L	102.1	90.0 - 110.0	MS	21-MAR-23 22:34	230321-1
	Selenium	50.7	ug/L	50	ug/L	101.4	90.0 - 110.0	MS	21-MAR-23 22:34	230321-1
	Arsenic	49.3	ug/L	50	ug/L	98.6	90.0 - 110.0	MS	22-MAR-23 11:35	230322-2
	Boron	93.6	ug/L	100	ug/L	93.6	90.0 - 110.0	MS	22-MAR-23 11:35	230322-2
	Calcium	5120	ug/L	5000	ug/L	102.4	90.0 - 110.0	MS	22-MAR-23 11:35	230322-2
	Thallium	49.4	ug/L	50	ug/L	98.8	90.0 - 110.0	MS	22-MAR-23 11:35	230322-2
	Molybdenum	53.2	ug/L	50	ug/L	106.3	90.0 - 110.0	MS	22-MAR-23 17:15	230322-3
CCV06										
	Antimony	48.4	ug/L	50	ug/L	96.7	90.0 - 110.0	MS	21-MAR-23 23:04	230321-1
	Arsenic	49.5	ug/L	50	ug/L	99	90.0 - 110.0	MS	21-MAR-23 23:04	230321-1
	Barium	48.6	ug/L	50	ug/L	97.2	90.0 - 110.0	MS	21-MAR-23 23:04	230321-1
	Beryllium	53.4	ug/L	50	ug/L	106.8	90.0 - 110.0	MS	21-MAR-23 23:04	230321-1
	Cadmium	51.1	ug/L	50	ug/L	102.1	90.0 - 110.0	MS	21-MAR-23 23:04	230321-1
	Chromium	50.4	ug/L	50	ug/L	100.9	90.0 - 110.0	MS	21-MAR-23 23:04	230321-1
	Cobalt	51.1	ug/L	50	ug/L	102.1	90.0 - 110.0	MS	21-MAR-23 23:04	230321-1
	Lead	50.8	ug/L	50	ug/L	101.6	90.0 - 110.0	MS	21-MAR-23 23:04	230321-1
	Lithium	53.9	ug/L	50	ug/L	107.8	90.0 - 110.0	MS	21-MAR-23 23:04	230321-1
	Selenium	49.4	ug/L	50	ug/L	98.8	90.0 - 110.0	MS	21-MAR-23 23:04	230321-1
	Arsenic	48.4	ug/L	50	ug/L	96.8	90.0 - 110.0	MS	22-MAR-23 11:57	230322-2
	Boron	90.4	ug/L	100	ug/L	90.4	90.0 - 110.0	MS	22-MAR-23 11:57	230322-2
	Calcium	4950	ug/L	5000	ug/L	98.9	90.0 - 110.0	MS	22-MAR-23 11:57	230322-2
	Thallium	49.2	ug/L	50	ug/L	98.3	90.0 - 110.0	MS	22-MAR-23 11:57	230322-2
CCV07										
	Arsenic	49	ug/L	50	ug/L	98	90.0 - 110.0	MS	22-MAR-23 12:07	230322-2
	Boron	97	ug/L	100	ug/L	97	90.0 - 110.0	MS	22-MAR-23 12:07	230322-2
	Calcium	5070	ug/L	5000	ug/L	101.4	90.0 - 110.0	MS	22-MAR-23 12:07	230322-2
	Thallium	48.7	ug/L	50	ug/L	97.4	90.0 - 110.0	MS	22-MAR-23 12:07	230322-2
CCV08										
	Arsenic	49.2	ug/L	50	ug/L	98.5	90.0 - 110.0	MS	22-MAR-23 12:22	230322-2
	Boron	116	ug/L	100	ug/L	116.1	90.0 - 110.0*	MS	22-MAR-23 12:22	230322-2
	Calcium	5010	ug/L	5000	ug/L	100.2	90.0 - 110.0	MS	22-MAR-23 12:22	230322-2

EPA

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 614767

Contract: DMNN00101 **Lab Code:** GEL

Instrument ID: ICPMS15,HG7

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Acceptance Window (%R)*	*M**	*Analysis Date/Time*	*Run Number*
	Thallium	49	ug/L	50	ug/L	98.1	90.0 - 110.0	MS	22-MAR-23 12:22	230322-2
CCV09										
	Arsenic	48.4	ug/L	50	ug/L	96.7	90.0 - 110.0	MS	22-MAR-23 12:51	230322-2
	Boron	95.5	ug/L	100	ug/L	95.5	90.0 - 110.0	MS	22-MAR-23 12:51	230322-2
	Calcium	5040	ug/L	5000	ug/L	100.8	90.0 - 110.0	MS	22-MAR-23 12:51	230322-2
	Thallium	48.6	ug/L	50	ug/L	97.2	90.0 - 110.0	MS	22-MAR-23 12:51	230322-2

***Analytical Methods:**

AV EPA 245.1/245.2
MS EPA 200.8 SC_NPDES

METALS
-2b-
CRDL Standard for ICP & ICPMS

SDG No: 614767

Contract: DMNN00101 **Lab Code:** GEL

Instrument ID: ICPMS15,HG7

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Advisory Limits (%R)*	*M**	*Analysis Date/Time*	*Run Number*
CRDL01										
	Mercury	.163	ug/L	.2	ug/L	81.5	70.0 - 130.0	AV	20-MAR-23 09:38	032023W1-4
	Barium	4.32	ug/L	4	ug/L	108	70.0 - 130.0	MS	21-MAR-23 19:19	230321-1
	Beryllium	.57	ug/L	.5	ug/L	114	70.0 - 130.0	MS	21-MAR-23 19:19	230321-1
	Cadmium	.956	ug/L	1	ug/L	95.6	70.0 - 130.0	MS	21-MAR-23 19:19	230321-1
	Chromium	10.3	ug/L	10	ug/L	102.9	70.0 - 130.0	MS	21-MAR-23 19:19	230321-1
	Cobalt	1.05	ug/L	1	ug/L	104.6	70.0 - 130.0	MS	21-MAR-23 19:19	230321-1
	Lead	2.08	ug/L	2	ug/L	104.2	70.0 - 130.0	MS	21-MAR-23 19:19	230321-1
	Lithium	10.1	ug/L	10	ug/L	101.3	70.0 - 130.0	MS	21-MAR-23 19:19	230321-1
	Selenium	5.8	ug/L	5	ug/L	116	70.0 - 130.0	MS	21-MAR-23 19:19	230321-1
	Antimony	3.02	ug/L	3	ug/L	100.6	70.0 - 130.0	MS	21-MAR-23 19:19	230321-1
	Arsenic	4.97	ug/L	5	ug/L	99.5	70.0 - 130.0	MS	21-MAR-23 19:19	230321-1
	Thallium	1.69	ug/L	2	ug/L	84.4	70.0 - 130.0	MS	22-MAR-23 10:11	230322-2
	Calcium	236	ug/L	200	ug/L	118.2	70.0 - 130.0	MS	22-MAR-23 10:11	230322-2
	Boron	14.9	ug/L	15	ug/L	99.4	70.0 - 130.0	MS	22-MAR-23 10:11	230322-2
	Arsenic	4.85	ug/L	5	ug/L	97	70.0 - 130.0	MS	22-MAR-23 10:11	230322-2
	Molybdenum	.998	ug/L	1	ug/L	99.8	70.0 - 130.0	MS	22-MAR-23 13:46	230322-3
CRDL02										
	Mercury	.178	ug/L	.2	ug/L	89	70.0 - 130.0	AV	20-MAR-23 10:06	032023W1-4
	Lead	2.13	ug/L	2	ug/L	106.3	70.0 - 130.0	MS	21-MAR-23 21:17	230321-1
	Cobalt	1.1	ug/L	1	ug/L	109.7	70.0 - 130.0	MS	21-MAR-23 21:17	230321-1
	Selenium	5.05	ug/L	5	ug/L	101.1	70.0 - 130.0	MS	21-MAR-23 21:17	230321-1
	Lithium	10.5	ug/L	10	ug/L	104.9	70.0 - 130.0	MS	21-MAR-23 21:17	230321-1
	Antimony	3.28	ug/L	3	ug/L	109.4	70.0 - 130.0	MS	21-MAR-23 21:17	230321-1
	Arsenic	5.32	ug/L	5	ug/L	106.4	70.0 - 130.0	MS	21-MAR-23 21:17	230321-1
	Barium	4.31	ug/L	4	ug/L	107.8	70.0 - 130.0	MS	21-MAR-23 21:17	230321-1
	Beryllium	.475	ug/L	.5	ug/L	95	70.0 - 130.0	MS	21-MAR-23 21:17	230321-1
	Cadmium	1.03	ug/L	1	ug/L	102.6	70.0 - 130.0	MS	21-MAR-23 21:17	230321-1
	Chromium	10.2	ug/L	10	ug/L	101.5	70.0 - 130.0	MS	21-MAR-23 21:17	230321-1
	Boron	15.5	ug/L	15	ug/L	103.3	70.0 - 130.0	MS	22-MAR-23 11:50	230322-2
	Arsenic	5.57	ug/L	5	ug/L	111.4	70.0 - 130.0	MS	22-MAR-23 11:50	230322-2
	Calcium	239	ug/L	200	ug/L	119.3	70.0 - 130.0	MS	22-MAR-23 11:50	230322-2
	Thallium	1.72	ug/L	2	ug/L	86.1	70.0 - 130.0	MS	22-MAR-23 11:50	230322-2

EPA

METALS
-2b-
CRDL Standard for ICP & ICPMS

SDG No: 614767

Contract: DMNN00101 **Lab Code:** GEL

Instrument ID: ICPMS15,HG7

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Advisory Limits (%R)*	*M**	*Analysis Date/Time*	*Run Number*
	Molybdenum	1.05	ug/L	1	ug/L	104.8	70.0 - 130.0	MS	22-MAR-23 15:06	230322-3
CRDL03										
	Mercury	.197	ug/L	.2	ug/L	98.5	70.0 - 130.0	AV	20-MAR-23 10:27	032023W1-4
	Selenium	4.92	ug/L	5	ug/L	98.5	70.0 - 130.0	MS	21-MAR-23 23:08	230321-1
	Antimony	3.39	ug/L	3	ug/L	113	70.0 - 130.0	MS	21-MAR-23 23:08	230321-1
	Lead	2.11	ug/L	2	ug/L	105.5	70.0 - 130.0	MS	21-MAR-23 23:08	230321-1
	Lithium	10.9	ug/L	10	ug/L	108.8	70.0 - 130.0	MS	21-MAR-23 23:08	230321-1
	Arsenic	4.82	ug/L	5	ug/L	96.4	70.0 - 130.0	MS	21-MAR-23 23:08	230321-1
	Barium	3.88	ug/L	4	ug/L	97.1	70.0 - 130.0	MS	21-MAR-23 23:08	230321-1
	Beryllium	.554	ug/L	.5	ug/L	110.8	70.0 - 130.0	MS	21-MAR-23 23:08	230321-1
	Cadmium	1.01	ug/L	1	ug/L	100.7	70.0 - 130.0	MS	21-MAR-23 23:08	230321-1
	Chromium	10.4	ug/L	10	ug/L	103.6	70.0 - 130.0	MS	21-MAR-23 23:08	230321-1
	Cobalt	1.06	ug/L	1	ug/L	106.4	70.0 - 130.0	MS	21-MAR-23 23:08	230321-1
	Thallium	1.51	ug/L	2	ug/L	75.5	70.0 - 130.0	MS	22-MAR-23 12:44	230322-2
	Calcium	216	ug/L	200	ug/L	108.2	70.0 - 130.0	MS	22-MAR-23 12:44	230322-2
	Boron	33.6	ug/L	15	ug/L	224	70.0 - 130.0 *	MS	22-MAR-23 12:44	230322-2
	Arsenic	4.95	ug/L	5	ug/L	99.1	70.0 - 130.0	MS	22-MAR-23 12:44	230322-2
	Molybdenum	.989	ug/L	1	ug/L	98.9	70.0 - 130.0	MS	22-MAR-23 16:14	230322-3
CRDL04										
	Molybdenum	1.03	ug/L	1	ug/L	102.5	70.0 - 130.0	MS	22-MAR-23 17:04	230322-3

***Analytical Methods:**

AV **EPA 245.1/245.2**
MS **EPA 200.8 SC_NPDES**

Metals
-3a-
Initial and Continuing Calibration Blank Summary

SDG No.: 614767

Contract: DMNN00101

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
ICB01										
	Mercury	0.067	+/-.1	U	0.067	0.2	LIQ	AV	20-MAR-23 09:36	032023W1-4
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	21-MAR-23 19:16	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	21-MAR-23 19:16	230321-1
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 19:16	230321-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	21-MAR-23 19:16	230321-1
	Cadmium	0.03	+/-.05	U	0.03	0.1	LIQ	MS	21-MAR-23 19:16	230321-1
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	21-MAR-23 19:16	230321-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	21-MAR-23 19:16	230321-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 19:16	230321-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	21-MAR-23 19:16	230321-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	21-MAR-23 19:16	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	22-MAR-23 10:09	230322-2
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	22-MAR-23 10:09	230322-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	22-MAR-23 10:09	230322-2
	Thallium	0.246	+/-.25	B	0.125	0.5	LIQ	MS	22-MAR-23 10:09	230322-2
	Molybdenum	0.167	+/-.5	U	0.167	1.0	LIQ	MS	22-MAR-23 13:42	230322-3
CCB01										
	Mercury	0.067	+/-.1	U	0.067	0.2	LIQ	AV	20-MAR-23 09:41	032023W1-4
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	21-MAR-23 19:33	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	21-MAR-23 19:33	230321-1
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 19:33	230321-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	21-MAR-23 19:33	230321-1
	Cadmium	0.03	+/-.05	U	0.03	0.1	LIQ	MS	21-MAR-23 19:33	230321-1
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	21-MAR-23 19:33	230321-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	21-MAR-23 19:33	230321-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 19:33	230321-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	21-MAR-23 19:33	230321-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	21-MAR-23 19:33	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	22-MAR-23 10:20	230322-2
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	22-MAR-23 10:20	230322-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	22-MAR-23 10:20	230322-2

EPA

Metals
-3a-
Initial and Continuing Calibration Blank Summary

SDG No.: 614767

Contract: DMNN00101

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
	Thallium	0.21	+/-.25	B	0.125	0.5	LIQ	MS	22-MAR-23 10:20	230322-2
	Molybdenum	0.424	+/-.5	B	0.167	1.0	LIQ	MS	22-MAR-23 14:00	230322-3
CCB02										
	Mercury	0.067	+/-.1	U	0.067	0.2	LIQ	AV	20-MAR-23 10:30	032023W1-4
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	21-MAR-23 19:43	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	21-MAR-23 19:43	230321-1
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 19:43	230321-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	21-MAR-23 19:43	230321-1
	Cadmium	0.03	+/-.05	U	0.03	0.1	LIQ	MS	21-MAR-23 19:43	230321-1
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	21-MAR-23 19:43	230321-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	21-MAR-23 19:43	230321-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 19:43	230321-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	21-MAR-23 19:43	230321-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	21-MAR-23 19:43	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	22-MAR-23 10:27	230322-2
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	22-MAR-23 10:27	230322-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	22-MAR-23 10:27	230322-2
	Thallium	0.278	+/-.25	B	0.125	0.5	LIQ	MS	22-MAR-23 10:27	230322-2
	Molybdenum	0.167	+/-.5	U	0.167	1.0	LIQ	MS	22-MAR-23 14:37	230322-3
CCB03										
	Mercury	0.067	+/-.1	U	0.067	0.2	LIQ	AV	20-MAR-23 10:50	032023W1-4
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	21-MAR-23 21:30	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	21-MAR-23 21:30	230321-1
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 21:30	230321-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	21-MAR-23 21:30	230321-1
	Cadmium	0.03	+/-.05	U	0.03	0.1	LIQ	MS	21-MAR-23 21:30	230321-1
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	21-MAR-23 21:30	230321-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	21-MAR-23 21:30	230321-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 21:30	230321-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	21-MAR-23 21:30	230321-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	21-MAR-23 21:30	230321-1

EPA

Metals
-3a-
Initial and Continuing Calibration Blank Summary

SDG No.: 614767

Contract: DMNN00101

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	22-MAR-23 10:49	230322-2
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	22-MAR-23 10:49	230322-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	22-MAR-23 10:49	230322-2
	Thallium	0.231	+/-.25	B	0.125	0.5	LIQ	MS	22-MAR-23 10:49	230322-2
	Molybdenum	0.429	+/-.5	B	0.167	1.0	LIQ	MS	22-MAR-23 15:20	230322-3
CCB04										
	Mercury	0.067	+/-.1	U	0.067	0.2	LIQ	AV	20-MAR-23 11:11	032023W1-4
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	21-MAR-23 22:04	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	21-MAR-23 22:04	230321-1
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 22:04	230321-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	21-MAR-23 22:04	230321-1
	Cadmium	0.03	+/-.05	U	0.03	0.1	LIQ	MS	21-MAR-23 22:04	230321-1
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	21-MAR-23 22:04	230321-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	21-MAR-23 22:04	230321-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 22:04	230321-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	21-MAR-23 22:04	230321-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	21-MAR-23 22:04	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	22-MAR-23 11:15	230322-2
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	22-MAR-23 11:15	230322-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	22-MAR-23 11:15	230322-2
	Thallium	0.216	+/-.25	B	0.125	0.5	LIQ	MS	22-MAR-23 11:15	230322-2
	Molybdenum	0.423	+/-.5	B	0.167	1.0	LIQ	MS	22-MAR-23 16:29	230322-3
CCB05										
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	21-MAR-23 22:38	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	21-MAR-23 22:38	230321-1
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 22:38	230321-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	21-MAR-23 22:38	230321-1
	Cadmium	0.03	+/-.05	U	0.03	0.1	LIQ	MS	21-MAR-23 22:38	230321-1
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	21-MAR-23 22:38	230321-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	21-MAR-23 22:38	230321-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 22:38	230321-1

EPA

Metals
-3a-
Initial and Continuing Calibration Blank Summary

SDG No.: 614767

Contract: DMNN00101

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	21-MAR-23 22:38	230321-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	21-MAR-23 22:38	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	22-MAR-23 11:37	230322-2
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	22-MAR-23 11:37	230322-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	22-MAR-23 11:37	230322-2
	Thallium	0.221	+/-.25	B	0.125	0.5	LIQ	MS	22-MAR-23 11:37	230322-2
	Molybdenum	0.443	+/-.5	B	0.167	1.0	LIQ	MS	22-MAR-23 17:19	230322-3
CCB06										
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	21-MAR-23 23:11	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	21-MAR-23 23:11	230321-1
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 23:11	230321-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	21-MAR-23 23:11	230321-1
	Cadmium	0.03	+/-.05	U	0.03	0.1	LIQ	MS	21-MAR-23 23:11	230321-1
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	21-MAR-23 23:11	230321-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	21-MAR-23 23:11	230321-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	21-MAR-23 23:11	230321-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	21-MAR-23 23:11	230321-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	21-MAR-23 23:11	230321-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	22-MAR-23 11:59	230322-2
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	22-MAR-23 11:59	230322-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	22-MAR-23 11:59	230322-2
	Thallium	0.219	+/-.25	B	0.125	0.5	LIQ	MS	22-MAR-23 11:59	230322-2
CCB07										
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	22-MAR-23 12:09	230322-2
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	22-MAR-23 12:09	230322-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	22-MAR-23 12:09	230322-2
	Thallium	0.222	+/-.25	B	0.125	0.5	LIQ	MS	22-MAR-23 12:09	230322-2
CCB08										
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	22-MAR-23 12:24	230322-2
	Boron	12.51	+/-7.5	B	4.0	15.0	LIQ	MS	22-MAR-23 12:24	230322-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	22-MAR-23 12:24	230322-2

EPA

Metals
-3a-
Initial and Continuing Calibration Blank Summary

SDG No.: 614767

Contract: DMNN00101

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
	Thallium	0.225	+/-.25	B	0.125	0.5	LIQ	MS	22-MAR-23 12:24	230322-2
CCB09										
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	22-MAR-23 12:54	230322-2
	Boron	4.68	+/-7.5	B	4.0	15.0	LIQ	MS	22-MAR-23 12:54	230322-2
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	22-MAR-23 12:54	230322-2
	Thallium	0.125	+/-.25	U	0.125	0.5	LIQ	MS	22-MAR-23 12:54	230322-2

***Analytical Methods:**

AV **EPA 245.1/245.2**
MS **EPA 200.8 SC_NPDES**

EPA

METALS
-3b-
PREPARATION BLANK SUMMARY

SDG NO. 614767
Contract: DMNN00101
Matrix: GW

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1205349091								
	Mercury	0.0670	ug/L	+/-0.1	U	AV	0.0670	0.200
1205349223								
	Arsenic	1.66	ug/L	+/-2.5	U	MS	1.66	5.00
	Barium	0.500	ug/L	+/-1	U	MS	0.500	2.00
	Beryllium	0.200	ug/L	+/-0.25	U	MS	0.200	0.500
	Boron	5.26	ug/L	+/-7.5	B	MS	4.00	15.0
	Cadmium	0.0300	ug/L	+/-0.05	U	MS	0.0300	0.100
	Calcium	30.0	ug/L	+/-50	U	MS	30.0	100
	Chromium	1.00	ug/L	+/-1.5	U	MS	1.00	3.00
	Cobalt	0.100	ug/L	+/-0.5	U	MS	0.100	1.00
	Lead	0.500	ug/L	+/-1	U	MS	0.500	2.00
	Lithium	2.00	ug/L	+/-5	U	MS	2.00	10.0
	Molybdenum	0.184	ug/L	+/-0.5	B	MS	0.167	1.00
	Selenium	1.50	ug/L	+/-2.5	U	MS	1.50	5.00
	Thallium	0.125	ug/L	+/-0.25	U	MS	0.125	0.500
	Antimony	0.600	ug/L	+/-1	U	MS	0.600	2.00

***Analytical Methods:**

AV **EPA 245.1/245.2**
MS **EPA 200.8 SC_NPDES**

METALS
-4-
Interference Check Sample

SDG No: 614767

Contract: DMNN00101 **Lab Code:** GEL

Instrument: ICPMS15

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
ICSA01									
	Antimony	0.162	ug/L					21-MAR-23 19:22	230321-1
	Arsenic	0.256	ug/L					21-MAR-23 19:22	230321-1
	Barium	1.74	ug/L					21-MAR-23 19:22	230321-1
	Beryllium	-0.004	ug/L					21-MAR-23 19:22	230321-1
	Cadmium	1.6	ug/L					21-MAR-23 19:22	230321-1
	Chromium	1.11	ug/L					21-MAR-23 19:22	230321-1
	Cobalt	0.867	ug/L					21-MAR-23 19:22	230321-1
	Lead	0.488	ug/L					21-MAR-23 19:22	230321-1
	Lithium	0.159	ug/L					21-MAR-23 19:22	230321-1
	Selenium	0.437	ug/L					21-MAR-23 19:22	230321-1
ICSAB01									
	Antimony	19.0	ug/L	20	ug/L	95.2	80.0 - 120.0	21-MAR-23 19:26	230321-1
	Arsenic	20.4	ug/L	20	ug/L	102	80.0 - 120.0	21-MAR-23 19:26	230321-1
	Barium	20.3	ug/L	21.9	ug/L	92.6	80.0 - 120.0	21-MAR-23 19:26	230321-1
	Beryllium	19.4	ug/L	20	ug/L	97.2	80.0 - 120.0	21-MAR-23 19:26	230321-1
	Cadmium	21.2	ug/L	20.64	ug/L	103	80.0 - 120.0	21-MAR-23 19:26	230321-1
	Chromium	20.4	ug/L	20	ug/L	102	80.0 - 120.0	21-MAR-23 19:26	230321-1
	Cobalt	20.1	ug/L	20.9	ug/L	95.9	80.0 - 120.0	21-MAR-23 19:26	230321-1
	Lead	19.4	ug/L	20	ug/L	96.9	80.0 - 120.0	21-MAR-23 19:26	230321-1
	Lithium	20.6	ug/L	20	ug/L	103	80.0 - 120.0	21-MAR-23 19:26	230321-1
	Selenium	19.6	ug/L	20	ug/L	98.2	80.0 - 120.0	21-MAR-23 19:26	230321-1
ICSA02									
	Antimony	0.165	ug/L					21-MAR-23 21:20	230321-1
	Arsenic	0.265	ug/L					21-MAR-23 21:20	230321-1
	Barium	1.76	ug/L					21-MAR-23 21:20	230321-1
	Beryllium	0.002	ug/L					21-MAR-23 21:20	230321-1
	Cadmium	1.61	ug/L					21-MAR-23 21:20	230321-1
	Chromium	1.09	ug/L					21-MAR-23 21:20	230321-1
	Cobalt	0.913	ug/L					21-MAR-23 21:20	230321-1
	Lead	0.483	ug/L					21-MAR-23 21:20	230321-1

EPA

METALS
-4-
Interference Check Sample

SDG No: 614767

Contract: DMNN00101 **Lab Code:** GEL

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
	Lithium	0.168	ug/L					21-MAR-23 21:20	230321-1
	Selenium	0.144	ug/L					21-MAR-23 21:20	230321-1
ICSAB02									
	Antimony	19.5	ug/L	20	ug/L	97.6	80.0 - 120.0	21-MAR-23 21:24	230321-1
	Arsenic	20.5	ug/L	20	ug/L	103	80.0 - 120.0	21-MAR-23 21:24	230321-1
	Barium	20.2	ug/L	21.9	ug/L	92.4	80.0 - 120.0	21-MAR-23 21:24	230321-1
	Beryllium	19.9	ug/L	20	ug/L	99.4	80.0 - 120.0	21-MAR-23 21:24	230321-1
	Cadmium	20.9	ug/L	20.64	ug/L	101	80.0 - 120.0	21-MAR-23 21:24	230321-1
	Chromium	20.7	ug/L	20	ug/L	104	80.0 - 120.0	21-MAR-23 21:24	230321-1
	Cobalt	20.2	ug/L	20.9	ug/L	96.5	80.0 - 120.0	21-MAR-23 21:24	230321-1
	Lead	19.2	ug/L	20	ug/L	96.1	80.0 - 120.0	21-MAR-23 21:24	230321-1
	Lithium	20.9	ug/L	20	ug/L	104	80.0 - 120.0	21-MAR-23 21:24	230321-1
	Selenium	20.2	ug/L	20	ug/L	101	80.0 - 120.0	21-MAR-23 21:24	230321-1
ICSA03									
	Antimony	0.278	ug/L					21-MAR-23 22:58	230321-1
	Arsenic	0.195	ug/L					21-MAR-23 22:58	230321-1
	Barium	1.78	ug/L					21-MAR-23 22:58	230321-1
	Beryllium	-0.008	ug/L					21-MAR-23 22:58	230321-1
	Cadmium	1.78	ug/L					21-MAR-23 22:58	230321-1
	Chromium	1.08	ug/L					21-MAR-23 22:58	230321-1
	Cobalt	0.892	ug/L					21-MAR-23 22:58	230321-1
	Lead	0.481	ug/L					21-MAR-23 22:58	230321-1
	Lithium	0.25	ug/L					21-MAR-23 22:58	230321-1
	Selenium	0.339	ug/L					21-MAR-23 22:58	230321-1
ICSAB03									
	Antimony	19.5	ug/L	20	ug/L	97.5	80.0 - 120.0	21-MAR-23 23:01	230321-1
	Arsenic	21.0	ug/L	20	ug/L	105	80.0 - 120.0	21-MAR-23 23:01	230321-1
	Barium	19.8	ug/L	21.9	ug/L	90.2	80.0 - 120.0	21-MAR-23 23:01	230321-1
	Beryllium	20.6	ug/L	20	ug/L	103	80.0 - 120.0	21-MAR-23 23:01	230321-1
	Cadmium	21.6	ug/L	20.64	ug/L	105	80.0 - 120.0	21-MAR-23 23:01	230321-1

EPA

METALS
-4-
Interference Check Sample

SDG No: 614767

Contract: DMNN00101 **Lab Code:** GEL

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
	Chromium	20.8	ug/L	20	ug/L	104	80.0 - 120.0	21-MAR-23 23:01	230321-1
	Cobalt	20.4	ug/L	20.9	ug/L	97.7	80.0 - 120.0	21-MAR-23 23:01	230321-1
	Lead	19.4	ug/L	20	ug/L	96.9	80.0 - 120.0	21-MAR-23 23:01	230321-1
	Lithium	21.9	ug/L	20	ug/L	110	80.0 - 120.0	21-MAR-23 23:01	230321-1
	Selenium	20.0	ug/L	20	ug/L	100	80.0 - 120.0	21-MAR-23 23:01	230321-1

METALS
-4-
Interference Check Sample

SDG No: 614767

Contract: DMNN00101 **Lab Code:** GEL

Instrument: ICPMS15

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
ICSA01									
	Arsenic	0.183	ug/L					22-MAR-23 10:14	230322-2
	Boron	3.72	ug/L					22-MAR-23 10:14	230322-2
	Calcium	95400	ug/L	100000	ug/L	95.4	80.0 - 120.0	22-MAR-23 10:14	230322-2
	Thallium	0.137	ug/L					22-MAR-23 10:14	230322-2
ICSAB01									
	Arsenic	20.6	ug/L	20	ug/L	103	80.0 - 120.0	22-MAR-23 10:16	230322-2
	Boron	21.6	ug/L	22.06	ug/L	97.7	80.0 - 120.0	22-MAR-23 10:16	230322-2
	Calcium	95500	ug/L	100000	ug/L	95.5	80.0 - 120.0	22-MAR-23 10:16	230322-2
	Thallium	19.2	ug/L	20	ug/L	95.7	80.0 - 120.0	22-MAR-23 10:16	230322-2
ICSA02									
	Arsenic	0.047	ug/L					22-MAR-23 11:53	230322-2
	Boron	3.42	ug/L					22-MAR-23 11:53	230322-2
	Calcium	94900	ug/L	100000	ug/L	94.9	80.0 - 120.0	22-MAR-23 11:53	230322-2
	Thallium	0.123	ug/L					22-MAR-23 11:53	230322-2
ICSAB02									
	Arsenic	20.5	ug/L	20	ug/L	103	80.0 - 120.0	22-MAR-23 11:55	230322-2
	Boron	22.2	ug/L	22.06	ug/L	101	80.0 - 120.0	22-MAR-23 11:55	230322-2
	Calcium	95100	ug/L	100000	ug/L	95.1	80.0 - 120.0	22-MAR-23 11:55	230322-2
	Thallium	18.9	ug/L	20	ug/L	94.4	80.0 - 120.0	22-MAR-23 11:55	230322-2
ICSA03									
	Arsenic	0.212	ug/L					22-MAR-23 12:46	230322-2
	Boron	11.5	ug/L					22-MAR-23 12:46	230322-2
	Calcium	95300	ug/L	100000	ug/L	95.3	80.0 - 120.0	22-MAR-23 12:46	230322-2
	Thallium	0.048	ug/L					22-MAR-23 12:46	230322-2
ICSAB03									
	Arsenic	20.6	ug/L	20	ug/L	103	80.0 - 120.0	22-MAR-23 12:48	230322-2
	Boron	24.9	ug/L	22.06	ug/L	113	80.0 - 120.0	22-MAR-23 12:48	230322-2
	Calcium	95200	ug/L	100000	ug/L	95.2	80.0 - 120.0	22-MAR-23 12:48	230322-2
	Thallium	18.9	ug/L	20	ug/L	94.7	80.0 - 120.0	22-MAR-23 12:48	230322-2

METALS
-4-
Interference Check Sample

SDG No: 614767

Contract: DMNN00101 **Lab Code:** GEL

Instrument: ICPMS15

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
ICSA01	Molybdenum	2100	ug/L	2000	ug/L	105	80.0 - 120.0	22-MAR-23 13:50	230322-3
ICSAB01	Molybdenum	2140	ug/L	2000	ug/L	107	80.0 - 120.0	22-MAR-23 13:53	230322-3
ICSA02	Molybdenum	2110	ug/L	2000	ug/L	106	80.0 - 120.0	22-MAR-23 15:09	230322-3
ICSAB02	Molybdenum	2140	ug/L	2000	ug/L	107	80.0 - 120.0	22-MAR-23 15:13	230322-3
ICSA03	Molybdenum	2110	ug/L	2000	ug/L	106	80.0 - 120.0	22-MAR-23 16:18	230322-3
ICSAB03	Molybdenum	2130	ug/L	2000	ug/L	106	80.0 - 120.0	22-MAR-23 16:22	230322-3
ICSA04	Molybdenum	2120	ug/L	2000	ug/L	106	80.0 - 120.0	22-MAR-23 17:08	230322-3
ICSAB04	Molybdenum	2130	ug/L	2000	ug/L	107	80.0 - 120.0	22-MAR-23 17:11	230322-3

METALS
-5a-

Matrix Spike Summary

SDG NO. 614767 **Client ID:** MW-AP-01-2023Q1S

Contract: DMNN00101 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 614767002 **Spike ID:** 1205349094

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/L	75-125	1.23		0.0670	U	2.00	61.4	N	AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
-5a-

Matrix Spike Summary

SDG NO. 614767 **Client ID:** MW-FGD-01-2023Q1S

Contract: DMNN00101 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 614767011 **Spike ID:** 1205349100

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/L	75-125	2.01		0.0670	U	2.00	101		AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
-5a-

Spike Summary

SDG NO. 614767 **Client ID:** MW-AP-01-2023Q1PS

Contract: DMNN00101 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 614767002 **Spike ID:** 1205349102

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/L	80-120	1.35		0.0670	U	2.00	67.7	N	AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
-5a-

Matrix Spike Summary

SDG NO. 614767 **Client ID:** MW-AP-01-2023Q1S

Contract: DMNN00101 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 614767002 **Spike ID:** 1205349226

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Antimony	ug/L	75-125	50.2		0.600	U	50.0	100		MS
Arsenic	ug/L	75-125	50.0		1.66	U	50.0	99.9		MS
Barium	ug/L		264		214		50.0	101	N/A	MS
Beryllium	ug/L	75-125	51.8		0.200	U	50.0	104		MS
Boron	ug/L		1680		1560		100	122	N/A	MS
Cadmium	ug/L	75-125	49.8		0.0300	U	50.0	99.7		MS
Calcium	ug/L		68800		64900		2000	194	N/A	MS
Chromium	ug/L	75-125	50.8		1.00	U	50.0	100		MS
Cobalt	ug/L	75-125	50.7		0.124	B	50.0	101		MS
Lead	ug/L	75-125	49.3		0.500	U	50.0	98.5		MS
Lithium	ug/L	75-125	49.9		2.00	U	50.0	99.7		MS
Molybdenum	ug/L	75-125	55.6		2.17		50.0	107		MS
Selenium	ug/L	75-125	46.9		1.50	U	50.0	93.5		MS
Thallium	ug/L	75-125	50.7		0.125	U	50.0	101		MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-5a-

Matrix Spike Summary

SDG NO. 614767 **Client ID:** MW-FGD-01-2023Q1S

Contract: DMNN00101 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 614767011 **Spike ID:** 1205349229

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Antimony	ug/L	75-125	50.6		0.600	U	50.0	101		MS
Arsenic	ug/L	75-125	50.0		1.66	U	50.0	99.9		MS
Barium	ug/L	75-125	168		122		50.0	92.5		MS
Beryllium	ug/L	75-125	52.8		0.596		50.0	104		MS
Boron	ug/L	75-125	104		8.91	B	100	95		MS
Cadmium	ug/L	75-125	51.1		0.0300	U	50.0	102		MS
Calcium	ug/L	75-125	3820		1610		2000	110		MS
Chromium	ug/L	75-125	50.3		1.00	U	50.0	100		MS
Cobalt	ug/L	75-125	53.7		1.86		50.0	104		MS
Lead	ug/L	75-125	52.0		1.69	B	50.0	101		MS
Lithium	ug/L	75-125	52.9		2.54	B	50.0	101		MS
Molybdenum	ug/L	75-125	52.1		0.167	U	50.0	104		MS
Selenium	ug/L	75-125	49.6		1.50	U	50.0	98.4		MS
Thallium	ug/L	75-125	50.1		0.125	U	50.0	100		MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

Metals
-6-
Duplicate Sample Summary

SDG No.: 614767 **Lab Code:** GEL

Contract: DMNN00101 **Client ID:** MW-AP-01-2023Q1D

Matrix: GROUND WATER **Level:** Low

Sample ID: 614767002 **Duplicate ID:** 1205349093 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/L		0.0670	U	0.0670	U			AV

***Analytical Methods:**
AV EPA 245.1/245.2

Metals
-6-
Duplicate Sample Summary

SDG No.: 614767 **Lab Code:** GEL

Contract: DMNN00101 **Client ID:** MW-FGD-01-2023Q1D

Matrix: GROUND WATER **Level:** Low

Sample ID: 614767011 **Duplicate ID:** 1205349099 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/L		0.0670	U	0.0670	U			AV

***Analytical Methods:**
AV EPA 245.1/245.2

EPA

Metals
-6-
Duplicate Sample Summary

SDG No.: 614767 **Lab Code:** GEL

Contract: DMNN00101 **Client ID:** MW-AP-01-2023Q1D

Matrix: GROUND WATER **Level:** Low

Sample ID: 614767002 **Duplicate ID:** 1205349225 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Antimony	ug/L		0.600	U	0.600	U			MS
Arsenic	ug/L		1.66	U	1.66	U			MS
Barium	ug/L	+/-20%	214		225		5.23		MS
Beryllium	ug/L		0.200	U	0.200	U			MS
Boron	ug/L	+/-20%	1560		1640		5.08		MS
Cadmium	ug/L		0.0300	U	0.0300	U			MS
Calcium	ug/L	+/-20%	64900		66800		2.98		MS
Chromium	ug/L		1.00	U	1.00	U			MS
Cobalt	ug/L	+/-2	0.124	B	0.131	B	5.49		MS
Lead	ug/L		0.500	U	0.500	U			MS
Lithium	ug/L		2.00	U	2.00	U			MS
Molybdenum	ug/L	+/-2	2.17		2.17		.138		MS
Selenium	ug/L		1.50	U	1.50	U			MS
Thallium	ug/L		0.125	U	0.125	U			MS

***Analytical Methods:**
MS EPA 200.8 SC_NPDES

Metals
-6-
Duplicate Sample Summary

SDG No.: 614767 **Lab Code:** GEL

Contract: DMNN00101 **Client ID:** MW-FGD-01-2023Q1D

Matrix: GROUND WATER **Level:** Low

Sample ID: 614767011 **Duplicate ID:** 1205349228 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Antimony	ug/L		0.600	U	0.600	U			MS
Arsenic	ug/L		1.66	U	1.66	U			MS
Barium	ug/L	+/-20%	122		115		5.39		MS
Beryllium	ug/L	+/-1	0.596		0.591		.842		MS
Boron	ug/L	+/-30	8.91	B	8.48	B	4.95		MS
Cadmium	ug/L		0.0300	U	0.0300	U			MS
Calcium	ug/L	+/-20%	1610		1590		1.11		MS
Chromium	ug/L		1.00	U	1.00	U			MS
Cobalt	ug/L	+/-2	1.86		1.81		2.45		MS
Lead	ug/L	+/-4	1.69	B	1.65	B	2.33		MS
Lithium	ug/L	+/-20	2.54	B	2.78	B	8.8		MS
Molybdenum	ug/L		0.167	U	0.167	U			MS
Selenium	ug/L		1.50	U	1.50	U			MS
Thallium	ug/L		0.125	U	0.125	U			MS

***Analytical Methods:**
MS EPA 200.8 SC_NPDES

METALS
-7-
Laboratory Control Sample Summary

SDG NO. 614767

Contract: DMNN00101

Aqueous LCS Source: GEL **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1205349092								
	Mercury	ug/L	2.00	1.98		99.1	85-115	AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
-7-
Laboratory Control Sample Summary

SDG NO. 614767

Contract: DMNN00101

Aqueous LCS Source: Enviromental Express **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1205349224								
	Antimony	ug/L	50.0	49.2		98.4	85-115	MS
	Arsenic	ug/L	50.0	48.5		97	85-115	MS
	Barium	ug/L	50.0	49.8		99.6	85-115	MS
	Beryllium	ug/L	50.0	50.3		101	85-115	MS
	Boron	ug/L	100	97.6		97.6	85-115	MS
	Cadmium	ug/L	50.0	50.0		100	85-115	MS
	Calcium	ug/L	2000	2190		109	85-115	MS
	Chromium	ug/L	50.0	50.0		100	85-115	MS
	Cobalt	ug/L	50.0	50.3		101	85-115	MS
	Lead	ug/L	50.0	49.9		99.8	85-115	MS
	Lithium	ug/L	50.0	49.0		98	80-120	MS
	Molybdenum	ug/L	50.0	49.8		99.5	85-115	MS
	Selenium	ug/L	50.0	48.1		96.1	85-115	MS
	Thallium	ug/L	50.0	49.9		99.8	85-115	MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-9-
Serial Dilution Sample Summary

SDG NO. 614767 **Client ID:** MW-AP-01-2023Q1L

Contract: DMNN00101

Matrix: LIQUID **Level:** Low

Sample ID: 614767002 **Serial Dilution ID:** 1205349095

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
-9-
Serial Dilution Sample Summary

SDG NO. 614767 **Client ID:** MW-FGD-01-2023Q1L

Contract: DMNN00101

Matrix: LIQUID **Level:** Low

Sample ID: 614767011 **Serial Dilution ID:** 1205349101

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
-9-
Serial Dilution Sample Summary

SDG NO. 614767 **Client ID:** MW-AP-01-2023Q1L

Contract: DMNN00101

Matrix: LIQUID **Level:** Low

Sample ID: 614767002 **Serial Dilution ID:** 1205349227

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Antimony	.6	U	3	U				MS
Arsenic	1.66	U	8.3	U				MS
Barium	214		216		1.023		10	MS
Beryllium	.2	U	1	U				MS
Boron	78		87		11.509			MS
Cadmium	.03	U	.15	U				MS
Calcium	3240		3180		1.917			MS
Chromium	1	U	5	U				MS
Cobalt	.124	B	.5	U	37.097			MS
Lead	.5	U	2.5	U				MS
Lithium	2	U	10	U				MS
Molybdenum	2.17		2.19	B	.691			MS
Selenium	1.5	U	7.5	U				MS
Thallium	.125	U	1.13	B				MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-9-
Serial Dilution Sample Summary

SDG NO. 614767 **Client ID:** MW-FGD-01-2023Q1L

Contract: DMNN00101

Matrix: LIQUID **Level:** Low

Sample ID: 614767011 **Serial Dilution ID:** 1205349230

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Antimony	.6	U	3.5	B				MS
Arsenic	1.66	U	8.3	U				MS
Barium	122		121		.753		10	MS
Beryllium	.596		1	U	65.268			MS
Boron	8.91	B	20.6	B	130.83			MS
Cadmium	.03	U	.42	B				MS
Calcium	1610		1610		.074			MS
Chromium	1	U	5	U				MS
Cobalt	1.86		2.34	B	25.74			MS
Lead	1.69	B	2.5	U	32.762			MS
Lithium	2.54	B	10	U	13.297			MS
Molybdenum	.167	U	.835	U				MS
Selenium	1.5	U	7.5	U				MS
Thallium	.125	U	1.56	B				MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-13-
SAMPLE PREPARATION SUMMARY

SDG No: 614767 **Method Type:** MS

Contract: DMNN00101 **Lab Code:** GEL

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size	Final Sample Volume	Percent Solids
Batch Number	2400310						
1205349223	MB for batch 2400310	MB	G	17-MAR-23	50mL	50mL	
1205349224	LCS for batch 2400310	LCS	G	17-MAR-23	50mL	50mL	
1205349226	MW-AP-01-2023Q1S	MS	G	17-MAR-23	50mL	50mL	
1205349229	MW-FGD-01-2023Q1S	MS	G	17-MAR-23	50mL	50mL	
1205349225	MW-AP-01-2023Q1D	DUP	G	17-MAR-23	50mL	50mL	
1205349228	MW-FGD-01-2023Q1D	DUP	G	17-MAR-23	50mL	50mL	
614767001	MW-AP-01A-2023Q1	SAMPLE	G	17-MAR-23	50mL	50mL	
614767002	MW-AP-01-2023Q1	SAMPLE	G	17-MAR-23	50mL	50mL	
614767003	MW-AP-02-2023Q1	SAMPLE	G	17-MAR-23	50mL	50mL	
614767004	MW-AP-03-2023Q1	SAMPLE	G	17-MAR-23	50mL	50mL	
614767005	MW-AP-04-2023Q1	SAMPLE	G	17-MAR-23	50mL	50mL	
614767006	MW-AP-05-2023Q1	SAMPLE	G	17-MAR-23	50mL	50mL	
614767007	MW-AP-08-2023Q1	SAMPLE	G	17-MAR-23	50mL	50mL	
614767008	DU-WAT-CCR-AP-23101	SAMPLE	G	17-MAR-23	50mL	50mL	
614767009	FBLK-WAT-CCR-AP-23101	SAMPLE	G	17-MAR-23	50mL	50mL	
614767010	FBLK-WAT-CCR-AP-23102	SAMPLE	G	17-MAR-23	50mL	50mL	
614767011	MW-FGD-01-2023Q1	SAMPLE	G	17-MAR-23	50mL	50mL	

EPA

METALS
-13-
SAMPLE PREPARATION SUMMARY

SDG No: 614767 **Method Type:** AV

Contract: DMNN00101 **Lab Code:** GEL

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size	Final Sample Volume	Percent Solids
Batch Number	2400238						
1205349091	MB for batch 2400238	MB	G	17-MAR-23	20mL	20mL	
1205349092	LCS for batch 2400238	LCS	G	17-MAR-23	20mL	20mL	
1205349094	MW-AP-01-2023Q1S	MS	G	17-MAR-23	20mL	20mL	
1205349100	MW-FGD-01-2023Q1S	MS	G	17-MAR-23	20mL	20mL	
1205349093	MW-AP-01-2023Q1D	DUP	G	17-MAR-23	20mL	20mL	
1205349099	MW-FGD-01-2023Q1D	DUP	G	17-MAR-23	20mL	20mL	
614767001	MW-AP-01A-2023Q1	SAMPLE	G	17-MAR-23	20mL	20mL	
614767002	MW-AP-01-2023Q1	SAMPLE	G	17-MAR-23	20mL	20mL	
614767003	MW-AP-02-2023Q1	SAMPLE	G	17-MAR-23	20mL	20mL	
614767004	MW-AP-03-2023Q1	SAMPLE	G	17-MAR-23	20mL	20mL	
614767005	MW-AP-04-2023Q1	SAMPLE	G	17-MAR-23	20mL	20mL	
614767006	MW-AP-05-2023Q1	SAMPLE	G	17-MAR-23	20mL	20mL	
614767007	MW-AP-08-2023Q1	SAMPLE	G	17-MAR-23	20mL	20mL	
614767008	DU-WAT-CCR-AP-23101	SAMPLE	G	17-MAR-23	20mL	20mL	
614767009	FBLK-WAT-CCR-AP-23101	SAMPLE	G	17-MAR-23	20mL	20mL	
614767010	FBLK-WAT-CCR-AP-23102	SAMPLE	G	17-MAR-23	20mL	20mL	
614767011	MW-FGD-01-2023Q1	SAMPLE	G	17-MAR-23	20mL	20mL	

EPA

General Chem Analysis

Case Narrative

General Chemistry
Technical Case Narrative
Dominion Energy
SDG #: 614767

Product: **Ion Chromatography**
Analytical Method: EPA 300.0
Analytical Procedure: GL-GC-E-086 REV# 30
Analytical Batch: 2401758

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
614767001	MW-AP-01A-2023Q1
614767002	MW-AP-01-2023Q1
614767003	MW-AP-02-2023Q1
614767004	MW-AP-03-2023Q1
614767005	MW-AP-04-2023Q1
614767006	MW-AP-05-2023Q1
614767007	MW-AP-08-2023Q1
614767008	DU-WAT-CCR-AP-23101
614767009	FBLK-WAT-CCR-AP-23101
614767010	FBLK-WAT-CCR-AP-23102
1205352263	Method Blank (MB)
1205352264	Laboratory Control Sample (LCS)
1205352265	614767002(MW-AP-01-2023Q1) Sample Duplicate (DUP)
1205352266	614767002(MW-AP-01-2023Q1) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions
The following samples 1205352265 (MW-AP-01-2023Q1DUP), 1205352266 (MW-AP-01-2023Q1PS), 614767002 (MW-AP-01-2023Q1), 614767003 (MW-AP-02-2023Q1), 614767004 (MW-AP-03-2023Q1), 614767005 (MW-AP-04-2023Q1), 614767006 (MW-AP-05-2023Q1), 614767007 (MW-AP-08-2023Q1) and 614767008 (DU-WAT-CCR-AP-23101) were diluted because target analyte concentrations exceeded the calibration range. Samples 1205352265 (MW-AP-01-2023Q1DUP), 1205352266 (MW-AP-01-2023Q1PS), 614767002 (MW-AP-01-2023Q1), 614767003 (MW-AP-02-2023Q1), 614767004 (MW-AP-03-2023Q1), 614767006 (MW-AP-05-2023Q1), 614767007 (MW-AP-08-2023Q1) and 614767008 (DU-WAT-CCR-AP-23101) were diluted based on historical data. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	614767						
	002	**003**	**004**	**005**	**006**	**007**	**008**
Chloride	50X	10X	25X	5X	10X	10X	25X
Sulfate	1X	10X	10X	5X	10X	10X	10X

Miscellaneous Information

Additional Comments
All method-driven specifications are followed for these analyses except where client-specific SOW requirements are required to be met.

Product: **Solids, Total Dissolved**
Analytical Method: SM 2540C
Analytical Procedure: GL-GC-E-001 REV# 20
Analytical Batch: 2401380

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
614767001	MW-AP-01A-2023Q1
614767002	MW-AP-01-2023Q1
614767003	MW-AP-02-2023Q1
614767004	MW-AP-03-2023Q1
614767005	MW-AP-04-2023Q1
614767006	MW-AP-05-2023Q1
614767007	MW-AP-08-2023Q1
614767008	DU-WAT-CCR-AP-23101
614767009	FBLK-WAT-CCR-AP-23101
614767010	FBLK-WAT-CCR-AP-23102
1205351438	Method Blank (MB)
1205351439	Laboratory Control Sample (LCS)
1205351440	614628002(NonSDG) Sample Duplicate (DUP)
1205351441	614767002(MW-AP-01-2023Q1) Sample Duplicate (DUP)
1205351442	614831002(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments
Sample filtration took > 10 minutes; therefore as prescribed in the method, a reduced aliquot was used. 1205351442 (Non SDG 614831002DUP) and 614767005 (MW-AP-04-2023Q1). A reduced aliquot was used due to limited volume. The client did not provide an entire 1 liter aliquot. 1205351440 (Non SDG 614628002DUP). All method-driven specifications are followed for these analyses except where client-specific SOW requirements are required to be met.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

DMNN001 Dominion Energy (50149867)

Client SDG: 614767 GEL Work Order: 614767

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
J Value is estimated
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Aubrey Kingsbury**

Date: 29 MAR 2023 **Title: Team Leader**

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 29, 2023

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	MW-AP-01A-2023Q1	Project:	DMNN00101
Sample ID:	614767001	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	14-MAR-23 16:30		
Receive Date:	16-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		5.87	0.0670	0.200	mg/L		1	JLD1	03/21/23	1458	2401758	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate	J	0.274	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C TDS "As Received"												
Total Dissolved Solids		21.0	2.38	10.0	mg/L			CH6	03/21/23	1118	2401380	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 29, 2023

Company :	Dominion Energy Services, Inc.
Address :	120 Tredegar Street
	Richmond, Virginia 23219
Contact:	Kelly Hicks
Project:	CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	MW-AP-01-2023Q1	Project:	DMNN00101
Sample ID:	614767002	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	16-MAR-23 10:30		
Receive Date:	16-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride		0.343	0.0330	0.100	mg/L		1	JLD1	03/21/23	2226	2401758	1
Sulfate		1.58	0.133	0.400	mg/L		1					
Chloride		194	3.35	10.0	mg/L		50	JLD1	03/21/23	2356	2401758	2
Solids Analysis												
SM2540C TDS "As Received"												
Total Dissolved Solids		317	2.38	10.0	mg/L			CH6	03/21/23	1118	2401380	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 29, 2023

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	MW-AP-02-2023Q1	Project:	DMNN00101
Sample ID:	614767003	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	15-MAR-23 14:55		
Receive Date:	16-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride		0.211	0.0330	0.100	mg/L		1	JLD1	03/22/23	0255	2401758	1
Chloride		47.7	0.670	2.00	mg/L		10	JLD1	03/21/23	1657	2401758	2
Sulfate		11.3	1.33	4.00	mg/L		10					
Solids Analysis												
SM2540C TDS "As Received"												
Total Dissolved Solids		277	2.38	10.0	mg/L			CH6	03/21/23	1118	2401380	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: March 29, 2023

Company :	Dominion Energy Services, Inc.
Address :	120 Tredegar Street
	Richmond, Virginia 23219
Contact:	Kelly Hicks
Project:	CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	MW-AP-03-2023Q1	Project:	DMNN00101
Sample ID:	614767004	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	15-MAR-23 15:00		
Receive Date:	16-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride		0.671	0.0330	0.100	mg/L		1	JLD1	03/22/23	0325	2401758	1
Sulfate		72.1	1.33	4.00	mg/L		10	JLD1	03/21/23	1727	2401758	2
Chloride		146	1.68	5.00	mg/L		25	JLD1	03/22/23	0355	2401758	3
Solids Analysis												
SM2540C TDS "As Received"												
Total Dissolved Solids		411	2.38	10.0	mg/L			CH6	03/21/23	1118	2401380	4

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	EPA 300.0	
4	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 29, 2023

Company :	Dominion Energy Services, Inc.
Address :	120 Tredegar Street
	Richmond, Virginia 23219
Contact:	Kelly Hicks
Project:	CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	MW-AP-04-2023Q1	Project:	DMNN00101
Sample ID:	614767005	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	16-MAR-23 10:01		
Receive Date:	16-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride		0.582	0.0330	0.100	mg/L		1	JLD1	03/21/23	1757	2401758	1
Chloride		22.1	0.335	1.00	mg/L		5	JLD1	03/22/23	0425	2401758	2
Sulfate		56.8	0.665	2.00	mg/L		5					
Solids Analysis												
SM2540C TDS "As Received"												
Total Dissolved Solids		512	4.76	20.0	mg/L			CH6	03/21/23	1118	2401380	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 29, 2023

Company :	Dominion Energy Services, Inc.
Address :	120 Tredegar Street
	Richmond, Virginia 23219
Contact:	Kelly Hicks
Project:	CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	MW-AP-05-2023Q1	Project:	DMNN00101
Sample ID:	614767006	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	15-MAR-23 15:35		
Receive Date:	16-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		15.2	0.670	2.00	mg/L		10	JLD1	03/21/23	1827	2401758	1
Sulfate		28.8	1.33	4.00	mg/L		10					
Fluoride		0.148	0.0330	0.100	mg/L		1	JLD1	03/22/23	0455	2401758	2
Solids Analysis												
SM2540C TDS "As Received"												
Total Dissolved Solids		198	2.38	10.0	mg/L			CH6	03/21/23	1118	2401380	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: March 29, 2023

Company :	Dominion Energy Services, Inc.
Address :	120 Tredegar Street
	Richmond, Virginia 23219
Contact:	Kelly Hicks
Project:	CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	MW-AP-08-2023Q1	Project:	DMNN00101
Sample ID:	614767007	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	14-MAR-23 11:40		
Receive Date:	16-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		19.6	0.670	2.00	mg/L		10	JLD1	03/21/23	2027	2401758	1
Sulfate		78.3	1.33	4.00	mg/L		10					
Fluoride		0.777	0.0330	0.100	mg/L		1	JLD1	03/22/23	0525	2401758	2
Solids Analysis												
SM2540C TDS "As Received"												
Total Dissolved Solids		311	2.38	10.0	mg/L			CH6	03/21/23	1118	2401380	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: March 29, 2023

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	DU-WAT-CCR-AP-23101	Project:	DMNN00101
Sample ID:	614767008	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	15-MAR-23 12:00		
Receive Date:	16-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Sulfate		71.4	1.33	4.00	mg/L		10	JLD1	03/21/23	2057	2401758	1
Chloride		145	1.68	5.00	mg/L		25	JLD1	03/22/23	0624	2401758	2
Fluoride		0.676	0.0330	0.100	mg/L		1	JLD1	03/22/23	0554	2401758	3
Solids Analysis												
SM2540C TDS "As Received"												
Total Dissolved Solids		410	2.38	10.0	mg/L			CH6	03/21/23	1118	2401380	4

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	EPA 300.0	
4	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 29, 2023

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	FBLK-WAT-CCR-AP-23101	Project:	DMNN00101
Sample ID:	614767009	Client ID:	DMNN001
Matrix:	AQ		
Collect Date:	15-MAR-23 15:16		
Receive Date:	16-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride	J	0.116	0.0670	0.200	mg/L		1	JLD1	03/21/23	2126	2401758	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate	U	ND	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C TDS "As Received"												
Total Dissolved Solids	U	ND	2.38	10.0	mg/L			CH6	03/21/23	1118	2401380	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 29, 2023

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID:	FBLK-WAT-CCR-AP-23102	Project:	DMNN00101
Sample ID:	614767010	Client ID:	DMNN001
Matrix:	AQ		
Collect Date:	16-MAR-23 10:15		
Receive Date:	16-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		0.200	0.0670	0.200	mg/L		1	JLD1	03/21/23	2156	2401758	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate	U	ND	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C TDS "As Received"												
Total Dissolved Solids	U	ND	2.38	10.0	mg/L			CH6	03/21/23	1118	2401380	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

Quality Control Summary

QC Summary

Report Date: March 29, 2023

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, Virginia

Contact: **Kelly Hicks**

Workorder: **614767**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography										
Batch 2401758										
QC1205352265 614767002 DUP										
Chloride		194		194	mg/L	0.32		(0%-20%)	JLD1	03/22/23 00:26
Fluoride		0.343		0.340	mg/L	0.791 ^		(+/-0.100)		03/21/23 22:56
Sulfate		1.58		1.52	mg/L	3.47 ^		(+/-0.400)		
QC1205352264 LCS										
Chloride	5.00			4.91	mg/L		98.3	(90%-110%)		03/21/23 14:28
Fluoride	2.50			2.51	mg/L		100	(90%-110%)		
Sulfate	10.0			9.99	mg/L		99.9	(90%-110%)		
QC1205352263 MB										
Chloride			U	ND	mg/L					03/21/23 13:59
Fluoride			U	ND	mg/L					
Sulfate			U	ND	mg/L					
QC1205352266 614767002 PS										
Chloride	5.00	3.88		8.93	mg/L		101	(90%-110%)		03/22/23 00:56
Fluoride	2.50	0.343		2.81	mg/L		98.7	(90%-110%)		03/21/23 23:26
Sulfate	10.0	1.58		11.5	mg/L		99.1	(90%-110%)		

QC Summary

Workorder: **614767**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Solids Analysis										
Batch 2401380										
QC1205351440 614628002 DUP										
Total Dissolved Solids	U	ND	U	ND	mg/L	N/A			CH6	03/21/23 11:18
QC1205351441 614767002 DUP										
Total Dissolved Solids		317		319	mg/L	0.629		(0%-5%)		03/21/23 11:18
QC1205351442 614831002 DUP										
Total Dissolved Solids		670		666	mg/L	0.599		(0%-5%)		03/21/23 11:18
QC1205351439 LCS										
Total Dissolved Solids	300			302	mg/L		101	(95%-105%)		03/21/23 11:18
QC1205351438 MB										
Total Dissolved Solids			U	ND	mg/L					03/21/23 11:18

Notes:

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported
- h Preparation or preservation holding time was exceeded
- R Sample results are rejected
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- N1 See case narrative

QC Summary

Workorder: **614767**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.

B The target analyte was detected in the associated blank.

e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes

J See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
Dominion Energy
SDG #: 614767

Product: **Radium-226+Radium-228 Calculation**
Analytical Method: Calculation
Analytical Procedure: GL-RAD-D-003 REV# 45
Analytical Batch: 2400806

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
614767001	MW-AP-01A-2023Q1
614767002	MW-AP-01-2023Q1
614767003	MW-AP-02-2023Q1
614767004	MW-AP-03-2023Q1
614767005	MW-AP-04-2023Q1
614767006	MW-AP-05-2023Q1
614767007	MW-AP-08-2023Q1
614767008	DU-WAT-CCR-AP-23101
614767009	FBLK-WAT-CCR-AP-23101
614767010	FBLK-WAT-CCR-AP-23102
614767011	MW-FGD-01-2023Q1

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: **GFPC Ra228, Liquid**
Analytical Method: EPA 904.0
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2400807

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
614767001	MW-AP-01A-2023Q1
614767002	MW-AP-01-2023Q1
614767003	MW-AP-02-2023Q1
614767004	MW-AP-03-2023Q1
614767005	MW-AP-04-2023Q1
614767006	MW-AP-05-2023Q1
614767007	MW-AP-08-2023Q1
614767008	DU-WAT-CCR-AP-23101

614767009	FBLK-WAT-CCR-AP-23101
614767010	FBLK-WAT-CCR-AP-23102
614767011	MW-FGD-01-2023Q1
1205350223	Method Blank (MB)
1205350224	614767002(MW-AP-01-2023Q1) Sample Duplicate (DUP)
1205350225	614767011(MW-FGD-01-2023Q1) Sample Duplicate (DUP)
1205350226	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Recounts
Samples 1205350225 (MW-FGD-01-2023Q1DUP) and 614767011 (MW-FGD-01-2023Q1) were recounted due to high relative percent difference/relative error ratio. The recounts are reported.

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2400800

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
614767001	MW-AP-01A-2023Q1
614767002	MW-AP-01-2023Q1
614767003	MW-AP-02-2023Q1
614767004	MW-AP-03-2023Q1
614767005	MW-AP-04-2023Q1
614767006	MW-AP-05-2023Q1
614767007	MW-AP-08-2023Q1
614767008	DU-WAT-CCR-AP-23101
614767010	FBLK-WAT-CCR-AP-23102
614767011	MW-FGD-01-2023Q1
1205350203	Method Blank (MB)
1205350204	614767011(MW-FGD-01-2023Q1) Sample Duplicate (DUP)
1205350205	614767002(MW-AP-01-2023Q1) Sample Duplicate (DUP)
1205350206	614767002(MW-AP-01-2023Q1) Matrix Spike (MS)
1205350207	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where

applicable, with the following exceptions.

Quality Control (QC) Information

Duplication Criteria between QC Sample and Duplicate Sample
The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample	Analyte	Value
1205350205 (MW-AP-01-2023Q1DUP)	Radium-226	RPD 30* (0.00%-20.00%) RER 1.18 (0-2)

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2411604

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
614767009	FBLK-WAT-CCR-AP-23101
1205371252	Method Blank (MB)
1205371253	Laboratory Control Sample (LCS)
1205371254	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Re-prep/Re-analysis
Sample 614767009 (FBLK-WAT-CCR-AP-23101) was reprepped to verify the result. The re-analysis is being reported.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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Qualifier Definition Report
for

DMNN001 Dominion Energy (50149867)

Client SDG: 614767 GEL Work Order: 614767

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a Tracer compound
J Value is estimated
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Theresa Austin**

Date: 20 APR 2023 **Title: Group Leader**

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street
Richmond, Virginia 23219
Report Date: April 20, 2023
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-AP-01A-2023Q1
Sample ID: 614767001
Matrix: GW
Collect Date: 14-MAR-23
Receive Date: 16-MAR-23
Collector: Client
Project: DMNN00101
Client ID: DMNN001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228		4.06	+/-1.38	1.74	+/-1.72	3.00	pCi/L			JE1	03/28/23	1426	2400807	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum		9.14	+/-1.67		+/-2.11		pCi/L		1	NXL1	03/31/23	1314	2400806	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		5.08	+/-0.936	0.416	+/-1.21	1.00	pCi/L			LXP1	03/31/23	0954	2400800	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2400807	74.1	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street
Richmond, Virginia 23219
Report Date: April 20, 2023
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-AP-01-2023Q1
Sample ID: 614767002
Matrix: GW
Collect Date: 16-MAR-23
Receive Date: 16-MAR-23
Collector: Client
Project: DMNN00101
Client ID: DMNN001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	0.867	+/-0.859	1.41	+/-0.886	3.00	pCi/L			JE1	03/28/23	1426	2400807	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	2.53	+/-1.02		+/-1.08		pCi/L		1	NXL1	03/31/23	1314	2400806	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		1.66	+/-0.558	0.353	+/-0.611	1.00	pCi/L			LXP1	03/31/23	1035	2400800	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2400807	84.9	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street
Richmond, Virginia 23219
Report Date: April 20, 2023
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-AP-02-2023Q1
Sample ID: 614767003
Matrix: GW
Collect Date: 15-MAR-23
Receive Date: 16-MAR-23
Collector: Client

Project: DMNN00101
Client ID: DMNN001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	-0.606	+/-0.777	1.64	+/-0.777	3.00	pCi/L			JE1	03/28/23	1426	2400807	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	1.99	+/-0.988		+/-1.05		pCi/L		1	NXL1	03/31/23	1314	2400806	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		1.99	+/-0.611	0.544	+/-0.703	1.00	pCi/L			LXP1	03/31/23	1035	2400800	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2400807	82.5	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219 Report Date: April 20, 2023

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-AP-03-2023Q1 Project: DMNN00101
Sample ID: 614767004 Client ID: DMNN001
Matrix: GW
Collect Date: 15-MAR-23
Receive Date: 16-MAR-23
Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228		2.33	+/-1.34	1.96	+/-1.47	3.00	pCi/L			JE1	03/28/23	1426	2400807	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum		8.28	+/-1.68		+/-2.01		pCi/L		1	NXL1	03/31/23	1314	2400806	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		5.94	+/-1.01	0.557	+/-1.38	1.00	pCi/L			LXP1	03/31/23	1035	2400800	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2400807	59.2	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219 Report Date: April 20, 2023

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-AP-04-2023Q1 Project: DMNN00101
Sample ID: 614767005 Client ID: DMNN001
Matrix: GW
Collect Date: 16-MAR-23
Receive Date: 16-MAR-23
Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	0.938	+/-1.06	1.77	+/-1.08	3.00	pCi/L			JE1	03/28/23	1426	2400807	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	2.59	+/-1.26		+/-1.32		pCi/L		1	NXL1	03/31/23	1314	2400806	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		1.65	+/-0.685	0.807	+/-0.745	1.00	pCi/L			LXP1	03/31/23	1035	2400800	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2400807	83.6	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Richmond, Virginia 23219
Report Date: April 20, 2023
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-AP-05-2023Q1
Sample ID: 614767006
Matrix: GW
Collect Date: 15-MAR-23
Receive Date: 16-MAR-23
Collector: Client

Project: DMNN00101
Client ID: DMNN001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	-0.00246	+/-1.35	2.46	+/-1.35	3.00	pCi/L			JE1	03/28/23	1426	2400807	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	2.57	+/-1.50		+/-1.57		pCi/L		1	NXL1	03/31/23	1314	2400806	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		2.57	+/-0.655	0.322	+/-0.799	1.00	pCi/L			LXP1	03/31/23	1035	2400800	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2400807	84	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219 Report Date: April 20, 2023

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-AP-08-2023Q1 Project: DMNN00101
Sample ID: 614767007 Client ID: DMNN001
Matrix: GW
Collect Date: 14-MAR-23
Receive Date: 16-MAR-23
Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	1.41	+/-1.16	1.85	+/-1.21	3.00	pCi/L			JE1	03/28/23	1426	2400807	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	7.52	+/-1.53		+/-1.85		pCi/L		1	NXL1	03/31/23	1314	2400806	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		6.11	+/-1.00	0.457	+/-1.40	1.00	pCi/L			LXP1	03/31/23	1035	2400800	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2400807	72.5	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219 Report Date: April 20, 2023

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: DU-WAT-CCR-AP-23101 Project: DMNN00101
Sample ID: 614767008 Client ID: DMNN001
Matrix: GW
Collect Date: 15-MAR-23
Receive Date: 16-MAR-23
Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	1.22	+/-1.30	2.16	+/-1.33	3.00	pCi/L			JE1	03/28/23	1426	2400807	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	3.27	+/-1.44		+/-1.53		pCi/L		1	NXL1	03/31/23	1314	2400806	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		2.05	+/-0.620	0.357	+/-0.754	1.00	pCi/L			LXP1	03/31/23	1035	2400800	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2400807	80.3	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219 Report Date: April 20, 2023

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: FBLK-WAT-CCR-AP-23101 Project: DMNN00101
Sample ID: 614767009 Client ID: DMNN001
Matrix: AQ
Collect Date: 15-MAR-23
Receive Date: 16-MAR-23
Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	0.324	+/-0.669	1.21	+/-0.674	3.00	pCi/L			JE1	03/28/23	1426	2400807	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	0.898	+/-0.778		+/-0.791		pCi/L		1	NXL1	03/31/23	1314	2400806	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		0.574	+/-0.397	0.544	+/-0.414	1.00	pCi/L			LXP1	04/20/23	0908	2411604	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2400807	77.2	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219 Report Date: April 20, 2023

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: FBLK-WAT-CCR-AP-23102 Project: DMNN00101
Sample ID: 614767010 Client ID: DMNN001
Matrix: AQ
Collect Date: 16-MAR-23
Receive Date: 16-MAR-23
Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	0.967	+/-1.20	2.03	+/-1.22	3.00	pCi/L			JE1	03/28/23	1426	2400807	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	U	1.23	+/-1.22		+/-1.25		pCi/L		1	NXL1	03/31/23	1314	2400806	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226	U	0.263	+/-0.243	0.336	+/-0.247	1.00	pCi/L			LXP1	03/31/23	1113	2400800	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2400807	64.7	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219 Report Date: April 20, 2023

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 1 Package

Client Sample ID: MW-FGD-01-2023Q1 Project: DMNN00101
Sample ID: 614767011 Client ID: DMNN001
Matrix: GW
Collect Date: 13-MAR-23
Receive Date: 16-MAR-23
Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	0.879	+/-1.63	2.84	+/-1.64	3.00	pCi/L			JE1	03/28/23	1623	2400807	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	6.39	+/-1.90		+/-2.28		pCi/L		1	NXL1	03/31/23	1314	2400806	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		5.52	+/-0.974	0.416	+/-1.58	1.00	pCi/L			LXP1	03/31/23	1113	2400800	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2400807	74.7	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

Quality Control Data

QC Summary

Report Date: April 20, 2023
Page 1 of 3

Client : **Dominion Energy Services, Inc.**
120 Tredegar Street

Richmond, Virginia **23219**

Contact: **Kelly Hicks**

Workorder: **614767**

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gas Flow									
Batch 2400807									
QC1205350223 MB									
Radium-228			U	0.803	pCi/L			JE1	03/28/2314:25
Uncert:				+/-0.931					
TPU:				+/-0.954					
QC1205350224 614767002 DUP									
Radium-228	U	0.867	U	0.606	pCi/L				03/28/2314:25
Uncert:		+/-0.859		+/-1.09		RPD: 0	N/A		
TPU:		+/-0.886		+/-1.10		RER: 0.362	(0-2)		
QC1205350225 614767011 DUP									
Radium-228	U	0.879	U	1.83	pCi/L				03/28/2316:23
Uncert:		+/-1.63		+/-1.38		RPD: 0	N/A		
TPU:		+/-1.64		+/-1.45		RER: 0.852	(0-2)		
QC1205350226 LCS									
Radium-228	62.7			59.7	pCi/L	REC: 95.3	(80%-120%)		03/28/2314:26
Uncert:				+/-3.84					
TPU:				+/-15.6					
Rad Ra-226									
Batch 2400800									
QC1205350203 MB									
Radium-226			U	0.239	pCi/L			LXP1	03/31/2311:13
Uncert:				+/-0.405					
TPU:				+/-0.407					
QC1205350204 614767011 DUP									
Radium-226		5.52		5.89	pCi/L				03/31/2311:46
Uncert:		+/-0.974		+/-1.02		RPD: 7	(0%-20%)		
TPU:		+/-1.58		+/-1.61		RER: 0.322	(0-2)		
QC1205350205 614767002 DUP									
Radium-226		1.66		2.25	pCi/L				03/31/2311:14
Uncert:		+/-0.558		+/-0.628		RPD: 30*	(0%-20%)		
TPU:		+/-0.611		+/-0.757		RER: 1.18	(0-2)		
QC1205350206 614767002 MS									
Radium-226	133	1.66		108	pCi/L	REC: 79.8	(75%-125%)		
Uncert:		+/-0.558		+/-9.09					
TPU:		+/-0.611		+/-27.6					
QC1205350207 LCS									
Radium-226	26.5			23.1	pCi/L	REC: 87.2	(80%-120%)		03/31/2311:49
Uncert:				+/-2.07					
TPU:				+/-3.96					
Batch 2411604									
QC1205371252 MB									
Radium-226			U	0.368	pCi/L			LXP1	04/20/2309:08
Uncert:				+/-0.417					
TPU:				+/-0.421					
QC1205371253 LCS									

QC Summary

Workorder: **614767**

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Ra-226									
Batch 2411604									
Radium-226	26.4			23.3	pCi/L	REC: 88.2	(80%-120%)		
	Uncert:			+/-1.79					
	TPU:			+/-4.44					
QC1205371254 LCSD									
Radium-226	26.4			24.1	pCi/L	REC: 91.2	(80%-120%)		
	Uncert:			+/-1.95		RPD: 3	(0%-20%)		
	TPU:			+/-4.81		RER: 0.242	(0-2)		

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
J	Value is estimated
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
N	Metals--The Matrix spike sample recovery is not within specified control limits
H	Analytical holding time was exceeded
<	Result is less than value reported
>	Result is greater than value reported
UI	Gamma Spectroscopy--Uncertain identification
BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
d	5-day BOD--The 2:1 depletion requirement was not met for this sample
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
E	%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.

QC Summary

Workorder: **614767**

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date	Time

** Analyte is a Tracer compound

B The target analyte was detected in the associated blank.

e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes

M REMP Result > MDC/CL and < RDL

J See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
** Indicates analyte is a surrogate compound.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptence criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

ENVIRONMENTAL® STANDARDS
Montrose Environmental Group

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

Wateree Power Station Groundwater Sampling
Samples Collected between: 3/13/2023 and 3/16/2023

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

614767

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
MW-AP-01A-2023Q1	MW-01A	N	EPA 200.8	Beryllium	T	0.221	J	RL	0.200	0.500		ug/L
MW-AP-01A-2023Q1	MW-01A	N	EPA 200.8	Boron	T		U	BL	13.5	15.0		ug/L
MW-AP-01A-2023Q1	MW-01A	N	EPA 200.8	Cobalt	T	0.620	J	RL	0.100	1.00		ug/L
MW-AP-01A-2023Q1	MW-01A	N	EPA 200.8	Lead	T	0.874	J	RL	0.500	2.00		ug/L
MW-AP-01A-2023Q1	MW-01A	N	EPA 200.8	Thallium	T	0.247	J	RL	0.125	0.500		ug/L
MW-AP-01A-2023Q1	MW-01A	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-01A-2023Q1	MW-01A	N	EPA 300.0	Sulfate	N	0.274	J	RL	0.133	0.400		mg/L
MW-AP-01-2023Q1	MW-AP-01	N	CALC	Radium-226+228 Sum	N	2.53	J	S			1.08	pCi/L
MW-AP-01-2023Q1	MW-AP-01	N	EPA 200.8	Cobalt	T	0.124	J	RL	0.100	1.00		ug/L
MW-AP-01-2023Q1	MW-AP-01	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-02-2023Q1	MW-AP-02	N	CALC	Radium-226+228 Sum	N	1.99	J	S			1.05	pCi/L
MW-AP-02-2023Q1	MW-AP-02	N	EPA 200.8	Cobalt	T	0.157	J	RL	0.100	1.00		ug/L
MW-AP-02-2023Q1	MW-AP-02	N	EPA 200.8	Lithium	T	2.01	J	RL	2.00	10.0		ug/L
MW-AP-02-2023Q1	MW-AP-02	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-03-2023Q1	MW-AP-03	N	CALC	Radium-226+228 Sum	N	8.28	J	FD			2.01	pCi/L
MW-AP-03-2023Q1	MW-AP-03	N	EPA 200.8	Cobalt	T	0.213	J	RL	0.100	1.00		ug/L
MW-AP-03-2023Q1	MW-AP-03	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-03-2023Q1	MW-AP-03	N	EPA 903.1	Radium-226	N	5.94	J	FD	0.557	1.00	1.38	pCi/L
MW-AP-04-2023Q1	MW-AP-04	N	CALC	Radium-226+228 Sum	N	2.59	J	S			1.32	pCi/L
MW-AP-04-2023Q1	MW-AP-04	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-05-2023Q1	MW-AP-05	N	CALC	Radium-226+228 Sum	N	2.57	J	S			1.57	pCi/L
MW-AP-05-2023Q1	MW-AP-05	N	EPA 200.8	Cobalt	T	0.639	J	RL	0.100	1.00		ug/L
MW-AP-05-2023Q1	MW-AP-05	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-08-2023Q1	MW-08	N	CALC	Radium-226+228 Sum	N	7.52	J	S			1.85	pCi/L
MW-AP-08-2023Q1	MW-08	N	EPA 200.8	Arsenic	T	2.42	J	RL	1.66	5.00		ug/L
MW-AP-08-2023Q1	MW-08	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
DU-WAT-CCR-AP-23101	MW-AP-03	FD	CALC	Radium-226+228 Sum	N	3.27	J	FD,S			1.53	pCi/L
DU-WAT-CCR-AP-23101	MW-AP-03	FD	EPA 200.8	Cobalt	T	0.216	J	RL	0.100	1.00		ug/L
DU-WAT-CCR-AP-23101	MW-AP-03	FD	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
DU-WAT-CCR-AP-23101	MW-AP-03	FD	EPA 903.1	Radium-226	N	2.05	J	FD	0.357	1.00	0.754	pCi/L

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
FBLK-WAT-CCR-AP-23101	Field Blank	FB	CALC	Radium-226+228 Sum	N	0.898	J	S			0.791	pCi/L
FBLK-WAT-CCR-AP-23101	Field Blank	FB	EPA 300.0	Chloride	N	0.116	J	RL	0.0670	0.200		mg/L
MW-FGD-01-2023Q1	MW-FGD-01	N	CALC	Radium-226+228 Sum	N	6.39	J	S			2.28	pCi/L
MW-FGD-01-2023Q1	MW-FGD-01	N	EPA 200.8	Lead	T	1.69	J	RL	0.500	2.00		ug/L
MW-FGD-01-2023Q1	MW-FGD-01	N	EPA 200.8	Lithium	T	2.54	J	RL	2.00	10.0		ug/L

Data Qualifiers	
U	The analyte was not detected above the level of the sample reporting limit.
J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise.
R	Unreliable positive result; analyte may or may not be present in sample.
Reason Codes and Explanations	
BE	Equipment blank contamination.
BF	Field blank contamination.
BL	Laboratory blank contamination.
BN	Negative laboratory blank contamination.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits
MP	MS/MSD imprecision.
Q	Chemical Preservation issue.
RL	Reported Results between the MDL and QL.
S	Radium-226+228 flagged due to reporting protocol for combined results
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Facility: Wateree Generating Station
SDG: 614767

Lab Sample ID	614767001
Sys Sample Code	MW-AP-01A-2023Q1
Sample Name	MW-AP-01A-2023Q1
Sample Date	3/14/2023 4:30:00 PM
Location	WAT-MW-01A / MW-01A
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	9.14			2.11				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			1.66	1.66	5.00	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	58.3				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L	0.221	J	RL		0.200	0.200	0.500	Y	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U	BL		13.5	13.5	15.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	695				30.0	30.0	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	0.620	J	RL		0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L	0.874	J	RL		0.500	0.500	2.00	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			0.167	0.167	1.00	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L	0.247	J	RL		0.125	0.125	0.500	Y	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	5.87				0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U			0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.274	J	RL		0.133	0.133	0.400	Y	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	5.08			1.21	0.416	0.416	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	4.06			1.72	1.74	1.74	3.00	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	21.0				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	614767002
Sys Sample Code	MW-AP-01-2023Q1
Sample Name	MW-AP-01-2023Q1
Sample Date	3/16/2023 10:30:00 AM
Location	WAT-MW-AP-01 / MW-AP-01
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	2.53	J	S	1.08				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			1.66	1.66	5.00	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	214				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	1560				80.0	80.0	300	Y	Yes	20	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	64900				600	600	2000	Y	Yes	20	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	0.124	J	RL		0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L	2.17				0.167	0.167	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.343				0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	1.58				0.133	0.133	0.400	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	194				3.35	3.35	10.0	Y	Yes	50	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	1.66			0.611	0.353	0.353	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	0.867	U		0.886	1.41	1.41	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	317				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	614767003
Sys Sample Code	MW-AP-02-2023Q1
Sample Name	MW-AP-02-2023Q1
Sample Date	3/15/2023 2:55:00 PM
Location	WAT-MW-AP-02 / MW-AP-02
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	1.99	J	S	1.05				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L	43.6				1.66	1.66	5.00	Y	Yes	1	NA
	Barium	7440-39-3	T	ug/L	205				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	570				40.0	40.0	150	Y	Yes	10	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	53500				300	300	1000	Y	Yes	10	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	0.157	J	RL		0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	2.01	J	RL		2.00	2.00	10.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L	3.92				0.167	0.167	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	47.7				0.670	0.670	2.00	Y	Yes	10	NA
	Sulfate	14808-79-8	N	mg/L	11.3				1.33	1.33	4.00	Y	Yes	10	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.211				0.0330	0.0330	0.100	Y	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	1.99			0.703	0.544	0.544	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	-0.606	U		0.777	1.64	1.64	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	277				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	614767004
Sys Sample Code	MW-AP-03-2023Q1
Sample Name	MW-AP-03-2023Q1
Sample Date	3/15/2023 3:00:00 PM
Location	WAT-MW-AP-03 / MW-AP-03
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	8.28	J	FD	2.01				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L	964				33.2	33.2	100	Y	Yes	20	NA
	Barium	7440-39-3	T	ug/L	195				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	1660				80.0	80.0	300	Y	Yes	20	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	68900				600	600	2000	Y	Yes	20	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	0.213	J	RL		0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	62.7				2.00	2.00	10.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L	19.5				0.167	0.167	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	146				1.68	1.68	5.00	Y	Yes	25	NA
	Sulfate	14808-79-8	N	mg/L	72.1				1.33	1.33	4.00	Y	Yes	10	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.671				0.0330	0.0330	0.100	Y	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	5.94	J	FD	1.38	0.557	0.557	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	2.33			1.47	1.96	1.96	3.00	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	411				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	614767005
Sys Sample Code	MW-AP-04-2023Q1
Sample Name	MW-AP-04-2023Q1
Sample Date	3/16/2023 10:01:00 AM
Location	WAT-MW-AP-04 / MW-AP-04
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	2.59	J	S	1.32				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L	25.3				1.66	1.66	5.00	Y	Yes	1	NA
	Barium	7440-39-3	T	ug/L	163				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	2000				80.0	80.0	300	Y	Yes	20	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	138000				600	600	2000	Y	Yes	20	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L		U			0.100	0.100	1.00	N	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L	3.82				0.167	0.167	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.582				0.0330	0.0330	0.100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	22.1				0.335	0.335	1.00	Y	Yes	5	NA
	Sulfate	14808-79-8	N	mg/L	56.8				0.665	0.665	2.00	Y	Yes	5	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	1.65			0.745	0.807	0.807	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	0.938	U		1.08	1.77	1.77	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	512				4.76	4.76	20.0	Y	Yes	1	NA

Lab Sample ID	614767006
Sys Sample Code	MW-AP-05-2023Q1
Sample Name	MW-AP-05-2023Q1
Sample Date	3/15/2023 3:35:00 PM
Location	WAT-MW-AP-05 / MW-AP-05
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	2.57	J	S	1.57				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			1.66	1.66	5.00	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	146				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	228				20.0	20.0	75.0	Y	Yes	5	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	16500				30.0	30.0	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	0.639	J	RL		0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			0.167	0.167	1.00	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	15.2				0.670	0.670	2.00	Y	Yes	10	NA
	Sulfate	14808-79-8	N	mg/L	28.8				1.33	1.33	4.00	Y	Yes	10	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.148				0.0330	0.0330	0.100	Y	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	2.57			0.799	0.322	0.322	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	-0.00246	U		1.35	2.46	2.46	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	198				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	614767007
Sys Sample Code	MW-AP-08-2023Q1
Sample Name	MW-AP-08-2023Q1
Sample Date	3/14/2023 11:40:00 AM
Location	WAT-MW-08 / MW-08
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	7.52	J	S	1.85				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L	2.42	J	RL		1.66	1.66	5.00	Y	Yes	1	NA
	Barium	7440-39-3	T	ug/L	154				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L	3.81				0.200	0.200	0.500	Y	Yes	1	NA
	Boron	7440-42-8	T	ug/L	233				20.0	20.0	75.0	Y	Yes	5	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	20900				30.0	30.0	100	Y	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	2.46				0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	10.2				2.00	2.00	10.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			0.167	0.167	1.00	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L	6.39				1.50	1.50	5.00	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	19.6				0.670	0.670	2.00	Y	Yes	10	NA
	Sulfate	14808-79-8	N	mg/L	78.3				1.33	1.33	4.00	Y	Yes	10	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.777				0.0330	0.0330	0.100	Y	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	6.11			1.40	0.457	0.457	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	1.41	U		1.21	1.85	1.85	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	311				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	614767008
Sys Sample Code	DU-WAT-CCR-AP-23101
Sample Name	DU-WAT-CCR-AP-23101
Sample Date	3/15/2023 12:00:00 PM
Location	WAT-MW-AP-03 / MW-AP-03
Sample Type	FD
Matrix	GW
Parent Sample	MW-AP-03-2023Q1

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	3.27	J	FD,S	1.53				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L	972				33.2	33.2	100	Y	Yes	20	NA
	Barium	7440-39-3	T	ug/L	191				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L	1740				80.0	80.0	300	Y	Yes	20	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	70000				600	600	2000	Y	Yes	20	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	0.216	J	RL		0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	62.0				2.00	2.00	10.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L	18.9				0.167	0.167	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	145				1.68	1.68	5.00	Y	Yes	25	NA
	Sulfate	14808-79-8	N	mg/L	71.4				1.33	1.33	4.00	Y	Yes	10	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.676				0.0330	0.0330	0.100	Y	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	2.05	J	FD	0.754	0.357	0.357	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	1.22	U		1.33	2.16	2.16	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	410				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	614767009
Sys Sample Code	FBLK-WAT-CCR-AP-23101
Sample Name	FBLK-WAT-CCR-AP-23101
Sample Date	3/15/2023 3:16:00 PM
Location	WAT-FB / Field Blank
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	0.898	J	S	0.791				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			1.66	1.66	5.00	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U			4.00	4.00	15.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L		U			30.0	30.0	100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L		U			0.100	0.100	1.00	N	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			0.167	0.167	1.00	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		U			0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	0.116	J	RL		0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U			0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L		U			0.133	0.133	0.400	N	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	0.574			0.414	0.544	0.544	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	0.324	U		0.674	1.21	1.21	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U			2.38	2.38	10.0	N	Yes	1	NA

Lab Sample ID	614767010
Sys Sample Code	FBLK-WAT-CCR-AP-23102
Sample Name	FBLK-WAT-CCR-AP-23102
Sample Date	3/16/2023 10:15:00 AM
Location	WAT-FB / Field Blank
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	1.23	U		1.25				N	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			1.66	1.66	5.00	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Boron	7440-42-8	T	ug/L		U			4.00	4.00	15.0	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L		U			30.0	30.0	100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L		U			0.100	0.100	1.00	N	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			0.167	0.167	1.00	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		U			0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	0.200				0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U			0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L		U			0.133	0.133	0.400	N	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	0.263	U		0.247	0.336	0.336	1.00	N	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	0.967	U		1.22	2.03	2.03	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U			2.38	2.38	10.0	N	Yes	1	NA

Facility: Wateree Generating Station
SDG: 614767

Lab Sample ID	614767011
Sys Sample Code	MW-FGD-01-2023Q1
Sample Name	MW-FGD-01-2023Q1
Sample Date	3/13/2023 3:00:00 PM
Location	WAT-MW-FGD-01 / MW-FGD-01
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	6.39	J	S	2.28				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			1.66	1.66	5.00	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	122				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L	0.596				0.200	0.200	0.500	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	1.86				0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L	1.69	J	RL		0.500	0.500	2.00	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	2.54	J	RL		2.00	2.00	10.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			0.167	0.167	1.00	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		U			0.0670	0.0670	0.200	N	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	5.52			1.58	0.416	0.416	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	0.879	U		1.64	2.84	2.84	3.00	N	Yes	1	NA

Appendix B
Second Semiannual Assessment Monitoring Program Event Field Data Sheets, Laboratory Reports, and Data Validation Forms

Dominion Groundwater Level Measurement Log
For Wateree Generating Station

Program: CCR	**Project Number:** 416559.5.0
Date: 2023-10-10	**Sampler Name(s):** David Szynal
Notes:	

Well ID	Time	Depth to GW (btoc, ft)	Depth to Bottom (btoc, ft)	Notes
WAT-MW-AP-01	10:21	19.21		
WAT-MW-AP-02	10:25	25.40		
WAT-MW-AP-10	10:26	23.90		
WAT-MW-AP-03	10:33	22.38		
WAT-MW-AP-03D	10:35	27.92		
WAT-MW-AP-03D2	10:37	23.27		
WAT-MW-AP-11	10:40	16.51		
WAT-MW-AP-11D	10:41	20.98		
WAT-MW-AP-11D2	10:42	16.60		
WAT-MW-AP-12	10:51	19.18		
WAT-MW-AP-04	10:55	11.70		
WAT-MW-AP-05	10:58	24.05		
MW-AP-08	11:04	22.49		
WAT-MW-AP-09	11:11	20.39		
WAT-MW-AP-09D	11:13	21.39		
WAT-MW-AP-13	11:15	18.60		
WAT-AS-FGD-01	11:24	16.80		
WAT-AS-FGD-02	11:30	15.95		
WAT-MW-FGD-02	11:33	16.40		
WAT-MW-FGD-03	11:36	17.85		
WAT-MW-FGD-04	11:40	15.95		
WAT-MW-FGD-05	11:42	15.87		
WAT-AS-FGD-03	11:45	14.93		
WAT-MW-FGD-06	11:49	16.90		
MW-AP-01A	11:53	14.64		

WATER SAMPLE LOG: MW-AP-01-2023Q4
WATEREE GENERATING STATION

PREPARED BY	CHECKED BY
BY: David Szynal DATE: 2023-10-11	BY: Jason Yonts DATE: 2023-10-20

WELL ID: WAT-MW-AP-01		
TASK CODE: WAT-GW-2023-10	WELL TYPE: Monitoring Well	WELL DIAMETER (IN.): 2
INITIAL DEPTH TO WATER (FT): 19.18	TOTAL DEPTH TO WATER (FT): 23.39	TOTAL WATER COLUMN (FT): 4.21
TOP OF SCREEN (FT): 9	BOTTOM OF SCREEN (FT): 24	METHOD OF PURGING: Low Flow
PUMP TYPE: Peristaltic	PUMP START TIME: 08:10	PUMP INTAKE DEPTH/SAMPLE DEPTH (FT): 21

PURGING	
METHOD: Low Flow	MEASURE POINT: Top of Casing
PUMP TYPE: Peristaltic	PUMP INTAKE/SAMPLE DEPTH (FT) : 21
PURGE AND STABILIZATION NOTES:	

PURGE MEASURES

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (US/CM)	ORP (MV)	DO (MG/L)	TURDIDITY (NTU)	TEMPERATURE (C)	WATER LEVEL	COMMENTS
08:25	200	5.24	869.24	47.2	0.31	3.31	23.52	19.2	
08:30	200	5.3	885.65	38.8	0.3	2.25	23.46	19.25	
08:35	200	5.39	893.56	28.7	0.28	2.27	23.45	19.25	
08:40	200	5.45	901.77	9.6	0.27	2	23.38	19.25	
08:45	200	5.49	909.95	-10.9	0.27	1.98	23.39	19.25	
08:50	200	5.54	915.85	-39.7	0.27	1.99	23.21	19.25	
08:55	200	5.58	927.82	-46.9	0.26	1.9	22.91	19.25	
09:00	200	5.6	923.22	-47.2	0.26	1.89	23.6	19.25	
09:05	200	5.63	926.23	-47.4	0.25	1.9	23.42	19.25	

SAMPLE	
TIME: 09:05	METHOD OF SAMPLING: Low Flow
TOTAL VOL. PURGED (ML): 11000	TIME POST SAMPLE: 09:40
WATER LEVEL POST-SAMPLE: 19.25	FLOW RATE POST-SAMPLE (ML/MIN): 200
TURBIDITY POST-SAMPLE (NTU): 1.85	COLOR POST SAMPLE: Clear
ODOR POST-SAMPLE: None	STABILITY REACHED: Y
SAMPLE COMMENTS:	

SAMPLE QA					
TYPE	**ID**	**TIME**	**TYPE**	**ID**	**TIME**
FIELD BLANK			FIELD DUPLICATE		
EQUIPMENT BLANK			FILTER BLANK		
EQUIPMENT BLANK			FILTER BLANK LOT:		
TUBING BLANK LOT:			MS/MSD	NO	

BOTTLES				
BOTTLE LOT NUMBER	**BOTTLE COUNT**	**SIZE (ML)**	**TYPE**	**PRESERVATIVE**
	1	250	HDPE	HNO3
	1	250	HDPE	UNPRESERVED
	1	125	HDPE	UNPRESERVED
	1	2000	HDPE	HNO3

WATER SAMPLE LOG: MW-AP-01A-2023Q4
WATEREE GENERATING STATION

PREPARED BY	CHECKED BY
BY: David Szynal DATE: 2023-10-11	BY: Jason Yonts DATE: 2023-10-20

WELL ID: WAT-MW-01A		
TASK CODE: WAT-GW-2023-10	WELL TYPE: Monitoring Well	WELL DIAMETER (IN.): 2
INITIAL DEPTH TO WATER (FT): 14.64	TOTAL DEPTH TO WATER (FT): 23.78	TOTAL WATER COLUMN (FT): 9.14
TOP OF SCREEN (FT): 10	BOTTOM OF SCREEN (FT): 20	METHOD OF PURGING: Low Flow
PUMP TYPE: Peristaltic	PUMP START TIME: 16:25	PUMP INTAKE DEPTH/SAMPLE DEPTH (FT): 18.5

PURGING	
METHOD: Low Flow	MEASURE POINT: Top of Casing
PUMP TYPE: Peristaltic	PUMP INTAKE/SAMPLE DEPTH (FT) : 18.5
PURGE AND STABILIZATION NOTES:	

PURGE MEASURES

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (US/CM)	ORP (MV)	DO (MG/L)	TURDIDITY (NTU)	TEMPERATURE (C)	WATER LEVEL	COMMENTS
16:30	200	4.99	50.74	83.4	2.13	5.21	23.26	14.68	
16:35	200	4.84	50.5	90.5	2	5.24	23.59	14.68	
16:40	200	4.88	46.93	93.4	1.64		23.72	14.68	
16:45	200	4.89	45.8	99.4	1.58	4.98	23.74	14.68	
16:50	200	4.9	44.92	99.5	1.55	4.88	23.81	14.68	
16:55	200	4.89	44.24	99.8	1.513	4.88	23.84	14.68	
17:00	200	4.83	43.34	102.8	1.59	4.81	23.61	14.68	

SAMPLE	
TIME: 17:00	METHOD OF SAMPLING: Low Flow
TOTAL VOL. PURGED (ML): 7000	TIME POST SAMPLE: 17:20
WATER LEVEL POST-SAMPLE: 14.68	FLOW RATE POST-SAMPLE (ML/MIN): 200
TURBIDITY POST-SAMPLE (NTU): 4.78	COLOR POST SAMPLE: Clear
ODOR POST-SAMPLE: None	STABILITY REACHED: Y
SAMPLE COMMENTS:	

SAMPLE QA					
TYPE	**ID**	**TIME**	**TYPE**	**ID**	**TIME**
FIELD BLANK			FIELD DUPLICATE		
EQUIPMENT BLANK			FILTER BLANK		
EQUIPMENT BLANK			FILTER BLANK LOT:		
TUBING BLANK LOT:			MS/MSD	NO	

BOTTLES				
BOTTLE LOT NUMBER	**BOTTLE COUNT**	**SIZE (ML)**	**TYPE**	**PRESERVATIVE**
	1	2000	HDPE	HNO3
	1	250	HDPE	HNO3
	1	250	HDPE	UNPRESERVED
	1	125	HDPE	UNPRESERVED

WATER SAMPLE LOG: MW-AP-02-2023Q4
WATEREE GENERATING STATION

PREPARED BY	CHECKED BY
BY: David Szynal DATE: 2023-10-11	BY: Jason Yonts DATE: 2023-10-20

WELL ID: WAT-MW-AP-02		
TASK CODE: WAT-GW-2023-10	WELL TYPE: Monitoring Well	WELL DIAMETER (IN.): 2
INITIAL DEPTH TO WATER (FT): 25.55	TOTAL DEPTH TO WATER (FT): 32.75	TOTAL WATER COLUMN (FT): 7.2
TOP OF SCREEN (FT): 15	BOTTOM OF SCREEN (FT): 30	METHOD OF PURGING: Low Flow
PUMP TYPE: Peristaltic	PUMP START TIME: 09:50	PUMP INTAKE DEPTH/SAMPLE DEPTH (FT): 28

PURGING	
METHOD: Low Flow	MEASURE POINT: Top of Casing
PUMP TYPE: Peristaltic	PUMP INTAKE/SAMPLE DEPTH (FT) : 28
PURGE AND STABILIZATION NOTES:	

PURGE MEASURES

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (US/CM)	ORP (MV)	DO (MG/L)	TURDIDITY (NTU)	TEMPERATURE (C)	WATER LEVEL	COMMENTS
09:55	200	5.6	643.82	-34.5	0.21	2.25	22.6	26.25	
10:00	200	5.58	642.51	-50.5	0.11	2.01	22.89	25.7	
10:05	200	5.59	641.42	-55.7	0.08	1.98	22.79	25.7	
10:10	200	5.61	644.34	-58.5	0.08	1.9	22.73	25.7	
10:15	200	5.63	644.19	-60.1	0.07	1.5	22.72	25.7	
10:20	200	5.65	644.45	-61.6	0.07	1.45	22.72	25.7	
10:25	200	5.67	645.64	-63.4	0.07	1.48	22.89	25.7	

SAMPLE	
TIME: 10:25	METHOD OF SAMPLING: Low Flow
TOTAL VOL. PURGED (ML): 7000	TIME POST SAMPLE: 11:30
WATER LEVEL POST-SAMPLE: 25.7	FLOW RATE POST-SAMPLE (ML/MIN): 200
TURBIDITY POST-SAMPLE (NTU): 1.1	COLOR POST SAMPLE: Clear
ODOR POST-SAMPLE: None	STABILITY REACHED: Y
SAMPLE COMMENTS:	

SAMPLE QA					
TYPE	**ID**	**TIME**	**TYPE**	**ID**	**TIME**
FIELD BLANK			FIELD DUPLICATE	DU-WAT-CCR-AP-23401	10:25
EQUIPMENT BLANK			FILTER BLANK		
EQUIPMENT BLANK			FILTER BLANK LOT:		
TUBING BLANK LOT:			MS/MSD	NO	

BOTTLES				
BOTTLE LOT NUMBER	**BOTTLE COUNT**	**SIZE (ML)**	**TYPE**	**PRESERVATIVE**
	2	2000	HDPE	HNO3
	2	250	HDPE	HNO3
	2	125	HDPE	UNPRESERVED
	2	250	HDPE	UNPRESERVED

WATER SAMPLE LOG: MW-AP-03-2023Q4
WATEREE GENERATING STATION

PREPARED BY	CHECKED BY
BY: David Szynal DATE: 2023-10-11	BY: Jason Yonts DATE: 2023-10-20

WELL ID: WAT-MW-AP-03		
TASK CODE: WAT-GW-2023-10	WELL TYPE: Monitoring Well	WELL DIAMETER (IN.): 2
INITIAL DEPTH TO WATER (FT): 22.41	TOTAL DEPTH TO WATER (FT): 33.5	TOTAL WATER COLUMN (FT): 11.09
TOP OF SCREEN (FT): 16	BOTTOM OF SCREEN (FT): 31	METHOD OF PURGING: Low Flow
PUMP TYPE: Peristaltic	PUMP START TIME: 11:30	PUMP INTAKE DEPTH/SAMPLE DEPTH (FT): 28

PURGING	
METHOD: Low Flow	MEASURE POINT: Top of Casing
PUMP TYPE: Peristaltic	PUMP INTAKE/SAMPLE DEPTH (FT) : 28
PURGE AND STABILIZATION NOTES:	

PURGE MEASURES

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (US/CM)	ORP (MV)	DO (MG/L)	TURDIDITY (NTU)	TEMPERATURE (C)	WATER LEVEL	COMMENTS
11:35	200	5.93	754.71	-50.9	0.17	1.93	23.11	22.45	
11:40	200	5.83	768.88	-66.7	0.11	1.12	23.03	22.45	
11:45	200	5.8	762.2	-72	0.09	1.04	23.16	22.45	
11:50	200	5.8	760.95	-75	0.08	0.98	23.23	22.45	
11:55	200	5.79	761.29	-77.2	0.07	0.08	23.46	22.45	
12:00	200	5.79	772.6	-78.7	0.06	0.06	23.28	22.45	
12:05	200	5.8	766.3	-79.7	0.06	0.08	23.31	22.45	

SAMPLE	
TIME: 12:05	METHOD OF SAMPLING: Low Flow
TOTAL VOL. PURGED (ML): 7000	TIME POST SAMPLE: 13:00
WATER LEVEL POST-SAMPLE: 22.45	FLOW RATE POST-SAMPLE (ML/MIN): 200
TURBIDITY POST-SAMPLE (NTU): 0.04	COLOR POST SAMPLE: Clear
ODOR POST-SAMPLE: None	STABILITY REACHED: Y
SAMPLE COMMENTS:	

SAMPLE QA					
TYPE	**ID**	**TIME**	**TYPE**	**ID**	**TIME**
FIELD BLANK			FIELD DUPLICATE		
EQUIPMENT BLANK			FILTER BLANK		
EQUIPMENT BLANK			FILTER BLANK LOT:		
TUBING BLANK LOT:			MS/MSD	YES	

BOTTLES				
BOTTLE LOT NUMBER	**BOTTLE COUNT**	**SIZE (ML)**	**TYPE**	**PRESERVATIVE**
	2	2000	HDPE	HNO3
	2	250	HDPE	HNO3
	2	250	HDPE	UNPRESERVED
	2	125	HDPE	UNPRESERVED

WATER SAMPLE LOG: MW-AP-04-2023Q4
WATEREE GENERATING STATION

PREPARED BY	CHECKED BY
BY: David Szynal DATE: 2023-10-11	BY: Jason Yonts DATE: 2023-10-20

WELL ID: WAT-MW-AP-04		
TASK CODE: WAT-GW-2023-10	WELL TYPE: Monitoring Well	WELL DIAMETER (IN.): 2
INITIAL DEPTH TO WATER (FT): 11.75	TOTAL DEPTH TO WATER (FT): 25.22	TOTAL WATER COLUMN (FT): 13.47
TOP OF SCREEN (FT): 6	BOTTOM OF SCREEN (FT): 21	METHOD OF PURGING: Low Flow
PUMP TYPE: Peristaltic	PUMP START TIME: 13:05	PUMP INTAKE DEPTH/SAMPLE DEPTH (FT): 18

PURGING	
METHOD: Low Flow	MEASURE POINT: Top of Casing
PUMP TYPE: Peristaltic	PUMP INTAKE/SAMPLE DEPTH (FT) : 18
PURGE AND STABILIZATION NOTES:	

PURGE MEASURES

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (US/CM)	ORP (MV)	DO (MG/L)	TURDIDITY (NTU)	TEMPERATURE (C)	WATER LEVEL	COMMENTS
13:10	200	6.37	903.22	-151.9	0.1	1.32	23.25	12	
13:15	200	6.25	908.7	-225.4	0.06	1.54	22.94	12.18	
13:20	200	6.24	901.37	-260	0.03	1	23.05	12.24	
13:25	200	6.27	904.12	-273.9	0.02	0.9	23.1	12.25	
13:30	200	6.3	900.58	-282.5	0.02	0.08	23.16	12.25	
13:35	200	6.33	904.53	-285.5	0.02	0.08	22.77	12.25	
13:40	200	6.34	905.32	-286.8	0.02	0.07	22.66	12.25	

SAMPLE	
TIME: 13:40	METHOD OF SAMPLING: Low Flow
TOTAL VOL. PURGED (ML): 7000	TIME POST SAMPLE: 14:05
WATER LEVEL POST-SAMPLE: 12.25	FLOW RATE POST-SAMPLE (ML/MIN): 200
TURBIDITY POST-SAMPLE (NTU): 0.05	COLOR POST SAMPLE: Clear
ODOR POST-SAMPLE: None	STABILITY REACHED: Y
SAMPLE COMMENTS:	

SAMPLE QA					
TYPE	**ID**	**TIME**	**TYPE**	**ID**	**TIME**
FIELD BLANK			FIELD DUPLICATE		
EQUIPMENT BLANK			FILTER BLANK		
EQUIPMENT BLANK			FILTER BLANK LOT:		
TUBING BLANK LOT:			MS/MSD	NO	

BOTTLES				
BOTTLE LOT NUMBER	**BOTTLE COUNT**	**SIZE (ML)**	**TYPE**	**PRESERVATIVE**
	1	2000	HDPE	HNO3
	1	250	HDPE	HNO3
	1	250	HDPE	ZNAC2
	1	125	HDPE	UNPRESERVED

WATER SAMPLE LOG: MW-AP-05-2023Q4
WATEREE GENERATING STATION

PREPARED BY	CHECKED BY
BY: David Szynal DATE: 2023-10-11	BY: Jason Yonts DATE: 2023-10-20

WELL ID: WAT-MW-AP-05		
TASK CODE: WAT-GW-2023-10	WELL TYPE: Monitoring Well	WELL DIAMETER (IN.): 2
INITIAL DEPTH TO WATER (FT): 24.9	TOTAL DEPTH TO WATER (FT): 39.38	TOTAL WATER COLUMN (FT): 14.48
TOP OF SCREEN (FT): 21.5	BOTTOM OF SCREEN (FT): 36.5	METHOD OF PURGING: Low Flow
PUMP TYPE: Peristaltic	PUMP START TIME: 14:05	PUMP INTAKE DEPTH/SAMPLE DEPTH (FT): 34

PURGING	
METHOD: Low Flow	MEASURE POINT: Top of Casing
PUMP TYPE: Peristaltic	PUMP INTAKE/SAMPLE DEPTH (FT) : 34
PURGE AND STABILIZATION NOTES:	

PURGE MEASURES

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (US/CM)	ORP (MV)	DO (MG/L)	TURDIDITY (NTU)	TEMPERATURE (C)	WATER LEVEL	COMMENTS
14:10	200	6.99	406.9	-88.8	1.22	3.2	24.99	24.95	
14:15	200	6.14	413.53	-102.7	0.09	2.25	23.09	24.95	
14:20	200	6.08	413.63	-103.6	0.07	2	22.98	24.95	
14:25	200	6	412.61	-103.4	0.07	1.85	23.08	24.95	
14:30	200	5.95	415.28	-103.2	0.06	1.81	22.58	24.95	
14:35	200	5.93	418.27	-102.8	0.06	1.8	22.27	24.95	
14:40	200	5.91	413.29	-101.2	0.06	1.79	22.81	24.95	

SAMPLE	
TIME: 14:40	METHOD OF SAMPLING: Low Flow
TOTAL VOL. PURGED (ML): 7000	TIME POST SAMPLE: 15:05
WATER LEVEL POST-SAMPLE: 24.95	FLOW RATE POST-SAMPLE (ML/MIN): 200
TURBIDITY POST-SAMPLE (NTU): 0.09	COLOR POST SAMPLE: Clear
ODOR POST-SAMPLE: None	STABILITY REACHED: Y
SAMPLE COMMENTS:	

SAMPLE QA					
TYPE	**ID**	**TIME**	**TYPE**	**ID**	**TIME**
FIELD BLANK	FBLK-WAT-CCR-AP-23401	14:50	FIELD DUPLICATE		
EQUIPMENT BLANK			FILTER BLANK		
EQUIPMENT BLANK			FILTER BLANK LOT:		
TUBING BLANK LOT:			MS/MSD	NO	

BOTTLES				
BOTTLE LOT NUMBER	**BOTTLE COUNT**	**SIZE (ML)**	**TYPE**	**PRESERVATIVE**
	2	2000	HDPE	HNO3
	2	250	HDPE	HNO3
	2	250	HDPE	UNPRESERVED
	2	125	HDPE	UNPRESERVED

WATER SAMPLE LOG: MW-AP-08-2023Q4
WATEREE GENERATING STATION

PREPARED BY	CHECKED BY
BY: David Szynal DATE: 2023-10-11	BY: Jason Yonts DATE: 2023-10-20

WELL ID: WAT-MW-08		
TASK CODE: WAT-GW-2023-10	WELL TYPE: Monitoring Well	WELL DIAMETER (IN.): 2
INITIAL DEPTH TO WATER (FT): 23.42	TOTAL DEPTH TO WATER (FT): 42.3	TOTAL WATER COLUMN (FT): 18.88
TOP OF SCREEN (FT): 24	BOTTOM OF SCREEN (FT): 44	METHOD OF PURGING: Low Flow
PUMP TYPE: Peristaltic	PUMP START TIME: 15:15	PUMP INTAKE DEPTH/SAMPLE DEPTH (FT): 38

PURGING	
METHOD: Low Flow	MEASURE POINT: Top of Casing
PUMP TYPE: Peristaltic	PUMP INTAKE/SAMPLE DEPTH (FT) : 38
PURGE AND STABILIZATION NOTES:	

PURGE MEASURES

TIME	PURGE RATE (ML/MIN)	PH (SU)	CONDUCTIVITY (US/CM)	ORP (MV)	DO (MG/L)	TURDIDITY (NTU)	TEMPERATURE (C)	WATER LEVEL	COMMENTS
15:20	200	5.81	517.23	-40.5	0.07	6.25	23.28	23.43	
15:25	200	5.72	512.11	-52.1	0.08	5.25	23.36	25.38	
15:30	200	5.7	505.4	-58.2	0.08	3.95	23.5	25.38	
15:35	200	5.69	499.89	-60	0.07	3.92	23.64	25.38	
15:40	200	5.67	506.42	-59.9	0.1	3.87	23.65	25.38	
15:45	200	5.65	510.9	-60.2	0.11	3.6	23.29	25.38	
15:50	200	5.65	511.33	-60.5	0.1	3.6	23.27	25.38	

SAMPLE	
TIME: 15:50	METHOD OF SAMPLING: Low Flow
TOTAL VOL. PURGED (ML): 7000	TIME POST SAMPLE: 16:15
WATER LEVEL POST-SAMPLE: 25.38	FLOW RATE POST-SAMPLE (ML/MIN): 200
TURBIDITY POST-SAMPLE (NTU): 3.54	COLOR POST SAMPLE: Clear
ODOR POST-SAMPLE: None	STABILITY REACHED: Y
SAMPLE COMMENTS:	

SAMPLE QA					
TYPE	**ID**	**TIME**	**TYPE**	**ID**	**TIME**
FIELD BLANK			FIELD DUPLICATE		
EQUIPMENT BLANK			FILTER BLANK		
EQUIPMENT BLANK			FILTER BLANK LOT:		
TUBING BLANK LOT:			MS/MSD	NO	

BOTTLES				
BOTTLE LOT NUMBER	**BOTTLE COUNT**	**SIZE (ML)**	**TYPE**	**PRESERVATIVE**
	1	2000	HDPE	HNO3
	1	250	HDPE	HNO3
	1	250	HDPE	UNPRESERVED
	1	125	HDPE	UNPRESERVED

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Wateree Station	MODEL:	Aqua Troll 400	SAMPLER:	ST / DS
PROJECT NO.:	416559.0005.0000	SERIAL #:	909268	DATE:	10/10/23

PH CALIBRATION CHECK

pH 7 (LOT #): 22290139 (EXP. DATE): 4/24 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): 24000444 / 22110130 (EXP. DATE): 5/24 / 4/2024 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
6.62 / 7.0	10 / 10	☒ WITHIN RANGE	1410
7.01 / 7.0	4 / 4	☒ WITHIN RANGE	1412
/	/	☐ WITHIN RANGE	
/	/	☐ WITHIN RANGE	

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 24002258 (EXP. DATE): 5/24 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
44871 4490	25°C	☒ WITHIN RANGE	1418
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 24002258 (EXP. DATE): 6/24 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
224 / 228	25°C	☒ WITHIN RANGE	1414
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Baro: 756.02 mm/Hg Temp: 29.70 °C Act: 8.48 mg/L Calc: 7.6 mg/L	☒ WITHIN RANGE	1416
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): n/a (EXP. DATE): n/a PRE-CAL. READING / STANDARD	(LOT #): n/a (EXP. DATE): n/a POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0 / 0	0 / 0	☒ WITHIN RANGE	1426
1 / 1	1 / 1	☒ WITHIN RANGE	1422
10 / 10	10 / 10	☒ WITHIN RANGE	1424
/	/	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): 24002258 (EXP. DATE): 5/24

☐ STANDARD SOLUTION (S)

LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK

CALIBRATED PARAMETERS		CALIBRATION RANGES [1]	
☑	pH	pH:	+/- 0.2 S.U.
☑	COND	COND:	+/- 1% OF CAL. STANDARD
☐	ORP	ORP:	+/- 25 mV
☐	D.O.	D.O.:	VARIES
☐	TURB	TURB:	+/- 5% OF CAL. STANDARD
☐	_____	[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER	
☐	_____		

NOTES

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
none	None

D. L. Ard — 10/10/23
SIGNED — DATE

Quentin Bentley — 10/12/23
CHECKED BY — DATE

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Wateree Station	MODEL:	Aqua Troll 400	SAMPLER:	(ST) DS
PROJECT NO.:	416559.0005.0000	SERIAL #:	851425	DATE:	10/10/23

PH CALIBRATION CHECK

pH 7 (LOT #): 22290139 (EXP. DATE): 4/24 PRE-CAL. READING / STANDARD	pH 4 / (10) (LOT #): 22110130 (EXP. DATE): 4/24 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
7.03 / 7.00	9.99 / 10.00	☐ WITHIN RANGE	0959
/	4.26 / 4.00	☐ WITHIN RANGE	1003
7.02 / 7.00	10.05 / 10.00	☒ WITHIN RANGE	1001
/	4.00 / 4.00	☒ WITHIN RANGE	1005

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 24000044 (EXP. DATE): 5/24 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4329.6 / 4490	19.23	☐ WITHIN RANGE	1005
4487.3 / 4490	19.28	☒ WITHIN RANGE	1006
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 24002258 (EXP. DATE): 6/24 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
234.5 / 228	19.48	☐ WITHIN RANGE	1007
227.9 / 228	19.48	☒ WITHIN RANGE	1008
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Baro: 758.00 mmHg Temp: 19.46 °C Act: 9.15 mg/L calc: 9.2 mg/L	☒ WITHIN RANGE	0956
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): (EXP. DATE): n/a PRE-CAL. READING / STANDARD	(LOT #): (EXP. DATE): n/a POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.00 / 0.00	0.00 / 0.00	☒ WITHIN RANGE	1016
0.96 / 1.00	0.96 / 1.00	☒ WITHIN RANGE	1016
10.14 / 10.00	10.04 / 10.00	☒ WITHIN RANGE	1017
/	/	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): (EXP. DATE):

☐ STANDARD SOLUTION (S)

LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK

CALIBRATED PARAMETERS		CALIBRATION RANGES [1]	
☑	pH	pH:	+/- 0.2 S.U.
☑	COND	COND:	+/- 1% OF CAL. STANDARD
☐	ORP	ORP:	+/- 25 mV
☐	D.O.	D.O.:	VARIES
☐	TURB	TURB:	+/- 5% OF CAL. STANDARD
☐	_____	[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER	
☐	_____		

NOTES

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
none	none

SIGNED [signature] DATE 10/10/23

CHECKED BY [signature] DATE 10/12/23

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Wateree Station	MODEL:	Aqua Troll 400	SAMPLER:	ST / DS
PROJECT NO.:	416559.0005.0000	SERIAL #:	909268	DATE:	10/11/23

PH CALIBRATION CHECK

pH 7 (LOT #): 22290139 (EXP. DATE): 4/24 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): 24000044 / 22110130 (EXP. DATE): 5/24 / 4/2024 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
6.15 / 7.0	9.32 / 10	☐ WITHIN RANGE	0802
7.0 / 7.0	10 / 10	☒ WITHIN RANGE	0804
/	3.27 / 4	☐ WITHIN RANGE	0806
/	4 / 4	☒ WITHIN RANGE	0808

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 24002258 (EXP. DATE): 5/24 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4487 / 4490	22.68	☒ WITHIN RANGE	0812
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 24002258 (EXP. DATE): 6/24 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
231 / 228	22.68	☒ WITHIN RANGE	0810
~~228~~ /		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Baro: 758.39 mmHg Temp: 20.41°C Act: 8.22 mg/L Cal: 9.1 mg/L	☒ WITHIN RANGE	0814
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): n/a (EXP. DATE): n/a PRE-CAL. READING / STANDARD	(LOT #): n/a (EXP. DATE): n/a POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0 / 0	0 / 0	☒ WITHIN RANGE	0816
1 / 1	1 / 1	☒ WITHIN RANGE	0818
10 / 10	10 / 10	☒ WITHIN RANGE	0820
/	/	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): (EXP. DATE):	☐ STANDARD SOLUTION (S) LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK
CALIBRATED PARAMETERS	CALIBRATION RANGES [1]
☑ pH	pH: +/- 0.2 S.U.
☑ COND	COND: +/- 1% OF CAL. STANDARD
☐ ORP	ORP: +/- 25 mV
☐ D.O.	D.O.: VARIES
☐ TURB	TURB: +/- 5% OF CAL. STANDARD
☐ _____	[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER
☐ _____	

NOTES

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
none	none

SIGNED _____ DATE 10/12/23

CHECKED BY _____ DATE 10/12/23

REVISED 06/2011

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Wateree Station	MODEL:	Aqua Troll 400	SAMPLER:	ST / DS
PROJECT NO.:	416559.0005.0000	SERIAL #:	851425	DATE:	10/11/23

PH CALIBRATION CHECK

pH 7 (LOT #): 221901 39 (EXP. DATE): 4/24 PRE-CAL. READING / STANDARD	pH 4 / (10) (LOT #): 2211030 (EXP. DATE): 4/24 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
6.78 / 7.00	9.97 / 10.00	☐ WITHIN RANGE	0801
/	4.34 / 4.00	☐ WITHIN RANGE	0804
7.02 / 7.00	10.02 / 10.00	☒ WITHIN RANGE	0803
/	4.00 / 4.00	☒ WITHIN RANGE	0808

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 24000044 (EXP. DATE): 5/24 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4526.5 / 4490	21.02	☐ WITHIN RANGE	0807
4484.4 / 4490	21.05	☒ WITHIN RANGE	0808
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 24002258 (EXP. DATE): 6/24 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
230.9 / 228	20.97	☐ WITHIN RANGE	0809
228.0 / 228	20.97	☒ WITHIN RANGE	0810
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Baro: 757.55 mmHg Temp: 18.88 °C Act: 9.27 mg/L Calc: 930 mg/L	☒ WITHIN RANGE	0757
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): (EXP. DATE): n/a PRE-CAL. READING / STANDARD	(LOT #): (EXP. DATE): n/a POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.00 / 0.00	0.00 / 0.00	☒ WITHIN RANGE	0811
0.89 / 1.00	1.00 / 1.00	☒ WITHIN RANGE	0811
11.20 / 10.00	9.99 / 10.00	☒ WITHIN RANGE	0812
/	/	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): (EXP. DATE):	☐ STANDARD SOLUTION (S) LIST LOT NUMBERS AND EXPIRATION DATES UNDER CALIBRATION CHECK

CALIBRATED PARAMETERS		CALIBRATION RANGES (1)	
☑	pH	pH:	+/- 0.2 S.U.
☑	COND	COND:	+/- 1% OF CAL. STANDARD
☐	ORP	ORP:	+/- 25 mV
☐	D.O.	D.O.:	VARIES
☐	TURB	TURB:	+/- 5% OF CAL. STANDARD
☐	_____	(1) CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE WATER QUALITY METER	
☐	_____		

NOTES

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
none	none

Russell T McLeod 10/11/23
SIGNED DATE

Jacob Bradley 10/12/23
CHECKED BY DATE

GEL Laboratories LLC
a member of The GEL Group INC

October 26, 2023

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, Virginia 23219

Re: CCR Groundwater Monitoring - Level 3 Package
Work Order: 640966

Dear Kelly Hicks:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 12, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1648.

Sincerely,

M Boddiford

Meredith Boddiford
Project Manager

Purchase Order: 50149867
Chain of Custody: 2023101101
Enclosures

Table of Contents

Case Narrative.....1

Chain of Custody and Supporting Documentation.4

Laboratory Certifications.....7

Metals Analysis.....9

Case Narrative.....10

Sample Data Summary.....14

Quality Control Summary.....24

General Chem Analysis.....48

Case Narrative.....49

Sample Data Summary.....54

Quality Control Summary.....64

Radiological Analysis.....68

Case Narrative.....69

Sample Data Summary.....74

Quality Control Data.....84

Case Narrative

Receipt Narrative
for
Dominion Energy (50149867)
SDG: 640966

October 26, 2023

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on October 12, 2023 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

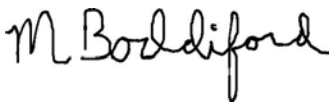
Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
640966001	MW-AP-01A-2023Q4
640966002	MW-AP-01-2023Q4
640966003	MW-AP-02-2023Q4
640966004	MW-AP-03-2023Q4
640966005	MW-AP-04-2023Q4
640966006	MW-AP-05-2023Q4
640966007	MW-AP-08-2023Q4
640966008	DU-WAT-CCR-AP-23401
640966009	FBLK-WAT-CCR-AP-23401

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Radiochemistry, General Chemistry and Metals.



Meredith Boddiford
Project Manager

Chain of Custody and Supporting Documentation

Page 1 of 1
Project # 416559.0005.0000.5.2
GEL Quote #:
COC Number [1]: 2023101101
PO Number: PO 50149867

GEL Laboratories LLC
gel.com
Chemistry | Radiochemistry | Radiobioassay | Specialty Analytics

Chain of Custody and Analytical Request

C0409966

GEL Work Order Number: 232263 **GEL Project Manager: Meredith Boddiford**

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: Dominion Energy Phone # 803-258-1528
Project/Site Name: Wateree Station Ash Pond CCR 2023Q4 Fax #
Address: Wateree, South Carolina
Collected By: D. Szynal / S. Thorsland Send Results To: AReed@envstd.com

Sample Analysis Requested [5] (Fill in the number of containers for each test)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive (If yes, please supply isotopic info.)	Should this sample be considered: (7) Known or possible Hazards	Total number of containers	Cl, Fl, SO4 - EPA 300.0	TDS - SM2540C	Total Metals (see list in comments) NI	Ra-226/228 903.1/904.0 NI	<-- Preservative Type (6)	Comments
MW-AP-01A-2023Q4	10/11/23	1700	N	N	GW	N		4	X	X	X	X		EPA 200.8 - Sb, As, Ba, Be
MW-AP-01-2023Q4	10/11/23	0905	N	N	GW	N		4	X	X	X	X		B, Cd, Ca, Cr, Co, Pb, Li,
MW-AP-02-2023Q4	10/11/23	1025	N	N	GW	N		4	X	X	X	X		Mo, Se, Tl
MW-AP-03-2023Q4	10/11/23	1205	N	N	GW	N		8	X	X	X	X		EPA 245.1 - Hg
MW-AP-04-2023Q4	10/11/23	1340	N	N	GW	N		4	X	X	X	X		
MW-AP-05-2023Q4	10/11/23	1440	N	N	GW	N		4	X	X	X	X		
MW-AP-08-2023Q4	10/11/23	1550	N	N	GW	N		4	X	X	X	X		See attached work
DU-WAT-CCR-AP-23401	10/11/23	—	FD	N	GW	N		4	X	X	X	X		order for details
FBLK-WAT-CCR-AP-23401	10/11/23	1445	FB	N	AQ	N		4	X	X	X	X		

SDG: 640966

Page 5 of 86

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1		10/11/23	1800		10/11/23	1800
2		10/12/23	0943		10/12/23	0943
3						

TAT Requested: Normal: X Rush: ____ Specify: ____

Fax Results: [ ] Yes [X] No

Select Deliverable: [ ] C of A [ ] QC Summary [ ] level 1 [ ] Level 2 [ ] Level 3 [X] Level 4

Additional Remarks:

12 AT 10/16/23

For Lab Receiving Use Only: *Custody Seal Intact?* [ ] Yes [ ] No **Cooler Temp:** 2 °C

> For sample shipping and delivery details, see Sample Receipt & Review form (SRR.)

Sample Collection Time Zone : [X] Eastern [ ] Pacific [ ] Central [ ] Mountain [ ] Other:

1.) Chain of Custody Number = Client Determined

2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite

3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.

4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B**, **6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).

6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

7.) **KNOWN OR POSSIBLE HAZARDS**

RCRA Metals
As = Arsenic **Hg**= Mercury
Ba = Barium **Se**= Selenium
Cd = Cadmium **Ag**= Silver
Cr = Chromium **MR**= Misc. RCRA metals
Pb = Lead

Characteristic Hazards
FL = Flammable/Ignitable
CO = Corrosive
RE = Reactive

TSCA Regulated
PCB = Polychlorinated biphenyls

Listed Waste
LW= Listed Waste
(F,K,P and U-listed wastes.)
Waste code(s):

Other
OT= Other / Unknown
(i.e.: High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.)
Description:

Please provide any additional details below regarding handling and/or disposal concerns. *(i.e.: Origin of sample(s), type of site collected from, odd matrices, etc.)*

640998
640960
640966
640949

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: DMNN	SDG/AR/COC/Work Order:
Received By: EG	Date Received: 10/12/23 943
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services (Courier) Other

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		√	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		√	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		√	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		√	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		√	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	√			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	√			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	√			Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 4
4	Daily check performed and passed on IR temperature gun?	√			Temperature Device Serial #: IR6-23 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	√			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?			√	Sample ID's and Containers Affected: MW-4F-12-20230Q4 pH>2 If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			√	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	√			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	√			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	√			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	√			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	√			
13	COC form is properly signed in relinquished/received sections?	√			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials AT Date 10/13/23 Page 1 of 1

GL-CHL-SR-001 Rev 7

Laboratory Certifications

List of current GEL Certifications as of 26 October 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-04
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-23-21
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
Dominion Energy
SDG #: 640966

Product: **Determination of Metals by ICP-MS**
Analytical Method: EPA 200.8 SC_NPDES
Analytical Procedure: GL-MA-E-014 REV# 36
Analytical Batch: 2507956

Product: **Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer**
Analytical Method: EPA 245.1/245.2
Analytical Procedure: GL-MA-E-010 REV# 40
Analytical Batch: 2508998

Preparation Method: EPA 200.2
Preparation Procedure: GL-MA-E-016 REV# 18
Preparation Batch: 2507954

Preparation Method: EPA 245.1/245.2 Prep
Preparation Procedure: GL-MA-E-010 REV# 40
Preparation Batch: 2508995

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
640966001	MW-AP-01A-2023Q4
640966002	MW-AP-01-2023Q4
640966003	MW-AP-02-2023Q4
640966004	MW-AP-03-2023Q4
640966005	MW-AP-04-2023Q4
640966006	MW-AP-05-2023Q4
640966007	MW-AP-08-2023Q4
640966008	DU-WAT-CCR-AP-23401
640966009	FBLK-WAT-CCR-AP-23401
1205545285	Method Blank (MB)**ICP-MS**
1205545286	Laboratory Control Sample (LCS)
1205545289	640966004(MW-AP-03-2023Q4L) Serial Dilution (SD)
1205545287	640966004(MW-AP-03-2023Q4D) Sample Duplicate (DUP)
1205545288	640966004(MW-AP-03-2023Q4S) Matrix Spike (MS)
1205547218	Method Blank (MB)**CVAA**
1205547219	Laboratory Control Sample (LCS)
1205547222	640966004(MW-AP-03-2023Q4L) Serial Dilution (SD)
1205547220	640966004(MW-AP-03-2023Q4D) Sample Duplicate (DUP)
1205547221	640966004(MW-AP-03-2023Q4S) Matrix Spike (MS)
1205547229	640966004(MW-AP-03-2023Q4PS) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

ICSA/ICSAB Statement
For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Quality Control (QC) Information

Matrix Spike (MS/MSD) Recovery Statement
The percent recoveries (%R) obtained from the MS/MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS/MSD (See Below) did not meet the recommended quality control acceptance criteria for percent recoveries for the following applicable analyte. The post spike also did not meet the required control limits; thus, confirming matrix interferences and/or sample non-homogeneity.

Sample	Analyte	Value
1205547221 (MW-AP-03-2023Q4MS)	Mercury	36.7* (75%-125%)

Post Spike (PS) Recovery Statement
The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS did not meet the recommended quality control acceptance criteria for percent recoveries for all applicable analytes and verifies the presence of matrix interferences.

Sample	Analyte	Value
1205547229 (MW-AP-03-2023Q4PS)	Mercury	37.3* (80%-120%)

Miscellaneous Information

Additional Comments
All method-driven specifications are followed for these analyses except where client-specific SOW requirements are required to be met.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

DMNN001 Dominion Energy (50149867)

Client SDG: 640966 GEL Work Order: 640966

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
B Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
J Value is estimated
N Metals--The Matrix spike sample recovery is not within specified control limits
N/A RPD or %Recovery limits do not apply.
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Alan Stanley**

Date: 20 OCT 2023 **Title: Analyst II/Team Leader**

Sample Data Summary

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 640966 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 640966001 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-01A-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	10/19/23 19:22	231019-1	2507956
7440-38-2	Arsenic	1.66	ug/L	U	1.66	5.00	5.00	1	MS	PRB	10/19/23 19:22	231019-1	2507956
7440-39-3	Barium	64.8	ug/L		0.500	2.00	2.00	1	MS	PRB	10/19/23 19:22	231019-1	2507956
7440-41-7	Beryllium	0.259	ug/L	J	0.200	0.500	0.500	1	MS	PRB	10/19/23 19:22	231019-1	2507956
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	10/19/23 19:22	231019-1	2507956
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	10/19/23 19:22	231019-1	2507956
7440-48-4	Cobalt	0.838	ug/L	J	0.100	1.00	1.00	1	MS	PRB	10/19/23 19:22	231019-1	2507956
7439-92-1	Lead	1.34	ug/L	J	0.500	2.00	2.00	1	MS	PRB	10/19/23 19:22	231019-1	2507956
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/19/23 19:22	231019-1	2507956
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	10/17/23 09:50	101723W2-2	2508998
7439-98-7	Molybdenum	0.178	ug/L	J	0.167	1.00	1.00	1	MS	PRB	10/19/23 19:22	231019-1	2507956
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	10/19/23 19:22	231019-1	2507956
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	10/19/23 19:22	231019-1	2507956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2508998	2508995	EPA 245.1/245.2 Prep	20	mL	20	mL	10/16/23	EK1
2507956	2507954	EPA 200.2	50	mL	50	mL	10/13/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**
AV **EPA 245.1/245.2**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 640966 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 640966002 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-01-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	10/19/23 19:26	231019-1	2507956
7440-38-2	Arsenic	1.66	ug/L	U	1.66	5.00	5.00	1	MS	PRB	10/19/23 19:26	231019-1	2507956
7440-39-3	Barium	248	ug/L		0.500	2.00	2.00	1	MS	PRB	10/19/23 19:26	231019-1	2507956
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	10/19/23 19:26	231019-1	2507956
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	10/19/23 19:26	231019-1	2507956
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	10/19/23 19:26	231019-1	2507956
7440-48-4	Cobalt	0.100	ug/L	U	0.100	1.00	1.00	1	MS	PRB	10/19/23 19:26	231019-1	2507956
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	10/19/23 19:26	231019-1	2507956
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/19/23 19:26	231019-1	2507956
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	10/17/23 09:52	101723W2-2	2508998
7439-98-7	Molybdenum	3.09	ug/L		0.167	1.00	1.00	1	MS	PRB	10/19/23 19:26	231019-1	2507956
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	10/19/23 19:26	231019-1	2507956
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	10/19/23 19:26	231019-1	2507956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2508998	2508995	EPA 245.1/245.2 Prep	20	mL	20	mL	10/16/23	EK1
2507956	2507954	EPA 200.2	50	mL	50	mL	10/13/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**
AV **EPA 245.1/245.2**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 640966 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 640966003 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-02-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	10/19/23 19:29	231019-1	2507956
7440-38-2	Arsenic	46.6	ug/L		1.66	5.00	5.00	1	MS	PRB	10/19/23 19:29	231019-1	2507956
7440-39-3	Barium	200	ug/L		0.500	2.00	2.00	1	MS	PRB	10/19/23 19:29	231019-1	2507956
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	10/19/23 19:29	231019-1	2507956
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	10/19/23 19:29	231019-1	2507956
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	10/19/23 19:29	231019-1	2507956
7440-48-4	Cobalt	0.115	ug/L	J	0.100	1.00	1.00	1	MS	PRB	10/19/23 19:29	231019-1	2507956
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	10/19/23 19:29	231019-1	2507956
7439-93-2	Lithium	5.06	ug/L	J	2.00	10.0	10.0	1	MS	PRB	10/19/23 19:29	231019-1	2507956
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	10/17/23 09:53	101723W2-2	2508998
7439-98-7	Molybdenum	5.73	ug/L		0.167	1.00	1.00	1	MS	PRB	10/19/23 19:29	231019-1	2507956
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	10/19/23 19:29	231019-1	2507956
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	10/19/23 19:29	231019-1	2507956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2508998	2508995	EPA 245.1/245.2 Prep	20	mL	20	mL	10/16/23	EK1
2507956	2507954	EPA 200.2	50	mL	50	mL	10/13/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**
AV **EPA 245.1/245.2**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 640966 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 640966004 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-03-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	10/19/23 19:33	231019-1	2507956
7440-38-2	Arsenic	638	ug/L		1.66	5.00	5.00	1	MS	PRB	10/19/23 19:33	231019-1	2507956
7440-39-3	Barium	198	ug/L		0.500	2.00	2.00	1	MS	PRB	10/19/23 19:33	231019-1	2507956
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	10/19/23 19:33	231019-1	2507956
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	10/19/23 19:33	231019-1	2507956
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	10/19/23 19:33	231019-1	2507956
7440-48-4	Cobalt	0.182	ug/L	J	0.100	1.00	1.00	1	MS	PRB	10/19/23 19:33	231019-1	2507956
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	10/19/23 19:33	231019-1	2507956
7439-93-2	Lithium	36.4	ug/L		2.00	10.0	10.0	1	MS	PRB	10/19/23 19:33	231019-1	2507956
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	10/17/23 09:55	101723W2-2	2508998
7439-98-7	Molybdenum	12.9	ug/L		0.167	1.00	1.00	1	MS	PRB	10/19/23 19:33	231019-1	2507956
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	10/19/23 19:33	231019-1	2507956
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	10/19/23 19:33	231019-1	2507956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2508998	2508995	EPA 245.1/245.2 Prep	20	mL	20	mL	10/16/23	EK1
2507956	2507954	EPA 200.2	50	mL	50	mL	10/13/23	JD2

***Analytical Methods:**

AV **EPA 245.1/245.2**
MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 640966 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 640966005 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-04-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	10/19/23 19:58	231019-1	2507956
7440-38-2	Arsenic	30.9	ug/L		1.66	5.00	5.00	1	MS	PRB	10/19/23 19:58	231019-1	2507956
7440-39-3	Barium	205	ug/L		0.500	2.00	2.00	1	MS	PRB	10/19/23 19:58	231019-1	2507956
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	10/19/23 19:58	231019-1	2507956
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	10/19/23 19:58	231019-1	2507956
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	10/19/23 19:58	231019-1	2507956
7440-48-4	Cobalt	0.100	ug/L	U	0.100	1.00	1.00	1	MS	PRB	10/19/23 19:58	231019-1	2507956
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	10/19/23 19:58	231019-1	2507956
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/19/23 19:58	231019-1	2507956
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	10/17/23 10:24	101723W2-2	2508998
7439-98-7	Molybdenum	4.62	ug/L		0.167	1.00	1.00	1	MS	PRB	10/19/23 19:58	231019-1	2507956
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	10/19/23 19:58	231019-1	2507956
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	10/19/23 19:58	231019-1	2507956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2508998	2508995	EPA 245.1/245.2 Prep	20	mL	20	mL	10/16/23	EK1
2507956	2507954	EPA 200.2	50	mL	50	mL	10/13/23	JD2

***Analytical Methods:**

AV **EPA 245.1/245.2**
MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 640966 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 640966006 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-05-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	10/19/23 20:01	231019-1	2507956
7440-38-2	Arsenic	1.66	ug/L	U	1.66	5.00	5.00	1	MS	PRB	10/19/23 20:01	231019-1	2507956
7440-39-3	Barium	173	ug/L		0.500	2.00	2.00	1	MS	PRB	10/19/23 20:01	231019-1	2507956
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	10/19/23 20:01	231019-1	2507956
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	10/19/23 20:01	231019-1	2507956
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	10/19/23 20:01	231019-1	2507956
7440-48-4	Cobalt	0.493	ug/L	J	0.100	1.00	1.00	1	MS	PRB	10/19/23 20:01	231019-1	2507956
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	10/19/23 20:01	231019-1	2507956
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/19/23 20:01	231019-1	2507956
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	10/17/23 10:26	101723W2-2	2508998
7439-98-7	Molybdenum	0.167	ug/L	U	0.167	1.00	1.00	1	MS	PRB	10/19/23 20:01	231019-1	2507956
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	10/19/23 20:01	231019-1	2507956
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	10/19/23 20:01	231019-1	2507956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2508998	2508995	EPA 245.1/245.2 Prep	20	mL	20	mL	10/16/23	EK1
2507956	2507954	EPA 200.2	50	mL	50	mL	10/13/23	JD2

***Analytical Methods:**

AV **EPA 245.1/245.2**
MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 640966 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 640966007 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-08-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	10/19/23 20:05	231019-1	2507956
7440-38-2	Arsenic	2.54	ug/L	J	1.66	5.00	5.00	1	MS	PRB	10/19/23 20:05	231019-1	2507956
7440-39-3	Barium	151	ug/L		0.500	2.00	2.00	1	MS	PRB	10/19/23 20:05	231019-1	2507956
7440-41-7	Beryllium	7.12	ug/L		0.200	0.500	0.500	1	MS	PRB	10/19/23 20:05	231019-1	2507956
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	10/19/23 20:05	231019-1	2507956
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	10/19/23 20:05	231019-1	2507956
7440-48-4	Cobalt	19.3	ug/L		0.100	1.00	1.00	1	MS	PRB	10/19/23 20:05	231019-1	2507956
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	10/19/23 20:05	231019-1	2507956
7439-93-2	Lithium	16.5	ug/L		2.00	10.0	10.0	1	MS	PRB	10/19/23 20:05	231019-1	2507956
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	10/17/23 10:27	101723W2-2	2508998
7439-98-7	Molybdenum	0.167	ug/L	U	0.167	1.00	1.00	1	MS	PRB	10/19/23 20:05	231019-1	2507956
7782-49-2	Selenium	9.19	ug/L		1.50	5.00	5.00	1	MS	PRB	10/19/23 20:05	231019-1	2507956
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	10/19/23 20:05	231019-1	2507956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2508998	2508995	EPA 245.1/245.2 Prep	20	mL	20	mL	10/16/23	EK1
2507956	2507954	EPA 200.2	50	mL	50	mL	10/13/23	JD2

***Analytical Methods:**

AV **EPA 245.1/245.2**
MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 640966 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 640966008 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: DU-WAT-CCR-AP-23401 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	10/19/23 20:08	231019-1	2507956
7440-38-2	Arsenic	47.1	ug/L		1.66	5.00	5.00	1	MS	PRB	10/19/23 20:08	231019-1	2507956
7440-39-3	Barium	207	ug/L		0.500	2.00	2.00	1	MS	PRB	10/19/23 20:08	231019-1	2507956
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	10/19/23 20:08	231019-1	2507956
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	10/19/23 20:08	231019-1	2507956
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	10/19/23 20:08	231019-1	2507956
7440-48-4	Cobalt	0.138	ug/L	J	0.100	1.00	1.00	1	MS	PRB	10/19/23 20:08	231019-1	2507956
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	10/19/23 20:08	231019-1	2507956
7439-93-2	Lithium	5.23	ug/L	J	2.00	10.0	10.0	1	MS	PRB	10/19/23 20:08	231019-1	2507956
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	10/17/23 10:29	101723W2-2	2508998
7439-98-7	Molybdenum	5.78	ug/L		0.167	1.00	1.00	1	MS	PRB	10/19/23 20:08	231019-1	2507956
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	10/19/23 20:08	231019-1	2507956
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	10/19/23 20:08	231019-1	2507956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2508998	2508995	EPA 245.1/245.2 Prep	20	mL	20	mL	10/16/23	EK1
2507956	2507954	EPA 200.2	50	mL	50	mL	10/13/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**
AV **EPA 245.1/245.2**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 640966 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 640966009 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: FBLK-WAT-CCR-AP-2340 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: AQ **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	0.600	ug/L	U	0.600	2.00	2.00	1	MS	PRB	10/19/23 20:12	231019-1	2507956
7440-38-2	Arsenic	1.66	ug/L	U	1.66	5.00	5.00	1	MS	PRB	10/19/23 20:12	231019-1	2507956
7440-39-3	Barium	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	10/19/23 20:12	231019-1	2507956
7440-41-7	Beryllium	0.200	ug/L	U	0.200	0.500	0.500	1	MS	PRB	10/19/23 20:12	231019-1	2507956
7440-43-9	Cadmium	0.0300	ug/L	U	0.0300	0.100	0.100	1	MS	PRB	10/19/23 20:12	231019-1	2507956
7440-47-3	Chromium	1.00	ug/L	U	1.00	3.00	3.00	1	MS	PRB	10/19/23 20:12	231019-1	2507956
7440-48-4	Cobalt	0.100	ug/L	U	0.100	1.00	1.00	1	MS	PRB	10/19/23 20:12	231019-1	2507956
7439-92-1	Lead	0.500	ug/L	U	0.500	2.00	2.00	1	MS	PRB	10/19/23 20:12	231019-1	2507956
7439-93-2	Lithium	2.00	ug/L	U	2.00	10.0	10.0	1	MS	PRB	10/19/23 20:12	231019-1	2507956
7439-97-6	Mercury	0.0670	ug/L	UN	0.0670	0.200	0.200	1	AV	JP2	10/17/23 10:31	101723W2-2	2508998
7439-98-7	Molybdenum	0.167	ug/L	U	0.167	1.00	1.00	1	MS	PRB	10/19/23 20:12	231019-1	2507956
7782-49-2	Selenium	1.50	ug/L	U	1.50	5.00	5.00	1	MS	PRB	10/19/23 20:12	231019-1	2507956
7440-28-0	Thallium	0.125	ug/L	U	0.125	0.500	0.500	1	MS	PRB	10/19/23 20:12	231019-1	2507956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2508998	2508995	EPA 245.1/245.2 Prep	20	mL	20	mL	10/16/23	EK1
2507956	2507954	EPA 200.2	50	mL	50	mL	10/13/23	JD2

***Analytical Methods:**

AV **EPA 245.1/245.2**
MS **EPA 200.8 SC_NPDES**

Quality Control Summary

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 640966

Contract: DMNN00102 **Lab Code:** GEL

Instrument ID: ICPMS15,HG7

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Acceptance Window (%R)*	*M**	*Analysis Date/Time*	*Run Number*
ICV01										
	Mercury	4.96	ug/L	5	ug/L	99.2	95.0 - 105.0	AV	17-OCT-23 09:37	101723W2-2
	Antimony	49.4	ug/L	50	ug/L	98.8	90.0 - 110.0	MS	19-OCT-23 17:58	231019-1
	Arsenic	50.4	ug/L	50	ug/L	100.8	90.0 - 110.0	MS	19-OCT-23 17:58	231019-1
	Barium	51.1	ug/L	50	ug/L	102.3	90.0 - 110.0	MS	19-OCT-23 17:58	231019-1
	Beryllium	50.8	ug/L	50	ug/L	101.7	90.0 - 110.0	MS	19-OCT-23 17:58	231019-1
	Cadmium	49.9	ug/L	50	ug/L	99.9	90.0 - 110.0	MS	19-OCT-23 17:58	231019-1
	Chromium	49.8	ug/L	50	ug/L	99.6	90.0 - 110.0	MS	19-OCT-23 17:58	231019-1
	Cobalt	50	ug/L	50	ug/L	100	90.0 - 110.0	MS	19-OCT-23 17:58	231019-1
	Lead	50.4	ug/L	50	ug/L	100.8	90.0 - 110.0	MS	19-OCT-23 17:58	231019-1
	Lithium	50.4	ug/L	50	ug/L	100.8	90.0 - 110.0	MS	19-OCT-23 17:58	231019-1
	Molybdenum	50.5	ug/L	50	ug/L	101	90.0 - 110.0	MS	19-OCT-23 17:58	231019-1
	Selenium	49	ug/L	50	ug/L	98	90.0 - 110.0	MS	19-OCT-23 17:58	231019-1
	Thallium	48.6	ug/L	50	ug/L	97.1	90.0 - 110.0	MS	19-OCT-23 17:58	231019-1
CCV01										
	Mercury	4.96	ug/L	5	ug/L	99.2	90.0 - 110.0	AV	17-OCT-23 09:42	101723W2-2
	Antimony	49.7	ug/L	50	ug/L	99.4	90.0 - 110.0	MS	19-OCT-23 18:16	231019-1
	Arsenic	50.6	ug/L	50	ug/L	101.2	90.0 - 110.0	MS	19-OCT-23 18:16	231019-1
	Barium	50.8	ug/L	50	ug/L	101.7	90.0 - 110.0	MS	19-OCT-23 18:16	231019-1
	Beryllium	50.5	ug/L	50	ug/L	100.9	90.0 - 110.0	MS	19-OCT-23 18:16	231019-1
	Cadmium	50.3	ug/L	50	ug/L	100.5	90.0 - 110.0	MS	19-OCT-23 18:16	231019-1
	Chromium	50	ug/L	50	ug/L	100	90.0 - 110.0	MS	19-OCT-23 18:16	231019-1
	Cobalt	49.7	ug/L	50	ug/L	99.4	90.0 - 110.0	MS	19-OCT-23 18:16	231019-1
	Lead	52	ug/L	50	ug/L	104	90.0 - 110.0	MS	19-OCT-23 18:16	231019-1
	Lithium	49.8	ug/L	50	ug/L	99.7	90.0 - 110.0	MS	19-OCT-23 18:16	231019-1
	Molybdenum	54.3	ug/L	50	ug/L	108.6	90.0 - 110.0	MS	19-OCT-23 18:16	231019-1
	Selenium	48.3	ug/L	50	ug/L	96.5	90.0 - 110.0	MS	19-OCT-23 18:16	231019-1
	Thallium	50.2	ug/L	50	ug/L	100.3	90.0 - 110.0	MS	19-OCT-23 18:16	231019-1
CCV02										
	Mercury	5.14	ug/L	5	ug/L	102.7	90.0 - 110.0	AV	17-OCT-23 10:02	101723W2-2
	Antimony	49.7	ug/L	50	ug/L	99.4	90.0 - 110.0	MS	19-OCT-23 18:26	231019-1
	Arsenic	50.2	ug/L	50	ug/L	100.5	90.0 - 110.0	MS	19-OCT-23 18:26	231019-1

EPA

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 640966

Contract: DMNN00102 **Lab Code:** GEL

Instrument ID: ICPMS15,HG7

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Acceptance Window (%R)*	*M**	*Analysis Date/Time*	*Run Number*
	Barium	50.4	ug/L	50	ug/L	100.8	90.0 - 110.0	MS	19-OCT-23 18:26	231019-1
	Beryllium	51.7	ug/L	50	ug/L	103.3	90.0 - 110.0	MS	19-OCT-23 18:26	231019-1
	Cadmium	49.7	ug/L	50	ug/L	99.3	90.0 - 110.0	MS	19-OCT-23 18:26	231019-1
	Chromium	50.7	ug/L	50	ug/L	101.4	90.0 - 110.0	MS	19-OCT-23 18:26	231019-1
	Cobalt	50.8	ug/L	50	ug/L	101.6	90.0 - 110.0	MS	19-OCT-23 18:26	231019-1
	Lead	50.6	ug/L	50	ug/L	101.3	90.0 - 110.0	MS	19-OCT-23 18:26	231019-1
	Lithium	50.9	ug/L	50	ug/L	101.9	90.0 - 110.0	MS	19-OCT-23 18:26	231019-1
	Molybdenum	51.2	ug/L	50	ug/L	102.4	90.0 - 110.0	MS	19-OCT-23 18:26	231019-1
	Selenium	49.3	ug/L	50	ug/L	98.6	90.0 - 110.0	MS	19-OCT-23 18:26	231019-1
	Thallium	49.7	ug/L	50	ug/L	99.3	90.0 - 110.0	MS	19-OCT-23 18:26	231019-1
CCV03										
	Mercury	5.19	ug/L	5	ug/L	103.7	90.0 - 110.0	AV	17-OCT-23 10:19	101723W2-2
	Antimony	50.1	ug/L	50	ug/L	100.2	90.0 - 110.0	MS	19-OCT-23 19:08	231019-1
	Arsenic	50.1	ug/L	50	ug/L	100.1	90.0 - 110.0	MS	19-OCT-23 19:08	231019-1
	Barium	50	ug/L	50	ug/L	100.1	90.0 - 110.0	MS	19-OCT-23 19:08	231019-1
	Beryllium	51.8	ug/L	50	ug/L	103.6	90.0 - 110.0	MS	19-OCT-23 19:08	231019-1
	Cadmium	50.3	ug/L	50	ug/L	100.5	90.0 - 110.0	MS	19-OCT-23 19:08	231019-1
	Chromium	50.8	ug/L	50	ug/L	101.5	90.0 - 110.0	MS	19-OCT-23 19:08	231019-1
	Cobalt	50.7	ug/L	50	ug/L	101.4	90.0 - 110.0	MS	19-OCT-23 19:08	231019-1
	Lead	50.8	ug/L	50	ug/L	101.6	90.0 - 110.0	MS	19-OCT-23 19:08	231019-1
	Lithium	51.1	ug/L	50	ug/L	102.1	90.0 - 110.0	MS	19-OCT-23 19:08	231019-1
	Molybdenum	52.7	ug/L	50	ug/L	105.4	90.0 - 110.0	MS	19-OCT-23 19:08	231019-1
	Selenium	50.4	ug/L	50	ug/L	100.7	90.0 - 110.0	MS	19-OCT-23 19:08	231019-1
	Thallium	49.1	ug/L	50	ug/L	98.1	90.0 - 110.0	MS	19-OCT-23 19:08	231019-1
CCV04										
	Mercury	5.04	ug/L	5	ug/L	100.8	90.0 - 110.0	AV	17-OCT-23 10:34	101723W2-2
	Antimony	49.8	ug/L	50	ug/L	99.5	90.0 - 110.0	MS	19-OCT-23 19:51	231019-1
	Arsenic	50	ug/L	50	ug/L	100	90.0 - 110.0	MS	19-OCT-23 19:51	231019-1
	Barium	51.1	ug/L	50	ug/L	102.1	90.0 - 110.0	MS	19-OCT-23 19:51	231019-1
	Beryllium	51.9	ug/L	50	ug/L	103.8	90.0 - 110.0	MS	19-OCT-23 19:51	231019-1
	Cadmium	50.2	ug/L	50	ug/L	100.3	90.0 - 110.0	MS	19-OCT-23 19:51	231019-1

EPA

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 640966

Contract: DMNN00102 **Lab Code:** GEL

Instrument ID: ICPMS15,HG7

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Acceptance Window (%R)*	*M**	*Analysis Date/Time*	*Run Number*
	Chromium	50.7	ug/L	50	ug/L	101.4	90.0 - 110.0	MS	19-OCT-23 19:51	231019-1
	Cobalt	50.4	ug/L	50	ug/L	100.7	90.0 - 110.0	MS	19-OCT-23 19:51	231019-1
	Lead	50.4	ug/L	50	ug/L	100.8	90.0 - 110.0	MS	19-OCT-23 19:51	231019-1
	Lithium	51	ug/L	50	ug/L	102	90.0 - 110.0	MS	19-OCT-23 19:51	231019-1
	Molybdenum	51.6	ug/L	50	ug/L	103.2	90.0 - 110.0	MS	19-OCT-23 19:51	231019-1
	Selenium	47.7	ug/L	50	ug/L	95.4	90.0 - 110.0	MS	19-OCT-23 19:51	231019-1
	Thallium	48.7	ug/L	50	ug/L	97.5	90.0 - 110.0	MS	19-OCT-23 19:51	231019-1
CCV05										
	Antimony	49.7	ug/L	50	ug/L	99.3	90.0 - 110.0	MS	19-OCT-23 20:26	231019-1
	Arsenic	50.7	ug/L	50	ug/L	101.3	90.0 - 110.0	MS	19-OCT-23 20:26	231019-1
	Barium	49.1	ug/L	50	ug/L	98.2	90.0 - 110.0	MS	19-OCT-23 20:26	231019-1
	Beryllium	53.9	ug/L	50	ug/L	107.9	90.0 - 110.0	MS	19-OCT-23 20:26	231019-1
	Cadmium	50.1	ug/L	50	ug/L	100.2	90.0 - 110.0	MS	19-OCT-23 20:26	231019-1
	Chromium	51.8	ug/L	50	ug/L	103.7	90.0 - 110.0	MS	19-OCT-23 20:26	231019-1
	Cobalt	52	ug/L	50	ug/L	104.1	90.0 - 110.0	MS	19-OCT-23 20:26	231019-1
	Lead	50.7	ug/L	50	ug/L	101.5	90.0 - 110.0	MS	19-OCT-23 20:26	231019-1
	Lithium	53.4	ug/L	50	ug/L	106.8	90.0 - 110.0	MS	19-OCT-23 20:26	231019-1
	Molybdenum	52.7	ug/L	50	ug/L	105.4	90.0 - 110.0	MS	19-OCT-23 20:26	231019-1
	Selenium	49.5	ug/L	50	ug/L	99.1	90.0 - 110.0	MS	19-OCT-23 20:26	231019-1
	Thallium	49.1	ug/L	50	ug/L	98.2	90.0 - 110.0	MS	19-OCT-23 20:26	231019-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES
AV EPA 245.1/245.2

METALS
-2b-
CRDL Standard for ICP & ICPMS

SDG No: 640966

Contract: DMNN00102 **Lab Code:** GEL

Instrument ID: ICPMS15,HG7

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Advisory Limits (%R)*	*M**	*Analysis Date/Time*	*Run Number*
CRDL01										
	Mercury	.156	ug/L	.2	ug/L	78	70.0 - 130.0	AV	17-OCT-23 09:40	101723W2-2
	Barium	4.11	ug/L	4	ug/L	102.7	70.0 - 130.0	MS	19-OCT-23 18:05	231019-1
	Beryllium	.495	ug/L	.5	ug/L	99	70.0 - 130.0	MS	19-OCT-23 18:05	231019-1
	Cadmium	1.01	ug/L	1	ug/L	101	70.0 - 130.0	MS	19-OCT-23 18:05	231019-1
	Chromium	10.2	ug/L	10	ug/L	102.1	70.0 - 130.0	MS	19-OCT-23 18:05	231019-1
	Cobalt	1.03	ug/L	1	ug/L	102.9	70.0 - 130.0	MS	19-OCT-23 18:05	231019-1
	Lead	2.05	ug/L	2	ug/L	102.6	70.0 - 130.0	MS	19-OCT-23 18:05	231019-1
	Lithium	10.2	ug/L	10	ug/L	102	70.0 - 130.0	MS	19-OCT-23 18:05	231019-1
	Molybdenum	1	ug/L	1	ug/L	100.3	70.0 - 130.0	MS	19-OCT-23 18:05	231019-1
	Selenium	5.05	ug/L	5	ug/L	101.1	70.0 - 130.0	MS	19-OCT-23 18:05	231019-1
	Thallium	1.95	ug/L	2	ug/L	97.6	70.0 - 130.0	MS	19-OCT-23 18:05	231019-1
	Antimony	2.65	ug/L	3	ug/L	88.4	70.0 - 130.0	MS	19-OCT-23 18:05	231019-1
	Arsenic	4.66	ug/L	5	ug/L	93.1	70.0 - 130.0	MS	19-OCT-23 18:05	231019-1
CRDL02										
	Mercury	.183	ug/L	.2	ug/L	91.5	70.0 - 130.0	AV	17-OCT-23 10:32	101723W2-2
	Antimony	2.7	ug/L	3	ug/L	89.9	70.0 - 130.0	MS	19-OCT-23 18:58	231019-1
	Beryllium	.522	ug/L	.5	ug/L	104.4	70.0 - 130.0	MS	19-OCT-23 18:58	231019-1
	Cadmium	1.01	ug/L	1	ug/L	100.8	70.0 - 130.0	MS	19-OCT-23 18:58	231019-1
	Chromium	10.1	ug/L	10	ug/L	100.8	70.0 - 130.0	MS	19-OCT-23 18:58	231019-1
	Cobalt	1.02	ug/L	1	ug/L	101.7	70.0 - 130.0	MS	19-OCT-23 18:58	231019-1
	Lead	1.99	ug/L	2	ug/L	99.6	70.0 - 130.0	MS	19-OCT-23 18:58	231019-1
	Lithium	9.97	ug/L	10	ug/L	99.7	70.0 - 130.0	MS	19-OCT-23 18:58	231019-1
	Molybdenum	1	ug/L	1	ug/L	100	70.0 - 130.0	MS	19-OCT-23 18:58	231019-1
	Selenium	5.27	ug/L	5	ug/L	105.4	70.0 - 130.0	MS	19-OCT-23 18:58	231019-1
	Thallium	1.9	ug/L	2	ug/L	94.9	70.0 - 130.0	MS	19-OCT-23 18:58	231019-1
	Arsenic	5.07	ug/L	5	ug/L	101.3	70.0 - 130.0	MS	19-OCT-23 18:58	231019-1
	Barium	4.31	ug/L	4	ug/L	107.8	70.0 - 130.0	MS	19-OCT-23 18:58	231019-1
CRDL03										
	Barium	4.17	ug/L	4	ug/L	104.2	70.0 - 130.0	MS	19-OCT-23 20:15	231019-1
	Beryllium	.593	ug/L	.5	ug/L	118.6	70.0 - 130.0	MS	19-OCT-23 20:15	231019-1
	Cadmium	.985	ug/L	1	ug/L	98.5	70.0 - 130.0	MS	19-OCT-23 20:15	231019-1
	Chromium	10.4	ug/L	10	ug/L	103.8	70.0 - 130.0	MS	19-OCT-23 20:15	231019-1

EPA

METALS
-2b-
CRDL Standard for ICP & ICPMS

SDG No: 640966

Contract: DMNN00102 **Lab Code:** GEL

Instrument ID: ICPMS15,HG7

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Advisory Limits (%R)*	*M**	*Analysis Date/Time*	*Run Number*
	Cobalt	1.06	ug/L	1	ug/L	106	70.0 - 130.0	MS	19-OCT-23 20:15	231019-1
	Arsenic	4.62	ug/L	5	ug/L	92.3	70.0 - 130.0	MS	19-OCT-23 20:15	231019-1
	Lithium	10.7	ug/L	10	ug/L	107	70.0 - 130.0	MS	19-OCT-23 20:15	231019-1
	Molybdenum	1.06	ug/L	1	ug/L	106.1	70.0 - 130.0	MS	19-OCT-23 20:15	231019-1
	Selenium	4.99	ug/L	5	ug/L	99.8	70.0 - 130.0	MS	19-OCT-23 20:15	231019-1
	Thallium	1.92	ug/L	2	ug/L	96.2	70.0 - 130.0	MS	19-OCT-23 20:15	231019-1
	Antimony	2.57	ug/L	3	ug/L	85.7	70.0 - 130.0	MS	19-OCT-23 20:15	231019-1
	Lead	2.05	ug/L	2	ug/L	102.3	70.0 - 130.0	MS	19-OCT-23 20:15	231019-1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**
AV **EPA 245.1/245.2**

Metals
-3a-
Initial and Continuing Calibration Blank Summary

SDG No.: 640966

Contract: DMNN00102

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
ICB01										
	Mercury	0.067	+/-.1	U	0.067	0.2	LIQ	AV	17-OCT-23 09:39	101723W2-2
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	19-OCT-23 18:01	231019-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	19-OCT-23 18:01	231019-1
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	19-OCT-23 18:01	231019-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	19-OCT-23 18:01	231019-1
	Cadmium	0.03	+/-.05	U	0.03	0.1	LIQ	MS	19-OCT-23 18:01	231019-1
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	19-OCT-23 18:01	231019-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	19-OCT-23 18:01	231019-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	19-OCT-23 18:01	231019-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	19-OCT-23 18:01	231019-1
	Molybdenum	0.167	+/-.5	U	0.167	1.0	LIQ	MS	19-OCT-23 18:01	231019-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	19-OCT-23 18:01	231019-1
	Thallium	0.125	+/-.25	U	0.125	0.5	LIQ	MS	19-OCT-23 18:01	231019-1
CCB01										
	Mercury	-0.072	+/-.1	B	0.067	0.2	LIQ	AV	17-OCT-23 09:44	101723W2-2
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	19-OCT-23 18:19	231019-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	19-OCT-23 18:19	231019-1
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	19-OCT-23 18:19	231019-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	19-OCT-23 18:19	231019-1
	Cadmium	0.03	+/-.05	U	0.03	0.1	LIQ	MS	19-OCT-23 18:19	231019-1
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	19-OCT-23 18:19	231019-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	19-OCT-23 18:19	231019-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	19-OCT-23 18:19	231019-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	19-OCT-23 18:19	231019-1
	Molybdenum	0.468	+/-.5	B	0.167	1.0	LIQ	MS	19-OCT-23 18:19	231019-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	19-OCT-23 18:19	231019-1
	Thallium	0.125	+/-.25	U	0.125	0.5	LIQ	MS	19-OCT-23 18:19	231019-1
CCB02										
	Mercury	-0.074	+/-.1	B	0.067	0.2	LIQ	AV	17-OCT-23 10:03	101723W2-2
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	19-OCT-23 18:30	231019-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	19-OCT-23 18:30	231019-1

EPA

Metals
-3a-
Initial and Continuing Calibration Blank Summary

SDG No.: 640966

Contract: DMNN00102

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	19-OCT-23 18:30	231019-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	19-OCT-23 18:30	231019-1
	Cadmium	0.153	+/-.05		0.03	0.1	LIQ	MS	19-OCT-23 18:30	231019-1
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	19-OCT-23 18:30	231019-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	19-OCT-23 18:30	231019-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	19-OCT-23 18:30	231019-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	19-OCT-23 18:30	231019-1
	Molybdenum	0.578	+/-.5	B	0.167	1.0	LIQ	MS	19-OCT-23 18:30	231019-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	19-OCT-23 18:30	231019-1
	Thallium	0.147	+/-.25	B	0.125	0.5	LIQ	MS	19-OCT-23 18:30	231019-1
CCB03										
	Mercury	0.067	+/-.1	U	0.067	0.2	LIQ	AV	17-OCT-23 10:21	101723W2-2
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	19-OCT-23 19:12	231019-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	19-OCT-23 19:12	231019-1
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	19-OCT-23 19:12	231019-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	19-OCT-23 19:12	231019-1
	Cadmium	0.03	+/-.05	U	0.03	0.1	LIQ	MS	19-OCT-23 19:12	231019-1
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	19-OCT-23 19:12	231019-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	19-OCT-23 19:12	231019-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	19-OCT-23 19:12	231019-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	19-OCT-23 19:12	231019-1
	Molybdenum	0.478	+/-.5	B	0.167	1.0	LIQ	MS	19-OCT-23 19:12	231019-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	19-OCT-23 19:12	231019-1
	Thallium	0.125	+/-.25	U	0.125	0.5	LIQ	MS	19-OCT-23 19:12	231019-1
CCB04										
	Mercury	0.067	+/-.1	U	0.067	0.2	LIQ	AV	17-OCT-23 10:36	101723W2-2
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	19-OCT-23 19:54	231019-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	19-OCT-23 19:54	231019-1
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	19-OCT-23 19:54	231019-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	19-OCT-23 19:54	231019-1
	Cadmium	0.03	+/-.05	U	0.03	0.1	LIQ	MS	19-OCT-23 19:54	231019-1

Metals
-3a-
Initial and Continuing Calibration Blank Summary

SDG No.: 640966

Contract: DMNN00102

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	19-OCT-23 19:54	231019-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	19-OCT-23 19:54	231019-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	19-OCT-23 19:54	231019-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	19-OCT-23 19:54	231019-1
	Molybdenum	0.167	+/-.5	U	0.167	1.0	LIQ	MS	19-OCT-23 19:54	231019-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	19-OCT-23 19:54	231019-1
	Thallium	0.125	+/-.25	U	0.125	0.5	LIQ	MS	19-OCT-23 19:54	231019-1
CCB05										
	Antimony	0.6	+/-1	U	0.6	2.0	LIQ	MS	19-OCT-23 20:29	231019-1
	Arsenic	1.66	+/-2.5	U	1.66	5.0	LIQ	MS	19-OCT-23 20:29	231019-1
	Barium	0.5	+/-1	U	0.5	2.0	LIQ	MS	19-OCT-23 20:29	231019-1
	Beryllium	0.2	+/-.25	U	0.2	0.5	LIQ	MS	19-OCT-23 20:29	231019-1
	Cadmium	0.03	+/-.05	U	0.03	0.1	LIQ	MS	19-OCT-23 20:29	231019-1
	Chromium	1.0	+/-1.5	U	1.0	3.0	LIQ	MS	19-OCT-23 20:29	231019-1
	Cobalt	0.1	+/-.5	U	0.1	1.0	LIQ	MS	19-OCT-23 20:29	231019-1
	Lead	0.5	+/-1	U	0.5	2.0	LIQ	MS	19-OCT-23 20:29	231019-1
	Lithium	2.0	+/-5	U	2.0	10.0	LIQ	MS	19-OCT-23 20:29	231019-1
	Molybdenum	0.423	+/-.5	B	0.167	1.0	LIQ	MS	19-OCT-23 20:29	231019-1
	Selenium	1.5	+/-2.5	U	1.5	5.0	LIQ	MS	19-OCT-23 20:29	231019-1
	Thallium	0.125	+/-.25	U	0.125	0.5	LIQ	MS	19-OCT-23 20:29	231019-1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**
AV **EPA 245.1/245.2**

METALS
-3b-
PREPARATION BLANK SUMMARY

SDG NO. 640966
Contract: DMNN00102
Matrix: GW

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1205545285								
	Chromium	1.00	ug/L	+/-1.5	U	MS	1.00	3.00
	Antimony	0.600	ug/L	+/-1	U	MS	0.600	2.00
	Arsenic	1.66	ug/L	+/-2.5	U	MS	1.66	5.00
	Barium	0.500	ug/L	+/-1	U	MS	0.500	2.00
	Beryllium	0.200	ug/L	+/-0.25	U	MS	0.200	0.500
	Cadmium	0.0300	ug/L	+/-0.05	U	MS	0.0300	0.100
	Thallium	0.125	ug/L	+/-0.25	U	MS	0.125	0.500
	Cobalt	0.100	ug/L	+/-0.5	U	MS	0.100	1.00
	Lead	0.500	ug/L	+/-1	U	MS	0.500	2.00
	Lithium	2.00	ug/L	+/-5	U	MS	2.00	10.0
	Molybdenum	0.235	ug/L	+/-0.5	B	MS	0.167	1.00
	Selenium	1.50	ug/L	+/-2.5	U	MS	1.50	5.00
1205547218								
	Mercury	0.0670	ug/L	+/-0.1	U	AV	0.0670	0.200

***Analytical Methods:**

AV **EPA 245.1/245.2**
MS **EPA 200.8 SC_NPDES**

METALS
-4-
Interference Check Sample

SDG No: 640966

Contract: DMNN00102 **Lab Code:** GEL

Instrument: ICPMS15

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
ICSA01									
	Arsenic	-0.134	ug/L					19-OCT-23 18:08	231019-1
	Barium	0.535	ug/L					19-OCT-23 18:08	231019-1
	Beryllium	0.007	ug/L					19-OCT-23 18:08	231019-1
	Cadmium	2.18	ug/L					19-OCT-23 18:08	231019-1
	Chromium	0.675	ug/L					19-OCT-23 18:08	231019-1
	Cobalt	0.925	ug/L					19-OCT-23 18:08	231019-1
	Lead	0.411	ug/L					19-OCT-23 18:08	231019-1
	Lithium	0.645	ug/L					19-OCT-23 18:08	231019-1
	Molybdenum	2010	ug/L	2000	ug/L	100	80.0 - 120.0	19-OCT-23 18:08	231019-1
	Selenium	1.84	ug/L					19-OCT-23 18:08	231019-1
	Thallium	0.036	ug/L					19-OCT-23 18:08	231019-1
	Antimony	0.192	ug/L					19-OCT-23 18:08	231019-1
ICSAB01									
	Antimony	19.6	ug/L	20	ug/L	98.1	80.0 - 120.0	19-OCT-23 18:12	231019-1
	Arsenic	20.2	ug/L	20	ug/L	101	80.0 - 120.0	19-OCT-23 18:12	231019-1
	Barium	19.3	ug/L	20	ug/L	96.6	80.0 - 120.0	19-OCT-23 18:12	231019-1
	Beryllium	19.3	ug/L	20	ug/L	96.4	80.0 - 120.0	19-OCT-23 18:12	231019-1
	Cadmium	21.5	ug/L	21.13	ug/L	102	80.0 - 120.0	19-OCT-23 18:12	231019-1
	Chromium	20.5	ug/L	20	ug/L	103	80.0 - 120.0	19-OCT-23 18:12	231019-1
	Cobalt	20.2	ug/L	20.92	ug/L	96.6	80.0 - 120.0	19-OCT-23 18:12	231019-1
	Lead	19.0	ug/L	20	ug/L	94.7	80.0 - 120.0	19-OCT-23 18:12	231019-1
	Lithium	20.0	ug/L	20	ug/L	99.9	80.0 - 120.0	19-OCT-23 18:12	231019-1
	Molybdenum	2000	ug/L	2000	ug/L	100	80.0 - 120.0	19-OCT-23 18:12	231019-1
	Selenium	20.9	ug/L	21.58	ug/L	96.7	80.0 - 120.0	19-OCT-23 18:12	231019-1
	Thallium	18.1	ug/L	20	ug/L	90.6	80.0 - 120.0	19-OCT-23 18:12	231019-1
ICSA02									
	Antimony	0.239	ug/L					19-OCT-23 19:01	231019-1
	Arsenic	-0.117	ug/L					19-OCT-23 19:01	231019-1
	Barium	0.532	ug/L					19-OCT-23 19:01	231019-1
	Beryllium	0.016	ug/L					19-OCT-23 19:01	231019-1

EPA

METALS
-4-
Interference Check Sample

SDG No: 640966

Contract: DMNN00102 **Lab Code:** GEL

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
	Cadmium	2.1	ug/L					19-OCT-23 19:01	231019-1
	Chromium	0.735	ug/L					19-OCT-23 19:01	231019-1
	Cobalt	0.911	ug/L					19-OCT-23 19:01	231019-1
	Lead	0.434	ug/L					19-OCT-23 19:01	231019-1
	Lithium	0.667	ug/L					19-OCT-23 19:01	231019-1
	Molybdenum	2010	ug/L	2000	ug/L	101	80.0 - 120.0	19-OCT-23 19:01	231019-1
	Selenium	1.59	ug/L					19-OCT-23 19:01	231019-1
	Thallium	0.04	ug/L					19-OCT-23 19:01	231019-1
ICSAB02									
	Antimony	19.3	ug/L	20	ug/L	96.5	80.0 - 120.0	19-OCT-23 19:05	231019-1
	Barium	19.4	ug/L	20	ug/L	96.8	80.0 - 120.0	19-OCT-23 19:05	231019-1
	Beryllium	19.1	ug/L	20	ug/L	95.3	80.0 - 120.0	19-OCT-23 19:05	231019-1
	Cadmium	20.8	ug/L	21.13	ug/L	98.5	80.0 - 120.0	19-OCT-23 19:05	231019-1
	Chromium	20.0	ug/L	20	ug/L	100	80.0 - 120.0	19-OCT-23 19:05	231019-1
	Cobalt	19.9	ug/L	20.92	ug/L	94.9	80.0 - 120.0	19-OCT-23 19:05	231019-1
	Lead	19.2	ug/L	20	ug/L	96.1	80.0 - 120.0	19-OCT-23 19:05	231019-1
	Lithium	19.9	ug/L	20	ug/L	99.4	80.0 - 120.0	19-OCT-23 19:05	231019-1
	Molybdenum	1990	ug/L	2000	ug/L	99.6	80.0 - 120.0	19-OCT-23 19:05	231019-1
	Selenium	20.7	ug/L	21.58	ug/L	95.8	80.0 - 120.0	19-OCT-23 19:05	231019-1
	Thallium	18.2	ug/L	20	ug/L	90.8	80.0 - 120.0	19-OCT-23 19:05	231019-1
	Arsenic	19.8	ug/L	20	ug/L	98.9	80.0 - 120.0	19-OCT-23 19:05	231019-1
ICSA03									
	Antimony	0.175	ug/L					19-OCT-23 20:19	231019-1
	Arsenic	-0.347	ug/L					19-OCT-23 20:19	231019-1
	Barium	0.517	ug/L					19-OCT-23 20:19	231019-1
	Beryllium	0.007	ug/L					19-OCT-23 20:19	231019-1
	Cadmium	2.01	ug/L					19-OCT-23 20:19	231019-1
	Chromium	0.686	ug/L					19-OCT-23 20:19	231019-1
	Cobalt	0.902	ug/L					19-OCT-23 20:19	231019-1
	Lead	0.418	ug/L					19-OCT-23 20:19	231019-1

METALS
-4-
Interference Check Sample

SDG No: 640966

Contract: DMNN00102 **Lab Code:** GEL

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
	Lithium	0.682	ug/L					19-OCT-23 20:19	231019-1
	Molybdenum	2020	ug/L	2000	ug/L	101	80.0 - 120.0	19-OCT-23 20:19	231019-1
	Selenium	1.7	ug/L					19-OCT-23 20:19	231019-1
	Thallium	0.024	ug/L					19-OCT-23 20:19	231019-1
ICSAB03									
	Antimony	19.6	ug/L	20	ug/L	98	80.0 - 120.0	19-OCT-23 20:22	231019-1
	Arsenic	20.0	ug/L	20	ug/L	99.8	80.0 - 120.0	19-OCT-23 20:22	231019-1
	Barium	19.3	ug/L	20	ug/L	96.2	80.0 - 120.0	19-OCT-23 20:22	231019-1
	Beryllium	19.4	ug/L	20	ug/L	96.9	80.0 - 120.0	19-OCT-23 20:22	231019-1
	Cadmium	21.2	ug/L	21.13	ug/L	101	80.0 - 120.0	19-OCT-23 20:22	231019-1
	Chromium	20.6	ug/L	20	ug/L	103	80.0 - 120.0	19-OCT-23 20:22	231019-1
	Cobalt	20.4	ug/L	20.92	ug/L	97.4	80.0 - 120.0	19-OCT-23 20:22	231019-1
	Lead	19.3	ug/L	20	ug/L	96.7	80.0 - 120.0	19-OCT-23 20:22	231019-1
	Lithium	21.2	ug/L	20	ug/L	106	80.0 - 120.0	19-OCT-23 20:22	231019-1
	Molybdenum	2030	ug/L	2000	ug/L	101	80.0 - 120.0	19-OCT-23 20:22	231019-1
	Selenium	20.1	ug/L	21.58	ug/L	93.1	80.0 - 120.0	19-OCT-23 20:22	231019-1
	Thallium	18.3	ug/L	20	ug/L	91.5	80.0 - 120.0	19-OCT-23 20:22	231019-1

METALS
-5a-

Matrix Spike Summary

SDG NO. 640966 **Client ID:** MW-AP-03-2023Q4S

Contract: DMNN00102 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 640966004 **Spike ID:** 1205545288

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Antimony	ug/L	75-125	51.3		0.600	U	50.0	103		MS
Arsenic	ug/L		701		638		50.0	126	N/A	MS
Barium	ug/L	75-125	249		198		50.0	102		MS
Beryllium	ug/L	75-125	50.7		0.200	U	50.0	101		MS
Cadmium	ug/L	75-125	50.5		0.0300	U	50.0	101		MS
Chromium	ug/L	75-125	51.4		1.00	U	50.0	102		MS
Cobalt	ug/L	75-125	51.3		0.182	B	50.0	102		MS
Lead	ug/L	75-125	49.9		0.500	U	50.0	99.7		MS
Lithium	ug/L	75-125	86.7		36.4		50.0	101		MS
Molybdenum	ug/L	75-125	66.0		12.9		50.0	106		MS
Selenium	ug/L	75-125	48.1		1.50	U	50.0	95.9		MS
Thallium	ug/L	75-125	48.5		0.125	U	50.0	96.9		MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-5a-

Matrix Spike Summary

SDG NO. 640966 **Client ID:** MW-AP-03-2023Q4S

Contract: DMNN00102 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 640966004 **Spike ID:** 1205547221

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/L	75-125	0.733		0.0670	U	2.00	36.7	N	AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
-5a-

Spike Summary

SDG NO. 640966 **Client ID:** MW-AP-03-2023Q4PS

Contract: DMNN00102 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 640966004 **Spike ID:** 1205547229

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Mercury	ug/L	80-120	0.746		0.0670	U	2.00	37.3	N	AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

Metals
-6-
Duplicate Sample Summary

SDG No.: 640966 **Lab Code:** GEL

Contract: DMNN00102 **Client ID:** MW-AP-03-2023Q4D

Matrix: GROUND WATER **Level:** Low

Sample ID: 640966004 **Duplicate ID:** 1205545287 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Antimony	ug/L		0.600	U	0.600	U			MS
Arsenic	ug/L	+/-20%	638		655		2.61		MS
Barium	ug/L	+/-20%	198		202		2.17		MS
Beryllium	ug/L		0.200	U	0.200	U			MS
Cadmium	ug/L		0.0300	U	0.0300	U			MS
Chromium	ug/L		1.00	U	1.00	U			MS
Cobalt	ug/L	+/-2	0.182	B	0.188	B	3.24		MS
Lead	ug/L		0.500	U	0.500	U			MS
Lithium	ug/L	+/-20	36.4		37.7		3.43		MS
Molybdenum	ug/L	+/-20%	12.9		13.6		5.45		MS
Selenium	ug/L		1.50	U	1.50	U			MS
Thallium	ug/L		0.125	U	0.125	U			MS

***Analytical Methods:**
MS EPA 200.8 SC_NPDES

Metals
-6-
Duplicate Sample Summary

SDG No.: 640966 **Lab Code:** GEL

Contract: DMNN00102 **Client ID:** MW-AP-03-2023Q4D

Matrix: GROUND WATER **Level:** Low

Sample ID: 640966004 **Duplicate ID:** 1205547220 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Mercury	ug/L		0.0670	U	0.0670	U			AV

***Analytical Methods:**
AV EPA 245.1/245.2

METALS
-7-
Laboratory Control Sample Summary

SDG NO. 640966

Contract: DMNN00102

Aqueous LCS Source: Enviromental Express **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1205545286								
	Antimony	ug/L	50.0	49.3		98.5	85-115	MS
	Arsenic	ug/L	50.0	50.4		101	85-115	MS
	Barium	ug/L	50.0	50.5		101	85-115	MS
	Beryllium	ug/L	50.0	52.1		104	85-115	MS
	Cadmium	ug/L	50.0	49.4		98.8	85-115	MS
	Chromium	ug/L	50.0	51.5		103	85-115	MS
	Cobalt	ug/L	50.0	51.0		102	85-115	MS
	Lead	ug/L	50.0	50.8		102	85-115	MS
	Lithium	ug/L	50.0	51.0		102	80-120	MS
	Molybdenum	ug/L	50.0	50.7		101	85-115	MS
	Selenium	ug/L	50.0	49.3		98.6	85-115	MS
	Thallium	ug/L	50.0	49.0		98.1	85-115	MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-7-
Laboratory Control Sample Summary

SDG NO. 640966

Contract: DMNN00102

Aqueous LCS Source: GEL **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1205547219								
	Mercury	ug/L	2.00	2.11		105	85-115	AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
-9-
Serial Dilution Sample Summary

SDG NO. 640966 **Client ID:** MW-AP-03-2023Q4L

Contract: DMNN00102

Matrix: LIQUID **Level:** Low

Sample ID: 640966004 **Serial Dilution ID:** 1205545289

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Antimony	.6	U	3	U				MS
Arsenic	638		658		3.114		10	MS
Barium	198		204		3.171		10	MS
Beryllium	.2	U	1	U				MS
Cadmium	.03	U	.15	U				MS
Chromium	1	U	5	U				MS
Cobalt	.182	B	.5	U	37.363			MS
Lead	.5	U	2.5	U				MS
Lithium	36.4		38.7	B	6.264			MS
Molybdenum	12.9		13.6		5.32			MS
Selenium	1.5	U	7.5	U				MS
Thallium	.125	U	.625	U				MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-9-
Serial Dilution Sample Summary

SDG NO. 640966 **Client ID:** MW-AP-03-2023Q4L

Contract: DMNN00102

Matrix: LIQUID **Level:** Low

Sample ID: 640966004 **Serial Dilution ID:** 1205547222

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Mercury	.067	U	.335	U				AV

***Analytical Methods:**

AV **EPA 245.1/245.2**

METALS
-13-
SAMPLE PREPARATION SUMMARY

SDG No: 640966 **Method Type:** MS

Contract: DMNN00102 **Lab Code:** GEL

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size	Final Sample Volume	Percent Solids
Batch Number	2507954						
1205545285	MB for batch 2507954	MB	G	13-OCT-23	50mL	50mL	
1205545286	LCS for batch 2507954	LCS	G	13-OCT-23	50mL	50mL	
1205545288	MW-AP-03-2023Q4S	MS	G	13-OCT-23	50mL	50mL	
1205545287	MW-AP-03-2023Q4D	DUP	G	13-OCT-23	50mL	50mL	
640966001	MW-AP-01A-2023Q4	SAMPLE	G	13-OCT-23	50mL	50mL	
640966002	MW-AP-01-2023Q4	SAMPLE	G	13-OCT-23	50mL	50mL	
640966003	MW-AP-02-2023Q4	SAMPLE	G	13-OCT-23	50mL	50mL	
640966004	MW-AP-03-2023Q4	SAMPLE	G	13-OCT-23	50mL	50mL	
640966005	MW-AP-04-2023Q4	SAMPLE	G	13-OCT-23	50mL	50mL	
640966006	MW-AP-05-2023Q4	SAMPLE	G	13-OCT-23	50mL	50mL	
640966007	MW-AP-08-2023Q4	SAMPLE	G	13-OCT-23	50mL	50mL	
640966008	DU-WAT-CCR-AP-23401	SAMPLE	G	13-OCT-23	50mL	50mL	
640966009	FBLK-WAT-CCR-AP-23401	SAMPLE	G	13-OCT-23	50mL	50mL	

EPA

METALS
-13-
SAMPLE PREPARATION SUMMARY

SDG No: 640966 **Method Type:** AV

Contract: DMNN00102 **Lab Code:** GEL

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size	Final Sample Volume	Percent Solids
Batch Number	2508995						
1205547218	MB for batch 2508995	MB	G	16-OCT-23	20mL	20mL	
1205547219	LCS for batch 2508995	LCS	G	16-OCT-23	20mL	20mL	
1205547221	MW-AP-03-2023Q4S	MS	G	16-OCT-23	20mL	20mL	
1205547220	MW-AP-03-2023Q4D	DUP	G	16-OCT-23	20mL	20mL	
640966001	MW-AP-01A-2023Q4	SAMPLE	G	16-OCT-23	20mL	20mL	
640966002	MW-AP-01-2023Q4	SAMPLE	G	16-OCT-23	20mL	20mL	
640966003	MW-AP-02-2023Q4	SAMPLE	G	16-OCT-23	20mL	20mL	
640966004	MW-AP-03-2023Q4	SAMPLE	G	16-OCT-23	20mL	20mL	
640966005	MW-AP-04-2023Q4	SAMPLE	G	16-OCT-23	20mL	20mL	
640966006	MW-AP-05-2023Q4	SAMPLE	G	16-OCT-23	20mL	20mL	
640966007	MW-AP-08-2023Q4	SAMPLE	G	16-OCT-23	20mL	20mL	
640966008	DU-WAT-CCR-AP-23401	SAMPLE	G	16-OCT-23	20mL	20mL	
640966009	FBLK-WAT-CCR-AP-23401	SAMPLE	G	16-OCT-23	20mL	20mL	

EPA

General Chem Analysis

Case Narrative

General Chemistry
Technical Case Narrative
Dominion Energy
SDG #: 640966

Product: **Ion Chromatography**
Analytical Method: EPA 300.0
Analytical Procedure: GL-GC-E-086 REV# 33
Analytical Batch: 2507968

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
640966001	MW-AP-01A-2023Q4
640966002	MW-AP-01-2023Q4
640966003	MW-AP-02-2023Q4
640966004	MW-AP-03-2023Q4
640966005	MW-AP-04-2023Q4
640966006	MW-AP-05-2023Q4
640966007	MW-AP-08-2023Q4
640966008	DU-WAT-CCR-AP-23401
640966009	FBLK-WAT-CCR-AP-23401
1205545315	Method Blank (MB)
1205545316	Laboratory Control Sample (LCS)
1205545317	640960006(MW-FGD-06-2023Q4) Sample Duplicate (DUP)
1205545318	640960006(MW-FGD-06-2023Q4) Post Spike (PS)
1205545319	640966004(MW-AP-03-2023Q4) Sample Duplicate (DUP)
1205545320	640966004(MW-AP-03-2023Q4) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The percent recoveries (%R) obtained from the spike analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike recovered outside of the established acceptance limits due to matrix interference and/or non-homogeneity.

Analyte	Sample	Value
Chloride	1205545318 (MW-FGD-06-2023Q4PS)	112* (90%-110%)
	1205545320 (MW-AP-03-2023Q4PS)	111* (90%-110%)

Technical Information

Sample Dilutions

The following samples 1205545319 (MW-AP-03-2023Q4DUP), 1205545320 (MW-AP-03-2023Q4PS), 640966002 (MW-AP-01-2023Q4), 640966003 (MW-AP-02-2023Q4), 640966004 (MW-AP-03-2023Q4), 640966005 (MW-AP-04-2023Q4), 640966006 (MW-AP-05-2023Q4), 640966007 (MW-AP-08-2023Q4) and 640966008 (DU-WAT-CCR-AP-23401) were diluted because target analyte concentrations exceeded the calibration range. Samples 1205545319 (MW-AP-03-2023Q4DUP), 1205545320 (MW-AP-03-2023Q4PS), 640966002 (MW-AP-01-2023Q4), 640966003 (MW-AP-02-2023Q4), 640966004 (MW-AP-03-2023Q4), 640966005 (MW-AP-04-2023Q4), 640966006 (MW-AP-05-2023Q4), 640966007 (MW-AP-08-2023Q4) and 640966008 (DU-WAT-CCR-AP-23401) were diluted based on historical data. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	640966						
	002	**003**	**004**	**005**	**006**	**007**	**008**
Chloride	40X	10X	20X	10X	10X	10X	10X
Fluoride	1X	1X	1X	10X	1X	10X	1X
Sulfate	1X	10X	10X	10X	10X	10X	10X

Miscellaneous Information

Additional Comments

All method-driven specifications are followed for these analyses except where client-specific SOW requirements are required to be met.

Product: **Solids, Total Dissolved**
Analytical Method: SM 2540C
Analytical Procedure: GL-GC-E-001 REV# 21
Analytical Batch: 2508078

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
640966001	MW-AP-01A-2023Q4
640966002	MW-AP-01-2023Q4
640966003	MW-AP-02-2023Q4
640966004	MW-AP-03-2023Q4
640966005	MW-AP-04-2023Q4
640966006	MW-AP-05-2023Q4
640966007	MW-AP-08-2023Q4
640966008	DU-WAT-CCR-AP-23401
640966009	FBLK-WAT-CCR-AP-23401
1205545523	Method Blank (MB)
1205545524	Laboratory Control Sample (LCS)
1205545525	640960006(MW-FGD-06-2023Q4) Sample Duplicate (DUP)
1205545526	640966004(MW-AP-03-2023Q4) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments
All method-driven specifications are followed for these analyses except where client-specific SOW requirements are required to be met.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

DMNN001 Dominion Energy (50149867)

Client SDG: 640966 GEL Work Order: 640966

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
J Value is estimated
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Kristen Mizzell **Name: Kristen Mizzell**

Date: 26 OCT 2023 **Title: Group Leader**

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 26, 2023

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 3 Package

Client Sample ID:	MW-AP-01A-2023Q4	Project:	DMNN00102
Sample ID:	640966001	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	11-OCT-23 17:00		
Receive Date:	12-OCT-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		6.49	0.0670	0.200	mg/L		1	LXA2	10/14/23	0811	2507968	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate	J	0.222	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids	U	ND	2.38	10.0	mg/L			CH6	10/13/23	1502	2508078	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 26, 2023

Company :	Dominion Energy Services, Inc.
Address :	120 Tredegar Street
	Richmond, Virginia 23219
Contact:	Kelly Hicks
Project:	CCR Groundwater Monitoring - Level 3 Package

Client Sample ID:	MW-AP-01-2023Q4	Project:	DMNN00102
Sample ID:	640966002	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	11-OCT-23 09:05		
Receive Date:	12-OCT-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride		0.383	0.0330	0.100	mg/L		1	LXA2	10/14/23	2119	2507968	1
Sulfate		11.0	0.133	0.400	mg/L		1					
Chloride		198	2.68	8.00	mg/L		40	LXA2	10/14/23	2048	2507968	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		458	2.38	10.0	mg/L			CH6	10/13/23	1502	2508078	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 26, 2023

Company :	Dominion Energy Services, Inc.
Address :	120 Tredegar Street
	Richmond, Virginia 23219
Contact:	Kelly Hicks
Project:	CCR Groundwater Monitoring - Level 3 Package

Client Sample ID:	MW-AP-02-2023Q4	Project:	DMNN00102
Sample ID:	640966003	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	11-OCT-23 10:25		
Receive Date:	12-OCT-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		48.7	0.670	2.00	mg/L		10	LXA2	10/14/23	0912	2507968	1
Sulfate		17.3	1.33	4.00	mg/L		10					
Fluoride		0.217	0.0330	0.100	mg/L		1	LXA2	10/14/23	2150	2507968	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		298	2.38	10.0	mg/L			CH6	10/13/23	1502	2508078	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 26, 2023

Company :	Dominion Energy Services, Inc.
Address :	120 Tredegar Street
	Richmond, Virginia 23219
Contact:	Kelly Hicks
Project:	CCR Groundwater Monitoring - Level 3 Package

Client Sample ID:	MW-AP-03-2023Q4	Project:	DMNN00102
Sample ID:	640966004	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	11-OCT-23 12:05		
Receive Date:	12-OCT-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride		0.524	0.0330	0.100	mg/L		1	LXA2	10/14/23	2354	2507968	1
Sulfate		55.4	1.33	4.00	mg/L		10	LXA2	10/14/23	0943	2507968	2
Chloride		114	1.34	4.00	mg/L		20	LXA2	10/14/23	2221	2507968	3
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		403	2.38	10.0	mg/L			CH6	10/13/23	1502	2508078	4

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	EPA 300.0	
4	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 26, 2023

Company :	Dominion Energy Services, Inc.
Address :	120 Tredegar Street
	Richmond, Virginia 23219
Contact:	Kelly Hicks
Project:	CCR Groundwater Monitoring - Level 3 Package

Client Sample ID:	MW-AP-04-2023Q4	Project:	DMNN00102
Sample ID:	640966005	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	11-OCT-23 13:40		
Receive Date:	12-OCT-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		21.2	0.670	2.00	mg/L		10	LXA2	10/14/23	1116	2507968	1
Fluoride		1.01	0.330	1.00	mg/L		10					
Sulfate		63.1	1.33	4.00	mg/L		10					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		532	2.38	10.0	mg/L			CH6	10/13/23	1502	2508078	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 26, 2023

Company :	Dominion Energy Services, Inc.
Address :	120 Tredegar Street
	Richmond, Virginia 23219
Contact:	Kelly Hicks
Project:	CCR Groundwater Monitoring - Level 3 Package

Client Sample ID:	MW-AP-05-2023Q4	Project:	DMNN00102
Sample ID:	640966006	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	11-OCT-23 14:40		
Receive Date:	12-OCT-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride	J	0.0612	0.0330	0.100	mg/L		1	LXA2	10/15/23	0259	2507968	1
Chloride		14.9	0.670	2.00	mg/L		10	LXA2	10/14/23	1147	2507968	2
Sulfate		33.4	1.33	4.00	mg/L		10					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		234	2.38	10.0	mg/L			CH6	10/13/23	1502	2508078	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 26, 2023

Company :	Dominion Energy Services, Inc.
Address :	120 Tredegar Street
	Richmond, Virginia 23219
Contact:	Kelly Hicks
Project:	CCR Groundwater Monitoring - Level 3 Package

Client Sample ID:	MW-AP-08-2023Q4	Project:	DMNN00102
Sample ID:	640966007	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	11-OCT-23 15:50		
Receive Date:	12-OCT-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		16.4	0.670	2.00	mg/L		10	LXA2	10/14/23	1218	2507968	1
Fluoride		1.25	0.330	1.00	mg/L		10					
Sulfate		110	1.33	4.00	mg/L		10					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		369	2.38	10.0	mg/L			CH6	10/13/23	1502	2508078	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 26, 2023

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 3 Package

Client Sample ID:	DU-WAT-CCR-AP-23401	Project:	DMNN00102
Sample ID:	640966008	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	11-OCT-23 12:00		
Receive Date:	12-OCT-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride		0.130	0.0330	0.100	mg/L		1	LXA2	10/15/23	0330	2507968	1
Chloride		49.0	0.670	2.00	mg/L		10	LXA2	10/14/23	1249	2507968	2
Sulfate		17.0	1.33	4.00	mg/L		10					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		299	2.38	10.0	mg/L			CH6	10/13/23	1502	2508078	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 26, 2023

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 3 Package

Client Sample ID:	FBLK-WAT-CCR-AP-23401	Project:	DMNN00102
Sample ID:	640966009	Client ID:	DMNN001
Matrix:	AQ		
Collect Date:	11-OCT-23 14:45		
Receive Date:	12-OCT-23		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride	U	ND	0.0670	0.200	mg/L		1	LXA2	10/14/23	1452	2507968	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate	U	ND	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids	U	ND	2.38	10.0	mg/L			CH6	10/13/23	1502	2508078	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	SM 2540C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

Quality Control Summary

QC Summary

Report Date: October 26, 2023

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, Virginia

Contact: **Kelly Hicks**

Workorder: **640966**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography										
Batch 2507968										
QC1205545317 640960006 DUP										
Chloride		5.65		5.65	mg/L	0.0265		(0%-20%)	LXA2	10/14/23 04:04
Fluoride	U	ND	U	ND	mg/L	N/A				
Sulfate		5.91		6.17	mg/L	4.33		(0%-20%)		
QC1205545319 640966004 DUP										
Chloride		114		114	mg/L	0.151		(0%-20%)		10/14/23 22:52
Fluoride		0.524		0.539	mg/L	2.92		(0%-20%)		10/15/23 01:57
Sulfate		55.4		55.4	mg/L	0.161		(0%-20%)		10/14/23 10:14
QC1205545316 LCS										
Chloride	5.00			4.62	mg/L		92.4	(90%-110%)		10/13/23 22:55
Fluoride	2.50			2.37	mg/L		94.9	(90%-110%)		
Sulfate	10.0			9.52	mg/L		95.2	(90%-110%)		
QC1205545315 MB										
Chloride			U	ND	mg/L					10/13/23 22:24
Fluoride			U	ND	mg/L					
Sulfate			U	ND	mg/L					
QC1205545318 640960006 PS										
Chloride	5.00	5.65		11.2	mg/L		112*	(90%-110%)		10/14/23 04:35

QC Summary

Workorder: **640966**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 2507968											
Fluoride	2.50	U	ND		2.65	mg/L		105	(90%-110%)	LXA2	10/14/23 04:35
Sulfate	10.0		5.91		15.7	mg/L		98.2	(90%-110%)		
QC1205545320 640966004 PS											
Chloride	5.00		5.69		11.2	mg/L		111*	(90%-110%)		10/14/23 23:23
Fluoride	2.50		0.524		3.07	mg/L		102	(90%-110%)		10/15/23 02:28
Sulfate	10.0		5.54		15.7	mg/L		102	(90%-110%)		10/14/23 10:45
Solids Analysis											
Batch 2508078											
QC1205545525 640960006 DUP											
Total Dissolved Solids			21.0		21.0	mg/L	0 ^		(+/-10.0)	CH6	10/13/23 15:02
QC1205545526 640966004 DUP											
Total Dissolved Solids			403		405	mg/L	0.495		(0%-5%)		10/13/23 15:02
QC1205545524 LCS											
Total Dissolved Solids	300				300	mg/L		100	(95%-105%)		10/13/23 15:02
QC1205545523 MB											
Total Dissolved Solids				U	ND	mg/L					10/13/23 15:02

Notes:

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported

QC Summary

Workorder: **640966**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
d	5-day BOD--The 2:1 depletion requirement was not met for this sample
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
N1	See case narrative
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
B	The target analyte was detected in the associated blank.
e	5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
J	See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
Dominion Energy
SDG #: 640966

Product: **Radium-226+Radium-228 Calculation**
Analytical Method: Calculation
Analytical Procedure: GL-RAD-D-003 REV# 45
Analytical Batch: 2511598

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
640966001	MW-AP-01A-2023Q4
640966002	MW-AP-01-2023Q4
640966003	MW-AP-02-2023Q4
640966004	MW-AP-03-2023Q4
640966005	MW-AP-04-2023Q4
640966006	MW-AP-05-2023Q4
640966007	MW-AP-08-2023Q4
640966008	DU-WAT-CCR-AP-23401
640966009	FBLK-WAT-CCR-AP-23401

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: **GFPC Ra228, Liquid**
Analytical Method: EPA 904.0
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2508275

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
640966001	MW-AP-01A-2023Q4
640966002	MW-AP-01-2023Q4
640966003	MW-AP-02-2023Q4
640966004	MW-AP-03-2023Q4
640966005	MW-AP-04-2023Q4
640966006	MW-AP-05-2023Q4
640966007	MW-AP-08-2023Q4
640966008	DU-WAT-CCR-AP-23401
640966009	FBLK-WAT-CCR-AP-23401
1205545830	Method Blank (MB)

1205545831	640966004(MW-AP-03-2023Q4) Sample Duplicate (DUP)
1205545832	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Preparation Information

Homogenous Matrix
Sample 640966002 (MW-AP-01-2023Q4) was non-homogenous matrix. orange sediment 640966002 (MW-AP-01-2023Q4).

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2508276

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
640966001	MW-AP-01A-2023Q4
640966002	MW-AP-01-2023Q4
640966003	MW-AP-02-2023Q4
640966004	MW-AP-03-2023Q4
640966005	MW-AP-04-2023Q4
640966006	MW-AP-05-2023Q4
640966007	MW-AP-08-2023Q4
640966008	DU-WAT-CCR-AP-23401
640966009	FBLK-WAT-CCR-AP-23401
1205545833	Method Blank (MB)
1205545834	640966004(MW-AP-03-2023Q4) Sample Duplicate (DUP)
1205545835	640966004(MW-AP-03-2023Q4) Matrix Spike (MS)
1205545836	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Preparation Information

Homogenous Matrix
Sample 640966002 (MW-AP-01-2023Q4) was non-homogenous matrix.

Miscellaneous Information

Additional Comments
The matrix spike, 1205545835 (MW-AP-03-2023Q4MS), aliquot was reduced to conserve sample volume.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

DMNN001 Dominion Energy (50149867)

Client SDG: 640966 GEL Work Order: 640966

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a Tracer compound
J Value is estimated
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Theresa Austin**

Date: 25 OCT 2023 **Title: Analyst III - Data Validator**

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street
Richmond, Virginia 23219
Report Date: October 24, 2023
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 3 Package

Client Sample ID: MW-AP-01A-2023Q4
Sample ID: 640966001
Matrix: GW
Collect Date: 11-OCT-23
Receive Date: 12-OCT-23
Collector: Client
Project: DMNN00102
Client ID: DMNN001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	1.07	+/-1.01	1.65	+/-1.05	3.00	pCi/L			JE1	10/18/23	1120	2508275	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	6.39	+/-1.60		+/-1.90		pCi/L			NXL1	10/24/23	1118	2511598	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		5.32	+/-1.24	0.583	+/-1.58	1.00	pCi/L			MJ2	10/24/23	0823	2508276	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2508275	82.8	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street
Richmond, Virginia 23219
Report Date: October 24, 2023
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 3 Package

Client Sample ID: MW-AP-01-2023Q4
Sample ID: 640966002
Matrix: GW
Collect Date: 11-OCT-23
Receive Date: 12-OCT-23
Collector: Client
Project: DMNN00102
Client ID: DMNN001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	-0.146	+/-0.776	1.52	+/-0.776	3.00	pCi/L			JE1	10/18/23	1120	2508275	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	1.07	+/-0.933		+/-0.946		pCi/L			NXL1	10/24/23	1118	2511598	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		1.07	+/-0.517	0.489	+/-0.540	1.00	pCi/L			MJ2	10/24/23	0823	2508276	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2508275	86.1	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street
Richmond, Virginia 23219
Report Date: October 24, 2023
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 3 Package

Client Sample ID: MW-AP-02-2023Q4
Sample ID: 640966003
Matrix: GW
Collect Date: 11-OCT-23
Receive Date: 12-OCT-23
Collector: Client
Project: DMNN00102
Client ID: DMNN001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	1.02	+/-0.904	1.47	+/-0.941	3.00	pCi/L			JE1	10/18/23	1120	2508275	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	3.79	+/-1.22		+/-1.37		pCi/L			NXL1	10/24/23	1118	2511598	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		2.78	+/-0.813	0.591	+/-1.00	1.00	pCi/L			MJ2	10/24/23	0823	2508276	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2508275	91.9	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street
Richmond, Virginia 23219
Report Date: October 24, 2023
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 3 Package

Client Sample ID: MW-AP-03-2023Q4
Sample ID: 640966004
Matrix: GW
Collect Date: 11-OCT-23
Receive Date: 12-OCT-23
Collector: Client
Project: DMNN00102
Client ID: DMNN001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	1.79	+/-1.20	1.89	+/-1.29	3.00	pCi/L			JE1	10/18/23	1120	2508275	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	3.33	+/-1.38		+/-1.47		pCi/L			NXL1	10/24/23	1118	2511598	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		1.53	+/-0.686	0.707	+/-0.723	1.00	pCi/L			MJ2	10/24/23	0823	2508276	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2508275	90.5	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219 Report Date: October 24, 2023

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 3 Package

Client Sample ID: MW-AP-04-2023Q4 Project: DMNN00102
Sample ID: 640966005 Client ID: DMNN001
Matrix: GW
Collect Date: 11-OCT-23
Receive Date: 12-OCT-23
Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	0.508	+/-0.641	1.09	+/-0.654	3.00	pCi/L			JE1	10/18/23	1120	2508275	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	3.28	+/-1.05		+/-1.19		pCi/L			NXL1	10/24/23	1118	2511598	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		2.77	+/-0.831	0.373	+/-0.991	1.00	pCi/L			MJ2	10/24/23	0858	2508276	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2508275	86	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street
Richmond, Virginia 23219
Report Date: October 24, 2023
Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 3 Package

Client Sample ID: MW-AP-05-2023Q4
Sample ID: 640966006
Matrix: GW
Collect Date: 11-OCT-23
Receive Date: 12-OCT-23
Collector: Client

Project: DMNN00102
Client ID: DMNN001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	1.42	+/-1.22	1.99	+/-1.27	3.00	pCi/L			JE1	10/18/23	1120	2508275	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	3.38	+/-1.43		+/-1.54		pCi/L			NXL1	10/24/23	1118	2511598	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		1.96	+/-0.750	0.622	+/-0.867	1.00	pCi/L			MJ2	10/24/23	0858	2508276	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2508275	91	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219 Report Date: October 24, 2023

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 3 Package

Client Sample ID: MW-AP-08-2023Q4 Project: DMNN00102
Sample ID: 640966007 Client ID: DMNN001
Matrix: GW
Collect Date: 11-OCT-23
Receive Date: 12-OCT-23
Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228		1.55	+/-0.835	1.16	+/-0.925	3.00	pCi/L			JE1	10/18/23	1120	2508275	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum		3.45	+/-1.10		+/-1.23		pCi/L			NXL1	10/24/23	1118	2511598	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226		1.90	+/-0.721	0.405	+/-0.814	1.00	pCi/L			MJ2	10/24/23	0858	2508276	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2508275	82.4	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219 Report Date: October 24, 2023

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 3 Package

Client Sample ID: DU-WAT-CCR-AP-23401 Project: DMNN00102
Sample ID: 640966008 Client ID: DMNN001
Matrix: GW
Collect Date: 11-OCT-23
Receive Date: 12-OCT-23
Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228	U	0.842	+/-0.714	1.13	+/-0.746	3.00	pCi/L			JE1	10/18/23	1120	2508275	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	U	0.885	+/-0.818		+/-0.846		pCi/L			NXL1	10/24/23	1118	2511598	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226	U	0.0424	+/-0.399	0.894	+/-0.399	1.00	pCi/L			MJ2	10/24/23	0858	2508276	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2508275	84.7	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company : Dominion Energy Services, Inc.
Address : 120 Tredegar Street

Richmond, Virginia 23219 Report Date: October 24, 2023

Contact: Kelly Hicks
Project: CCR Groundwater Monitoring - Level 3 Package

Client Sample ID: FBLK-WAT-CCR-AP-23401 Project: DMNN00102
Sample ID: 640966009 Client ID: DMNN001
Matrix: AQ
Collect Date: 11-OCT-23
Receive Date: 12-OCT-23
Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
GFPC Ra228, Liquid "As Received"														
Radium-228		1.27	+/-0.823	1.20	+/-0.886	3.00	pCi/L			JE1	10/18/23	1121	2508275	1
Radium-226+Radium-228 Calculation "See Parent Products"														
Radium-226+228 Sum	J	1.55	+/-0.867		+/-0.929		pCi/L			NXL1	10/24/23	1118	2511598	2
Rad Radium-226														
Lucas Cell, Ra226, Liquid "As Received"														
Radium-226	U	0.276	+/-0.275	0.358	+/-0.280	1.00	pCi/L			MJ2	10/24/23	0858	2508276	3

The following Analytical Methods were performed

Method	Description
1	EPA 904.0
2	Calculation
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2508275	85.8	(30%-110%)

Notes:

The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

Quality Control Data

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Client : **Dominion Energy Services, Inc.**
120 Tredegar Street
Richmond, Virginia **23219**
Contact: **Kelly Hicks**

Workorder: **640966**

Report Date: October 24, 2023

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gas Flow									
Batch 2508275									
QC1205545830 MB									
Radium-228			U	0.536	pCi/L			JE1	10/18/2311:20
Uncert:				+/-0.729					
TPU:				+/-0.741					
QC1205545831 640966004 DUP									
Radium-228		U 1.79	U	1.54	pCi/L				10/18/2311:20
Uncert:		+/-1.20		+/-1.09		RPD: 0	N/A		
TPU:		+/-1.29		+/-1.16		RER: 0.292	(0-2)		
QC1205545832 LCS									
Radium-228	76.4			63.9	pCi/L	REC: 83.6	(80%-120%)		10/18/2311:20
Uncert:				+/-3.72					
TPU:				+/-16.7					
Rad Ra-226									
Batch 2508276									
QC1205545833 MB									
Radium-226			U	0.334	pCi/L			MJ2	10/24/2308:58
Uncert:				+/-0.354					
TPU:				+/-0.360					
QC1205545834 640966004 DUP									
Radium-226		1.53		1.93	pCi/L				
Uncert:		+/-0.686		+/-0.728		RPD: 23	(0% - 100%)		
TPU:		+/-0.723		+/-0.814		RER: 0.71	(0-2)		
QC1205545835 640966004 MS									
Radium-226	266	1.53		280	pCi/L	REC: 105	(75%-125%)		
Uncert:		+/-0.686		+/-26.9					
TPU:		+/-0.723		+/-71.6					
QC1205545836 LCS									
Radium-226	27.2			27.9	pCi/L	REC: 103	(80%-120%)		10/24/2309:32
Uncert:				+/-2.73					
TPU:				+/-5.21					

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- N Metals--The Matrix spike sample recovery is not within specified control limits
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported
- UI Gamma Spectroscopy--Uncertain identification

QC Summary

Workorder: **640966**

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date	Time

BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
d	5-day BOD--The 2:1 depletion requirement was not met for this sample
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
E	%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
R	Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
**	Analyte is a Tracer compound
B	The target analyte was detected in the associated blank.
e	5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
M	REMP Result > MDC/CL and < RDL
J	See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
** Indicates analyte is a surrogate compound.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptence criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

GEL Laboratories LLC
a member of The GEL Group INC

November 10, 2023

Kelly Hicks
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, Virginia 23219

Re: CCR Groundwater Monitoring - Level 3 Package
Work Order: 643805

Dear Kelly Hicks:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 12, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1648.

Sincerely,

M Boddiford

Meredith Boddiford
Project Manager

Purchase Order: 50149867
Chain of Custody: 2023101101
Enclosures

Table of Contents

Case Narrative.....1

Chain of Custody and Supporting Documentation.4

Laboratory Certifications.....7

Metals Analysis.....9

Case Narrative.....10

Sample Data Summary.....14

Quality Control Summary.....24

Case Narrative

Receipt Narrative
for
Dominion Energy (50149867)
SDG: 643805

November 10, 2023

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on October 12, 2023 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

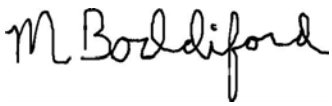
Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
643805001	MW-AP-01A-2023Q4
643805002	MW-AP-01-2023Q4
643805003	MW-AP-02-2023Q4
643805004	MW-AP-03-2023Q4
643805005	MW-AP-04-2023Q4
643805006	MW-AP-05-2023Q4
643805007	MW-AP-08-2023Q4
643805008	DU-WAT-CCR-AP-23401
643805009	FBLK-WAT-CCR-AP-23401

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals.



Meredith Boddiford
Project Manager

Chain of Custody and Supporting Documentation

Page 1 of 1
Project # 416559.0005.0000.5.2
GEL Quote #:
COC Number [1]: 2023101101
PO Number: PO 50149867

GEL Laboratories LLC
gel.com
Chemistry | Radiochemistry | Radiobioassay | Specialty Analytics

Chain of Custody and Analytical Request

C0409066

GEL Work Order Number: 232263 **GEL Project Manager: Meredith Boddiford**

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: Dominion Energy Phone # 803-258-1528
Project/Site Name: Wateree Station Ash Pond CCR 2023Q4 Fax #
Address: Wateree, South Carolina
Collected By: D. Szynal / S. Thorsland Send Results To: AReed@envstd.com

Sample Analysis Requested [5] (Fill in the number of containers for each test)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive (If yes, please supply isotopic info.)	Should this sample be considered: (7) Known or possible Hazards	Total number of containers	Cl, Fl, SO4 - EPA 300.0	TDS - SM2540C	Total Metals (see list in comments) NI	Ra-226/228 903.1/904.0 NI	<-- Preservative Type (6)	Comments
MW-AP-01A-2023Q4	10/11/23	1700	N	N	GW	N		4	X	X	X	X		EPA 200.8 - Sb, As, Ba, Be
MW-AP-01-2023Q4	10/11/23	0905	N	N	GW	N		4	X	X	X	X		B, Cd, Ca, Cr, Co, Pb, Li,
MW-AP-02-2023Q4	10/11/23	1025	N	N	GW	N		4	X	X	X	X		Mo, Se, Tl
MW-AP-03-2023Q4	10/11/23	1205	N	N	GW	N		8	X	X	X	X		EPA 245.1 - Hg
MW-AP-04-2023Q4	10/11/23	1340	N	N	GW	N		4	X	X	X	X		
MW-AP-05-2023Q4	10/11/23	1440	N	N	GW	N		4	X	X	X	X		
MW-AP-08-2023Q4	10/11/23	1550	N	N	GW	N		4	X	X	X	X		See attached work
DU-WAT-CCR-AP-23401	10/11/23	—	FD	N	GW	N		4	X	X	X	X		order for details
FBLK-WAT-CCR-AP-23401	10/11/23	1445	FB	N	AQ	N		4	X	X	X	X		

SDG: 643805

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1		10/11/23	1800		10/11/23	1800
2		10/12/23	0943		10/12/23	0943
3						

TAT Requested: Normal: X Rush: ____ Specify: ____

Fax Results: [ ] Yes [X] No

Select Deliverable: [ ] C of A [ ] QC Summary [ ] level 1 [ ] Level 2 [ ] Level 3 [X] Level 4

Additional Remarks:

12 AT 10/16/23

For Lab Receiving Use Only: *Custody Seal Intact?* [ ] Yes [ ] No **Cooler Temp:** 2 °C

> For sample shipping and delivery details, see Sample Receipt & Review form (SRR.)

Sample Collection Time Zone : [X] Eastern [ ] Pacific [ ] Central [ ] Mountain [ ] Other:

1.) Chain of Custody Number = Client Determined

2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite

3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.

4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B**, **6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).

6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

7.) **KNOWN OR POSSIBLE HAZARDS**

RCRA Metals
As = Arsenic **Hg**= Mercury
Ba = Barium **Se**= Selenium
Cd = Cadmium **Ag**= Silver
Cr = Chromium **MR**= Misc. RCRA metals
Pb = Lead

Characteristic Hazards
FL = Flammable/Ignitable
CO = Corrosive
RE = Reactive

TSCA Regulated
PCB = Polychlorinated biphenyls

Listed Waste
LW= Listed Waste
(F,K,P and U-listed wastes.)
Waste code(s):

Other
OT= Other / Unknown
(i.e.: High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.)
Description:

Please provide any additional details below regarding handling and/or disposal concerns. *(i.e.: Origin of sample(s), type of site collected from, odd matrices, etc.)*

640998
640960
640966
640949

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: DMNN	SDG/AR/COC/Work Order:
Received By: EG	Date Received: 10/12/23 943
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services (Courier) Other

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		√	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		√	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		√	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		√	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		√	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	√			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	√			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	√			Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 4
4	Daily check performed and passed on IR temperature gun?	√			Temperature Device Serial #: IR6-23 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	√			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?			√	Sample ID's and Containers Affected: MW-4F-12-20230Q4 pH>2 If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			√	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	√			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	√			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	√			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	√			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	√			
13	COC form is properly signed in relinquished/received sections?	√			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials AT Date 10/13/23 Page 1 of 1

GL-CHL-SR-001 Rev 7

Laboratory Certifications

List of current GEL Certifications as of 10 November 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-04
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-23-21
Utah NELAP	SC000122023-38
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
Dominion Energy
SDG #: 643805

Product: Determination of Metals by ICP-MS
Analytical Method: EPA 200.8 SC_NPDES
Analytical Procedure: GL-MA-E-014 REV# 36
Analytical Batch: 2518956

Preparation Method: EPA 200.2
Preparation Procedure: GL-MA-E-016 REV# 18
Preparation Batch: 2518955

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
643805001	MW-AP-01A-2023Q4
643805002	MW-AP-01-2023Q4
643805003	MW-AP-02-2023Q4
643805004	MW-AP-03-2023Q4
643805005	MW-AP-04-2023Q4
643805006	MW-AP-05-2023Q4
643805007	MW-AP-08-2023Q4
643805008	DU-WAT-CCR-AP-23401
643805009	FBLK-WAT-CCR-AP-23401
1205564459	Method Blank (MB)**ICP-MS**
1205564460	Laboratory Control Sample (LCS)
1205564463	643805004(MW-AP-03-2023Q4L) Serial Dilution (SD)
1205564461	643805004(MW-AP-03-2023Q4D) Sample Duplicate (DUP)
1205564462	643805004(MW-AP-03-2023Q4S) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

ICSA/ICSAB Statement
For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Technical Information

Sample Dilutions
Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target

analyte concentrations into the linear calibration range. Samples 643805002 (MW-AP-01-2023Q4), 643805003 (MW-AP-02-2023Q4), 643805004 (MW-AP-03-2023Q4), 643805005 (MW-AP-04-2023Q4), 643805006 (MW-AP-05-2023Q4), 643805007 (MW-AP-08-2023Q4) and 643805008 (DU-WAT-CCR-AP-23401) were diluted to ensure that the analyte concentrations were within the linear calibration range of the instrument.

Analyte	643805						
	002	**003**	**004**	**005**	**006**	**007**	**008**
Boron	20X	10X	10X	20X	5X	5X	10X
Calcium	20X	10X	10X	20X	1X	1X	10X

Miscellaneous Information

Additional Comments
All method-driven specifications are followed for these analyses except where client-specific SOW requirements are required to be met.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

DMNN001 Dominion Energy (50149867)

Client SDG: 643805 GEL Work Order: 643805

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
B Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
J Value is estimated
N/A RPD or %Recovery limits do not apply.
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Edmund Frampton**

Date: 10 NOV 2023 **Title: Group Leader**

Sample Data Summary

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 643805 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 643805001 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-01A-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	10.1	ug/L	J	4.00	15.0	15.0	1	MS	PRB	11/10/23 12:29	231110-1	2518956
7440-70-2	Calcium	580	ug/L		30.0	100	100	1	MS	PRB	11/10/23 12:29	231110-1	2518956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2518956	2518955	EPA 200.2	50	mL	50	mL	11/04/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 643805 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 643805002 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-01-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	2220	ug/L		80.0	300	300	20	MS	PRB	11/10/23 12:31	231110-1	2518956
7440-70-2	Calcium	74000	ug/L		600	2000	2000	20	MS	PRB	11/10/23 12:31	231110-1	2518956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2518956	2518955	EPA 200.2	50	mL	50	mL	11/04/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 643805 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 643805003 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-02-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	668	ug/L		40.0	150	150	10	MS	PRB	11/10/23 12:33	231110-1	2518956
7440-70-2	Calcium	55000	ug/L		300	1000	1000	10	MS	PRB	11/10/23 12:33	231110-1	2518956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2518956	2518955	EPA 200.2	50	mL	50	mL	11/04/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 643805 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 643805004 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-03-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	1310	ug/L		40.0	150	150	10	MS	PRB	11/10/23 12:35	231110-1	2518956
7440-70-2	Calcium	63600	ug/L		300	1000	1000	10	MS	PRB	11/10/23 12:35	231110-1	2518956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2518956	2518955	EPA 200.2	50	mL	50	mL	11/04/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 643805 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 643805005 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-04-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	2040	ug/L		80.0	300	300	20	MS	PRB	11/10/23 12:50	231110-1	2518956
7440-70-2	Calcium	149000	ug/L		600	2000	2000	20	MS	PRB	11/10/23 12:50	231110-1	2518956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2518956	2518955	EPA 200.2	50	mL	50	mL	11/04/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 643805 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 643805006 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-05-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	180	ug/L		20.0	75.0	75.0	5	MS	PRB	11/10/23 12:54	231110-1	2518956
7440-70-2	Calcium	16400	ug/L		30.0	100	100	1	MS	PRB	11/10/23 12:52	231110-1	2518956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2518956	2518955	EPA 200.2	50	mL	50	mL	11/04/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 643805 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 643805007 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: MW-AP-08-2023Q4 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	294	ug/L		20.0	75.0	75.0	5	MS	PRB	11/10/23 12:58	231110-1	2518956
7440-70-2	Calcium	23100	ug/L		30.0	100	100	1	MS	PRB	11/10/23 12:56	231110-1	2518956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2518956	2518955	EPA 200.2	50	mL	50	mL	11/04/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 643805 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 643805008 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: DU-WAT-CCR-AP-23401 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: GW **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	989	ug/L		40.0	150	150	10	MS	PRB	11/10/23 13:00	231110-1	2518956
7440-70-2	Calcium	78600	ug/L		300	1000	1000	10	MS	PRB	11/10/23 13:00	231110-1	2518956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2518956	2518955	EPA 200.2	50	mL	50	mL	11/04/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 643805 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 643805009 **LEVEL:** Low **DATE COLLECTED:** 11-OCT-23

CLIENT ID: FBLK-WAT-CCR-AP-2340 **%SOLIDS:** 0 **DATE RECEIVED:** 12-OCT-23

MATRIX: AQ **BASIS:** As Received

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-42-8	Boron	4.00	ug/L	U	4.00	15.0	15.0	1	MS	PRB	11/10/23 13:02	231110-1	2518956
7440-70-2	Calcium	30.0	ug/L	U	30.0	100	100	1	MS	PRB	11/10/23 13:02	231110-1	2518956

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2518956	2518955	EPA 200.2	50	mL	50	mL	11/04/23	JD2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

Quality Control Summary

METALS
-2a-
Initial and Continuing Calibration Verification

SDG No: 643805

Contract: DMNN00102 **Lab Code:** GEL

Instrument ID: ICPMS15

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Acceptance Window (%R)*	*M**	*Analysis Date/Time*	*Run Number*
ICV01										
	Boron	98.8	ug/L	100	ug/L	98.8	90.0 - 110.0	MS	10-NOV-23 12:04	231110-1
	Calcium	5010	ug/L	5000	ug/L	100.2	90.0 - 110.0	MS	10-NOV-23 12:04	231110-1
CCV01										
	Boron	96.3	ug/L	100	ug/L	96.3	90.0 - 110.0	MS	10-NOV-23 12:15	231110-1
	Calcium	5000	ug/L	5000	ug/L	99.9	90.0 - 110.0	MS	10-NOV-23 12:15	231110-1
CCV02										
	Boron	94.6	ug/L	100	ug/L	94.6	90.0 - 110.0	MS	10-NOV-23 12:21	231110-1
	Calcium	5000	ug/L	5000	ug/L	99.9	90.0 - 110.0	MS	10-NOV-23 12:21	231110-1
CCV03										
	Boron	97.3	ug/L	100	ug/L	97.3	90.0 - 110.0	MS	10-NOV-23 12:46	231110-1
	Calcium	5010	ug/L	5000	ug/L	100.1	90.0 - 110.0	MS	10-NOV-23 12:46	231110-1
CCV04										
	Boron	95.7	ug/L	100	ug/L	95.7	90.0 - 110.0	MS	10-NOV-23 13:10	231110-1
	Calcium	4960	ug/L	5000	ug/L	99.3	90.0 - 110.0	MS	10-NOV-23 13:10	231110-1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

EPA

METALS
-2b-
CRDL Standard for ICP & ICPMS

SDG No: 643805

Contract: DMNN00102 **Lab Code:** GEL

Instrument ID: ICPMS15

Sample ID	*Analyte*	*Result*	*Units*	*True Value*	*Units*	*% Recovery*	*Advisory Limits (%R)*	*M**	*Analysis Date/Time*	*Run Number*
CRDL01										
	Boron	13.5	ug/L	15	ug/L	90.2	70.0 - 130.0	MS	10-NOV-23 12:08	231110-1
	Calcium	228	ug/L	200	ug/L	113.9	70.0 - 130.0	MS	10-NOV-23 12:08	231110-1
CRDL02										
	Boron	13.4	ug/L	15	ug/L	89.6	70.0 - 130.0	MS	10-NOV-23 13:04	231110-1
	Calcium	214	ug/L	200	ug/L	107	70.0 - 130.0	MS	10-NOV-23 13:04	231110-1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

Metals
-3a-
Initial and Continuing Calibration Blank Summary

SDG No.: 643805

Contract: DMNN00102

Lab Code: GEL

Sample ID	Analyte	Result ug/L	Acceptance	Conc Qual	MDL	RDL	Matrix	M*	Analysis Date/Time	Run
ICB01										
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	10-NOV-23 12:06	231110-1
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	10-NOV-23 12:06	231110-1
CCB01										
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	10-NOV-23 12:17	231110-1
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	10-NOV-23 12:17	231110-1
CCB02										
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	10-NOV-23 12:23	231110-1
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	10-NOV-23 12:23	231110-1
CCB03										
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	10-NOV-23 12:48	231110-1
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	10-NOV-23 12:48	231110-1
CCB04										
	Boron	4.0	+/-7.5	U	4.0	15.0	LIQ	MS	10-NOV-23 13:12	231110-1
	Calcium	30.0	+/-50	U	30.0	100	LIQ	MS	10-NOV-23 13:12	231110-1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-3b-
PREPARATION BLANK SUMMARY

SDG NO. 643805
Contract: DMNN00102
Matrix: GW

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1205564459								
	Calcium	30.0	ug/L	+/-50	U	MS	30.0	100
	Boron	4.00	ug/L	+/-7.5	U	MS	4.00	15.0

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-4-
Interference Check Sample

SDG No: 643805

Contract: DMNN00102 **Lab Code:** GEL

Instrument: ICPMS15

Sample ID	Analyte	Result	Units	True Value	Units	% Recovery	Acceptance Window (%R)	Analysis Date/Time	Run Number
ICSA01									
	Calcium	94700	ug/L	100000	ug/L	94.7	80.0 - 120.0	10-NOV-23 12:10	231110-1
	Boron	1.89	ug/L					10-NOV-23 12:10	231110-1
ICSAB01									
	Calcium	93700	ug/L	100000	ug/L	93.7	80.0 - 120.0	10-NOV-23 12:13	231110-1
	Boron	19.2	ug/L	20	ug/L	95.9	80.0 - 120.0	10-NOV-23 12:13	231110-1
ICSA02									
	Calcium	95400	ug/L	100000	ug/L	95.4	80.0 - 120.0	10-NOV-23 13:06	231110-1
	Boron	1.71	ug/L					10-NOV-23 13:06	231110-1
ICSAB02									
	Calcium	95400	ug/L	100000	ug/L	95.4	80.0 - 120.0	10-NOV-23 13:08	231110-1
	Boron	19.4	ug/L	20	ug/L	96.7	80.0 - 120.0	10-NOV-23 13:08	231110-1

METALS
-5a-

Matrix Spike Summary

SDG NO. 643805 **Client ID:** MW-AP-03-2023Q4S

Contract: DMNN00102 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 643805004 **Spike ID:** 1205564462

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Boron	ug/L		1390		1310		100	79.6	N/A	MS
Calcium	ug/L		64400		63600		2000	40.3	N/A	MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

Metals
-6-
Duplicate Sample Summary

SDG No.: 643805 **Lab Code:** GEL

Contract: DMNN00102 **Client ID:** MW-AP-03-2023Q4D

Matrix: GROUND WATER **Level:** Low

Sample ID: 643805004 **Duplicate ID:** 1205564461 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Boron	ug/L	+/-20%	1310		1360		3.79		MS
Calcium	ug/L	+/-20%	63600		66100		3.84		MS

***Analytical Methods:**
MS EPA 200.8 SC_NPDES

METALS
-7-
Laboratory Control Sample Summary

SDG NO. 643805

Contract: DMNN00102

Aqueous LCS Source: Enviromental Express **Solid LCS Source:**

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1205564460								
	Boron	ug/L	100	100		100	85-115	MS
	Calcium	ug/L	2000	2130		107	85-115	MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-9-
Serial Dilution Sample Summary

SDG NO. 643805 **Client ID:** MW-AP-03-2023Q4L

Contract: DMNN00102

Matrix: LIQUID **Level:** Low

Sample ID: 643805004 **Serial Dilution ID:** 1205564463

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Boron	131		129		1.593			MS
Calcium	6360		6420		1.054		10	MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
-13-
SAMPLE PREPARATION SUMMARY

SDG No: 643805 **Method Type:** MS

Contract: DMNN00102 **Lab Code:** GEL

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size	Final Sample Volume	Percent Solids
Batch Number	2518955						
1205564459	MB for batch 2518955	MB	G	04-NOV-23	50mL	50mL	
1205564460	LCS for batch 2518955	LCS	G	04-NOV-23	50mL	50mL	
1205564462	MW-AP-03-2023Q4S	MS	G	04-NOV-23	50mL	50mL	
1205564461	MW-AP-03-2023Q4D	DUP	G	04-NOV-23	50mL	50mL	
643805001	MW-AP-01A-2023Q4	SAMPLE	G	04-NOV-23	50mL	50mL	
643805002	MW-AP-01-2023Q4	SAMPLE	G	04-NOV-23	50mL	50mL	
643805003	MW-AP-02-2023Q4	SAMPLE	G	04-NOV-23	50mL	50mL	
643805004	MW-AP-03-2023Q4	SAMPLE	G	04-NOV-23	50mL	50mL	
643805005	MW-AP-04-2023Q4	SAMPLE	G	04-NOV-23	50mL	50mL	
643805006	MW-AP-05-2023Q4	SAMPLE	G	04-NOV-23	50mL	50mL	
643805007	MW-AP-08-2023Q4	SAMPLE	G	04-NOV-23	50mL	50mL	
643805008	DU-WAT-CCR-AP-23401	SAMPLE	G	04-NOV-23	50mL	50mL	
643805009	FBLK-WAT-CCR-AP-23401	SAMPLE	G	04-NOV-23	50mL	50mL	

EPA

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

Wateree Power Station Groundwater Sampling
Samples Collected between: 10/10/2023 and 10/11/2023

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

640966

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
MW-AP-01A-2023Q4	MW-AP-01A	N	CALC	Radium-226+228 Sum	N	6.39	J	S			1.90	pCi/L
MW-AP-01A-2023Q4	MW-AP-01A	N	EPA 200.8	Beryllium	T	0.259	J	RL	0.200	0.500		ug/L
MW-AP-01A-2023Q4	MW-AP-01A	N	EPA 200.8	Cobalt	T	0.838	J	RL	0.100	1.00		ug/L
MW-AP-01A-2023Q4	MW-AP-01A	N	EPA 200.8	Lead	T	1.34	J	RL	0.500	2.00		ug/L
MW-AP-01A-2023Q4	MW-AP-01A	N	EPA 200.8	Molybdenum	T		U	BL	0.178	1.00		ug/L
MW-AP-01A-2023Q4	MW-AP-01A	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-01A-2023Q4	MW-AP-01A	N	EPA 300.0	Sulfate	N	0.222	J	RL	0.133	0.400		mg/L
MW-AP-01-2023Q4	MW-AP-01	N	CALC	Radium-226+228 Sum	N	1.07	J	S			0.946	pCi/L
MW-AP-01-2023Q4	MW-AP-01	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-02-2023Q4	MW-AP-02	N	CALC	Radium-226+228 Sum	N	3.79	J	FD,S			1.37	pCi/L
MW-AP-02-2023Q4	MW-AP-02	N	EPA 200.8	Cobalt	T	0.115	J	RL	0.100	1.00		ug/L
MW-AP-02-2023Q4	MW-AP-02	N	EPA 200.8	Lithium	T	5.06	J	RL	2.00	10.0		ug/L
MW-AP-02-2023Q4	MW-AP-02	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-02-2023Q4	MW-AP-02	N	EPA 903.1	Radium-226	N	2.78	J	FD	0.591	1.00	1.00	pCi/L
MW-AP-03-2023Q4	MW-AP-03	N	CALC	Radium-226+228 Sum	N	3.33	J	S			1.47	pCi/L
MW-AP-03-2023Q4	MW-AP-03	N	EPA 200.8	Cobalt	T	0.182	J	RL	0.100	1.00		ug/L
MW-AP-03-2023Q4	MW-AP-03	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-04-2023Q4	MW-AP-04	N	CALC	Radium-226+228 Sum	N	3.28	J	S			1.19	pCi/L
MW-AP-04-2023Q4	MW-AP-04	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-05-2023Q4	MW-AP-05	N	CALC	Radium-226+228 Sum	N	3.38	J	S			1.54	pCi/L
MW-AP-05-2023Q4	MW-AP-05	N	EPA 200.8	Cobalt	T	0.493	J	RL	0.100	1.00		ug/L
MW-AP-05-2023Q4	MW-AP-05	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-05-2023Q4	MW-AP-05	N	EPA 300.0	Fluoride	N	0.0612	J	RL	0.0330	0.100		mg/L
MW-AP-08-2023Q4	MW-08	N	CALC	Radium-226+228 Sum	N	3.45	J	BF			1.23	pCi/L
MW-AP-08-2023Q4	MW-08	N	EPA 200.8	Arsenic	T	2.54	J	RL	1.66	5.00		ug/L
MW-AP-08-2023Q4	MW-08	N	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
MW-AP-08-2023Q4	MW-08	N	EPA 904.0	Radium-228	N	1.55	U	BF	1.55	3.00	0.925	pCi/L
DU-WAT-CCR-AP-23401	MW-AP-02	FD	CALC	Radium-226+228 Sum	N	0.885	UJ	FD			0.846	pCi/L
DU-WAT-CCR-AP-23401	MW-AP-02	FD	EPA 200.8	Cobalt	T	0.138	J	RL	0.100	1.00		ug/L
DU-WAT-CCR-AP-23401	MW-AP-02	FD	EPA 200.8	Lithium	T	5.23	J	RL	2.00	10.0		ug/L

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
DU-WAT-CCR-AP-23401	MW-AP-02	FD	EPA 245.1	Mercury	T		UJ	M	0.0670	0.200		ug/L
DU-WAT-CCR-AP-23401	MW-AP-02	FD	EPA 903.1	Radium-226	N	0.0424	UJ	FD	0.894	1.00	0.399	pCi/L
FBLK-WAT-CCR-AP-23401	Field Blank	FB	CALC	Radium-226+228 Sum	N	1.55	J	S			0.929	pCi/L

Data Qualifiers	
U	The analyte was not detected above the level of the sample reporting limit.
J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise.
R	Unreliable positive result; analyte may or may not be present in sample.
Reason Codes and Explanations	
BE	Equipment blank contamination.
BF	Field blank contamination.
BL	Laboratory blank contamination.
BN	Negative laboratory blank contamination.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits
MP	MS/MSD imprecision.
Q	Chemical Preservation issue.
RL	Reported Results between the MDL and QL.
S	Radium-226+228 flagged due to reporting protocol for combined results
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Facility: Wateree Generating Station
SDG: 640966

Lab Sample ID	640966001
Sys Sample Code	MW-AP-01A-2023Q4
Sample Name	MW-AP-01A-2023Q4
Sample Date	10/11/2023 5:00:00 PM
Location	WAT-MW-01A / MW-AP-01A
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	6.39	J	S	1.90				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			1.66	1.66	5.00	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	64.8				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L	0.259	J	RL		0.200	0.200	0.500	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	0.838	J	RL		0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L	1.34	J	RL		0.500	0.500	2.00	Y	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U	BL		0.178	0.178	1.00	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	6.49				0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U			0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	0.222	J	RL		0.133	0.133	0.400	Y	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	5.32			1.58	0.583	0.583	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	1.07	U		1.05	1.65	1.65	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U			2.38	2.38	10.0	N	Yes	1	NA

Facility: Wateree Generating Station
SDG: 640966

Lab Sample ID	640966002
Sys Sample Code	MW-AP-01-2023Q4
Sample Name	MW-AP-01-2023Q4
Sample Date	10/11/2023 9:05:00 AM
Location	WAT-MW-AP-01 / MW-AP-01
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	1.07	J	S	0.946				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			1.66	1.66	5.00	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	248				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L		U			0.100	0.100	1.00	N	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L	3.09				0.167	0.167	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	198				2.68	2.68	8.00	Y	Yes	40	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.383				0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	11.0				0.133	0.133	0.400	Y	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	1.07			0.540	0.489	0.489	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	-0.146	U		0.776	1.52	1.52	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	458				2.38	2.38	10.0	Y	Yes	1	NA

Facility: Wateree Generating Station
SDG: 640966

Lab Sample ID	640966003
Sys Sample Code	MW-AP-02-2023Q4
Sample Name	MW-AP-02-2023Q4
Sample Date	10/11/2023 10:25:00 AM
Location	WAT-MW-AP-02 / MW-AP-02
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	3.79	J	FD,S	1.37				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L	46.6				1.66	1.66	5.00	Y	Yes	1	NA
	Barium	7440-39-3	T	ug/L	200				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	0.115	J	RL		0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	5.06	J	RL		2.00	2.00	10.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L	5.73				0.167	0.167	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	48.7				0.670	0.670	2.00	Y	Yes	10	NA
	Sulfate	14808-79-8	N	mg/L	17.3				1.33	1.33	4.00	Y	Yes	10	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.217				0.0330	0.0330	0.100	Y	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	2.78	J	FD	1.00	0.591	0.591	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	1.02	U		0.941	1.47	1.47	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	298				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	640966004
Sys Sample Code	MW-AP-03-2023Q4
Sample Name	MW-AP-03-2023Q4
Sample Date	10/11/2023 12:05:00 PM
Location	WAT-MW-AP-03 / MW-AP-03
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	3.33	J	S	1.47				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L	638				1.66	1.66	5.00	Y	Yes	1	NA
	Barium	7440-39-3	T	ug/L	198				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	0.182	J	RL		0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	36.4				2.00	2.00	10.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L	12.9				0.167	0.167	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	114				1.34	1.34	4.00	Y	Yes	20	NA
	Sulfate	14808-79-8	N	mg/L	55.4				1.33	1.33	4.00	Y	Yes	10	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.524				0.0330	0.0330	0.100	Y	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	1.53			0.723	0.707	0.707	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	1.79	U		1.29	1.89	1.89	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	403				2.38	2.38	10.0	Y	Yes	1	NA

Facility: Wateree Generating Station
SDG: 640966

Lab Sample ID	640966005
Sys Sample Code	MW-AP-04-2023Q4
Sample Name	MW-AP-04-2023Q4
Sample Date	10/11/2023 1:40:00 PM
Location	WAT-MW-AP-04 / MW-AP-04
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	3.28	J	S	1.19				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L	30.9				1.66	1.66	5.00	Y	Yes	1	NA
	Barium	7440-39-3	T	ug/L	205				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L		U			0.100	0.100	1.00	N	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L	4.62				0.167	0.167	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	21.2				0.670	0.670	2.00	Y	Yes	10	NA
	Fluoride	16984-48-8	N	mg/L	1.01				0.330	0.330	1.00	Y	Yes	10	NA
	Sulfate	14808-79-8	N	mg/L	63.1				1.33	1.33	4.00	Y	Yes	10	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	2.77			0.991	0.373	0.373	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	0.508	U		0.654	1.09	1.09	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	532				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	640966006
Sys Sample Code	MW-AP-05-2023Q4
Sample Name	MW-AP-05-2023Q4
Sample Date	10/11/2023 2:40:00 PM
Location	WAT-MW-AP-05 / MW-AP-05
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	3.38	J	S	1.54				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			1.66	1.66	5.00	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L	173				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	0.493	J	RL		0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			0.167	0.167	1.00	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	14.9				0.670	0.670	2.00	Y	Yes	10	NA
	Sulfate	14808-79-8	N	mg/L	33.4				1.33	1.33	4.00	Y	Yes	10	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.0612	J	RL		0.0330	0.0330	0.100	Y	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	1.96			0.867	0.622	0.622	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	1.42	U		1.27	1.99	1.99	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	234				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	640966007
Sys Sample Code	MW-AP-08-2023Q4
Sample Name	MW-AP-08-2023Q4
Sample Date	10/11/2023 3:50:00 PM
Location	WAT-MW-08 / MW-08
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	3.45	J	BF	1.23				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L	2.54	J	RL		1.66	1.66	5.00	Y	Yes	1	NA
	Barium	7440-39-3	T	ug/L	151				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L	7.12				0.200	0.200	0.500	Y	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	19.3				0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	16.5				2.00	2.00	10.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			0.167	0.167	1.00	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L	9.19				1.50	1.50	5.00	Y	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	16.4				0.670	0.670	2.00	Y	Yes	10	NA
	Fluoride	16984-48-8	N	mg/L	1.25				0.330	0.330	1.00	Y	Yes	10	NA
	Sulfate	14808-79-8	N	mg/L	110				1.33	1.33	4.00	Y	Yes	10	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	1.90			0.814	0.405	0.405	1.00	Y	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	1.55	U	BF	0.925	1.55	1.55	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	369				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	640966008
Sys Sample Code	DU-WAT-CCR-AP-23401
Sample Name	DU-WAT-CCR-AP-23401
Sample Date	10/11/2023 12:00:00 PM
Location	WAT-MW-AP-02 / MW-AP-02
Sample Type	FD
Matrix	GW
Parent Sample	MW-AP-02-2023Q4

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	0.885	UJ	FD	0.846				N	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L	47.1				1.66	1.66	5.00	Y	Yes	1	NA
	Barium	7440-39-3	T	ug/L	207				0.500	0.500	2.00	Y	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L	0.138	J	RL		0.100	0.100	1.00	Y	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L	5.23	J	RL		2.00	2.00	10.0	Y	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L	5.78				0.167	0.167	1.00	Y	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		UJ	M		0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	49.0				0.670	0.670	2.00	Y	Yes	10	NA
	Sulfate	14808-79-8	N	mg/L	17.0				1.33	1.33	4.00	Y	Yes	10	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.130				0.0330	0.0330	0.100	Y	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	0.0424	UJ	FD	0.399	0.894	0.894	1.00	N	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	0.842	U		0.746	1.13	1.13	3.00	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	299				2.38	2.38	10.0	Y	Yes	1	NA

Facility: Wateree Generating Station
SDG: 640966

Lab Sample ID	640966009
Sys Sample Code	FBLK-WAT-CCR-AP-23401
Sample Name	FBLK-WAT-CCR-AP-23401
Sample Date	10/11/2023 2:45:00 PM
Location	WAT-FB / Field Blank
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
CALC	Radium-226+228 Sum	RA226/228	N	pCi/L	1.55	J	S	0.929				Y	Yes	1	NA
EPA 200.8	Antimony	7440-36-0	T	ug/L		U			0.600	0.600	2.00	N	Yes	1	NA
	Arsenic	7440-38-2	T	ug/L		U			1.66	1.66	5.00	N	Yes	1	NA
	Barium	7440-39-3	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Beryllium	7440-41-7	T	ug/L		U			0.200	0.200	0.500	N	Yes	1	NA
	Cadmium	7440-43-9	T	ug/L		U			0.0300	0.0300	0.100	N	Yes	1	NA
	Chromium	7440-47-3	T	ug/L		U			1.00	1.00	3.00	N	Yes	1	NA
	Cobalt	7440-48-4	T	ug/L		U			0.100	0.100	1.00	N	Yes	1	NA
	Lead	7439-92-1	T	ug/L		U			0.500	0.500	2.00	N	Yes	1	NA
	Lithium	7439-93-2	T	ug/L		U			2.00	2.00	10.0	N	Yes	1	NA
	Molybdenum	7439-98-7	T	ug/L		U			0.167	0.167	1.00	N	Yes	1	NA
	Selenium	7782-49-2	T	ug/L		U			1.50	1.50	5.00	N	Yes	1	NA
	Thallium	7440-28-0	T	ug/L		U			0.125	0.125	0.500	N	Yes	1	NA
EPA 245.1	Mercury	7439-97-6	T	ug/L		U			0.0670	0.0670	0.200	N	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L		U			0.0670	0.0670	0.200	N	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L		U			0.0330	0.0330	0.100	N	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L		U			0.133	0.133	0.400	N	Yes	1	NA
EPA 903.1	Radium-226	13982-63-3	N	pCi/L	0.276	U		0.280	0.358	0.358	1.00	N	Yes	1	NA
EPA 904.0	Radium-228	15262-20-1	N	pCi/L	1.27			0.886	1.20	1.20	3.00	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U			2.38	2.38	10.0	N	Yes	1	NA

ENVIRONMENTAL® STANDARDS
Montrose Environmental Group

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the samples collected as part of:

Wateree Power Station Groundwater Sampling
Samples Collected between: 10/10/2023 and 10/11/2023

This review was performed with guidance from the associated US EPA data validation guidelines and in accordance with the Quality Assurance Program Plan. These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the US EPA, SW-846, and Standard Methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the US EPA, SW-846, and Standard Methods utilized by the laboratory. This QA review was performed on the data associated with Job Number:

643805

The findings offered in this report are based on a review of holding times and preservation, method blank results, field blank results, filter blank results, equipment blank results, tubing blank results, matrix spike/matrix spike duplicate recoveries and precision, laboratory control sample/laboratory control sample duplicate recoveries and precision, laboratory and field duplicate precision, total and dissolved results comparisons, and/or positive results between the method detection limit and quantitation limit.

The following results were qualified based on the data verification effort:

Sample	Location	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
MW-AP-01A-2023Q4	MW-AP-01A	N	EPA 200.8	Boron	T	10.1	J	RL	4.00	15.0		ug/L
MW-AP-02-2023Q4	MW-AP-02	N	EPA 200.8	Boron	T	668	J	FD	40.0	150		ug/L
MW-AP-02-2023Q4	MW-AP-02	N	EPA 200.8	Calcium	T	55000	J	FD	300	1000		ug/L
DU-WAT-CCR-AP-23401	MW-AP-02	FD	EPA 200.8	Boron	T	989	J	FD	40.0	150		ug/L
DU-WAT-CCR-AP-23401	MW-AP-02	FD	EPA 200.8	Calcium	T	78600	J	FD	300	1000		ug/L

Data Qualifiers	
U	The analyte was not detected above the level of the sample reporting limit.
J	Quantitation is approximate due to limitations identified during data validation.
J+	The result is an estimated quantity; the result may be biased high.
J-	The result is an estimated quantity; the result may be biased low.
UJ	The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise.
R	Unreliable positive result; analyte may or may not be present in sample.
Reason Codes and Explanations	
BE	Equipment blank contamination.
BF	Field blank contamination.
BL	Laboratory blank contamination.
BN	Negative laboratory blank contamination.
FD	Field duplicate imprecision.
FG	Total versus Dissolved Imprecision.
H	Holding time exceeded.
L	LCS and LCSD recoveries outside of acceptance limits
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits
MP	MS/MSD imprecision.

Q	Chemical Preservation issue.
RL	Reported Results between the MDL and QL.
S	Radium-226+228 flagged due to reporting protocol for combined results
T	Temperature preservation issue.
X	Percent solids < 50%.
Y	Chemical yield outside of acceptance limits
ZZ	Other

Facility: Wateree Generating Station
SDG: 643805

Lab Sample ID	643805001
Sys Sample Code	MW-AP-01A-2023Q4
Sample Name	MW-AP-01A-2023Q4
Sample Date	10/11/2023 5:00:00 PM
Location	WAT-MW-01A / MW-AP-01A
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	10.1	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	580				30.0	30.0	100	Y	Yes	1	NA

Lab Sample ID	643805002
Sys Sample Code	MW-AP-01-2023Q4
Sample Name	MW-AP-01-2023Q4
Sample Date	10/11/2023 9:05:00 AM
Location	WAT-MW-AP-01 / MW-AP-01
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	2220				80.0	80.0	300	Y	Yes	20	NA
	Calcium	7440-70-2	T	ug/L	74000				600	600	2000	Y	Yes	20	NA

Lab Sample ID	643805003
Sys Sample Code	MW-AP-02-2023Q4
Sample Name	MW-AP-02-2023Q4
Sample Date	10/11/2023 10:25:00 AM
Location	WAT-MW-AP-02 / MW-AP-02
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	668	J	FD		40.0	40.0	150	Y	Yes	10	NA
	Calcium	7440-70-2	T	ug/L	55000	J	FD		300	300	1000	Y	Yes	10	NA

Lab Sample ID	643805004
Sys Sample Code	MW-AP-03-2023Q4
Sample Name	MW-AP-03-2023Q4
Sample Date	10/11/2023 12:05:00 PM
Location	WAT-MW-AP-03 / MW-AP-03
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	1310				40.0	40.0	150	Y	Yes	10	NA
	Calcium	7440-70-2	T	ug/L	63600				300	300	1000	Y	Yes	10	NA

Lab Sample ID	643805005
Sys Sample Code	MW-AP-04-2023Q4
Sample Name	MW-AP-04-2023Q4
Sample Date	10/11/2023 1:40:00 PM
Location	WAT-MW-AP-04 / MW-AP-04
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	2040				80.0	80.0	300	Y	Yes	20	NA
	Calcium	7440-70-2	T	ug/L	149000				600	600	2000	Y	Yes	20	NA

Facility: Wateree Generating Station
SDG: 643805

Lab Sample ID	643805006
Sys Sample Code	MW-AP-05-2023Q4
Sample Name	MW-AP-05-2023Q4
Sample Date	10/11/2023 2:40:00 PM
Location	WAT-MW-AP-05 / MW-AP-05
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	180				20.0	20.0	75.0	Y	Yes	5	NA
	Calcium	7440-70-2	T	ug/L	16400				30.0	30.0	100	Y	Yes	1	NA

Facility: Wateree Generating Station
SDG: 643805

Lab Sample ID	643805007
Sys Sample Code	MW-AP-08-2023Q4
Sample Name	MW-AP-08-2023Q4
Sample Date	10/11/2023 3:50:00 PM
Location	WAT-MW-08 / MW-08
Sample Type	N
Matrix	GW
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	294				20.0	20.0	75.0	Y	Yes	5	NA
	Calcium	7440-70-2	T	ug/L	23100				30.0	30.0	100	Y	Yes	1	NA

Lab Sample ID	643805008
Sys Sample Code	DU-WAT-CCR-AP-23401
Sample Name	DU-WAT-CCR-AP-23401
Sample Date	10/11/2023 12:00:00 PM
Location	WAT-MW-AP-02 / MW-AP-02
Sample Type	FD
Matrix	GW
Parent Sample	MW-AP-02-2023Q4

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L	989	J	FD		40.0	40.0	150	Y	Yes	10	NA
	Calcium	7440-70-2	T	ug/L	78600	J	FD		300	300	1000	Y	Yes	10	NA

Facility: Wateree Generating Station
SDG: 643805

Lab Sample ID	643805009
Sys Sample Code	FBLK-WAT-CCR-AP-23401
Sample Name	FBLK-WAT-CCR-AP-23401
Sample Date	10/11/2023 2:45:00 PM
Location	WAT-FB / Field Blank
Sample Type	FB
Matrix	AQ
Parent Sample	

Analytic Method	Chemical Name	CAS Rn	Fraction	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis
EPA 200.8	Boron	7440-42-8	T	ug/L		U			4.00	4.00	15.0	N	Yes	1	NA
	Calcium	7440-70-2	T	ug/L		U			30.0	30.0	100	N	Yes	1	NA

Appendix C
First Semiannual Assessment Monitoring Program Statistical Evaluation

DOMINION ENERGY SOUTH CAROLINA

WATEREE STATION ASH POND
SEMIANNUAL ASSESSMENT MONITORING

RICHLAND COUNTY, SOUTH CAROLINA

CCR GROUNDWATER ASSESSMENT MONITORING
STATISTICAL ANALYSIS REPORT

For the March 2023 Sampling Event

June 26, 2023

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Senior Environmental Engineer

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Table of Contents

Statistical Analysis Report 1

List of Tables

Table 1 March 2023 Semiannual Corrective Measure Monitoring Concentrations
Table 2 Data Sets for Confidence Interval Calculations
Table 3 Well/Constituent Pair Statistical Results

List of Figures

Figure 1 Groundwater Potentiometric Map

List of Appendices

Appendix A ProUCL Statistical Outputs
Appendix B Wateree Ash Pond Confidence Limit Graphs

Statistical Analysis Report

Groundwater Sampling

TRC Environmental Corporation (TRC) is providing this report of Groundwater Protection Standard (GWPS) exceedances for the Wateree Station Ash Pond for the tenth semiannual assessment monitoring event. Samples were collected on March 14 through 16, 2023. The final laboratory analytical data packages for the event were received on April 20th, 2023, and the data validation report was received on April 26th, 2023. **Table 1** presents the March 2023 data for Appendix IV constituents. This report addresses results from Assessment Monitoring wells MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08. Background wells for the Ash Pond include AP-MW-01A and MW-FGD-01. A potentiometric surface map, based on the September 2022 calculated water table elevation data, is shown as **Figure 1**.

Statistical Analysis

Statistically Significant Level (SSL) exceedances of the GWPS include the following, thus the Ash Pond remains in Corrective Measures monitoring:

- For arsenic (comparison to UCL): MW-AP-02, MW-AP-03, and MW-AP-04.
- For lithium (comparison to UCL): MW-AP-03.

The Wateree Station Ash Pond was found to exceed background concentrations for CCR Rule Appendix III constituents following the first semiannual Detection Monitoring event in September 2017. The Ash Pond was then found to exceed Groundwater Protection Standards (GWPS) for arsenic and lithium following the first Compliance Monitoring event in March 2018.

The Wateree Ash Pond is currently conducting corrective measures. Corrective measure groundwater monitoring will continue until groundwater is restored to concentrations less than the groundwater protection standards. Groundwater concentrations for Appendix IV constituents will be considered restored when the following is true for each well-constituent (w/c) pair monitored at the Ash Pond CCR unit:

- For w/c pairs that have not exceeded the GWPS at a statistically significant level, the lower confidence limit (LCL) of the mean for that w/c pair is less than the GWPS, or
- For w/c pairs that have exceeded the GWPS at a statistically significant level, the upper confidence limit (UCL) of the mean for that w/c pair is less than the GWPS.

TRC reviewed the post-baseline data set for constituents that have exceeded the GWPS at a statistically significant level. This review was conducted as follows:

- The data sets consisted of one result per CCR sampling event (semiannual sampling period) from August 2019 through March 2023 (*i.e.*, most recent 8 results). When verification resampling was conducted, the verification resampling result was used for the event. When duplicate samples were collected, the original (parent sample) concentration was used. **Table 2** presents the data used for the statistical comparisons to GWPS.

UCLs and LCLs were calculated for downgradient compliance monitoring wells using USEPA's ProUCL software (version 5.2) as follows:

- For each w/c pair, no further statistical calculations were made if none of the results exceeded the GWPS on a direct comparison basis. A statistically significance exceedance of the LCL is not possible for these constituents.
- Calculations of UCLs were made based on the distribution of detected concentrations within each w/c pair data set.
- For w/c pair data sets for which ProUCL recommended use of a UCL premised on a normal distribution, the LCL was calculated based on the symmetry of the distribution around the mean.
- For lognormally distributed data, the data were log-transformed and entered into ProUCL. The results were re-transformed to base-10 numbers for reporting and comparing to GWPS.

ProUCL was used to test each w/c pair that had a direct exceedance of a GWPS for a decreasing or increasing trend using the Theil-Sen Trend Test.

Table 3 presents the results of the statistical evaluations for the March 2023 groundwater samples. For w/c pairs that have previously exceeded the GWPS (arsenic in MW-AP-02, MW-AP-03, and MW-AP-04 and lithium in MW-AP-03), the updated UCL is compared to the GWPS. For other constituents with a direct comparison exceedance of a GWPS (*i.e.*, arsenic in MW-AP-04, beryllium, cobalt, and radium 226/228), the LCL for each w/c pair was compared to the GWPS. **Table 3** also includes the results of the trend tests. The statistical outputs from ProUCL are provided in **Appendix A**. Confidence limit graphs for arsenic (MW-AP-02, MW-AP-03, MW-AP-04, and MW-AP-08), and lithium (MW-AP-03) are provided in **Appendix B**.

Figure

MW-AP-01A
114.38

MW-FGD-06
114.72

MW-FGD-05
107.99

MW-FGD-04
107.13

AS-FGD-01
109.80

AS-FGD-03
104.44

MW-FGD-03
105.44

AS-FGD-02
104.38

MW-FGD-02
103.78

MW-AP-09
95.53

(MW-AP-09D)

MW-AP-13
95.14

MW-AP-08
95.26

MW-AP-05
90.28

MW-AP-04
91.61

MW-AP-12
90.98

(MW-AP-03D2)

(MW-AP-03D)

MW-AP-11
90.79

MW-AP-03
91.94

(MW-AP-11D)

(MW-AP-11D2)

MW-AP-10
91.12

MW-AP-02
90.94

MW-AP-01
92.36

LEGEND

- CCR Background Monitoring Well
- CCR Downgradient Monitoring Well
- CCR Corrective Action Monitoring Well
- New Monitoring Well Installation Location
- Event Piezometer
- Property Boundary
- FGD Pond
- Backfilled Clean Closed Ash Pond Area Boundary
- Water Table Elevation in feet above mean sea level (2' Contour Intervals) - Dashed where inferred.
- Approximate Groundwater Flow Direction
- **92.36** Water Elevation (FT MSL)

NOTE: Aerial Image from ESRI World Imagery dated September 2022.
Wells in parentheses not used for contouring.

N W E S

0 500 1,000 Feet

1 " = 500 '
1:6,000

PROJECT:
DESC WATEREE STATION
BACKFILLED CLEAN CLOSED ASH POND AREA
EASTOVER, SOUTH CAROLINA

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP - MARCH 10, 2023

DRAWN BY:	J. BRADLEY	PROJ. NO.:	416559.0005.0000
CHECKED BY:	J. YONTS		
APPROVED BY:	R. MAYER		**FIGURE 1**
DATE:	MAY 2023		

TRC
50 International Drive, Suite 150
Patewood Plaza Three
Greenville, SC 29615
Phone: 864.281.0030
www.TRCcompanies.com

FILE NO.: Figure1_CCR_AP_Waterlevel_2023Q1.mxd

Plot Date: 5/24/2023, 07:59:02 AM by JYONTS – LAYOUT: ANSI B(11"x17")
Path: T:\1-PROJECTS\Dominion\South Carolina\5 Wateree SC\Ash Pond\2023\Figure1 CCR AP Waterlevel 2023Q1.mxd
Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet (Foot US)
Map Rotation: 0

Tables

Table 1 March 2023 Semiannual Corrective Measure Monitoring Concentrations

WELL	CONSTITUENT/GWPS /RESULT (µg/L except as noted) [1]														
	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CHROMIUM	COBALT	FLUORIDE	LEAD	LITHIUM	MERCURY	MOLYBDENUM	RADIUM 226/228	SELENIUM	THALLIUM
	6	10	2000	4	5	100	6	4	15	40	2	100	5	50	2
MW-AP-01A	0.600 U	1.66 U	58.3	0.221 J	0.0300 U	1.00 U	0.620 J	0.0330 U	1.11 J	2.00 U	0.0670 UJ	0.167 U	9.14	1.50 U	0.247 J
MW-AP-01	0.600 U	1.66 U	214	0.200 U	0.0300 U	1.00 U	0.124 J	0.343	0.500 U	2.00 U	0.0670 UJ	2.17	2.53 J	1.50 U	0.125 U
MW-AP-02	0.600 U	43.6	205	0.200 U	0.0300 U	1.00 U	0.157 J	0.211	0.500 U	2.01 J	0.0670 UJ	3.92	1.99 J	1.50 U	0.125 U
MW-AP-03	0.600 U	964	195	0.200 U	0.0300 U	1.00 U	0.213 J	0.671	0.500 U	62.7	0.0670 UJ	19.5	8.28 J	1.50 U	0.125 U
MW-AP-04	0.600 U	25.3	163	0.200 U	0.0300 U	1.00 U	0.100 U	0.582	0.500 U	2.00 U	0.0670 UJ	3.82	2.59 J	1.50 U	0.125 U
MW-AP-05	0.600 U	1.66 U	146	0.200 U	0.0300 U	1.00 U	0.639 J	0.148	0.500 U	2.00 U	0.0670 UJ	0.167 U	2.57 J	1.50 U	0.125 U
MW-AP-08	0.600 U	2.42 J	154	3.81	0.0300 U	1.00 U	2.46	0.777	0.500 U	10.2	0.0670 UJ	0.167 U	7.52 J	6.39	0.125 U

Shaded results exceed groundwater protection standards (GWPS) by direct comparison.
[1] Fluoride concentrations expressed in milligrams per liter (mg/L); Radium concentrations expressed in pico-Curies per liter (pCi/L).
U The analyte was not detected above the level of the sample reporting limit.
J Estimated concentration.
UJ The analyte was not detected; the reporting limit is approximate and may be inaccurate or imprecise.

Table 2 Data Sets for Confidence Interval Calculations

WELL	CONSTITUENT [GWPS]	Aug-19	Mar-20	Sep-20	Mar-21	Sep-21	Mar-22	Sep-22	Mar-23
MW-AP-02	Arsenic [10]	55.8	76.1	77.2	68.1	45	103	69.9	43.6
MW-AP-03	Arsenic [10]	600	1,500	1,200	1,430	1,050	1,170	1,080	964
MW-AP-04	Arsenic [10]	22.9	9.14	10.4	13.6	13.6	10.3	33.5	25.3
MW-AP-08	Arsenic [10]	2.9	2.17	< 2.92	< 1.66	3.77	2.28	10.5	2.42 J
MW-AP-08	Beryllium [4]	2.218	1.35	1	2.35	1.6	4.31	8.72	3.81
MW-AP-08	Cobalt [6]	1.7	6.52	2.8	0.813 J	5.84	4.25	22.1	2.46
MW-AP-03	Lithium [40]	32.7	74.3	67.2	72.6	56.6	67.8	69.3	62.7
MW-AP-01	Radium 226/228 [5]	2.23	2.203	1.91	1.83	1.58	9.95 J	2.10 J	2.53
MW-AP-02	Radium 226/228 [5]	1.605	2.166	2.3	2.19	1.281	10.4 J	2.25 J	1.99 J
MW-AP-03	Radium 226/228 [5]	2.95	2.185	3.01	1.29	1.617	7.56 J	3.50 J	8.28 J

Concentrations reported in µg/L except radium, which is reported in pCi/L
Shaded results exceed GWPS by direct comparison.
NS Well not sampled during that event
J Estimated concentration.
[1] September 2018

Table 3 Well/Constituent Pair Statistical Results

WELL	CONSTITUENT	GWPS	DISTRIBUTION	TREND	LCL	UCL	BASIS[1]
MW-AP-02	Arsenic	10	Normal	None	54.3	80.4	95% Student's-t UCL
MW-AP-03	Arsenic	10	Normal	None	936	1,312	95% Student's-t UCL
MW-AP-04	Arsenic	10	Normal	None	11.4	23.3	95% Student's-t UCL
MW-AP-08	Arsenic	10	Normal	None	1.50	5.49	95% KM (t) UCL
MW-AP-08	Beryllium	4	Normal	None	1.48	4.86	95% Student's-t UCL
MW-AP-08	Cobalt	6	Lognormal	None	1.63	6.93[2]	95% Student's-t UCL on log-transformed data set
MW-AP-03	Lithium	40	Normal	None	53.9	71.9	95% Student's-t UCL
MW-AP-01	Radium 226/228	5	Nonparametric	None	1.46	4.62	95% Standard Bootstrap UCL
MW-AP-02	Radium 226/228	5	Nonparametric	None	1.34	4.71	95% Standard Bootstrap UCL
MW-AP-03	Radium 226/228	5	Normal	None	2.02	5.58[2]	95% Student's-t UCL

Shaded cells denote w/c pairs that statistically exceed the GWPS.
Concentrations reported in µg/L except radium, which is reported in pCi/L
[1] UCL basis recommended by or selected from USEPA's ProUCL v. 5.2 – see Appendix A
[2] Not an exceedance; the w/c pair has not yet exceeded the GWPS at an SSL (i.e., LCL)

Appendix A
ProUCL Statistical Outputs

Upper Confidence Limits

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/7/2023 12:42:20 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

As AP-02

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	43.6	**Mean**	**67.34**
Maximum	103	Median	69
SD	19.45	Std. Error of Mean	6.877
Coefficient of Variation	0.289	Skewness	0.542

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.935	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level	
Lilliefors Test Statistic	0.181	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level	

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	80.37	95% Adjusted-CLT UCL (Chen-1995)	80.06
		95% Modified-t UCL (Johnson-1978)	80.59

Gamma GOF Test

A-D Test Statistic	0.293	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.715	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.177	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	13.82	k star (bias corrected MLE)	8.718
Theta hat (MLE)	4.874	Theta star (bias corrected MLE)	7.724
nu hat (MLE)	221	nu star (bias corrected)	139.5
MLE Mean (bias corrected)	67.34	MLE Sd (bias corrected)	22.81
		Approximate Chi Square Value (0.05)	113.2
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	107.2

Assuming Gamma Distribution

95% Approximate Gamma UCL	82.98	95% Adjusted Gamma UCL	87.61

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.942	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.851	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.19	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.265	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	3.775	Mean of logged Data	4.173
Maximum of Logged Data	4.635	SD of logged Data	0.291

Assuming Lognormal Distribution

95% H-UCL	84.8	90% Chebyshev (MVUE) UCL	88.2
95% Chebyshev (MVUE) UCL	97.65	97.5% Chebyshev (MVUE) UCL	110.8
99% Chebyshev (MVUE) UCL	136.5		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	78.65	95% BCA Bootstrap UCL	79.5
95% Standard Bootstrap UCL	78.03	95% Bootstrap-t UCL	81.64
95% Hall's Bootstrap UCL	82.43	95% Percentile Bootstrap UCL	78.74
90% Chebyshev(Mean, Sd) UCL	87.97	95% Chebyshev(Mean, Sd) UCL	97.31
97.5% Chebyshev(Mean, Sd) UCL	110.3	99% Chebyshev(Mean, Sd) UCL	135.8

Suggested UCL to Use

95% Student's-t UCL	**80.37**

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

As AP-03

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	600	Mean	1124
Maximum	1500	Median	1125
SD	280.4	Std. Error of Mean	99.15

Coefficient of Variation	0.249	Skewness	-0.575

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.95	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.159	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1312	95% Adjusted-CLT UCL (Chen-1995)	1266
		95% Modified-t UCL (Johnson-1978)	1309

Gamma GOF Test

A-D Test Statistic	0.359	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.716	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.18	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	15.78	k star (bias corrected MLE)	9.944
Theta hat (MLE)	71.26	Theta star (bias corrected MLE)	113.1
nu hat (MLE)	252.4	nu star (bias corrected)	159.1

MLE Mean (bias corrected)	1124	MLE Sd (bias corrected)	356.5
		Approximate Chi Square Value (0.05)	130.9
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	124.5

Assuming Gamma Distribution

95% Approximate Gamma UCL	1366	95% Adjusted Gamma UCL	1437

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.888	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.851	Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.209	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.265	Data appear Lognormal at 10% Significance Level	

Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	6.397	Mean of logged Data	6.993
Maximum of Logged Data	7.313	SD of logged Data	0.284

Assuming Lognormal Distribution

95% H-UCL	1410	90% Chebyshev (MVUE) UCL	1468
95% Chebyshev (MVUE) UCL	1622	97.5% Chebyshev (MVUE) UCL	1836
99% Chebyshev (MVUE) UCL	2257		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	1287	95% BCA Bootstrap UCL	1257
95% Standard Bootstrap UCL	1276	95% Bootstrap-t UCL	1292
95% Hall's Bootstrap UCL	1298	95% Percentile Bootstrap UCL	1268
90% Chebyshev(Mean, Sd) UCL	1422	95% Chebyshev(Mean, Sd) UCL	1556
97.5% Chebyshev(Mean, Sd) UCL	1743	99% Chebyshev(Mean, Sd) UCL	2111

Suggested UCL to Use

95% Student's-t UCL	1312

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.

As AP-04

General Statistics

Total Number of Observations	8	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	9.14	**Mean**	**17.34**
Maximum	33.5	Median	13.6
SD	8.851	Std. Error of Mean	3.129
Coefficient of Variation	0.51	Skewness	0.976

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.856	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.289	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	23.27	95% Adjusted-CLT UCL (Chen-1995)	23.64
		95% Modified-t UCL (Johnson-1978)	23.45

Gamma GOF Test

A-D Test Statistic	0.505	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.719	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.267	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	4.894	k star (bias corrected MLE)	3.142
Theta hat (MLE)	3.544	Theta star (bias corrected MLE)	5.519
nu hat (MLE)	78.3	nu star (bias corrected)	50.27
MLE Mean (bias corrected)	17.34	MLE Sd (bias corrected)	9.784
		Approximate Chi Square Value (0.05)	34.99
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	31.8

Assuming Gamma Distribution

95% Approximate Gamma UCL	24.92	95% Adjusted Gamma UCL	27.42

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.898	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.851	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.237	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.265	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	2.213	Mean of logged Data	2.748
Maximum of Logged Data	3.512	SD of logged Data	0.482

Assuming Lognormal Distribution

95% H-UCL	26.76	90% Chebyshev (MVUE) UCL	26.15
95% Chebyshev (MVUE) UCL	30.19	97.5% Chebyshev (MVUE) UCL	35.78
99% Chebyshev (MVUE) UCL	46.78		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	22.49	95% BCA Bootstrap UCL	23.69
95% Standard Bootstrap UCL	22.26	95% Bootstrap-t UCL	25.65
95% Hall's Bootstrap UCL	22.34	95% Percentile Bootstrap UCL	22.58
90% Chebyshev(Mean, Sd) UCL	26.73	95% Chebyshev(Mean, Sd) UCL	30.98
97.5% Chebyshev(Mean, Sd) UCL	36.88	99% Chebyshev(Mean, Sd) UCL	48.48

Suggested UCL to Use

95% Student's-t UCL	**23.27**

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Be AP-08

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1	**Mean**	**3.17**
Maximum	8.72	Median	2.284
SD	2.524	Std. Error of Mean	0.892

Coefficient of Variation	0.796	Skewness	1.792

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.808	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.252	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.86	95% Adjusted-CLT UCL (Chen-1995)	5.241
		95% Modified-t UCL (Johnson-1978)	4.954

Gamma GOF Test

A-D Test Statistic	0.313	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.723	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.208	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.297	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	2.322	k star (bias corrected MLE)	1.535
Theta hat (MLE)	1.365	Theta star (bias corrected MLE)	2.065
nu hat (MLE)	37.16	nu star (bias corrected)	24.56

MLE Mean (bias corrected)	3.17	MLE Sd (bias corrected)	2.559
		Approximate Chi Square Value (0.05)	14.27
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	12.33

Assuming Gamma Distribution

95% Approximate Gamma UCL	5.454	95% Adjusted Gamma UCL	6.311

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.967	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.851	Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.164	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.265	Data appear Lognormal at 10% Significance Level	

Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	0	Mean of logged Data	0.923
Maximum of Logged Data	2.166	SD of logged Data	0.704

Assuming Lognormal Distribution

95% H-UCL	6.695	90% Chebyshev (MVUE) UCL	5.474
95% Chebyshev (MVUE) UCL	6.544	97.5% Chebyshev (MVUE) UCL	8.028
99% Chebyshev (MVUE) UCL	10.95		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	4.637	95% BCA Bootstrap UCL	5.136
95% Standard Bootstrap UCL	4.558	95% Bootstrap-t UCL	6.461
95% Hall's Bootstrap UCL	10.19	95% Percentile Bootstrap UCL	4.719
90% Chebyshev(Mean, Sd) UCL	5.846	95% Chebyshev(Mean, Sd) UCL	7.059
97.5% Chebyshev(Mean, Sd) UCL	8.742	99% Chebyshev(Mean, Sd) UCL	12.05

Suggested UCL to Use

95% Student's-t UCL	4.86

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Co AP-08 – DNU – Refer to Log-transformed UCL Evaluation

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.813	Mean	5.81
Maximum	22.1	Median	3.525
SD	6.871	Std. Error of Mean	2.429
Coefficient of Variation	1.182	Skewness	2.384

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,

refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,

but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).

The Chebyshev UCL often results in gross overestimates of the mean.

Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.688	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.749	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.334	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.333	Data Not Normal at 1% Significance Level	

Data Not Normal at 1% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10.41	95% Adjusted-CLT UCL (Chen-1995)	11.99

		95% Modified-t UCL (Johnson-1978)	10.75

Gamma GOF Test

A-D Test Statistic	0.376	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.732	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.208	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.3	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	1.239	k star (bias corrected MLE)	0.857
Theta hat (MLE)	4.691	Theta star (bias corrected MLE)	6.777
nu hat (MLE)	19.82	nu star (bias corrected)	13.72
MLE Mean (bias corrected)	5.81	MLE Sd (bias corrected)	6.275
		Approximate Chi Square Value (0.05)	6.379
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	5.168

Assuming Gamma Distribution

95% Approximate Gamma UCL	12.5	95% Adjusted Gamma UCL	15.42

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.98	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.851	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.158	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.265	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	-0.207	Mean of logged Data	1.304
Maximum of Logged Data	3.096	SD of logged Data	0.992

Assuming Lognormal Distribution

95% H-UCL	21.62	90% Chebyshev (MVUE) UCL	11.54
95% Chebyshev (MVUE) UCL	14.25	97.5% Chebyshev (MVUE) UCL	18.01
99% Chebyshev (MVUE) UCL	25.39		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	9.806	95% BCA Bootstrap UCL	11.59
95% Standard Bootstrap UCL	9.587	95% Bootstrap-t UCL	18.66
95% Hall's Bootstrap UCL	25.08	95% Percentile Bootstrap UCL	10.26
90% Chebyshev(Mean, Sd) UCL	13.1	95% Chebyshev(Mean, Sd) UCL	16.4
97.5% Chebyshev(Mean, Sd) UCL	20.98	99% Chebyshev(Mean, Sd) UCL	29.98

Suggested UCL to Use

Recommendation cannot be provided

The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.
Please verify the data were collected from random locations.
If the data were collected using judgmental or other non-random methods,
then contact a statistician to correctly calculate UCLs.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Li AP-03

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	32.7	**Mean**	**62.9**
Maximum	74.3	Median	67.5
SD	13.41	Std. Error of Mean	4.742
Coefficient of Variation	0.213	Skewness	-1.969

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.784	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.251	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	71.88	95% Adjusted-CLT UCL (Chen-1995)	67.17
		95% Modified-t UCL (Johnson-1978)	71.33

Gamma GOF Test

A-D Test Statistic	0.975	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.716	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.275	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	18.78	k star (bias corrected MLE)	11.82
Theta hat (MLE)	3.349	Theta star (bias corrected MLE)	5.321
nu hat (MLE)	300.5	nu star (bias corrected)	189.1
MLE Mean (bias corrected)	62.9	MLE Sd (bias corrected)	18.29

		Approximate Chi Square Value (0.05)	158.3
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	151.2

Assuming Gamma Distribution

95% Approximate Gamma UCL	75.14	95% Adjusted Gamma UCL	78.69

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.703	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.851	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.285	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.265	Data Not Lognormal at 10% Significance Level	

Data Not Lognormal at 10% Significance Level

Lognormal Statistics

Minimum of Logged Data	3.487	Mean of logged Data	4.115
Maximum of Logged Data	4.308	SD of logged Data	0.268

Assuming Lognormal Distribution

95% H-UCL	77.83	90% Chebyshev (MVUE) UCL	81.16
95% Chebyshev (MVUE) UCL	89.31	97.5% Chebyshev (MVUE) UCL	100.6
99% Chebyshev (MVUE) UCL	122.8		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	70.7	95% BCA Bootstrap UCL	68.36
95% Standard Bootstrap UCL	70.14	95% Bootstrap-t UCL	69.16
95% Hall's Bootstrap UCL	68.05	95% Percentile Bootstrap UCL	69.35
90% Chebyshev(Mean, Sd) UCL	77.13	95% Chebyshev(Mean, Sd) UCL	83.57
97.5% Chebyshev(Mean, Sd) UCL	92.51	99% Chebyshev(Mean, Sd) UCL	110.1

Suggested UCL to Use

95% Student's-t UCL	**71.88**

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.

Ra AP-01

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.58	**Mean**	**3.042**
Maximum	9.95	Median	2.152
SD	2.806	Std. Error of Mean	0.992
Coefficient of Variation	0.923	Skewness	2.769

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach, refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance, but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7). The Chebyshev UCL often results in gross overestimates of the mean. Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.519	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.749	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.447	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.333	Data Not Normal at 1% Significance Level	

Data Not Normal at 1% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.921	95% Adjusted-CLT UCL (Chen-1995)	5.711
		95% Modified-t UCL (Johnson-1978)	5.083

Gamma GOF Test

A-D Test Statistic	1.554	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.722	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.406	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.297	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.607	k star (bias corrected MLE)	1.713
Theta hat (MLE)	1.166	Theta star (bias corrected MLE)	1.776
nu hat (MLE)	41.72	nu star (bias corrected)	27.41
MLE Mean (bias corrected)	3.042	MLE Sd (bias corrected)	2.324
		Approximate Chi Square Value (0.05)	16.47
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	14.37

Assuming Gamma Distribution

95% Approximate Gamma UCL	5.062	95% Adjusted Gamma UCL	5.803

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.661	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.851	Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.361	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.265	Data Not Lognormal at 10% Significance Level

Data Not Lognormal at 10% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.457	Mean of logged Data	0.909
Maximum of Logged Data	2.298	SD of logged Data	0.579

Assuming Lognormal Distribution

95% H-UCL	5.064	90% Chebyshev (MVUE) UCL	4.649
95% Chebyshev (MVUE) UCL	5.456	97.5% Chebyshev (MVUE) UCL	6.577
99% Chebyshev (MVUE) UCL	8.778		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	4.674	95% BCA Bootstrap UCL	5.879
95% Standard Bootstrap UCL	**4.622**	95% Bootstrap-t UCL	16.61
95% Hall's Bootstrap UCL	15.35	95% Percentile Bootstrap UCL	5.009
90% Chebyshev(Mean, Sd) UCL	6.018	95% Chebyshev(Mean, Sd) UCL	7.366
97.5% Chebyshev(Mean, Sd) UCL	9.237	99% Chebyshev(Mean, Sd) UCL	12.91

Suggested UCL to Use

Recommendation cannot be provided

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Ra AP-02

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.281	**Mean**	**3.023**
Maximum	10.4	Median	2.178
SD	3.002	Std. Error of Mean	1.061
Coefficient of Variation	0.993	Skewness	2.748

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,

refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,

but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).

The Chebyshev UCL often results in gross overestimates of the mean.

Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.531	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.749	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.47	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.333	Data Not Normal at 1% Significance Level	

Data Not Normal at 1% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.034	95% Adjusted-CLT UCL (Chen-1995)	5.87
		95% Modified-t UCL (Johnson-1978)	5.205

Gamma GOF Test

A-D Test Statistic	1.44	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.723	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.44	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.297	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.26	k star (bias corrected MLE)	1.496
Theta hat (MLE)	1.337	Theta star (bias corrected MLE)	2.021
nu hat (MLE)	36.16	nu star (bias corrected)	23.93
MLE Mean (bias corrected)	3.023	MLE Sd (bias corrected)	2.471
		Approximate Chi Square Value (0.05)	13.8
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	11.9

Assuming Gamma Distribution

95% Approximate Gamma UCL	5.243	95% Adjusted Gamma UCL	6.081

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.712	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.851	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.398	**Lilliefors Lognormal GOF Test**	

10% Lilliefors Critical Value	0.265	Data Not Lognormal at 10% Significance Level	

Data Not Lognormal at 10% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.248	Mean of logged Data	0.869
Maximum of Logged Data	2.342	SD of logged Data	0.629

Assuming Lognormal Distribution

95% H-UCL	5.374	90% Chebyshev (MVUE) UCL	4.735
95% Chebyshev (MVUE) UCL	5.601	97.5% Chebyshev (MVUE) UCL	6.802
99% Chebyshev (MVUE) UCL	9.161		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	4.769	95% BCA Bootstrap UCL	5.338
95% Standard Bootstrap UCL	**4.705**	95% Bootstrap-t UCL	15.09
95% Hall's Bootstrap UCL	18.1	95% Percentile Bootstrap UCL	5.127
90% Chebyshev(Mean, Sd) UCL	6.207	95% Chebyshev(Mean, Sd) UCL	7.649
97.5% Chebyshev(Mean, Sd) UCL	9.651	99% Chebyshev(Mean, Sd) UCL	13.58

Suggested UCL to Use

Recommendation cannot be provided

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Ra AP-03

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.29	**Mean**	**3.799**

Maximum	8.28	Median	2.98
SD	2.654	Std. Error of Mean	0.938
Coefficient of Variation	0.699	Skewness	1.137

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.816	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.295	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.577	95% Adjusted-CLT UCL (Chen-1995)	5.746
		95% Modified-t UCL (Johnson-1978)	5.64

Gamma GOF Test

A-D Test Statistic	0.439	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.722	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.22	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.297	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	2.674	k star (bias corrected MLE)	1.755

Theta hat (MLE)	1.421	Theta star (bias corrected MLE)	2.165
nu hat (MLE)	42.79	nu star (bias corrected)	28.07
MLE Mean (bias corrected)	3.799	MLE Sd (bias corrected)	2.868
		Approximate Chi Square Value (0.05)	16.99
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	14.85

Assuming Gamma Distribution

95% Approximate Gamma UCL	6.279	95% Adjusted Gamma UCL	7.184

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.931	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.851	Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.18	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.265	Data appear Lognormal at 10% Significance Level	

Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	0.255	Mean of logged Data	1.136
Maximum of Logged Data	2.114	SD of logged Data	0.665

Assuming Lognormal Distribution

95% H-UCL	7.582	90% Chebyshev (MVUE) UCL	6.458
95% Chebyshev (MVUE) UCL	7.679	97.5% Chebyshev (MVUE) UCL	9.372
99% Chebyshev (MVUE) UCL	12.7		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	5.343	95% BCA Bootstrap UCL	5.547
95% Standard Bootstrap UCL	5.267	95% Bootstrap-t UCL	8.382
95% Hall's Bootstrap UCL	18.17	95% Percentile Bootstrap UCL	5.318
90% Chebyshev(Mean, Sd) UCL	6.614	95% Chebyshev(Mean, Sd) UCL	7.89

97.5% Chebyshev(Mean, Sd) UCL	9.66	99% Chebyshev(Mean, Sd) UCL	13.14

Suggested UCL to Use

95% Student's-t UCL	**5.577**

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/7/2023 1:02:15 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

As AP-08

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
Number of Detects	6	Number of Non-Detects	2
Number of Distinct Detects	6	Number of Distinct Non-Detects	2
Minimum Detect	2.17	Minimum Non-Detect	1.66
Maximum Detect	10.5	Maximum Non-Detect	2.92
Variance Detects	10.46	Percent Non-Detects	25%
Mean Detects	4.007	SD Detects	3.235
Median Detects	2.66	CV Detects	0.807
Skewness Detects	2.279	Kurtosis Detects	5.296
Mean of Logged Detects	1.204	SD of Logged Detects	0.597

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.647	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.713	Detected Data Not Normal at 1% Significance Level

Lilliefors Test Statistic	0.362	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.373	Detected Data appear Normal at 1% Significance Level	

Detected Data appear Approximate Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	**3.498**	KM Standard Error of Mean	1.052
90KM SD	2.713	95% KM (BCA) UCL	5.489
95% KM (t) UCL	5.492	95% KM (Percentile Bootstrap) UCL	5.45
95% KM (z) UCL	5.229	95% KM Bootstrap t UCL	11.72
90% KM Chebyshev UCL	6.655	95% KM Chebyshev UCL	8.086
97.5% KM Chebyshev UCL	10.07	99% KM Chebyshev UCL	13.97

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.857	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.702	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.295	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.335	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics on Detected Data Only

k hat (MLE)	2.878	k star (bias corrected MLE)	1.55
Theta hat (MLE)	1.392	Theta star (bias corrected MLE)	2.584
nu hat (MLE)	34.54	nu star (bias corrected)	18.6
Mean (detects)	4.007		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	3.227

Maximum	10.5	Median	2.35
SD	3.127	CV	0.969
k hat (MLE)	0.772	k star (bias corrected MLE)	0.566
Theta hat (MLE)	4.182	Theta star (bias corrected MLE)	5.706
nu hat (MLE)	12.35	nu star (bias corrected)	9.05
Adjusted Level of Significance (β)	0.0195		
Approximate Chi Square Value (9.05, α)	3.357	Adjusted Chi Square Value (9.05, β)	2.542
95% Gamma Approximate UCL	8.7	95% Gamma Adjusted UCL	11.49

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	3.498	SD (KM)	2.713
Variance (KM)	7.36	SE of Mean (KM)	1.052
k hat (KM)	1.663	k star (KM)	1.123
nu hat (KM)	26.61	nu star (KM)	17.96
theta hat (KM)	2.104	theta star (KM)	3.116
80% gamma percentile (KM)	5.574	90% gamma percentile (KM)	7.828
95% gamma percentile (KM)	10.06	99% gamma percentile (KM)	15.21

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (17.96, α)	9.363	Adjusted Chi Square Value (17.96, β)	7.844
95% KM Approximate Gamma UCL	6.711	95% KM Adjusted Gamma UCL	8.011

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.769	**Shapiro Wilk GOF Test**
10% Shapiro Wilk Critical Value	0.826	Detected Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**
10% Lilliefors Critical Value	0.298	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Approximate Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.396	Mean in Log Scale	0.996
SD in Original Scale	2.975	SD in Log Scale	0.669

95% t UCL (assumes normality of ROS data)	5.389	95% Percentile Bootstrap UCL	5.372
95% BCA Bootstrap UCL	5.921	95% Bootstrap t UCL	10.18
95% H-UCL (Log ROS)	6.659		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	1.068	KM Geo Mean	2.909
KM SD (logged)	0.537	95% Critical H Value (KM-Log)	2.418
KM Standard Error of Mean (logged)	0.21	95% H-UCL (KM -Log)	5.49
KM SD (logged)	0.537	95% Critical H Value (KM-Log)	2.418
KM Standard Error of Mean (logged)	0.21		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	3.291	Mean in Log Scale	0.927
SD in Original Scale	3.043	SD in Log Scale	0.735
95% t UCL (Assumes normality)	5.329	95% H-Stat UCL	7.23

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 1% Significance Level

Suggested UCL to Use

95% KM (t) UCL	5.492

When a data set follows an approximate distribution passing only one of the GOF tests,
it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/7/2023 1:08:37 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

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General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
Number of Detects	6	Number of Non-Detects	2
Number of Distinct Detects	6	Number of Distinct Non-Detects	2
Minimum Detect	0.531	Minimum Non-Detect	-0.207
Maximum Detect	3.096	Maximum Non-Detect	1.03
Variance Detects	0.799	Percent Non-Detects	25%
Mean Detects	1.602	SD Detects	0.894
Median Detects	1.606	CV Detects	0.558
Skewness Detects	0.745	Kurtosis Detects	0.919

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.952	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.713	Detected Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.213	**Lilliefors GOF Test**

1% Lilliefors Critical Value	0.373	Detected Data appear Normal at 1% Significance Level

Detected Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	**1.227**	KM Standard Error of Mean	0.389
90KM SD	0.986	95% KM (BCA) UCL	1.844
95% KM (t) UCL	1.963	95% KM (Percentile Bootstrap) UCL	1.83
95% KM (z) UCL	1.866	95% KM Bootstrap t UCL	1.895
90% KM Chebyshev UCL	2.393	95% KM Chebyshev UCL	2.921
97.5% KM Chebyshev UCL	3.655	99% KM Chebyshev UCL	5.095

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.206	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.701	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.162	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.334	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics on Detected Data Only

k hat (MLE)	3.602	k star (bias corrected MLE)	1.912
Theta hat (MLE)	0.445	Theta star (bias corrected MLE)	0.838
nu hat (MLE)	43.23	nu star (bias corrected)	22.95
Mean (detects)	1.602		

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	1.227	SD (KM)	0.986
Variance (KM)	0.972	SE of Mean (KM)	0.389
k hat (KM)	1.547	k star (KM)	1.05
nu hat (KM)	24.76	nu star (KM)	16.81
theta hat (KM)	0.793	theta star (KM)	1.168
80% gamma percentile (KM)	1.966	90% gamma percentile (KM)	2.791

95% gamma percentile (KM)	3.612	99% gamma percentile (KM)	5.511

Gamma Kaplan-Meier (KM) Statistics

		Adjusted Level of Significance (β)	0.0195
Approximate Chi Square Value (16.81, α)	8.535	Adjusted Chi Square Value (16.81, β)	7.096
95% KM Approximate Gamma UCL	2.416	95% KM Adjusted Gamma UCL	2.906

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	N/A	KM Geo Mean	N/A
KM SD (logged)	N/A	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	N/A	95% H-UCL (KM -Log)	N/A
KM SD (logged)	N/A	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	N/A		

DL/2 Statistics

Mean in Original Scale	1.253	SD in Original Scale	1.008
95% t UCL (Assumes normality)	1.928		

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 1% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.963

Antilog = exp(1.963) = 6.931

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Trends

Theil-Sen Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/8/2023 5:46:36 PM
From File	WorkSheet.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

As AP-02

General Statistics

Number of Events	8
Number of Values Reported (n)	8
Number of Values After Averaging	8
Number of Replicates	0
Minimum	43.6
Maximum	103
Mean	67.34
Geometric Mean	64.92
Median	69
Standard Deviation	19.45
Coefficient of Variation	0.289

Mann-Kendall Statistics

M-K Test Value (S)	-4
Tabulated p-value	0.36
Standard Deviation of S	8.083
Standardized Value of S	-0.371
Approximate p-value	0.355

Approximate inference for Theil-Sen Trend Test

Number of Slopes	28
Theil-Sen Slope	-0.00806
Theil-Sen Intercept	426.2
M1	6.079
M2	21.92
95% LCL of Slope (0.025)	-0.0561
95% UCL of Slope (0.975)	0.0464

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	43678	55.8	74.4	-18.6
2	43891	76.1	72.68	3.419
3	44075	77.2	71.2	6.001
4	44256	68.1	69.74	-1.641
5	44440	45	68.26	-23.26
6	44621	103	66.8	36.2
7	44805	69.9	65.32	4.581
8	44986	43.6	63.86	-20.26

Theil-Sen Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/8/2023 5:47:55 PM
From File	WorkSheet.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

As AP-03

General Statistics

Number of Events	8
Number of Values Reported (n)	8
Number of Values After Averaging	8
Number of Replicates	0
Minimum	600
Maximum	1500
Mean	1124
Geometric Mean	1089
Median	1125
Standard Deviation	280.4
Coefficient of Variation	0.249

Mann-Kendall Statistics

M-K Test Value (S)	-8
Tabulated p-value	0.119
Standard Deviation of S	8.083
Standardized Value of S	-0.866
Approximate p-value	0.193

Approximate inference for Theil-Sen Trend Test

Number of Slopes	28
Theil-Sen Slope	-0.225
Theil-Sen Intercept	11122
M1	6.079
M2	21.92
95% LCL of Slope (0.025)	-0.638
95% UCL of Slope (0.975)	0.578

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	43678	600	1276	-676
2	43891	1500	1228	272
3	44075	1200	1187	13.46
4	44256	1430	1146	284.3
5	44440	1050	1104	-54.26
6	44621	1170	1063	106.5
7	44805	1080	1022	58.02
8	44986	964	981.2	-17.18

Theil-Sen Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/8/2023 5:48:19 PM
From File	WorkSheet.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

As AP-04

General Statistics

Number of Events	8
Number of Values Reported (n)	8
Number of Values After Averaging	8
Number of Replicates	0
Minimum	9.14
Maximum	33.5
Mean	17.34
Geometric Mean	15.6
Median	13.6
Standard Deviation	8.851
Coefficient of Variation	0.51

Mann-Kendall Statistics

M-K Test Value (S)	9
Tabulated p-value	0.119
Standard Deviation of S	8.021
Standardized Value of S	0.997
Approximate p-value	0.159

Approximate inference for Theil-Sen Trend Test

Number of Slopes	28
Theil-Sen Slope	0.00845
Theil-Sen Intercept	-360.9
M1	6.14
M2	21.86
95% LCL of Slope (0.025)	-0.0132
95% UCL of Slope (0.975)	0.0209

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	43678	22.9	7.942	14.96
2	43891	9.14	9.74	-0.6
3	44075	10.4	11.29	-0.894
4	44256	13.6	12.82	0.777
5	44440	13.6	14.38	-0.777
6	44621	10.3	15.91	-5.606
7	44805	33.5	17.46	16.04
8	44986	25.3	18.99	6.312

Theil-Sen Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/8/2023 5:51:18 PM
From File	WorkSheet.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

As AP-08

General Statistics

Number of Events	8
Number of Values Reported (n)	8
Number of Values After Averaging	8
Number of Replicates	0
Minimum	1.66
Maximum	10.5
Mean	3.578
Geometric Mean	3.006
Median	2.66
Standard Deviation	2.867
Coefficient of Variation	0.801

Mann-Kendall Statistics

M-K Test Value (S)	6
Tabulated p-value	0.274
Standard Deviation of S	8.083
Standardized Value of S	0.619
Approximate p-value	0.268

Approximate inference for Theil-Sen Trend Test

Number of Slopes	28
Theil-Sen Slope	3.0594E-4
Theil-Sen Intercept	-10.91
M1	6.079
M2	21.92
95% LCL of Slope (0.025)	-0.00209
95% UCL of Slope (0.975)	0.00653

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	43678	2.9	2.455	0.445
2	43891	2.17	2.52	-0.35
3	44075	2.92	2.576	0.344
4	44256	1.66	2.632	-0.972
5	44440	3.77	2.688	1.082
6	44621	2.28	2.744	-0.464
7	44805	10.5	2.8	7.7
8	44986	2.42	2.855	-0.435

Theil-Sen Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/8/2023 5:51:37 PM
From File	WorkSheet.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

Be AP-08

General Statistics

Number of Events	8
Number of Values Reported (n)	8
Number of Values After Averaging	8
Number of Replicates	0
Minimum	1
Maximum	8.72
Mean	3.17
Geometric Mean	2.517
Median	2.284
Standard Deviation	2.524
Coefficient of Variation	0.796

Mann-Kendall Statistics

M-K Test Value (S)	14
Tabulated p-value	0.054
Standard Deviation of S	8.083
Standardized Value of S	1.608
Approximate p-value	0.0539

Approximate inference for Theil-Sen Trend Test

Number of Slopes	28
Theil-Sen Slope	0.00249
Theil-Sen Intercept	-108.3
M1	6.079
M2	21.92
95% LCL of Slope (0.025)	-0.00133
95% UCL of Slope (0.975)	0.00735

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	43678	2.218	0.614	1.604
2	43891	1.35	1.145	0.205
3	44075	1	1.603	-0.603
4	44256	2.35	2.055	0.295
5	44440	1.6	2.513	-0.913
6	44621	4.31	2.965	1.345
7	44805	8.72	3.423	5.297
8	44986	3.81	3.875	-0.0646

Theil-Sen Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/8/2023 5:51:57 PM
From File	WorkSheet.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

Co AP-08

General Statistics

Number of Events	8
Number of Values Reported (n)	8
Number of Values After Averaging	8
Number of Replicates	0
Minimum	0.813
Maximum	22.1
Mean	5.81
Geometric Mean	3.686
Median	3.525
Standard Deviation	6.871
Coefficient of Variation	1.182

Mann-Kendall Statistics

M-K Test Value (S)	4
Tabulated p-value	0.36
Standard Deviation of S	8.083
Standardized Value of S	0.371
Approximate p-value	0.355

Approximate inference for Theil-Sen Trend Test

Number of Slopes	28
Theil-Sen Slope	0.00246
Theil-Sen Intercept	-105.4
M1	6.079
M2	21.92
95% LCL of Slope (0.025)	-0.00609
95% UCL of Slope (0.975)	0.018

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	43678	1.7	1.88	-0.18
2	43891	6.52	2.403	4.117
3	44075	2.8	2.855	-0.0545
4	44256	0.813	3.299	-2.486
5	44440	5.84	3.751	2.089
6	44621	4.25	4.195	0.0545
7	44805	22.1	4.647	17.45
8	44986	2.46	5.092	-2.632

Theil-Sen Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/14/2023 10:02:20 AM
From File	WorkSheet.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

Li AP-03

General Statistics

Number of Events	8
Number of Values Reported (n)	8
Number of Values After Averaging	8
Number of Replicates	0
Minimum	32.7
Maximum	74.3
Mean	62.9
Geometric Mean	61.23
Median	67.5
Standard Deviation	13.41
Coefficient of Variation	0.213

Mann-Kendall Statistics

M-K Test Value (S)	0
Tabulated p-value	0.548
Standard Deviation of S	8.083
Standardized Value of S	N/A

Approximate inference for Theil-Sen Trend Test

Number of Slopes	28
Theil-Sen Slope	-0.00178
Theil-Sen Intercept	146.4
M1	6.079
M2	21.92
95% LCL of Slope (0.025)	-0.0139
95% UCL of Slope (0.975)	0.0324

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	43678	32.7	68.69	-35.99
2	43891	74.3	68.31	5.987
3	44075	67.2	67.99	-0.786
4	44256	72.6	67.66	4.936
5	44440	56.6	67.34	-10.74
6	44621	67.8	67.01	0.786
7	44805	69.3	66.69	2.613
8	44986	62.7	66.36	-3.665

Theil-Sen Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/8/2023 5:52:36 PM
From File	WorkSheet.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

Ra AP-01

General Statistics

Number of Events	8
Number of Values Reported (n)	8
Number of Values After Averaging	8
Number of Replicates	0
Minimum	1.58
Maximum	9.95
Mean	3.042
Geometric Mean	2.481
Median	2.152
Standard Deviation	2.806
Coefficient of Variation	0.923

Mann-Kendall Statistics

M-K Test Value (S)	0
Tabulated p-value	0.548
Standard Deviation of S	8.083
Standardized Value of S	N/A

Approximate inference for Theil-Sen Trend Test

Number of Slopes	28
Theil-Sen Slope	5.8333E-5
Theil-Sen Intercept	-0.435
M1	6.079
M2	21.92
95% LCL of Slope (0.025)	-0.00101
95% UCL of Slope (0.975)	0.00172

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	43678	2.23	2.112	0.118
2	43891	2.203	2.125	0.0782
3	44075	1.91	2.136	-0.226
4	44256	1.83	2.146	-0.316
5	44440	1.58	2.157	-0.577
6	44621	9.95	2.167	7.783
7	44805	2.1	2.178	-0.0782
8	44986	2.53	2.189	0.341

Theil-Sen Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/8/2023 5:52:54 PM
From File	WorkSheet.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

Ra AP-02

General Statistics

Number of Events	8
Number of Values Reported (n)	8
Number of Values After Averaging	8
Number of Replicates	0
Minimum	1.281
Maximum	10.4
Mean	3.023
Geometric Mean	2.384
Median	2.178
Standard Deviation	3.002
Coefficient of Variation	0.993

Mann-Kendall Statistics

M-K Test Value (S)	4
Tabulated p-value	0.36
Standard Deviation of S	8.083
Standardized Value of S	0.371
Approximate p-value	0.355

Approximate inference for Theil-Sen Trend Test

Number of Slopes	28
Theil-Sen Slope	1.0060E-4
Theil-Sen Intercept	-2.283
M1	6.079
M2	21.92
95% LCL of Slope (0.025)	-0.00137
95% UCL of Slope (0.975)	0.00256

Insufficient evidence to identify a significant trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	43678	1.605	2.111	-0.506
2	43891	2.166	2.132	0.034
3	44075	2.3	2.151	0.149
4	44256	2.19	2.169	0.0213
5	44440	1.281	2.187	-0.906
6	44621	10.4	2.205	8.195
7	44805	2.25	2.224	0.026
8	44986	1.99	2.242	-0.252

Theil-Sen Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.2 6/8/2023 5:53:14 PM
From File	WorkSheet.xls
Full Precision	OFF
Average Replicates	Replicates at sampling events will be averaged!
Confidence Coefficient	0.95
Level of Significance	0.05

Ra AP-03

General Statistics

Number of Events	8
Number of Values Reported (n)	8
Number of Values After Averaging	8
Number of Replicates	0
Minimum	1.29
Maximum	8.28
Mean	3.799
Geometric Mean	3.115
Median	2.98
Standard Deviation	2.654
Coefficient of Variation	0.699

Mann-Kendall Statistics

M-K Test Value (S)	12
Tabulated p-value	0.089
Standard Deviation of S	8.083
Standardized Value of S	1.361
Approximate p-value	0.0868

Approximate inference for Theil-Sen Trend Test

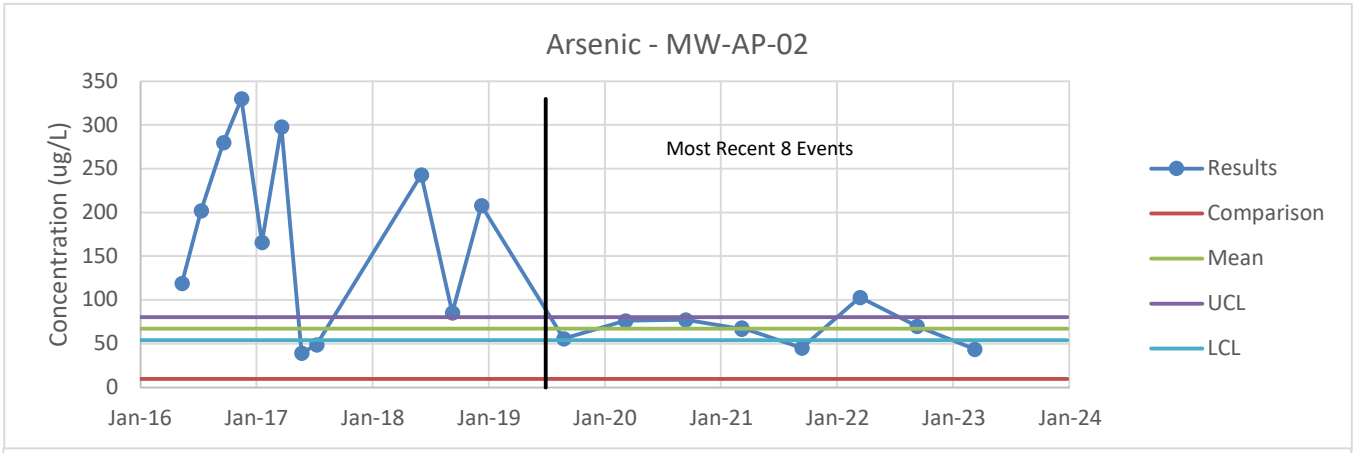
Number of Slopes	28
Theil-Sen Slope	0.003
Theil-Sen Intercept	-130
M1	6.079
M2	21.92
95% LCL of Slope (0.025)	-0.0024
95% UCL of Slope (0.975)	0.00724

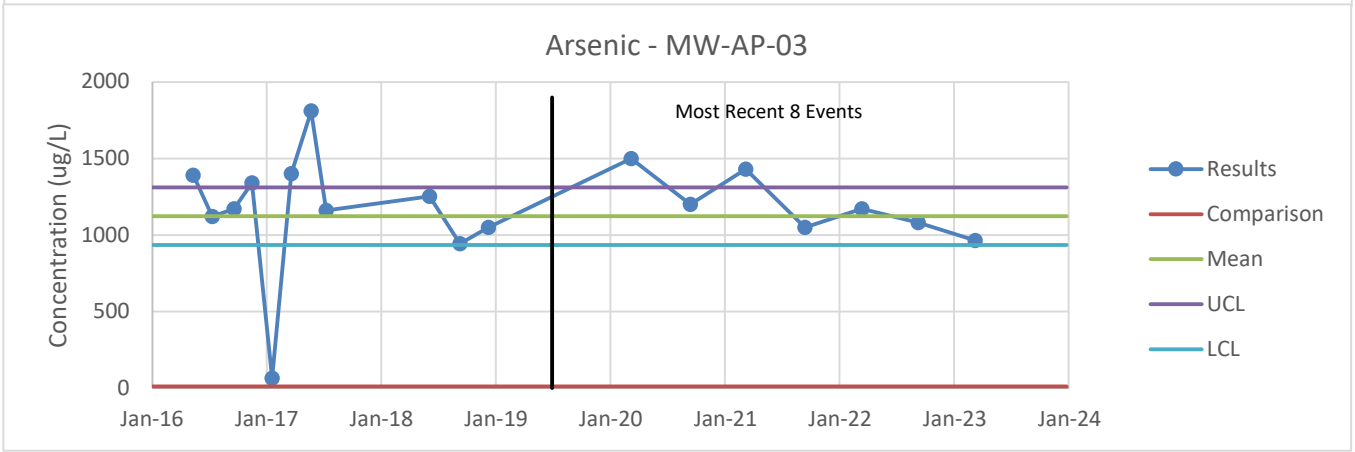
Insufficient evidence to identify a significant trend at the specified level of significance.

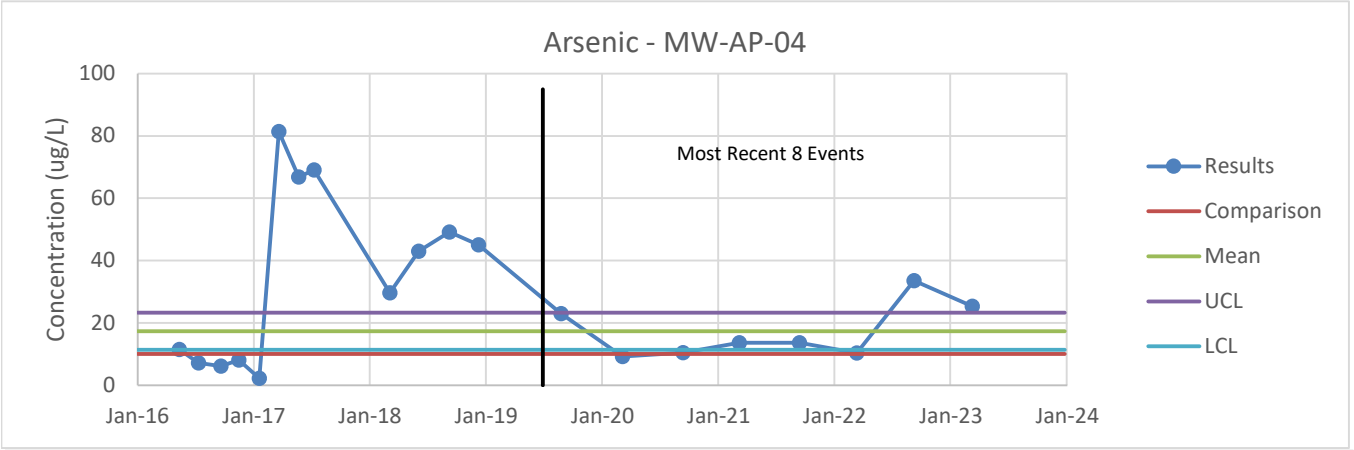
Theil-Sen Trend Test Estimates and Residuals

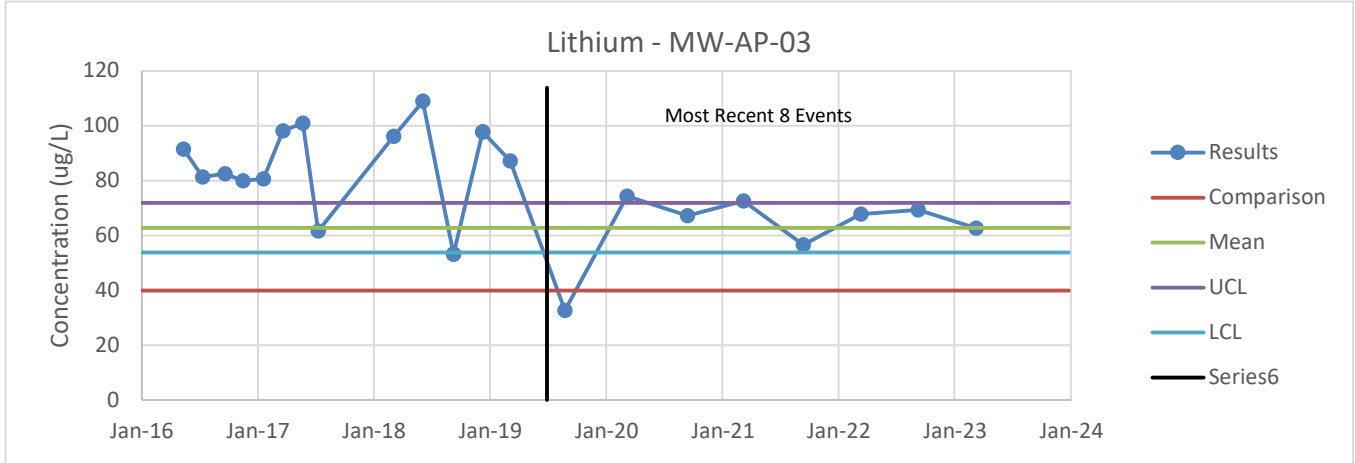
#	Events	Values	Estimates	Residuals
1	43678	2.95	0.971	1.979
2	43891	2.185	1.609	0.576
3	44075	3.01	2.161	0.849
4	44256	1.29	2.704	-1.414
5	44440	1.617	3.256	-1.639
6	44621	7.56	3.799	3.761
7	44805	3.5	4.351	-0.851
8	44986	8.28	4.893	3.387

Appendix B
Wateree Ash Pond Confidence Limit Graphs


Arsenic - MW-AP-02
Concentration (ug/L)
350
300
250
200
150
100
50
0
Most Recent 8 Events
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Results
Comparison
Mean
UCL
LCL


Arsenic - MW-AP-03
Concentration (ug/L)
2000
1500
1000
500
0
Most Recent 8 Events
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Results
Comparison
Mean
UCL
LCL


Arsenic - MW-AP-04
Concentration (ug/L)
100
80
60
40
20
0
Most Recent 8 Events
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Results
Comparison
Mean
UCL
LCL


Lithium - MW-AP-03
Concentration (ug/L)
120
100
80
60
40
20
0
Most Recent 8 Events
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Jan-24
Results
Comparison
Mean
UCL
LCL
Series6

Appendix D
Second Semiannual Assessment Monitoring Program Statistical Evaluation

DOMINION ENERGY SOUTH CAROLINA

WATEREE STATION ASH POND
SEMIANNUAL ASSESSMENT MONITORING

RICHLAND COUNTY, SOUTH CAROLINA

CCR GROUNDWATER ASSESSMENT MONITORING
STATISTICAL ANALYSIS REPORT

For the October 2023 Sampling Event

January 4, 2024

Joyce Peterson, P.E.
Senior Environmental Engineer

Richard A. Mayer Jr., P.G.
Project Manager

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Table of Contents

Statistical Analysis Report 1

List of Tables

Table 1 October 2023 Semiannual Corrective Measure Monitoring Concentrations
Table 2 Data Sets for Confidence Interval Calculations
Table 3 Well/Constituent Pair Statistical Results

List of Figures

Figure 1 Groundwater Potentiometric Map

List of Appendices

Appendix A ProUCL Statistical Outputs
Appendix B Wateree Ash Pond Updated Background Threshold Values for Ra 226/228

Statistical Analysis Report

Groundwater Sampling

TRC Environmental Corporation (TRC) is providing this report of Groundwater Protection Standard (GWPS) exceedances for the Wateree Station Ash Pond for the 2nd Semiannual 2023 Assessment Monitoring Program event. Samples were collected on October 11, 2023. The final laboratory analytical data packages for the event were received on October 26, 2023, and the data validation report was received on November 10, 2023. **Table 1** presents the October 2023 data for Appendix IV constituents. The certified monitoring well network includes the following monitoring wells:

- Background monitoring well – MW-AP-01A.
- Downgradient monitoring wells – MW-AP-01, MW-AP-02, MW-AP-03, MW-AP-04, MW-AP-05, and MW-AP-08.

A potentiometric surface map, based on the October 2023 calculated water table elevation data, is shown as **Figure 1**.

Statistical Analysis

Statistically Significant Level (SSL) exceedances of the GWPS include the following, thus the Ash Pond remains in Corrective Measures monitoring:

- For arsenic (comparison to UCL): MW-AP-02, MW-AP-03, and MW-AP-04.
- For lithium (comparison to UCL): MW-AP-03.

The Wateree Station Ash Pond was found to exceed background concentrations for CCR Rule Appendix III constituents following the first semiannual Detection Monitoring event in September 2017. The Ash Pond was then found to exceed Groundwater Protection Standards (GWPS) for arsenic and lithium following the first Compliance Monitoring event in March 2018.

The Wateree Ash Pond is currently conducting corrective measures. Corrective measure groundwater monitoring will continue until groundwater is restored to concentrations less than the groundwater protection standards. Groundwater concentrations for Appendix IV constituents will be considered restored when the following is true for each well-constituent (w/c) pair monitored at the Ash Pond CCR unit:

- For w/c pairs that have not exceeded the GWPS at a statistically significant level, the lower confidence limit (LCL) of the mean for that w/c pair is less than the GWPS, or

- For w/c pairs that have exceeded the GWPS at a statistically significant level, the upper confidence limit (UCL) of the mean for that w/c pair is less than the GWPS.

TRC reviewed the post-baseline data set for constituents that have exceeded the GWPS at a statistically significant level. This review was conducted as follows:

- The data sets consisted of one result per CCR sampling event (semiannual sampling period) from March 2020 through October 2023 (*i.e.*, most recent 8 results). When verification resampling was conducted, the verification resampling result was used for the event. When duplicate samples were collected, the original (parent sample) concentration was used. **Table 2** presents the data used for the statistical comparisons to GWPS.

UCLs and LCLs were calculated for downgradient compliance monitoring wells using USEPA's ProUCL software (version 5.2) as follows:

- For each w/c pair, no further statistical calculations were made if none of the results exceeded the GWPS on a direct comparison basis. A statistically significance exceedance of the LCL is not possible for these constituents.
- Calculations of UCLs were made based on the distribution of detected concentrations within each w/c pair data set.
- For w/c pair data sets for which ProUCL recommended use of a UCL premised on a normal distribution, the LCL was calculated based on the symmetry of the distribution around the mean.
- For lognormally distributed data, the data were log-transformed and entered into ProUCL. The results were re-transformed to base-10 numbers for reporting and comparing to GWPS.

Table 3 presents the results of the statistical evaluations for the October 2023 groundwater samples. For w/c pairs that have previously exceeded the GWPS (arsenic in MW-AP-02, MW-AP-03, and MW-AP-04 and lithium in MW-AP-03), the updated UCL is compared to the GWPS. For other constituents with a direct comparison exceedance of a GWPS (*i.e.*, arsenic in MW-AP-04; beryllium and cobalt in MW-AP-08; and radium 226/228 in MW-AP-01A, MW-AP-01, MW-AP-02, MW-AP-03, and MW-AP-08), the LCL for each w/c pair was compared to the GWPS. The statistical outputs from ProUCL are provided in **Appendix A**.

Due to exceedances of the GWPS for radium 226/228 in the background well (MW-AP-01A), ProUCL's Background Threshold Value (BTV) function was used to update the GWPS for radium 226/228, which is the greater of the default value from the CCR Rule [5 pCi/L] or the background value. The background value [9.8 pCi/L], being the greater value, is used in this and subsequent statistical evaluations of downgradient groundwater monitoring data for radium 226/228. The statistical output for the updated BTV for radium 226/228 is provided in **Appendix B**.

Figure

MW-AP-01A
113.21

MW-FGD-06
112.82

MW-FGD-05
107.48

MW-FGD-04
106.84

AS-FGD-01
109.49

AS-FGD-03
104.48

MW-FGD-03
105.44

AS-FGD-02
104.48

MW-FGD-02
104.84

MW-AP-13
91.31

MW-AP-08
87.00

MW-AP-05
81.98

MW-AP-09D
90.84

MW-AP-09
92.09

MW-AP-04
87.32

MW-AP-12
86.88

MW-AP-03D2
87.41

MW-AP-03D
82.69

MW-AP-03
87.99

MW-AP-11
86.42

MW-AP-11D
82.00

MW-AP-11D2
87.30

MW-AP-10
86.90

MW-AP-02
85.60

MW-AP-01
89.00

112 110 108 106 104 102 100 98 96 94 92 90 88 86 84 82

LEGEND

- CCR BACKGROUND MONITORING WELL
- CCR DOWNGRADIENT MONITORING WELL
- CCR CORRECTIVE ACTION MONITORING WELL
- EVENT PIEZOMETER
- BACKFILLED CLEAN CLOSED ASH POND AREA
- FGD POND
- PROPERTY BOUNDARY
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- WATER TABLE ELEVATION IN FEET ABOVE MEAN SEA LEVEL (2' CONTOUR INTERVALS) - DASHED WHERE INFERRED
- **92.36** WATER ELEVATION (FT. MSL)

NOTES:

1. AERIAL IMAGE FROM ESRI WORLD IMAGERY DATED SEPTEMBER, 2022.

N

1:5,400
1" = 450'
0 225 450 FEET

PROJECT:
DESC WATEREE STATION
BACKFILLED CLEAN CLOSED ASH POND AREA
EASTOVER, SOUTH CAROLINA

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP - OCTOBER 10, 2023

DRAWN BY:	L. LILL	PROJ. NO.:	416559.0005.0000
CHECKED BY:	J. YONTS		
APPROVED BY:	R. MAYER		**FIGURE 1**
DATE:	NOVEMBER 2023		

TRC
50 INTERNATIONAL DRIVE
PATEWOOD PLAZA THREE, SUITE 150
GREENVILLE, SC 29615
PHONE: 864.281.0030

FILE: 2023_Figures.aprx

Tables

Table 1 October 2023 Semiannual Corrective Measure Monitoring Concentrations

WELL	CONSTITUENT/GWPS /RESULT (µg/L except as noted) [1]														
	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CHROMIUM	COBALT	FLUORIDE	LEAD	LITHIUM	MERCURY	MOLYBDENUM	RADIUM 226/228	SELENIUM	THALLIUM
	6	10	2000	4	5	100	6	4	15	40	2	100	9.80[2]	50	2
MW-AP-01A	0.600 U	1.66 U	64.8	0.259 J	0.0300 U	1.00 U	0.838 J	0.0330 U	1.34 J	2.00 U	0.0670 UJ	0.178 U	6.39 J	1.50 U	0.125 U
MW-AP-01	0.600 U	1.66 U	248	0.200 U	0.0300 U	1.00 U	0.100 U	0.383	0.500 U	2.00 U	0.0670 UJ	3.09	1.07 J	1.50 U	0.125 U
MW-AP-02	0.600 U	46.6	200	0.200 U	0.0300 U	1.00 U	0.115 J	0.217	0.500 U	5.06 J	0.0670 UJ	5.73	3.79 J	1.50 U	0.125 U
MW-AP-03	0.600 U	638	198	0.200 U	0.0300 U	1.00 U	0.182 J	0.524	0.500 U	36.4	0.0670 UJ	12.9	3.33 J	1.50 U	0.125 U
MW-AP-04	0.600 U	30.9	205	0.200 U	0.0300 U	1.00 U	0.100 U	1.01	0.500 U	2.00 U	0.0670 UJ	4.62	3.28 J	1.50 U	0.125 U
MW-AP-05	0.600 U	1.66 U	173	0.200 U	0.0300 U	1.00 U	0.493 J	0.0612 J	0.500 U	2.00 U	0.0670 UJ	0.167 U	3.38 J	1.50 U	0.125 U
MW-AP-08	0.600 U	2.54 J	151	7.12	0.0300 U	1.00 U	19.3	1.25	0.500 U	16.5	0.0670 UJ	0.167 U	3.45 J	9.19	0.125 U

Shaded results exceed groundwater protection standards (GWPS) by direct comparison.
(1) Fluoride concentrations expressed in milligrams per liter (mg/L); Radium concentrations expressed in pico-Curies per liter (pCi/L).
(2) Updated Background Threshold Value (BTV) See Appendix B.
U - The analyte was not detected above the level of the sample reporting limit.
J - Estimated concentration.

Table 2 Data Sets for Confidence Interval Calculations

WELL	CONSTITUENT [GWPS]	Mar-20	Sep-20	Mar-21	Sep-21	Mar-22	Sep-22	Mar-23	Oct-23
MW-AP-02	Arsenic [10]	76.1	77.2	68.1	45	103	69.9	43.6	46.6
MW-AP-03	Arsenic [10]	1,500	1,200	1,430	1,050	1,170	1,080	964	638
MW-AP-04	Arsenic [10]	9.14	10.4	13.6	13.6	10.3	33.5	25.3	30.9
MW-AP-08	Arsenic [10]	2.17	< 2.92	< 1.66	3.77	2.28	10.5	2.42 J	2.54 J
MW-AP-08	Beryllium [4]	1.35	1	2.35	1.6	4.31	8.72	3.81	7.12
MW-AP-08	Cobalt [6]	6.52	2.8	0.813 J	5.84	4.25	22.1	2.46	19.3
MW-AP-03	Lithium [40]	74.3	67.2	72.6	56.6	67.8	69.3	62.7	36.4
MW-AP-01	Radium 226/228 [9.8][1]	2.203	1.91	1.83	1.58	9.95 J	2.10 J	2.53	1.07 J
MW-AP-02	Radium 226/228 [9.8] [1]	2.166	2.3	2.19	1.281	10.4 J	2.25 J	1.99 J	3.79 J

Concentrations reported in µg/L except radium, which is reported in pCi/L.
Shaded results exceed GWPS by direct comparison.
[1] Updated Background Threshold Value (BTV) See Appendix B.
J - Estimated concentration.
U - The analyte was not detected above the level of the sample reporting limit.

Table 3 Well/Constituent Pair Statistical Results

WELL	CONSTITUENT	GWPS	DISTRIBUTION	TREND	LCL	UCL	BASIS[1]
MW-AP-02	Arsenic	10	Normal	NA	52.5	79.9	95% Student's-t UCL
MW-AP-03	Arsenic	10	Normal	NA	948	1,310	95% Student's-t UCL
MW-AP-04	Arsenic	10	Normal	NA	11.7	25.01	95% Student's-t UCL
MW-AP-08	Arsenic	10	Normal	NA	1.43	5.45	95% KM (t) UCL
MW-AP-08	Beryllium	4	Normal	NA	1.88	5.68[2]	95% Student's-t UCL
MW-AP-08	Cobalt	6	Normal	NA	2.60	13.42[2]	95% Student's-t UCL
MW-AP-03	Lithium	40	Normal	NA	55.2	71.6	95% Student's-t UCL
MW-AP-01	Radium 226/228	9.8[3]	Nonparametric	NA	1.35	4.45	95% Standard Bootstrap UCL
MW-AP-02	Radium 226/228	9.8 [3]	Nonparametric	NA	1.71	4.89	95% Standard Bootstrap UCL

Shaded cells denote w/c pairs that statistically exceed the GWPS.
Concentrations reported in µg/L except radium, which is reported in pCi/L.
NA – Not analyzed.
[1] UCL basis recommended by or selected from USEPA's ProUCL v. 5.2 – see Appendix A.
[2] Not an exceedance; the w/c pair has not yet exceeded the GWPS at an SSL (i.e., LCL).
[3] Updated Background Threshold Value (BTV) See Appendix B.

Appendix A
ProUCL Statistical Outputs

Upper Confidence Limits

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.2 12/15/2023 10:33:31 AM
From File	most recent 8 data.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

As AP-02

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	43.6	**Mean**	**66.19**
Maximum	103	Median	69
SD	20.48	Std. Error of Mean	7.239
Coefficient of Variation	0.309	Skewness	0.526

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.899	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.206	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	79.9	95% Adjusted-CLT UCL (Chen-1995)	79.53
		95% Modified-t UCL (Johnson-1978)	80.13

Gamma GOF Test

A-D Test Statistic	0.461	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.715	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.229	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	12.09	k star (bias corrected MLE)	7.64
Theta hat (MLE)	5.474	Theta star (bias corrected MLE)	8.663
nu hat (MLE)	193.4	nu star (bias corrected)	122.2
MLE Mean (bias corrected)	66.19	MLE Sd (bias corrected)	23.95
		Approximate Chi Square Value (0.05)	97.71
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	92.16

Assuming Gamma Distribution

95% Approximate Gamma UCL	82.81	95% Adjusted Gamma UCL	87.79

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.897	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.851	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.215	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.265	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	3.775	Mean of logged Data	4.151
Maximum of Logged Data	4.635	SD of logged Data	0.31

Assuming Lognormal Distribution

95% H-UCL	84.93	90% Chebyshev (MVUE) UCL	88.08
95% Chebyshev (MVUE) UCL	98	97.5% Chebyshev (MVUE) UCL	111.8
99% Chebyshev (MVUE) UCL	138.8		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	78.1	95% BCA Bootstrap UCL	78.53
95% Standard Bootstrap UCL	77.32	95% Bootstrap-t UCL	81.96
95% Hall's Bootstrap UCL	79.57	95% Percentile Bootstrap UCL	77.5
90% Chebyshev(Mean, Sd) UCL	87.91	95% Chebyshev(Mean, Sd) UCL	97.74
97.5% Chebyshev(Mean, Sd) UCL	111.4	99% Chebyshev(Mean, Sd) UCL	138.2

Suggested UCL to Use

95% Student's-t UCL	**79.9**

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

As AP-03

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	638	**Mean**	**1129**
Maximum	1500	Median	1125
SD	270.4	Std. Error of Mean	95.61
Coefficient of Variation	0.24	Skewness	-0.431

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,

refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,

but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).

The Chebyshev UCL often results in gross overestimates of the mean.

Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.958	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.146	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1310	95% Adjusted-CLT UCL (Chen-1995)	1271
		95% Modified-t UCL (Johnson-1978)	1308

Gamma GOF Test

A-D Test Statistic	0.309	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.716	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.162	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	17.67	k star (bias corrected MLE)	11.13
Theta hat (MLE)	63.9	Theta star (bias corrected MLE)	101.5
nu hat (MLE)	282.7	nu star (bias corrected)	178
MLE Mean (bias corrected)	1129	MLE Sd (bias corrected)	338.5
		Approximate Chi Square Value (0.05)	148.2
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	141.3

Assuming Gamma Distribution

95% Approximate Gamma UCL	1357	95% Adjusted Gamma UCL	1423

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.91	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.851	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.188	**Lilliefors Lognormal GOF Test**

10% Lilliefors Critical Value	0.265	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	6.458	Mean of logged Data	7.001
Maximum of Logged Data	7.313	SD of logged Data	0.265

Assuming Lognormal Distribution

95% H-UCL	1391	90% Chebyshev (MVUE) UCL	1451
95% Chebyshev (MVUE) UCL	1596	97.5% Chebyshev (MVUE) UCL	1797
99% Chebyshev (MVUE) UCL	2191		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	1286	95% BCA Bootstrap UCL	1261
95% Standard Bootstrap UCL	1277	95% Bootstrap-t UCL	1300
95% Hall's Bootstrap UCL	1315	95% Percentile Bootstrap UCL	1271
90% Chebyshev(Mean, Sd) UCL	1416	95% Chebyshev(Mean, Sd) UCL	1546
97.5% Chebyshev(Mean, Sd) UCL	1726	99% Chebyshev(Mean, Sd) UCL	2080

Suggested UCL to Use

95% Student's-t UCL	1310

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.

As AP-04

General Statistics

Total Number of Observations	8	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	9.14	**Mean**	**18.34**

Maximum	33.5	Median	13.6
SD	9.952	Std. Error of Mean	3.519
Coefficient of Variation	0.543	Skewness	0.732

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.821	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.308	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.01	95% Adjusted-CLT UCL (Chen-1995)	25.1
		95% Modified-t UCL (Johnson-1978)	25.16

Gamma GOF Test

A-D Test Statistic	0.647	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.719	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.286	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	4.184	k star (bias corrected MLE)	2.698
Theta hat (MLE)	4.384	Theta star (bias corrected MLE)	6.798
nu hat (MLE)	66.94	nu star (bias corrected)	43.17

MLE Mean (bias corrected)	18.34	MLE Sd (bias corrected)	11.17
		Approximate Chi Square Value (0.05)	29.11
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	26.22

Assuming Gamma Distribution

95% Approximate Gamma UCL	27.21	95% Adjusted Gamma UCL	30.2

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.859	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.851	Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.255	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.265	Data appear Lognormal at 10% Significance Level	

Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	2.213	Mean of logged Data	2.785
Maximum of Logged Data	3.512	SD of logged Data	0.526

Assuming Lognormal Distribution

95% H-UCL	29.95	90% Chebyshev (MVUE) UCL	28.54
95% Chebyshev (MVUE) UCL	33.2	97.5% Chebyshev (MVUE) UCL	39.66
99% Chebyshev (MVUE) UCL	52.37		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	24.13	95% BCA Bootstrap UCL	24.21
95% Standard Bootstrap UCL	23.84	95% Bootstrap-t UCL	28.06
95% Hall's Bootstrap UCL	23.01	95% Percentile Bootstrap UCL	24.09
90% Chebyshev(Mean, Sd) UCL	28.9	95% Chebyshev(Mean, Sd) UCL	33.68
97.5% Chebyshev(Mean, Sd) UCL	40.32	99% Chebyshev(Mean, Sd) UCL	53.35

Suggested UCL to Use

95% Student's-t UCL	25.01

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Be AP-08

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1	**Mean**	**3.783**
Maximum	8.72	Median	3.08
SD	2.835	Std. Error of Mean	1.002
Coefficient of Variation	0.75	Skewness	0.906

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.884	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.193	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.682	95% Adjusted-CLT UCL (Chen-1995)	5.774
		95% Modified-t UCL (Johnson-1978)	5.735

Gamma GOF Test

A-D Test Statistic	0.278	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.724	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.173	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.297	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	2.064	k star (bias corrected MLE)	1.373
Theta hat (MLE)	1.833	Theta star (bias corrected MLE)	2.755
nu hat (MLE)	33.02	nu star (bias corrected)	21.97
MLE Mean (bias corrected)	3.783	MLE Sd (bias corrected)	3.228
		Approximate Chi Square Value (0.05)	12.32
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	10.53

Assuming Gamma Distribution

95% Approximate Gamma UCL	6.748	95% Adjusted Gamma UCL	7.888

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.95	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.851	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.151	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.265	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	0	Mean of logged Data	1.069
Maximum of Logged Data	2.166	SD of logged Data	0.79

Assuming Lognormal Distribution

95% H-UCL	9.537	90% Chebyshev (MVUE) UCL	7.035
95% Chebyshev (MVUE) UCL	8.502	97.5% Chebyshev (MVUE) UCL	10.54
99% Chebyshev (MVUE) UCL	14.54		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	5.431	95% BCA Bootstrap UCL	5.531
95% Standard Bootstrap UCL	5.36	95% Bootstrap-t UCL	6.968
95% Hall's Bootstrap UCL	7.11	95% Percentile Bootstrap UCL	5.406
90% Chebyshev(Mean, Sd) UCL	6.79	95% Chebyshev(Mean, Sd) UCL	8.152
97.5% Chebyshev(Mean, Sd) UCL	10.04	99% Chebyshev(Mean, Sd) UCL	13.76

Suggested UCL to Use

95% Student's-t UCL	**5.682**

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Co AP-08

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.813	**Mean**	**8.01**
Maximum	22.1	Median	5.045
SD	8.078	Std. Error of Mean	2.856
Coefficient of Variation	1.008	Skewness	1.259

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.786	**Shapiro Wilk GOF Test**

1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level	
Lilliefors Test Statistic	0.323	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level	

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.42	95% Adjusted-CLT UCL (Chen-1995)	14.07
		95% Modified-t UCL (Johnson-1978)	13.63

Gamma GOF Test

A-D Test Statistic	0.363	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.733	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.212	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.3	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	1.197	k star (bias corrected MLE)	0.832
Theta hat (MLE)	6.691	Theta star (bias corrected MLE)	9.633
nu hat (MLE)	19.15	nu star (bias corrected)	13.3
MLE Mean (bias corrected)	8.01	MLE Sd (bias corrected)	8.784
		Approximate Chi Square Value (0.05)	6.098
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	4.92

Assuming Gamma Distribution

95% Approximate Gamma UCL	17.48	95% Adjusted Gamma UCL	21.66

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.956	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.851	Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.153	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.265	Data appear Lognormal at 10% Significance Level	

Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	-0.207	Mean of logged Data	1.608
Maximum of Logged Data	3.096	SD of logged Data	1.088

Assuming Lognormal Distribution

95% H-UCL	40.48	90% Chebyshev (MVUE) UCL	17.79
95% Chebyshev (MVUE) UCL	22.15	97.5% Chebyshev (MVUE) UCL	28.2
99% Chebyshev (MVUE) UCL	40.08		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	12.71	95% BCA Bootstrap UCL	13.31
95% Standard Bootstrap UCL	12.58	95% Bootstrap-t UCL	25.74
95% Hall's Bootstrap UCL	48.66	95% Percentile Bootstrap UCL	12.78
90% Chebyshev(Mean, Sd) UCL	16.58	95% Chebyshev(Mean, Sd) UCL	20.46
97.5% Chebyshev(Mean, Sd) UCL	25.85	99% Chebyshev(Mean, Sd) UCL	36.43

Suggested UCL to Use

95% Student's-t UCL	13.42

The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.

Please verify the data were collected from random locations.

If the data were collected using judgmental or other non-random methods,

then contact a statistician to correctly calculate UCLs.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Li AP-03

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	36.4	**Mean**	**63.36**
Maximum	74.3	Median	67.5
SD	12.23	Std. Error of Mean	4.326
Coefficient of Variation	0.193	Skewness	-1.816

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.813	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.248	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	71.56	95% Adjusted-CLT UCL (Chen-1995)	67.51
		95% Modified-t UCL (Johnson-1978)	71.09

Gamma GOF Test

A-D Test Statistic	0.842	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.716	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.265	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.294	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	24.22	k star (bias corrected MLE)	15.22
Theta hat (MLE)	2.616	Theta star (bias corrected MLE)	4.163
nu hat (MLE)	387.5	nu star (bias corrected)	243.5
MLE Mean (bias corrected)	63.36	MLE Sd (bias corrected)	16.24
		Approximate Chi Square Value (0.05)	208.4
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	200.2

Assuming Gamma Distribution

95% Approximate Gamma UCL	74.04	95% Adjusted Gamma UCL	77.09

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.742	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.851	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.268	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.265	Data Not Lognormal at 10% Significance Level	

Data Not Lognormal at 10% Significance Level

Lognormal Statistics

Minimum of Logged Data	3.595	Mean of logged Data	4.128
Maximum of Logged Data	4.308	SD of logged Data	0.232

Assuming Lognormal Distribution

95% H-UCL	75.82	90% Chebyshev (MVUE) UCL	79.2
95% Chebyshev (MVUE) UCL	86.3	97.5% Chebyshev (MVUE) UCL	96.15
99% Chebyshev (MVUE) UCL	115.5		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	70.48	95% BCA Bootstrap UCL	68.53
95% Standard Bootstrap UCL	70.1	95% Bootstrap-t UCL	69.28
95% Hall's Bootstrap UCL	68.23	95% Percentile Bootstrap UCL	69.31
90% Chebyshev(Mean, Sd) UCL	76.34	95% Chebyshev(Mean, Sd) UCL	82.22
97.5% Chebyshev(Mean, Sd) UCL	90.38	99% Chebyshev(Mean, Sd) UCL	106.4

Suggested UCL to Use

95% Student's-t UCL	71.56

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.

Ra AP-01

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.07	**Mean**	**2.897**
Maximum	9.95	Median	2.005
SD	2.883	Std. Error of Mean	1.019
Coefficient of Variation	0.995	Skewness	2.698

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach, refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance, but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7). The Chebyshev UCL often results in gross overestimates of the mean. Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.568	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.749	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.426	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.333	Data Not Normal at 1% Significance Level	

Data Not Normal at 1% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.828	95% Adjusted-CLT UCL (Chen-1995)	5.612
		95% Modified-t UCL (Johnson-1978)	4.99

Gamma GOF Test

A-D Test Statistic	1.149	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.724	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.361	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.297	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.178	k star (bias corrected MLE)	1.445
Theta hat (MLE)	1.33	Theta star (bias corrected MLE)	2.005
nu hat (MLE)	34.85	nu star (bias corrected)	23.11
MLE Mean (bias corrected)	2.897	MLE Sd (bias corrected)	2.41
		Approximate Chi Square Value (0.05)	13.18
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	11.33

Assuming Gamma Distribution

95% Approximate Gamma UCL	5.081	95% Adjusted Gamma UCL	5.912

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.793	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.851	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.307	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.265	Data Not Lognormal at 10% Significance Level	

Data Not Lognormal at 10% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.0677	Mean of logged Data	0.817
Maximum of Logged Data	2.298	SD of logged Data	0.652

Assuming Lognormal Distribution

95% H-UCL	5.36	90% Chebyshev (MVUE) UCL	4.622
95% Chebyshev (MVUE) UCL	5.485	97.5% Chebyshev (MVUE) UCL	6.683

99% Chebyshev (MVUE) UCL	9.037

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	4.573	95% BCA Bootstrap UCL	5.926
95% Standard Bootstrap UCL	**4.445**	95% Bootstrap-t UCL	12.61
95% Hall's Bootstrap UCL	14.11	95% Percentile Bootstrap UCL	4.775
90% Chebyshev(Mean, Sd) UCL	5.954	95% Chebyshev(Mean, Sd) UCL	7.34
97.5% Chebyshev(Mean, Sd) UCL	9.262	99% Chebyshev(Mean, Sd) UCL	13.04

Suggested UCL to Use

Recommendation cannot be provided

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Ra AP-02

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1.281	**Mean**	**3.296**
Maximum	10.4	Median	2.22
SD	2.954	Std. Error of Mean	1.044
Coefficient of Variation	0.896	Skewness	2.538

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,

refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,

but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).

The Chebyshev UCL often results in gross overestimates of the mean.

Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.612	**Shapiro Wilk GOF Test**	

1% Shapiro Wilk Critical Value	0.749	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.382	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.333	Data Not Normal at 1% Significance Level	

Data Not Normal at 1% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	5.274	95% Adjusted-CLT UCL (Chen-1995)	6.015
		95% Modified-t UCL (Johnson-1978)	5.43

Gamma GOF Test

A-D Test Statistic	1.079	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.723	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.373	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.297	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.465	k star (bias corrected MLE)	1.624
Theta hat (MLE)	1.337	Theta star (bias corrected MLE)	2.03
nu hat (MLE)	39.44	nu star (bias corrected)	25.98
MLE Mean (bias corrected)	3.296	MLE Sd (bias corrected)	2.586
		Approximate Chi Square Value (0.05)	15.37
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	13.34

Assuming Gamma Distribution

95% Approximate Gamma UCL	5.573	95% Adjusted Gamma UCL	6.417

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.805	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.851	Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.341	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.265	Data Not Lognormal at 10% Significance Level	

Data Not Lognormal at 10% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.248	Mean of logged Data	0.976
Maximum of Logged Data	2.342	SD of logged Data	0.625

Assuming Lognormal Distribution

95% H-UCL	5.936	90% Chebyshev (MVUE) UCL	5.248
95% Chebyshev (MVUE) UCL	6.203	97.5% Chebyshev (MVUE) UCL	7.529
99% Chebyshev (MVUE) UCL	10.13		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	5.013	95% BCA Bootstrap UCL	6.178
95% Standard Bootstrap UCL	**4.886**	95% Bootstrap-t UCL	14.13
95% Hall's Bootstrap UCL	20.48	95% Percentile Bootstrap UCL	5.142
90% Chebyshev(Mean, Sd) UCL	6.429	95% Chebyshev(Mean, Sd) UCL	7.848
97.5% Chebyshev(Mean, Sd) UCL	9.817	99% Chebyshev(Mean, Sd) UCL	13.69

Suggested UCL to Use

Recommendation cannot be provided

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

As AP-08

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
Number of Detects	6	Number of Non-Detects	2
Number of Distinct Detects	6	Number of Distinct Non-Detects	2
Minimum Detect	2.17	Minimum Non-Detect	1.66
Maximum Detect	10.5	Maximum Non-Detect	2.92
Variance Detects	10.64	Percent Non-Detects	25%
Mean Detects	3.947	SD Detects	3.263

Median Detects	2.48	CV Detects	0.827
Skewness Detects	2.288	Kurtosis Detects	5.312
Mean of Logged Detects	1.182	SD of Logged Detects	0.606

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.629	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.713	Detected Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.355	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.373	Detected Data appear Normal at 1% Significance Level

Detected Data appear Approximate Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	**3.444**	KM Standard Error of Mean	1.057
90KM SD	2.728	95% KM (BCA) UCL	5.484
95% KM (t) UCL	5.448	95% KM (Percentile Bootstrap) UCL	5.413
95% KM (z) UCL	5.184	95% KM Bootstrap t UCL	13.77
90% KM Chebyshev UCL	6.617	95% KM Chebyshev UCL	8.054
97.5% KM Chebyshev UCL	10.05	99% KM Chebyshev UCL	13.97

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.967	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.702	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.35	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.335	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.778	k star (bias corrected MLE)	1.5

Theta hat (MLE)	1.421	Theta star (bias corrected MLE)	2.631
nu hat (MLE)	33.34	nu star (bias corrected)	18
Mean (detects)	3.947		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	3.174
Maximum	10.5	Median	2.35
SD	3.139	CV	0.989
k hat (MLE)	0.768	k star (bias corrected MLE)	0.563
Theta hat (MLE)	4.135	Theta star (bias corrected MLE)	5.637
nu hat (MLE)	12.28	nu star (bias corrected)	9.009
Adjusted Level of Significance (β)	0.0195		
Approximate Chi Square Value (9.01, α)	3.332	Adjusted Chi Square Value (9.01, β)	2.521
95% Gamma Approximate UCL	8.581	95% Gamma Adjusted UCL	11.34

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	3.444	SD (KM)	2.728
Variance (KM)	7.441	SE of Mean (KM)	1.057
k hat (KM)	1.594	k star (KM)	1.08
nu hat (KM)	25.51	nu star (KM)	17.28
theta hat (KM)	2.16	theta star (KM)	3.19
80% gamma percentile (KM)	5.507	90% gamma percentile (KM)	7.782
95% gamma percentile (KM)	10.04	99% gamma percentile (KM)	15.26

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (17.28, α)	8.87	Adjusted Chi Square Value (17.28, β)	7.398
95% KM Approximate Gamma UCL	6.708	95% KM Adjusted Gamma UCL	8.043

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.733	**Shapiro Wilk GOF Test**	
10% Shapiro Wilk Critical Value	0.826	Detected Data Not Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.327	**Lilliefors GOF Test**	
10% Lilliefors Critical Value	0.298	Detected Data Not Lognormal at 10% Significance Level	

Detected Data Not Lognormal at 10% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.343	Mean in Log Scale	0.974
SD in Original Scale	2.991	SD in Log Scale	0.674
95% t UCL (assumes normality of ROS data)	5.346	95% Percentile Bootstrap UCL	5.34
95% BCA Bootstrap UCL	5.803	95% Bootstrap t UCL	10.5
95% H-UCL (Log ROS)	6.587		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	1.048	KM Geo Mean	2.852
KM SD (logged)	0.539	95% Critical H Value (KM-Log)	2.422
KM Standard Error of Mean (logged)	0.21	95% H-UCL (KM -Log)	5.404
KM SD (logged)	0.539	95% Critical H Value (KM-Log)	2.422
KM Standard Error of Mean (logged)	0.21		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	3.246	Mean in Log Scale	0.911
SD in Original Scale	3.052	SD in Log Scale	0.733
95% t UCL (Assumes normality)	5.29	95% H-Stat UCL	7.077

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 1% Significance Level

Suggested UCL to Use

95% KM (t) UCL	5.448

When a data set follows an approximate distribution passing only one of the GOF tests,
it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Appendix B
Updated Background Threshold Value for Radium 226/228

Background Statistics for Uncensored Full Data Sets

User Selected Options

Date/Time of Computation	ProUCL 5.2 12/15/2023 3:29:27 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Coverage	95%
New or Future K Observations	1
Number of Bootstrap Operations	2000

Background Ra

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
Minimum	1.427	First Quartile	1.749
Second Largest	6.39	Median	3.545
Maximum	9.14	Third Quartile	6.008
Mean	4.157	SD	2.807
Coefficient of Variation	0.675	Skewness	0.729
Mean of logged Data	1.208	SD of logged Data	0.719

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance.

Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	3.187	d2max (for USL)	2.032

Normal GOF Test

Shapiro Wilk Test Statistic	0.894	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.749	Data appear Normal at 1% Significance Level	
Lilliefors Test Statistic	0.208	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.333	Data appear Normal at 1% Significance Level	

Data appear Normal at 1% Significance Level

Note GOF tests may be unreliable for small sample sizes

Background Statistics Assuming Normal Distribution

95% UTL with 95% Coverage	13.1	90% Percentile (z)	7.755
95% UPL (t)	**9.799**	95% Percentile (z)	8.775
95% USL	9.861	99% Percentile (z)	10.69

Gamma GOF Test

A-D Test Statistic	0.377	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.723	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.193	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.297	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	2.462	k star (bias corrected MLE)	1.622
Theta hat (MLE)	1.689	Theta star (bias corrected MLE)	2.563
nu hat (MLE)	39.39	nu star (bias corrected)	25.95
MLE Mean (bias corrected)	4.157	MLE Sd (bias corrected)	3.264

Background Statistics Assuming Gamma Distribution

95% Wilson Hilferty (WH) Approx. Gamma UPL	11.69	90% Percentile	8.5
95% Hawkins Wixley (HW) Approx. Gamma UPL	12.15	95% Percentile	10.55
95% WH Approx. Gamma UTL with 95% Coverage	19.7	99% Percentile	15.16
95% HW Approx. Gamma UTL with 95% Coverage	21.64		
95% WH USL	11.82	95% HW USL	12.29

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.91	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.851	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.174	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.265	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level

Note GOF tests may be unreliable for small sample sizes

Background Statistics assuming Lognormal Distribution

95% UTL with	95% Coverage	33.15	90% Percentile (z)	8.416
	95% UPL (t)	14.21	95% Percentile (z)	10.93
	95% USL	14.44	99% Percentile (z)	17.85

Nonparametric Distribution Free Background Statistics

Data appear Normal at 1% Significance Level

Nonparametric Upper Limits for Background Threshold Values

Order of Statistic, order		8	95% UTL with 95% Coverage	9.14
Approx, f used to compute achieved CC		0.421	Approximate Actual Confidence Coefficient achieved by UTL	0.337
			Approximate Sample Size needed to achieve specified CC	59
95% Percentile Bootstrap UTL with	95% Coverage	9.14	95% BCA Bootstrap UTL with 95% Coverage	9.14
	95% UPL	9.14	90% Percentile	7.215
	90% Chebyshev UPL	13.09	95% Percentile	8.178
	95% Chebyshev UPL	17.14	99% Percentile	8.948
	95% USL	9.14		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.
Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.
The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.