DOMINION ENERGY SOUTH CAROLINA

COPE STATION CLASS III INDUSTRIAL LANDFILL

ORANGEBURG COUNTY, SOUTH CAROLINA

EPA CCR RULE COMPLIANCE

2022 CCR ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

January 31, 2023

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Executive Summary

Dominion Energy South Carolina (DESC) operates a Class III Industrial Landfill (Unit) for the disposal of coal combustion residuals (CCR) at the Cope Generating Station (Station) located near Cope, in Orangeburg County, South Carolina. The Unit receives CCR generated from the combustion of coal at the Station. Management of the CCR at 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 2022, the Unit was operating under the detection monitoring program in accordance with §257.94.

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 2022, the Unit was operating under the detection monitoring program in accordance with §257.94.

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 2022, there were SSIs over background for the following Appendix III constituents at the following wells:
  - Chloride – MW-LF-02

- Fluoride – MW-LF-02

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

- The Unit is in the detection monitoring program and has not initiated assessment monitoring to date.

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.*

- The Unit is in the detection monitoring program and Appendix IV constituents were not evaluated in 2022.

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

- The Unit has not entered the assessment monitoring program and therefore not applicable.

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

- The Unit has not entered the assessment monitoring program and therefore not applicable.

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

- The Unit has not entered the assessment monitoring program and therefore not applicable.

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.

- The Unit has not entered the assessment monitoring program and therefore not applicable.

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 *2022 CCR Annual Groundwater Monitoring and Corrective Action Report* (Report) was prepared on behalf of Dominion Energy South Carolina (DESC) for the Class III Industrial Landfill (Unit) at the Cope Generating Station (Station) located near Cope, in Orangeburg County, South Carolina. Coal combustion residuals (CCR) are produced as part of the electrical generation operations and is disposed of in the Unit. The CCR Unit is managed in accordance with the South Carolina Department of Health and Environmental Control (SCDHEC) Class III Landfill Permit (Permit No. LF3-00028) and 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 by January 31st 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 August 2022.

1.1 Site Location

The Station is operated by DESC and is located at 405 Teamwork Road in Orangeburg County, South Carolina (**Figure 1**). The Station is located approximately 2 miles southwest of Cope, South Carolina. The Unit is located on the northwest portion of the Station property approximately 3,000 feet from the generating plant.

1.2 Site History

The Station is an active coal-fired power station located in Orangeburg County, SC. The facility began operations in 1996 and operates a single 417-megawatt coal-fired unit. The Station consists of Class II and III landfills and a landfill leachate pond. The Class III Landfill is currently regulated under the CCR rule, the Class II Landfill is closed, and the Landfill Leachate Pond is monitored and permitted under a National Pollutant Discharge System (NPDES) issued by SCDHEC. Phase 1 of the Unit was placed into operation in accordance with an operation approval issued by DHEC on November 12, 2014.

1.3 Key Actions

Key actions for the Unit to date are as follows:

- Permitted for management of CCR by SCDHEC under Class III Landfill Permit No. LF3-00028.

- Initiated the Detection Monitoring Program (DMP) on May 12, 2016, with the collection of eight (8) baseline/background samples and completed the background monitoring activities on July 27, 2017, pursuant to the CCR Rule §257.94(b).
- Conducted the initial DMP compliance sampling event on September 25-26, 2017, pursuant to 40 CFR §257.94.
- Placed a copy of the Units 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).
- Background concentrations of Appendix III constituents were updated using United States Environmental Protection Agency-approved statistical procedures in August 2021.
- In 2022, DESC completed an Alternate Source Demonstration (ASD) per 40 CFR §257.94(e)(2) in response to potential Statistically Significant Increases (SSIs) identified during the statistical evaluation of the data generated from the second semiannual 2021 (September 2021) detection monitoring event. The ASD was certified by a South Carolina-registered professional engineer. As required by 40 CFR §257.94(e)(2), a copy of the ASD is included in **Appendix A**. Based on the successful evaluation and the results presented in the ASD, DESC continued with detection monitoring in accordance with 40 CFR §257.94.
- Conducted the first semiannual 2022 detection monitoring between March 8-9, 2022 and completed the sample analyses on March 31, 2022, pursuant to the CCR Rule [§257.94(b)].
- Completed a successful ASD per 40 CFR §257.94(e)(2) for the potential SSIs identified during the first semiannual 2022 detection monitoring event. The ASD was certified by a South Carolina-registered professional engineer. As required by 40 CFR §257.94(e)(2), a copy of the ASD is included in this Report and provided in **Appendix B**. DESC continued with detection monitoring in accordance with 40 CFR §257.94.
- Conducted the second semiannual 2022 detection monitoring between August 24, 29, and 30, 2022 and completed the sample analyses on September 12, 2022, pursuant to the CCR Rule [§257.94(b)]. An ASD evaluation of the data will be performed during the first quarter of 2023 per 40 CFR §257.94(e)(2).
- The Unit remained in detection monitoring for the duration of 2022.

1.4 Monitoring Program Concerns

There were no monitoring program concerns identified during 2022.

Section 2
Site Information

2.1 Monitoring Well Network

Groundwater monitoring wells (MW-LF-01, MW-LF-02, MW-LF-03, MW-LF-04, MW-LF-05, and MW-LF-06) were installed and developed at the Unit in March 2016 to serve as the EPA CCR Compliance Monitoring Well Network. Existing monitoring wells MW-BG-06 and MW-BG-16, utilized for other monitoring programs for the Unit, were incorporated into the CCR Compliance Monitoring Well Network in November 2016. Two additional groundwater monitoring wells, AS-LF-01 and AS-LF-02, that were installed in November 2017, and one existing monitoring well, MW-40, served as ASD monitoring wells for SSIs observed during Detection Monitoring in September and October 2017. The results of the ASD, performed by others, were presented in the August 2018 *Alternate Source Demonstration Report, Cope Station Class 3 Landfill* and demonstrated the SSIs were not due to a release from the Unit at the Station and no further actions were warranted. Both AS-LF-01 and AS-LF-02 were incorporated into the CCR Compliance Monitoring Well Network in December 2017. Groundwater monitoring well MW-40 is used to support potential ASD activities.

The Compliance Monitoring Well Network currently consists of five upgradient wells (MW-LF-01, MW-BG-06, MW-BG-16, AS-LF-01, and AS-LF-02) to monitor background groundwater quality entering the surficial aquifer of the Unit and five downgradient monitoring wells (MW-LF-02, MW-LF-03, MW-LF-04, MW-LF-05, and MW-LF-06) that serve to monitor groundwater quality downgradient of the Unit. One monitoring well (MW-40) is used to support ASD evaluations. The location of the EPA CCR Rule Compliance Monitoring Well Network is presented on **Figure 2**.

2.2 Monitoring Well Installation and Decommissioning Activities

DESC did not install any new wells or decommission any existing wells in the certified groundwater monitoring system during 2022.

2.3 Groundwater Potentiometric Surface Evaluation

Current and historic static water level data for the Station are summarized in **Table 1**. Per requirements of 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 conducted in

March and August 2022. Using the groundwater contours from March (**Figure 3**) and August (**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 48 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 2022 Detection Monitoring Program

The groundwater potentiometric surface map for March 2022 is presented in **Figure 3**. Using an estimated effective porosity value of 20% and an estimated average hydraulic conductivity value of 5.40 ft/day, the average rate of groundwater flow for the uppermost aquifer beneath the Unit was calculated to be 48.59 ft/year.

Well 1	Well 2	h^1 (ft)	h^2 (ft)	S (ft)	i	K (ft/day) (1)	n_e	Vs (ft/day)	Vs (ft/yr.)
MW-BG-16	MW-LF-06	171.54	158.31	2,590	0.0051	5.40	0.20	0.1379	50.33
MW-LF-01	MW-LF-05	167.81	157.20	1,880	0.0056			0.1524	55.61
AS-LF-01	MW-LF-04	164.00	159.81	1,300	0.0032			0.0870	31.76
MW-LF-03	MW-LF-04	162.34	159.81	440	0.0058			0.1552	56.66
						Average		0.1331	48.59

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

2.3.2 Second Semiannual 2022 Detection Monitoring Program

The groundwater potentiometric surface map for August 2022 is presented in **Figure 4**. Using an estimated effective porosity value of 20% and estimated average hydraulic conductivity value of 5.40 ft/day, the average rate of groundwater flow for the uppermost aquifer beneath the Unit was calculated to be 48.45 ft/year.

Well 1	Well 2	h^1 (ft)	h^2 (ft)	S (ft)	i	K (ft/day) (1)	n_e	Vs (ft/day)	Vs (ft/yr.)
MW-BG-16	MW-LF-06	170.02	158.12	2,590	0.0046	5.40	0.20	0.1240	45.27
MW-LF-01	MW-LF-05	166.78	156.81	1,880	0.0053			0.1432	52.25
AS-LF-01	MW-LF-04	164.06	159.72	1,300	0.0033			0.0901	32.90
MW-LF-03	MW-LF-04	162.55	159.72	440	0.0064			0.1736	63.38
						Average		0.1327	48.45

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

Section 3
Field Activities

CCR-related groundwater sampling activities that occurred during 2022 are summarized in the following sections.

3.1 Compliance Monitoring Program Sampling Activities

As per 40 CFR §257.94(c), two semiannual DMP events were completed for the constituents and parameters listed in Appendix III of the CCR Rule. Summaries of the 2022 DMP sampling events are presented below.

2022 Monitoring Event	Sample Dates	Final Laboratory Package Receipt Date
First Semiannual Detection Monitoring Program Event	March 8-9, 2022	March 31, 2022
Second Semiannual Detection Monitoring Program Event	August 24, 29, and 30, 2022	September 12, 2022

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

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 SCDHEC Environmental Laboratory Certification Program (ELCP) accredited laboratory for analysis of CCR Rule constituents (GEL certification #10120001).

Section 4
Laboratory Analytical Results

Laboratory analytical results from the DMP sampling events conducted in 2022 are summarized in the following sections.

4.1 First Semiannual 2022 Detection Monitoring Program Event

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

4.2 Second Semiannual 2022 Detection Monitoring Program Event

The groundwater sampling collected during the second semiannual DMP event were analyzed by GEL for the constituents and parameters listed in Appendix III of the CCR Rule. The laboratory certificates of analysis, chain-of-custody forms, and field notes for the sampling event are presented in **Appendix D**. 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 DMP sampling events. The reviews were performed with guidance from the USEPA data validation guidelines and in accordance with the Station's GWMP. A discussion of the findings is presented below.

5.1 First Semiannual 2022 Compliance Event Findings

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

- One blind duplicate sample was collected from the MW-LF-05 location on March 9, 2022.
- Additional sample volume was collected at AS-LF-01 on March 9, 2022, to allow for the laboratory to conduct a matrix spike (MS) and matrix spike duplicate (MSD) quality control check.
- A field blank was collected in the area of MW-LF-01 on March 9, 2022, 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 C**.

5.2 Second Semiannual 2022 Compliance Event Findings

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

- One blind duplicate sample was collected from the MW-LF-06 location on August 29, 2022.
- Additional sample volume was collected at MW-LF-02 on August 30, 2022, to allow for the laboratory to conduct a MS/MSD quality control check.
- A field blank was collected in the area of MW-LF-06 on August 29, 2022, 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 in the area of MW-40 on August 30, 2022, 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 D**.

Section 6
Statistical Evaluation of Groundwater Data

Statistical evaluation of the semiannual DMP 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 2022 are summarized in the following sections.

6.1 Site-Specific Background Evaluations

Compliance data from each semiannual event was evaluated against site-specific background values as follows.

6.1.1 First Semiannual 2022 Compliance Event

Pursuant to 40 CFR §257.95, TRC evaluated Appendix III constituent detections against site-specific background values that were established for the DMP (**Appendix E**). Based on that evaluation, the following Appendix III SSIs were identified for the first semiannual 2022 event (**Table 2**):

- Chloride (MW-LF-02)
- Fluoride (MW-LF-02)

An ASD and certification was prepared for these SSIs and is attached as **Appendix B**.

6.1.2 Second Semiannual 2022 Compliance Event

Pursuant to 40 CFR §257.95, TRC evaluated Appendix III constituent detections against site-specific background values that were established for the DMP (**Appendix F**). Based on that evaluation, the following Appendix III SSIs were identified for the second semiannual 2022 event (**Table 3**):

- Chloride (MW-LF-02)

An ASD evaluation of the data from the second semiannual 2022 compliance event will be performed during the first quarter of 2023 per 40 CFR §257.94(e)(2).

Section 7
Conclusions

7.1 Findings

The first semiannual 2022 DMP compliance sampling event was conducted on March 8 - 9, 2022, with sample analyses completed on March 31, 2022. The second semiannual 2022 DMP compliance sampling event was conducted on August 24, 29, and 30, 2022, with sample analyses complete on September 12, 2022. These groundwater sampling and analysis activities were performed in general accordance with the requirements of the Unit's GWMP for the CCR Rule network.

Evaluation of the monitoring results from the first semiannual 2022 event identified an exceedance above the background value for chloride and fluoride in MW-LF-02. DESC completed a successful ASD for the potential SSI identified during the first semiannual 2022 detection monitoring event. The ASD was certified by a South Carolina-registered professional engineer and presented in this Report (**Appendix B**). Monitoring results from the second semiannual 2022 event identified exceedances above the background value for chloride in MW-LF-02. An ASD evaluation is being conducted in accordance with the applicable CCR Rule timeframe.

7.2 Planned Activities

Based on the results from the 2022 monitoring activities, DESC intends to continue with semiannual groundwater monitoring activities in 2023 that are consistent with the provisions in the CCR Rule [Part 257.94] and prepare an ASD to address 2022 second semiannual SSIs. In addition, DESC plans to install additional observation wells in the vicinity of the Unit to further refine hydrogeologic conditions.

Section 8
References

Environmental Protection Agency (EPA). 2015. Federal Register. Volume 80. No. 74. Friday April 17, 2015. Part II. Environmental Protection Agency. *40 CFR Parts 257and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule.* [EPA-HQ-RCRA–2009–0640; FRL–9919–44–OSWER]. RIN–2050–AE81.

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Nautilus 2021. Analysis of Groundwater Flow Rate and Direction: September 2020 Monitoring Data, Cope Station: Class III Landfill, Wateree Station: Class III Landfill, FGD Pond, Ash Pond, Williams Station: FGD Pond, Highway 52 Class III Landfill: Nautilus Geologic Consulting, PLLC. February 2021.

Section 9
Signature Page

This *2022 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 Class III Industrial Landfill at Cope 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)].

Name: Richard A. Mayer Jr., P.G.

Expiration Date: June 30, 2023

Company: TRC Environmental Corporation

Date: January 31, 2023

(SEAL)

Tables

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-LF-01	176.41	5/12/2016	7.56	168.85
		7/14/2016	8.82	167.59
		9/14/2016	8.13	168.28
		11/8/2016	8.48	167.93
		1/25/2017	5.95	170.46
		3/29/2017	7.08	169.33
		5/15/2017	6.84	169.57
		7/27/2017	9.40	167.01
		9/25/2017	9.68	166.73
		10/12/2017	10.51	165.90
		10/30/2017	10.19	166.22
		12/11/2017	9.01	167.40
		12/19/2017	8.81	167.60
		12/28/2017	8.24	168.17
		2/21/2018	8.29	168.12
		3/21/2018	8.49	167.92
		9/17/2018	8.21	168.20
		3/20/2019	5.89	170.52
		9/20/2019	9.88	166.53
		3/16/2020	4.86	171.55
		9/21/2020	7.97	168.44
		3/15/2021	5.31	171.10
		9/28/2021	9.92	166.49
		3/8/2022	8.60	167.81
		8/24/2022	9.63	166.78
MW-LF-02	190.08	5/12/2016	25.38	164.70
		7/14/2016	26.30	163.78
		9/14/2016	25.40	164.68
		11/8/2016	26.68	163.40
		1/25/2017	23.82	166.26
		3/29/2017	25.61	164.47
		5/15/2017	24.88	165.20
		7/27/2017	26.86	163.22
		9/25/2017	27.00	163.08
		10/12/2017	27.81	162.27
		10/30/2017	27.35	162.73
		12/11/2017	26.00	164.08
		12/19/2017	26.62	163.46
		12/28/2017	26.65	163.43
		2/21/2018	26.82	163.26
		3/21/2018	27.22	162.86
		9/18/2018	25.54	164.54
		3/20/2019	23.53	166.55
		9/19/2019	26.30	163.78
		3/16/2020	21.67	168.41
		9/21/2020	23.74	166.34
		3/16/2021	22.12	167.96
		9/28/2021	26.06	164.02
		3/8/2022	26.18	163.90
		8/24/2022	25.87	164.21

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

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-LF-03	187.19	5/12/2016	23.34	163.85
		7/14/2016	24.53	162.66
		9/14/2016	23.60	163.59
		11/8/2016	24.61	162.58
		1/25/2017	22.78	164.41
		3/30/2017	23.99	163.20
		5/15/2017	23.25	163.94
		7/27/2017	25.33	161.86
		9/25/2017	25.68	161.51
		10/12/2017	26.31	160.88
		10/30/2017	26.14	161.05
		3/21/2018	25.86	161.33
		9/18/2018	23.96	163.23
		3/20/2019	22.30	164.89
		9/19/2019	25.35	161.84
		3/16/2020	19.75	167.44
		9/21/2020	23.44	163.75
		3/15/2021	20.45	166.74
		9/28/2021	24.95	162.24
		3/8/2022	24.85	162.34
		8/24/2022	24.64	162.55
MW-LF-04	184.20	5/12/2016	23.29	160.91
		7/14/2016	24.31	159.89
		9/14/2016	24.03	160.17
		11/8/2016	24.03	160.17
		1/25/2017	22.78	161.42
		3/30/2017	23.49	160.71
		5/15/2017	23.18	161.02
		7/27/2017	24.86	159.34
		9/25/2017	25.44	158.76
		10/12/2017	25.86	158.34
		10/30/2017	25.87	158.33
		3/21/2018	25.12	159.08
		9/18/2018	23.90	160.30
		3/20/2019	22.53	161.67
		9/19/2019	25.22	158.98
		3/16/2020	20.77	163.43
		9/21/2020	24.23	159.97
		3/16/2021	21.01	163.19
		9/28/2021	24.65	159.55
		3/8/2022	24.39	159.81
		8/24/2022	24.48	159.72

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

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-LF-05	177.95	5/12/2016	20.36	157.59
		7/14/2016	21.25	156.70
		9/14/2016	20.83	157.12
		11/8/2016	20.75	157.20
		1/25/2017	19.41	158.54
		3/30/2017	20.18	157.77
		5/15/2017	20.08	157.87
		7/27/2017	21.28	156.67
		9/25/2017	21.84	156.11
		10/12/2017	22.10	155.85
		10/30/2017	21.94	156.01
		3/21/2018	21.00	156.95
		9/18/2018	21.67	156.28
		3/20/2019	19.61	158.34
		9/19/2019	21.85	156.10
		3/16/2020	18.64	159.31
		9/18/2020	20.87	157.08
		3/15/2021	18.74	159.21
		9/28/2021	21.20	156.75
		3/8/2022	20.75	157.20
		8/24/2022	21.14	156.81
MW-LF-06	178.57	5/12/2016	19.12	159.45
		7/14/2016	20.07	158.50
		9/15/2016	20.41	158.16
		11/8/2016	19.88	158.69
		1/25/2017	18.76	159.81
		3/30/2017	19.18	159.39
		5/15/2017	19.01	159.56
		7/27/2017	20.40	158.17
		9/26/2017	21.19	157.38
		10/12/2017	21.39	157.18
		10/30/2017	21.41	157.16
		3/21/2018	20.59	157.98
		9/18/2018	19.85	158.72
		3/20/2019	18.59	159.98
		9/19/2019	21.00	157.57
		3/16/2020	17.22	161.35
		9/18/2020	20.39	158.18
		3/16/2021	17.53	161.04
		9/28/2021	20.49	158.08
		3/8/2022	20.26	158.31
		8/24/2022	20.45	158.12

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

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
MW-BG-06	187.95	11/8/2016	12.82	175.13
		1/26/2017	10.76	177.19
		3/29/2017	12.55	175.40
		5/16/2017	12.93	175.02
		7/28/2017	15.88	172.07
		9/26/2017	16.28	171.67
		10/10/2017	16.72	171.23
		10/30/2017	16.15	171.80
		2/22/2018	13.48	174.47
		3/21/2018	13.48	174.47
		9/17/2018	14.49	173.46
		3/21/2019	12.44	175.51
		9/19/2019	16.75	171.20
		3/16/2020	11.45	176.50
		9/18/2020	13.79	174.16
		3/15/2021	11.59	176.36
		9/28/2021	16.30	171.65
		3/8/2022	14.48	173.47
		8/24/2022	16.93	171.02
MW-BG-16	182.52	11/8/2016	9.06	173.46
		1/26/2017	7.63	174.89
		3/29/2017	8.22	174.30
		5/16/2017	8.63	173.89
		7/28/2017	10.60	171.92
		9/26/2017	11.24	171.28
		10/10/2017	11.72	170.80
		10/30/2017	11.36	171.16
		2/22/2018	10.27	172.25
		3/21/2018	10.25	172.27
		9/17/2018	10.45	172.07
		3/21/2019	8.49	174.03
		9/19/2019	12.25	170.27
		3/16/2020	8.28	174.24
		9/18/2020	9.92	172.60
		3/16/2021	8.33	174.19
		9/28/2021	12.01	170.51
		3/8/2022	10.98	171.54
		8/24/2022	12.50	170.02

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

Table 1
Summary of Historical CCR Static Water Level Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

Monitoring Well ID	Top of Casing Elevation (ft. AMSL)	Date	Depth to Water (feet)	Static Water Level Elevation (ft. AMSL)
AS-LF-01	174.75	12/11/2017	11.50	163.25
		12/19/2017	14.15	160.60
		12/28/2017	13.81	160.94
		2/21/2018	13.77	160.98
		3/22/2018	14.08	160.67
		9/18/2018	12.73	162.02
		3/21/2019	11.48	163.27
		9/20/2019	10.13	164.62
		3/17/2020	8.11	166.64
		9/18/2020	10.69	164.06
		3/15/2021	7.65	167.10
		9/28/2021	10.81	163.94
		3/8/2022	10.75	164.00
		8/24/2022	10.69	164.06
AS-LF-02	175.38	12/11/2017	10.91	164.47
		12/19/2017	11.14	164.24
		12/28/2017	10.67	164.71
		2/21/2018	10.80	164.58
		3/22/2018	10.98	164.40
		9/18/2018	9.94	165.44
		3/21/2019	7.89	167.49
		9/20/2019	10.41	164.97
		3/17/2020	7.36	168.02
		9/18/2020	8.77	166.61
		3/16/2021	7.66	167.72
		9/28/2021	10.54	164.84
		3/8/2022	10.41	164.97
		8/24/2022	10.46	164.92
MW-40	177.28	12/11/2017	12.03	165.25
		12/19/2017	12.11	165.17
		12/28/2017	11.82	165.46
		2/21/2018	11.82	165.46
		3/21/2018	12.13	165.15
		9/17/2018	10.75	166.53
		3/21/2019	11.57	165.71
		9/20/2019	11.13	166.15
		9/20/2019	11.13	166.15
		3/17/2020	7.46	169.82
		9/18/2020	9.7	167.58
		3/16/2021	7.95	169.33
		9/28/2021	11.21	166.07
		3/8/2022	11.18	166.10
		8/24/2022	11.04	166.24

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

Table 2
Summary of First 2022 Semiannual Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

			Background Wells																						ASD Support Well			
		Sample ID:	MW-LF-01				MW-BG-06				MW-BG-16				AS-LF-01				AS-LF-02				MW-40			
		Sample Date:	03/09/2022				03/08/2022				03/08/2022				03/09/2022				03/09/2022				03/09/2022			
Parameter Name	**Units**	**Background Threshold Values**	**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	1000	**6.98**	J	4.00	15.0	**8.61**	J	4.00	15.0	**9.64**	J	4.00	15.0	**12.3**	J	4.00	15.0	**16.3**		4.00	15.0	**37.7**		4.00	15.0
Calcium	mg/L	15.8	**2.200**		0.030	0.100	**9.780**		0.030	0.100	**2.040**		0.030	0.100	**4.010**		0.030	0.100	**4.540**		0.030	0.100	**31.700**		0.030	0.100
Chloride	mg/L	21.9	**8.90**		0.0670	0.200	**17.6**		0.335	1.00	**3.54**		0.0670	0.200	**5.27**		0.0670	0.200	**13.0**		0.134	0.400	**44.5**		1.34	4.00
Fluoride	mg/L	0.165	0.0330	U	0.0330	0.100	**0.0584**	J	0.0330	0.100	0.0330	U	0.0330	0.100	**0.113**		0.0330	0.100	**0.0630**	J	0.0330	0.100	**0.891**		0.0330	0.100
pH	SU	3.4 - 6.2	4.42		0.01	0.01	4.31		0.01	0.01	4.31		0.01	0.01	4.52		0.01	0.01	4.45		0.01	0.01	4.13		0.01	0.01
Sulfate	mg/L	21.6	**0.312**	J	0.133	0.400	0.133	U	0.133	0.400	**1.73**		0.133	0.400	**15.1**		0.133	0.400	**10.1**		0.133	0.400	**160**		0.133	0.400
Total Dissolved Solids	mg/L	295.3	**10.0**	J	3.40	14.3	**101**		3.40	14.3	**4.29**	J	3.40	14.3	**24.3**	J	3.40	14.3	**42.9**	J	3.40	14.3	**301**	J	3.40	14.3
Field Parameters																										
Conductivity	µS/cm	--	48.32		0.1	0.1	181.72		0.1	0.1	45.54		0.1	0.1	67.95		0.1	0.1	96.69		0.1	0.1	510.09		0.1	0.1
Dissolved Oxygen	mg/L	--	3.57		0.01	0.01	7.18		0.01	0.01	7.45		0.01	0.01	5.02		0.01	0.01	4.39		0.01	0.01	0.33		0.01	0.01
Temperature	C	--	20.22		0.01	0.01	17.72		0.01	0.01	17.53		0.01	0.01	19.61		0.01	0.01	20.55		0.01	0.01	20.72		0.01	0.01
Turbidity	NTU	--	3.39		0.1	0.1	0.56		0.1	0.1	1.61		0.1	0.1	0.21		0.1	0.1	1.23		0.1	0.1	0.43		0.1	0.1
Depth to Water	ft btoc	--	8.60		0.01	0.01	14.48		0.01	0.01	10.98		0.01	0.01	10.75		0.01	0.01	10.41		0.01	0.01	11.18		0.01	0.01
Groundwater Elevation	ft msl	--	167.81		0.01	0.01	173.47		0.01	0.01	171.54		0.01	0.01	164.00		0.01	0.01	164.97		0.01	0.01	166.10		0.01	0.01
Oxidation Reduction Potential	millivolts	--	222.2		0.1	0.1	139.9		0.1	0.1	105.5		0.1	0.1	106.1		0.1	0.1	108.2		0.1	0.1	191.9		0.1	0.1

Notes:
MDL = Method Detection Limit
QL = Quantification Limit
mg/L = Milligram 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

Qualifiers (Qual)
J = Estimated Results
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values

Bold font = Detected constituent
* - Groundwater Elevation data collected on March 8, 2022

Table 2
Summary of First 2022 Semiannual Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

			Downgradient Wells																							
		Sample ID:	MW-LF-02				MW-LF-03				MW-LF-04				MW-LF-05				MW-LF-05 DUP				MW-LF-06			
		Sample Date:	03/09/2022				03/09/2022				03/09/2022				03/09/2022				03/09/2022				03/09/2022			
Parameter Name	**Units**	**Background Threshold Values**	**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	1000	**17.1**		4.00	15.0	**8.19**	J	4.00	15.0	**9.69**	J	4.00	15.0	**10.2**	J	4.00	15.0	**10.6**	J	4.00	15.0	**9.02**	J	4.00	15.0
Calcium	mg/L	15.8	**5.720**		0.030	0.100	**1.070**		0.030	0.100	**1.860**		0.030	0.100	**2.840**		0.030	0.100	**2.790**		0.030	0.100	**2.150**		0.030	0.100
Chloride	mg/L	21.9	**39.9**		0.0670	2.00	**3.57**		0.0670	0.200	**4.66**		0.0670	0.200	**9.14**		0.134	0.400	**9.26**		0.134	0.400	**8.12**		0.0670	0.200
Fluoride	mg/L	0.165	**0.171**		0.0330	0.100	0.0330	U	0.0330	0.100	0.0330	U	0.0330	0.100	0.0330	U	0.0330	0.100	0.0330	U	0.0330	0.100	0.0330	U	0.0330	0.100
pH	SU	3.4 - 6.2	4.21		0.01	0.01	4.55		0.01	0.01	4.51		0.01	0.01	4.40		0.01	0.01	4.40		0.01	0.01	4.41		0.01	0.01
Sulfate	mg/L	21.6	**6.26**		0.133	0.400	**0.570**		0.133	0.400	**0.620**		0.133	0.400	**0.583**		0.133	0.400	**0.575**		0.133	0.400	**0.638**		0.133	0.400
Total Dissolved Solids	mg/L	295.3	**77.1**	J	3.40	14.3	**8.57**	J	3.40	14.3	**17.1**	J	3.40	14.3	**32.9**	J	3.40	14.3	**42.9**	J	3.40	14.3	**30.0**	J	3.40	14.3
Field Parameters																										
Conductivity	µS/cm	--	178.86		0.1	0.1	34.32		0.1	0.1	47.95		0.1	0.1	74.90		0.1	0.1	74.90		0.1	0.1	58.78		0.1	0.1
Dissolved Oxygen	mg/L	--	0.54		0.01	0.01	2.72		0.01	0.01	4.70		0.01	0.01	4.63		0.01	0.01	4.63		0.01	0.01	4.48		0.01	0.01
Temperature	C	--	22.24		0.01	0.01	22.45		0.01	0.01	22.99		0.01	0.01	21.42		0.01	0.01	21.42		0.01	0.01	22.53		0.01	0.01
Turbidity	NTU	--	2.08		0.1	0.1	1.48		0.1	0.1	4.41		0.1	0.1	0.45		0.1	0.1	0.45		0.1	0.1	3.31		0.1	0.1
Depth to Water	ft btoc	--	26.18		0.01	0.01	24.85		0.01	0.01	24.39		0.01	0.01	20.75		0.01	0.01	20.75		0.01	0.01	20.26		0.01	0.01
Groundwater Elevation	ft msl	--	163.90		0.01	0.01	162.34		0.01	0.01	159.81		0.01	0.01	157.20		0.01	0.01	157.20		0.01	0.01	158.31		0.01	0.01
Oxidation Reduction Potential	millivolts	--	422.8		0.1	0.1	195.8		0.1	0.1	190.2		0.1	0.1	109.6		0.1	0.1	109.6		0.1	0.1	248.1		0.1	0.1

Notes:
MDL = Method Detection Limit
QL = Quantification Limit
mg/L = Milligram 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

Qualifiers (Qual)
J = Estimated Results
J+ = Potentially high value
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent
* - Groundwater Elevation data collected on March 8, 2022

Table 3
Summary of Second Semiannual 2022 Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

			Background Wells																				ASD Support Well			
		Sample ID:	MW-LF-01				MW-BG-06				MW-BG-16				AS-LF-01				AS-LF-02				MW-40			
		Sample Date:	08/29/2022				08/29/2022				08/29/2022				08/30/2022				08/30/2022				08/30/2022			
Parameter Name	**Units**	**Background Threshold Values**	**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	1000	**11.2**	J	4.00	15.0	**7.70**	J	4.00	15.0	**9.26**	J	4.00	15.0	**19.5**		4.00	15.0	**31.7**		4.00	15.0	**48.6**		4.00	15.0
Calcium	mg/L	15.8	**2.040**		0.030	0.100	**9.630**		0.030	0.030	**1.890**		0.030	0.030	**1.810**		0.030	0.030	**3.620**		0.030	0.030	**30.100**		0.030	0.030
Chloride	mg/L	21.9	**9.52**		0.0670	0.200	**18.0**		0.335	1.00	**3.09**		0.0670	0.200	**2.62**		0.0670	0.200	**5.34**		0.0670	0.200	**45.9**		0.067	0.200
Fluoride	mg/L	0.165	0.0330	U	0.0330	0.100	0.0330	U	0.0330	0.100	0.0330	U	0.0330	0.100	0.0330	U	0.0330	0.100	**0.0375**	J	0.0330	0.100	**0.589**		0.0330	0.100
pH	SU	3.4 - 6.2	4.43		0.01	0.01	4.23		0.01	0.01	4.66		0.01	0.01	4.30		0.01	0.01	4.41		0.01	0.01	4.01		0.01	0.01
Sulfate	mg/L	21.6	**0.371**	J	0.133	0.400	**0.284**	J	0.133	0.400	**2.26**		0.133	0.400	**12.0**		0.133	0.400	**16.4**		0.133	0.400	**139**		1.33	4.00
Total Dissolved Solids	mg/L	295.3	**2.38**	U	2.38	10.0	**87.0**		2.38	10.0	**10.0**		2.38	10.0	**9.00**	J	2.38	10.0	**36.0**		2.38	10.0	**263**		2.38	10.0
Field Parameters																										
Conductivity	µS/cm	--	52.90		0.1	0.1	183.56		0.1	0.1	41.46		0.1	0.1	57.68		0.1	0.1	82.10		0.1	0.1	480.97		0.1	0.1
Dissolved Oxygen	mg/L	--	2.25		0.01	0.01	6.26		0.01	0.01	6.91		0.01	0.01	4.06		0.01	0.01	3.29		0.01	0.01	0.17		0.01	0.01
Temperature	C	--	25.40		0.01	0.01	21.18		0.01	0.01	21.48		0.01	0.01	25.51		0.01	0.01	25.29		0.01	0.01	24.44		0.01	0.01
Turbidity	NTU	--	2.17		0.1	0.1	1.95		0.1	0.1	2.05		0.1	0.1	1.58		0.1	0.1	2.06		0.1	0.1	1.84		0.1	0.1
Depth to Water	ft btoc	--	9.63		0.01	0.01	16.93		0.01	0.01	12.50		0.01	0.01	10.69		0.01	0.01	10.46		0.01	0.01	11.04		0.01	0.01
Groundwater Elevation	ft msl	--	166.78		0.01	0.01	171.02		0.01	0.01	170.02		0.01	0.01	164.06		0.01	0.01	164.92		0.01	0.01	166.24		0.01	0.01
Oxidation Reduction Potential	millivolts	--	70.1		0.1	0.1	80.1		0.1	0.1	91.3		0.1	0.1	73.4		0.1	0.1	91.9		0.1	0.1	111.7		0.1	0.1

Notes:
MDL = Method Detection Limit
QL = Quantification Limit
mg/L = Milligram 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

Qualifiers (Qual)
J = Estimated Results
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent
* - Groundwater Elevation data collected on August 24, 2022

Table 3
Summary of Second 2022 Semiannual Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

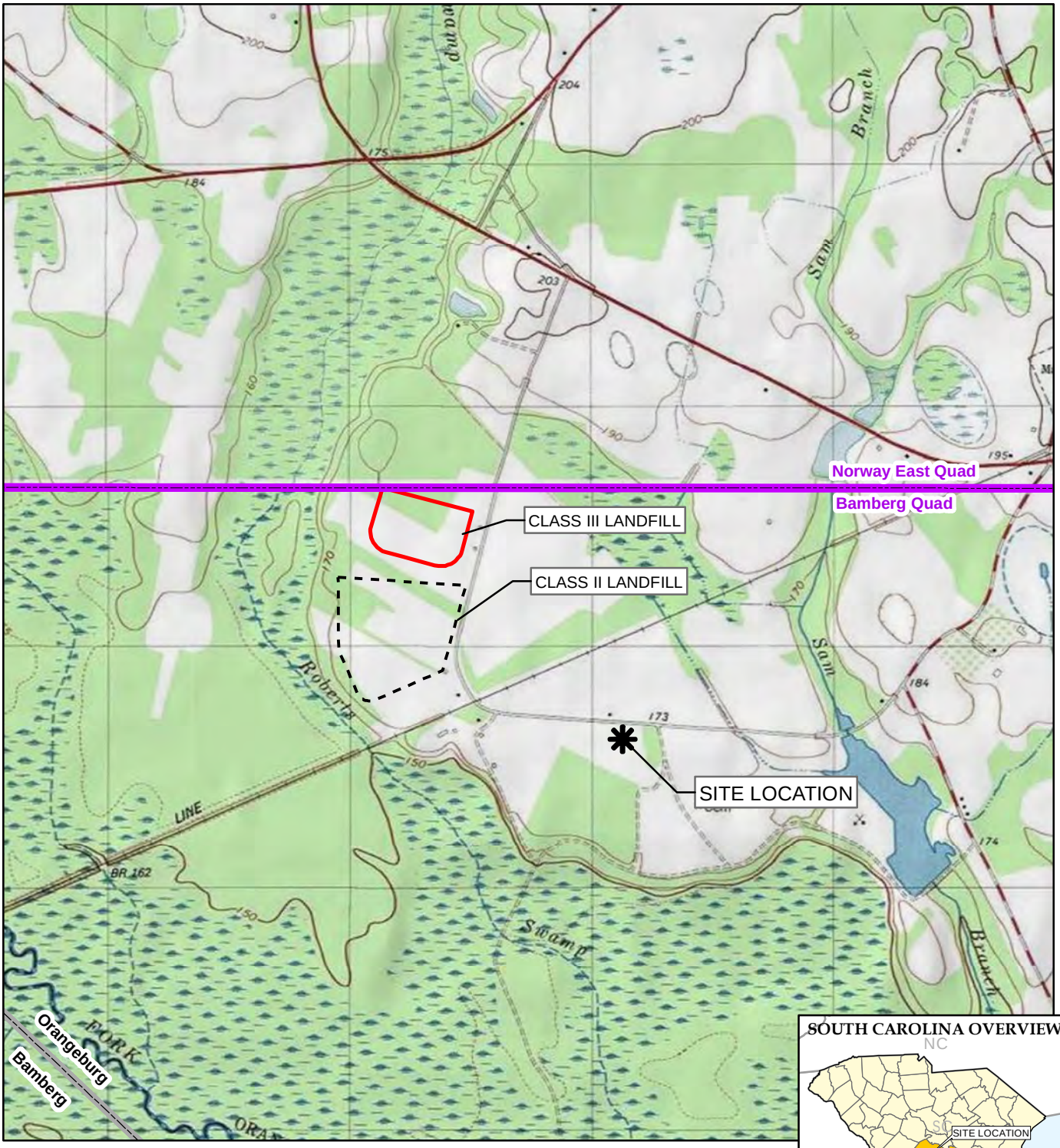
			Downgradient Wells																							
		Sample ID:	MW-LF-02				MW-LF-03				MW-LF-04				MW-LF-05				MW-LF-06				MW-LF-06-DUP			
		Sample Date:	08/30/2022				08/30/2022				08/29/2022				08/29/2022				08/29/2022				08/29/2022			
Parameter Name	**Units**	**Background Threshold Values**	**Result**	**Qual**	**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	1000	**16.4**		4.00	15.0	**7.62**	J	4.00	15.0	**9.88**	J	4.00	15.0	**10.2**	J	4.00	15.0	**10.6**	J	4.00	15.0	**10.4**	J	4.00	15.0
Calcium	mg/L	15.8	**4.870**		0.030	0.100	**1.220**		0.030	0.100	**1.730**		0.030	0.100	**2.680**		0.030	0.030	**2.410**		0.030	0.030	**2.290**		0.030	0.030
Chloride	mg/L	21.9	**30.1**		0.335	1.00	**3.34**		0.0670	0.200	**4.87**		0.0670	0.200	**9.74**		0.0670	0.200	**8.62**		0.0670	0.200	**8.58**		0.0670	0.200
Fluoride	mg/L	0.165	**0.124**		0.0330	0.100	**0.0330**	U	0.0330	0.100	0.0330	U	0.0330	0.100	0.0330	U	0.0330	0.100	0.0330	U	0.0330	0.100	0.0330	U	0.0330	0.100
pH	SU	3.4 - 6.2	3.88		0.01	0.01	4.03		0.01	0.01	4.13		0.01	0.01	4.01		0.01	0.01	4.01		0.01	0.01	4.01		0.01	0.01
Sulfate	mg/L	21.6	**7.34**		0.133	0.400	**0.491**		0.133	0.400	**0.682**		0.133	0.400	**0.656**		0.133	0.400	**0.592**		0.133	0.400	**0.571**		0.133	0.400
Total Dissolved Solids	mg/L	295.3	**55.0**		2.38	10.0	**2.38**	U	2.38	10.0	**14.0**		2.38	10.0	**32.0**		2.38	10.0	**17.0**		2.38	10.0	**14.0**		2.38	10.0
Field Parameters																										
Conductivity	µS/cm	--	163.77		0.1	0.1	38.19		0.1	0.1	49.89		0.1	0.1	76.91		0.1	0.1	60.75		0.1	0.1	60.75		0.1	0.1
Dissolved Oxygen	mg/L	--	0.50		0.01	0.01	2.66		0.01	0.01	4.63		0.01	0.01	4.45		0.01	0.01	4.10		0.01	0.01	4.10		0.01	0.01
Temperature	C	--	24.37		0.01	0.01	24.72		0.01	0.01	24.06		0.01	0.01	27.01		0.01	0.01	26.42		0.01	0.01	26.42		0.01	0.01
Turbidity	NTU	--	0.75		0.1	0.1	0.14		0.1	0.1	2.15		0.1	0.1	0.35		0.1	0.1	0.57		0.1	0.1	0.57		0.1	0.1
Depth to Water	ft btoc	--	25.87		0.01	0.01	24.64		0.01	0.01	24.48		0.01	0.01	21.14		0.01	0.01	20.45		0.01	0.01	20.45		0.01	0.01
Groundwater Elevation	ft msl	--	164.21		0.01	0.01	162.55		0.01	0.01	159.72		0.01	0.01	156.81		0.01	0.01	158.12		0.01	0.01	158.12		0.01	0.01
Oxidation Reduction Potential	millivolts	--	146.4		0.1	0.1	112.3		0.1	0.1	195.4		0.1	0.1	191.6		0.1	0.1	161.9		0.1	0.1	161.9		0.1	0.1

Notes:
MDL = Method Detection Limit
QL = Quantification Limit
mg/L = Milligram 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

Qualifiers (Qual)
J = Estimated Results
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent
* - Groundwater Elevation data collected on August 24, 2022

Figures

TRC - GIS



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES (BAMBERG & NORWAY EAST).

N

SITE LOCATION

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

0 1,000 2,000 FEET

USGS 24k QUAD BOUNDARY

COUNTY BOUNDARY

CLASS II LANDFILL BOUNDARY

CLASS III LANDFILL BOUNDARY

TRC
50 International Drive, Suite 150
Patewood Plaza Three
Greenville, SC 29615
Phone: 864.281.0030

DOMINION ENERGY SOUTH CAROLINA
COPE STATION
405 TEAMWORK ROAD
COPE, SOUTH CAROLINA 29038

FIGURE 1
SITE LOCATION MAP

DRAWN BY:	J. YONTS
APPROVED BY:	R. MAYER
PROJECT NO:	416559.0007.0000
FILE NO.	Figure1_Cope_Loc_Map_CCR.mxd
DATE:	DECEMBER 2022

LEGEND

- CCR Background Monitoring Well
- CCR Downgradient Monitoring Well
- CCR Background ASD Monitoring Well
- Class III Landfill Boundary
- Class II Landfill

NOTE: Aerial Image from ESRI World Imagery dated January 2020.

N W E S

0 400 800 Feet

1 " = 400 '
1:4,800

PROJECT:
DESC COPE STATION
CLASS III LANDFILL
COPE, SOUTH CAROLINA

TITLE:
CCR RULE COMPLIANCE
MONITORING WELL NETWORK

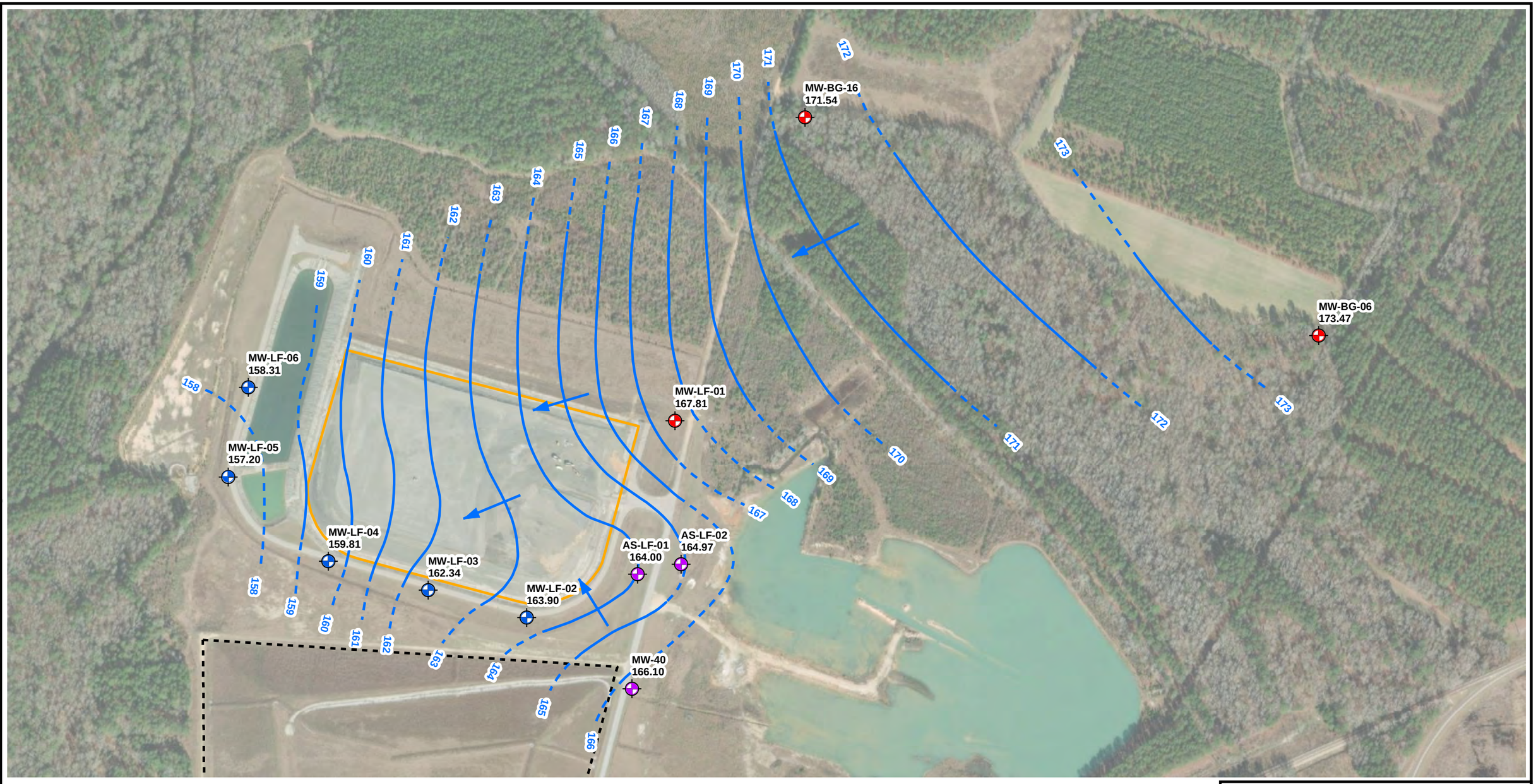
DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER		
APPROVED BY:	R. MAYER		**FIGURE 2**
DATE:	DECEMBER 2022		

TRC
50 International Drive, Suite 150
Patewood Plaza Three
Greenville, SC 29615
Phone: 864.281.0030
www.TRCcompanies.com

FILE NO.: Figure2_Cope_CCR_Network.mxd

Plot Date: 12/22/2022, 09:16:12 AM by JYONTS -- LAYOUT: ANSI B(11"x17")
Path: S:\1-PROJECTS\Dominion\South Carolina\7 Cope SC2022\Figure2 Cope CCR Network.mxd
Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet (Foot US)
Map Rotation: 0

TRC - GIS



LEGEND

- CCR Background Monitoring Well
- CCR Downgradient Monitoring Well
- CCR Background ASD Monitoring Well
- Class III Landfill Boundary
- Class II Landfill
- Water Table Elevation in feet above mean sea level (1' Contour Intervals) - Dashed where inferred.
- Approximate Groundwater Flow Direction
- **173.47** Water Elevation (FT MSL)

N W E S

0 400 800 Feet

1 " = 400 '
1:4,800

NOTE: Aerial Image from ESRI World Imagery dated January 2020.

PROJECT:
DESC COPE STATION
CLASS III LANDFILL
COPE, SOUTH CAROLINA

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP - MARCH 8, 2022

DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	J. BRADLEY		
APPROVED BY:	R. MAYER		**FIGURE 3**
DATE:	DECEMBER 2022		

TRC
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Greenville, SC 29615
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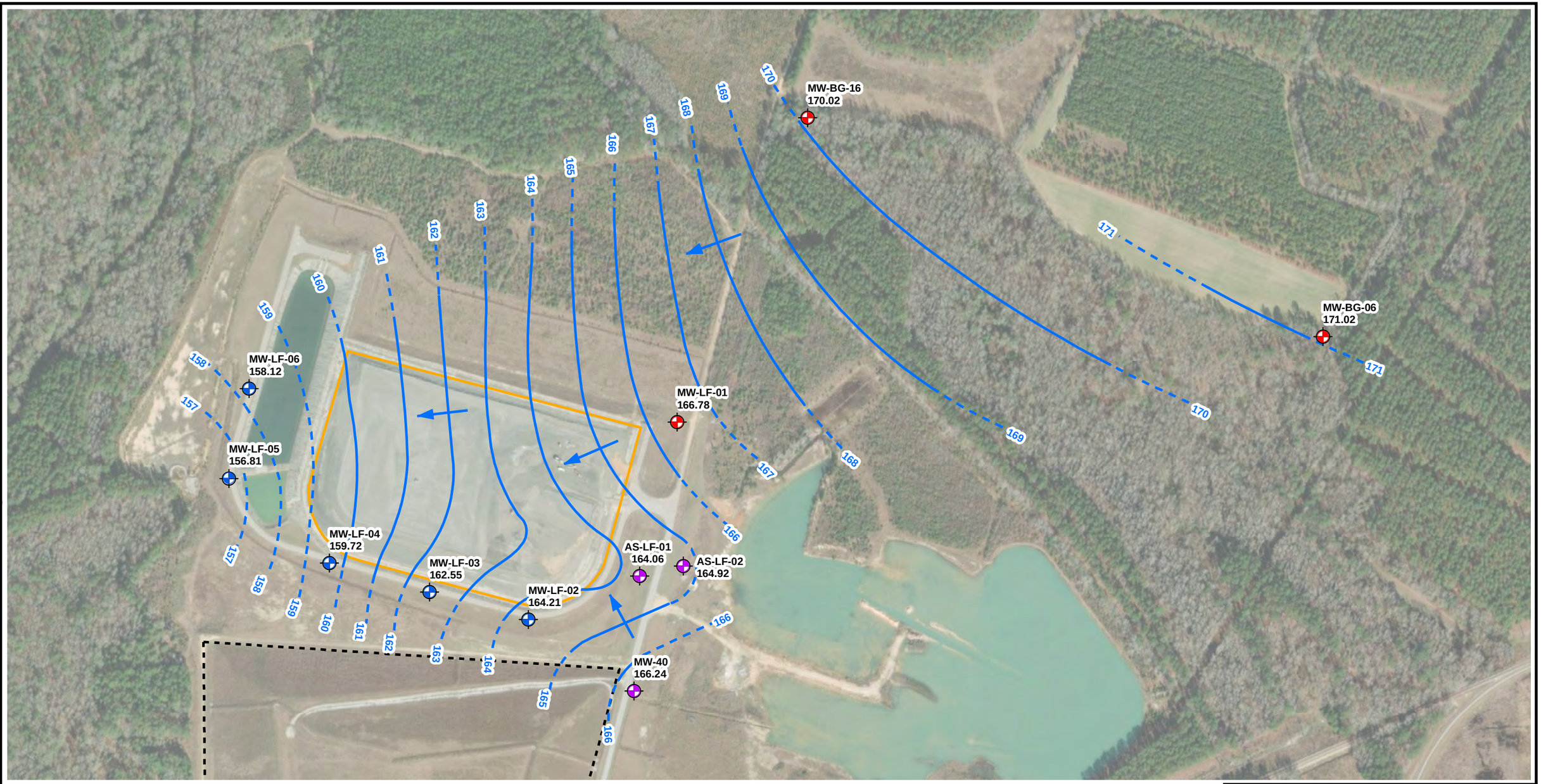
www.TRCcompanies.com

FILE NO.: Figure3_Cope_Class_III_CCR_2022Q1.mxd

Plot Date: 12/21/2022, 12:12:07 PM by JYONTS -- LAYOUT: ANSI B(11"x17")
Path: S:\1-PROJECTS\Dominion\South_Carolina\7_Cope_SC\2022\Figure3_Cope_Class_III_CCR_2022Q1.mxd
Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet (Foot US)
Map Rotation: 0

TRC - GIS



LEGEND

- CCR Background Monitoring Well
- CCR Downgradient Monitoring Well
- CCR Background ASD Monitoring Well
- Class III Landfill Boundary
- Class II Landfill
- Water Table Elevation in feet above mean sea level (1' Contour Intervals) - Dashed where inferred.
- Approximate Groundwater Flow Direction
- **166.24** Water Elevation (FT MSL)

N W E S

0 400 800 Feet

1 " = 400 '
1:4,800

NOTE: Aerial Image from ESRI World Imagery dated January 2020.

PROJECT:
DESC COPE STATION
CLASS III LANDFILL
COPE, SOUTH CAROLINA

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP - AUGUST 24, 2022

DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	J. BRADLEY		
APPROVED BY:	R. MAYER		**FIGURE 4**
DATE:	DECEMBER 2022		

TRC
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FILE NO.: Figure4_Cope_Class_III_CCR_2022Q3.mxd

Plot Date: 12/21/2022, 12:21:16 PM by JYONTS -- LAYOUT: ANSI B(11"x17")
Path: S:\1-PROJECTS\Dominion\South Carolina\7 Cope SC\2022\Figure4 Cope Class III CCR 2022Q3.mxd
Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet (Foot US)
Map Rotation: 0
TRC - GIS

Appendix A
September 2021 Alternate Source Demonstration

DOMINION ENERGY SOUTH CAROLINA

COPE STATION CLASS III INDUSTRIAL LANDFILL

ORANGEBURG COUNTY, SOUTH CAROLINA

EPA CCR RULE COMPLIANCE

ALTERNATE SOURCE DEMONSTRATION REPORT

Second Semiannual 2021 Detection Monitoring Event

April 2022

Nakia W. Addison, P.E.
Senior Engineer

Richard A. Mayer Jr., P.G.
Project Hydrogeologist

50 INTERNATIONAL DRIVE, SUITE 150, GREENVILLE, SC 29615, ● 864.281.0030 PHONE ● 864.281.0288 FAX ● WWW.TRCCOMPANIES.COM

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Executive Summary

Dominion Energy South Carolina (DESC) completed the most recent semiannual detection monitoring sampling (second semiannual 2021 sampling event) in September 2021 for the Cope Generating Station (Station) Class III Industrial Landfill (Unit) pursuant to the *Criteria for Classification of Solid Waste Disposal Facilities and Practices; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, 40 CFR Part 257 (CCR Rule). The Unit constitutes the coal combustion residuals (CCR) Unit per the CCR Rule. Per 40 CFR §257.94, the samples were analyzed for the Appendix III detection monitoring parameters. Upon receipt of the laboratory analytical results, statistical analysis was performed and evaluated for potential statistically significant increases (SSI) above background concentrations.

The following SSIs above background concentrations were identified based on direct comparisons made between the statistically derived background threshold value (95 percent upper prediction limit) and the downgradient monitoring results:

- Chloride (MW-LF-02),
- Fluoride (MW-LF-02).

The information provided in this report serves as DESC's alternate source demonstration (ASD) prepared in accordance with 40 CFR §257.94(e)(2) and successfully demonstrates that the SSIs are not due to a release from the Unit to groundwater, but are due to the following:

- Natural variation in groundwater quality within the area.

Therefore, based on the information provided in this ASD report, DESC will continue to conduct semiannual detection monitoring for Appendix III constituents in accordance with 40 CFR §257.94 at the certified groundwater monitoring well system (Certified Monitoring Well Network) for the CCR Unit.

Section 1
Introduction

1.1 Background

Dominion Energy South Carolina, Inc. (DESC) operates the Cope Generating Station (Station), a coal-fired power plant, to generate electricity. The Station is located at 405 Teamwork Drive in Cope, Orangeburg County, South Carolina as shown on **Figure 1**. Coal combustion residuals (CCR) are produced as part of the electrical generation operations. The Station has been generating and disposing of CCR on-site in a coal ash disposal landfill (Unit) since it began operations in 1996. The Unit is a Class 3 non-commercial industrial landfill and operates under South Carolina Department of Health and Environmental Control (SCDHEC) Solid Waste Permit No. LF-3-00038.

The Unit receives both fly ash and flue gas desulfurization (FGD) waste from the Station and includes a liner system consisting of a minimum 2-foot-thick compacted clay layer (maximum permeability of 1×10^{-7} cm/sec) overlain by a 60-mil HDPE geomembrane and leachate collection system.

The Unit accepts CCR for disposal in accordance with the federal *Criteria for Classification of Solid Waste Disposal Facilities and Practices; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule* (CCR Rule), effective October 19, 2015, and subsequent Final Rules promulgated by the United States Environmental Protection Agency (USEPA).

1.2 Groundwater Monitoring and Statistical Analysis

In accordance with 40 CFR §257.90 through §257.94, DESC installed a groundwater monitoring system for the Unit, collected samples from the Certified Monitoring Well Network for laboratory analysis for CCR constituents, and performed statistical analysis of the collected samples. The location of the EPA CCR Rule Compliance Monitoring Well Network is presented on **Figure 2**. The Certified Monitoring Well Network consists of 10 wells installed into the subsurface to monitor shallow groundwater as follows:

- Five wells were installed as background monitoring wells and include MW-LF-01, MW-BG-06, MW-BG-16, AS-LF-01, and AS-LF-02.
- Five wells were installed as compliance monitoring wells and include MW-LF-02, MW-LF-03, MW-LF-04, MW-LF-05, and MW-LF-06.
- Additionally, monitoring well MW-40 was installed to support alternate source demonstration activities.

Pursuant to 40 CFR §257.91(f), DESC obtained certification by a qualified South Carolina-registered professional engineer (P.E.) stating that the Certified Monitoring Well Network has been designed and constructed to meet the requirements of 40 CFR §257.91 of the CCR Rule (Garrett & Moore 2017).

As discussed above, the Unit is currently being monitored pursuant to the CCR Rule. A groundwater sampling and analysis plan including selection of statistical procedures to evaluate groundwater data was prepared per the CCR Rule (Nautilus 2016). Eight quarterly background CCR Rule detection monitoring events were performed from May 2016 through July 2017 in accordance with 40 CFR §257.93(d) and §257.94(b). The eight quarterly detection monitoring background samples were analyzed for Appendix III to Part 257 – Constituents for Detection Monitoring and for Appendix IV to Part 257 – Constituents for Assessment Monitoring.

Following completion of quarterly background detection monitoring in July 2017, DESC implemented semiannual detection monitoring per 40 CFR §257.94(b) for the CCR Unit. The second semiannual (initial) detection monitoring event was performed in September 2017. Subsequent detection monitoring events, with associated verification sampling when appropriate, have been performed on a semiannual basis since September 2017. DESC completed the second 2021 semiannual detection monitoring event in September 2021. Per the CCR Rule, the semiannual detection monitoring event samples were analyzed for Appendix III constituents.

After completion of each semiannual detection monitoring event, the Appendix III data were statistically evaluated to identify potential statistically significant increases (SSIs) for Appendix III constituents above background levels. In accordance with 40 CFR §257.93(f)(6), DESC obtained certification by a qualified South Carolina-registered P.E. stating that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR Unit (SCE&G 2017).

Pursuant to 40 CFR §257.93(h), statistical analysis of the laboratory analytical data was performed to identify potential SSIs for the second semiannual 2021 detection monitoring event. Data from the second semiannual 2021 detection monitoring event is presented in **Table 1**. Two SSIs were identified for chloride and fluoride at MW-LF-02.

1.3 Purpose

Pursuant to 40 CFR §257.94(e)(2), DESC may demonstrate that a source other than the CCR Unit caused the SSIs identified or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The purpose of this report is to provide written documentation of the successful ASD for the SSIs identified for the second semiannual 2021 detection monitoring event, pursuant to 40 CFR §257.94(e)(2) of the CCR Rule.

1.4 Site Hydrogeology

The Station is located within the Edisto River Subbasin (Ace Basin watershed) of the Coastal Plain physiographic province. Aquifers and confining units in the South Carolina portion of the Coastal Plain are composed of crystalline carbonate rocks, sand, clay, silt, and gravel that contain large volumes of high-quality groundwater (SAWSC 2016). The Unit groundwater monitoring wells are within the surficial aquifer of the Huber-Congaree geologic formation. This formation consists of thinly layered, well-sorted, fine-grained sand with minimal interstitial clay and thin, laterally continuous clay interlayers (SCDNR 2009). Hydraulic conductivity values in the surficial aquifer at the Station range from 9.87×10^{-5} cm/s to 8.61×10^{-3} cm/s with an estimated groundwater flow velocities of between 0.002 to 0.84 feet/day (Nautilus 2021a).

1.5 General Groundwater Quality

Regionally, groundwater quality in the Edisto River Subbasin consists of a sodium bicarbonate water type grading to a sodium chloride water type with depth and proximity to the coast (SCDNR 2009). As such, the regional groundwater quality contains higher levels of specific constituents, such as chloride and fluoride, than in other regions in South Carolina. The USEPA has established National Primary Drinking Water Regulations that define a permitted maximum contaminant level (MCL) for specific constituents in drinking water. The primary MCLs are legally enforceable standards that were established to protect public health by limiting the levels of contaminants in drinking water. Additionally, the USEPA has established non-enforceable secondary MCLs for guidelines to assist public water systems in managing their drinking water for aesthetic consideration such as taste, color, and odor. Reported water quality concentrations for select primary and/or secondary drinking water contaminants compared to USEPA MCLs are provided in the table below.

Edisto River Subbasin Groundwater Water Quality

Constituent	Concentration Range		USEPA MCL
	Low	High	
Chloride (mg/L)	1.0	1,000	250 (Secondary)
Fluoride (mg/L)	2.0	11	4.0 (Primary)

Note: mg/L = milligram per liter

As noted in the table above, the natural range of chloride and fluoride within the Edisto River Subbasin, exceeds the primary and/or secondary drinking water MCLs established by the USEPA for drinking water (SCDNR 2009).

Section 2
Alternate Source Demonstration

Pursuant to 40 CFR §257.94(e)(2), DESC may demonstrate that a source other than the CCR Unit caused the SSI or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. As discussed previously, the second semiannual 2021 detection monitoring event was performed in September 2021. Statistical analysis of the second semiannual 2021 detection monitoring data was performed pursuant to 40 CFR §257.93(f) and (g) and in accordance with the Statistical Methods Certification (SCE&G 2017) and the Statistical Analysis Plan (OBG 2017). Based on either increasing trends at 95% confidence levels using Thiel-Sen's trend test and/or interwell prediction limits statistical analyses, the following SSIs were identified:

- Chloride (MW-LF-02).
- Fluoride (MW-LF-02).

All other Appendix III constituent concentrations were within their trends at 95% confidence levels using Thiel-Sen's trend and/or interwell prediction limits in all the CCR Rule groundwater monitoring system wells.

A discussion for each of the individual SSIs and associated evidence demonstrating that the SSIs were not caused by a release from the Unit is provided in the subsections below.

2.1 Chloride at MW-LF-02

The chloride SSI identified at MW-LF-02 is a result of natural variation in groundwater quality from areas upgradient from the Unit. The following evidence supports this determination:

- Chloride was detected in MW-LF-02 at a concentration of 31.0 mg/L in the September 2021 sample. This concentration exceeds the background threshold value of 21.9 mg/L. Based on review of potentiometric surface mapping (**Figure 3**), shallow groundwater flow in the Unit is generally to the west-southwest. The location of MW-LF-02 is hydraulically cross-gradient of the southeastern corner of the Unit, consistent with historical delineation of groundwater flow made at the site. Dissolved solutes in groundwater travel by advection and dispersion. In advection, the movement of dissolved solutes in groundwater is dominated by changes in hydraulic head while movement through dispersion is due to changes in solute concentrations. Given the cross-gradient location of MW-LF-02, advection is unlikely to have carried chloride or other solutes from the Unit. Although dispersion of chloride from the Unit remains a possibility, given the distribution of groundwater flow in the MW-LF-02 area, it is more likely that the source of chloride is from upgradient areas of the Unit such as AS-LF-01, AS-LF-02, and MW-40.

- To further evaluate the potential source of chloride in the Unit area, an isoconcentration map was prepared for the September 2021 data and presented as **Figure 4**. Monitoring wells AS-LF-01, AS-LF-02, MW-40, MW-LF-01, and MW-BG-06 are all located upgradient from MW-LF-02 with chloride concentrations ranging from 3.31 mg/L (AS-LF-01) to 47.6 mg/L (MW-40) based on the September 2021 data. The chloride concentration at MW-LF-02 from September 2021 (31.0 mg/L) falls within this range. Historically, the highest chloride concentrations have been detected at MW-40 with a range of between 45.8 mg/L (December 2017) to 140 mg/L (September 2018) (Nautilus 2021a). The distribution of chloride in groundwater depicted by the isoconcentration map suggests that the source for chloride at MW-LF-02 is to the south-southeast of the monitoring well and the Unit.
- There are several constituents which are good indicators of coal ash impacts with lithium being one of them. Previous analysis of leachate from the Unit have indicated detections of lithium between 3,350 micrograms per liter (µg/L) and 6,254 µg/L (Nautilus 2021a). Total lithium was analyzed during the September 2021 event and was not detected above the laboratory method detection limit (MDL) of 2.00 µg/L at all locations sampled. Historically, lithium has not been detected above the laboratory MDL within the Unit monitoring well network with the exception of MW-LF-03 (2.4 µg/L in March 2019 and 2.02 µg/L in March 2021) and AS-LF-01 (2.41 µg/L in February 2018) (Nautilus 2021b). The general absence of lithium within the Unit monitoring well network suggests that a release of leachate from the Unit has not occurred.
- Most natural waters contain cations and anions found in equilibrium (Piper 1944). Evaluation of the geochemistry of groundwater can assist in understanding the source(s) of the dissolved constituents. A geochemical analysis of major cations (calcium, magnesium, sodium, and potassium) and anions (total alkalinity, chloride, fluoride, and sulfate) was conducted during the September 2021 sampling event and presented in **Table 2**. A useful tool to graph the major distribution of the dissolved constituents in groundwater is through the use of a Piper diagram (Piper 1944). A Piper diagram was prepared using the September 2021 geochemical data and presented as **Figure 5**. The following observations were noted:
  - With respect to anions (bottom right triangle of Piper diagram), MW-LF-02 plotted closely (within the 80 to 100% chloride distribution) with background wells MW-LF-01 and MW-BG-06, along with downgradient wells MW-LF-04, MW-LF-05, and MW-LF-06.
  - With respect to cations (bottom left triangle of Piper diagram), MW-LF-02 plotted closely (within the 40 to 60% sodium + potassium distribution) with background well MW-LF-01 and downgradient well MW-LF-03.
  - With respect to the overall hydrochemical distribution (diamond in Piper diagram), MW-LF-02 plotted within the same area of the diamond as background wells MW-LF-01 within the calcium chloride and sodium chloride mixed type water hydrochemical facies.

  Evaluation of the geochemical distribution of cations and anions in the groundwater samples suggests that the water type for MW-LF-02 has similarities to that of background wells MW-LF-01, MW-BG-06, and AS-LF-01. This observation suggests that the source for chloride at MW-02-LF is

not from the Unit. The similar geochemical signature of MW-LF-02 with background wells MW-LF-01 and MW-BG-06 further suggests that the SSI for chloride is the result of natural variations of chloride in the groundwater at the site.

2.2 Fluoride at MW-LF-02

The fluoride SSI identified at MW-LF-02 is also a result of natural variation in groundwater quality from areas upgradient from the Unit. The following evidence supports this determination:

- Fluoride was detected in MW-LF-02 at a concentration of 0.203 mg/L in the September 2021 sample. This concentration exceeds the background threshold value of 0.165 mg/L. Based on review of potentiometric surface mapping (**Figure 3**), shallow groundwater flow in the Unit is generally to the west-southwest. The location of MW-LF-02 is hydraulically cross-gradient of the southeastern corner of the Unit, consistent with historical delineation of groundwater flow made at the site. Dissolved solutes in groundwater travel by advection and dispersion. In advection, the movement of dissolved solutes in groundwater is dominated by changes in hydraulic head while movement through dispersion is due to changes in solute concentrations. Given the cross-gradient location of MW-LF-02, advection is unlikely to have carried fluoride or other solutes from the Unit. Although dispersion of fluoride from the Unit remains a possibility, given the distribution of groundwater flow in the MW-LF-02 area, it is more likely that the source of fluoride is from upgradient areas of the Unit such as AS-LF-01, AS-LF-02, and MW-40.
- To further evaluate the potential source of fluoride in the Unit area, an isoconcentration map was prepared for the September 2021 data and presented as **Figure 6**. Monitoring wells AS-LF-01, AS-LF-02, MW-40, MW-LF-01, and MW-BG-06 are all located upgradient from MW-LF-02 with fluoride concentrations ranging from < 0.0330 mg/L (AS-LF-01) to 0.679 mg/L (MW-40) based on the September 2021 data. The fluoride concentration at MW-LF-02 from September 2021 (0.203 mg/L) falls within this range. Fluoride was first detected in MW-40 in March 2020 at a concentration of 0.5 mg/L. Fluoride was again detected in MW-40 in March 2021 (0.625 mg/L) and September 2021 (0.679 mg/L). The distribution of fluoride in groundwater depicted by the isoconcentration map suggests that the source for fluoride at MW-LF-02 is to the south-southeast of the monitoring well and the Unit.
- There are several constituents which are good indicators of coal ash impacts with lithium being one of them. Previous analysis of leachate from the Unit have indicated detections of lithium between 3,350 µg/L and 6,254 µg/L (Nautilus 2021a). Total lithium was analyzed during the September 2021 event and was not detected above the laboratory method detection limit (MDL) of 2.00 µg/L at all locations sampled. Historically, lithium has not been detected above the laboratory MDL within the Unit monitoring well network with the exception of MW-LF-03 (2.4 µg/L in March 2019 and 2.02 µg/L in March 2021) and AS-LF-01 (2.41 µg/L in February 2018) (Nautilus 2021b). The general

absence of lithium within the Unit monitoring well network suggests that a release of leachate from the Unit has not occurred.

- Most natural waters contain cations and anions found in equilibrium (Piper 1944). Evaluation of the geochemistry of groundwater can assist in understanding the source(s) of the dissolved constituents. A geochemical analysis of major cations (calcium, magnesium, sodium, and potassium) and anions (total alkalinity, chloride, fluoride, and sulfate) was conducted during the September 2021 sampling event and presented in **Table 2**. A useful tool to graph the major distribution of the dissolved constituents in groundwater is through the use of a Piper diagram (Piper 1944). A Piper diagram was prepared using the September 2021 geochemical data and presented as **Figure 5**. The following observations were noted:
  - With respect to anions (bottom right triangle of Piper diagram), MW-LF-02 plotted closely (within the 80 to 100% chloride distribution) with background wells MW-LF-01 and MW-BG-06, along with downgradient wells MW-LF-04, MW-LF-05, and MW-LF-06.
  - With respect to cations (bottom left triangle of Piper diagram), MW-LF-02 plotted closely (within the 40 to 60% sodium + potassium distribution) with background well MW-LF-01 and downgradient well MW-LF-03.
  - With respect to the overall hydrochemical distribution (diamond in Piper diagram), MW-LF-02 plotted within the same area of the diamond as background wells MW-LF-01 within the calcium chloride and sodium chloride mixed type water hydrochemical facies.

Evaluation of the geochemical distribution of cations and anions in the groundwater samples suggests that the water type for MW-LF-02 has similarities to that of background wells MW-LF-01, MW-BG-06, and AS-LF-01. This observation suggests that the source for fluoride at MW-02-LF is not from the Unit. The similar geochemical signature of MW-LF-02 with background wells MW-LF-01 and MW-BG-06 further suggests that the SSI for fluoride is the result of natural variations of chloride in the groundwater at the site.

Section 3
Conclusions

The information provided in this report serves as the ASD prepared in accordance with 40 CFR §257.94(e)(2) of the CCR Rule and demonstrates that the SSIs determined based on statistical analysis of the second semiannual 2021 detection monitoring event performed in September of 2021 were not due to a release from the Unit to the subsurface.

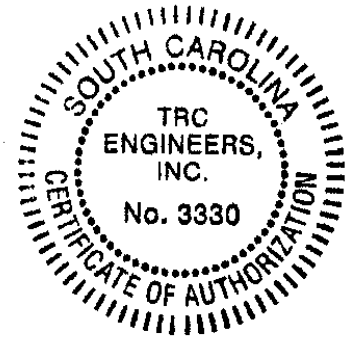
Based on the information provided in this ASD report, DESC will continue to conduct semiannual detection monitoring in accordance with 40 CFR §257.94 at the Certified Monitoring Well Network for the Unit.

Section 4
Certification

I hereby certify that the alternative source demonstration presented within this document for the DESC Cope Generating Station Coal Ash Disposal Landfill CCR Unit has been prepared to meet the requirements of Title 40 CFR §257.94(e)2 of the Federal CCR Rule. This document is accurate and has been prepared in accordance with good engineering practices, including the consideration of applicable industry standards, and with the requirements of Title 40 CFR §257.94(e) 2.

Name: Nakia W. Addison, P.E. **Expiration Date:** June 30, 2024

Company: TRC Engineers, Inc. **Date:** April 13, 2022



(SEAL)

Section 5
References

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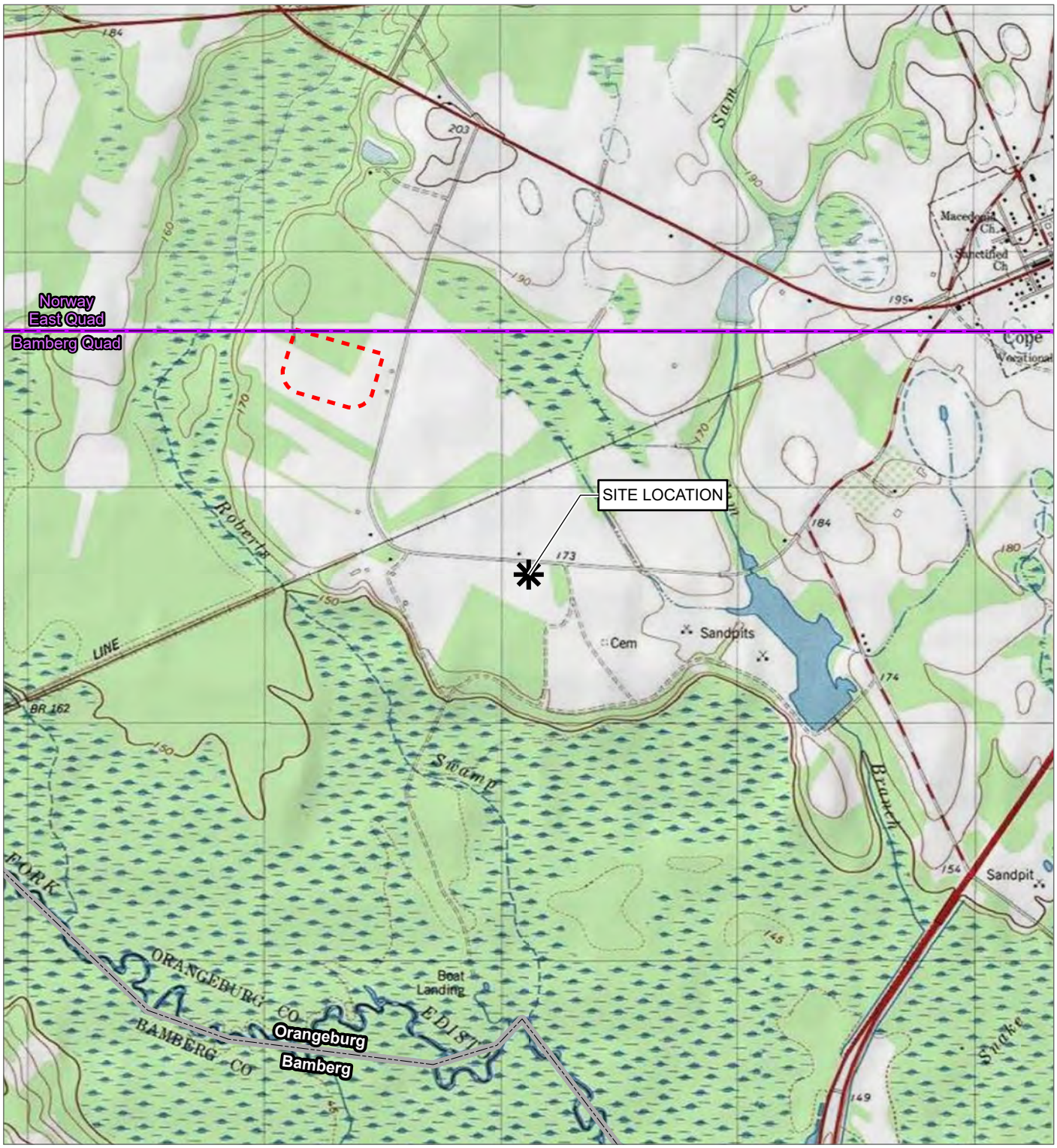
South Carolina Department of Natural Resources (SCDNR), 2009, South Carolina State Water Assessment, 2nd Edition. 408 pp.

United States Environmental Protection Agency. 2017. Secondary Drinking Water Standards: Guidance for Nuisance Chemicals, March 8, 2017.

Figures



- SITE LOCATION
- CLASS III LANDFILL BOUNDARY
- COUNTY BOUNDARY
- USGS 24K QUAD BOUNDARY

PROJECT: **DOMINION ENERGY SOUTH CAROLINA**
COPE STATION
405 TEAMWORK ROAD,
COPE, SC 29038

TITLE:

SITE LOCATION MAP

DRAWN BY:	R. BARBER	PROJ. NO.:	416559.0007.0000
CHECKED BY:	A. HORRIE		
APPROVED BY:	R. MAYER		**FIGURE 1**
DATE:	JANUARY 2022		

BASE MAP: USGS TOPO MAP
DATA SOURCES: TRC, USGS 7.5' QUADRANGLES:
NORWAY EAST (1980) QUAD ID: 33081-D1, SC; BAMBURG (1980) QUAD ID: 33081-C1, SC

0 1,000 2,000 FEET

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

TRC
708 HEARTLAND TRAIL
SUITE 3000
MADISON, WI 53717
PHONE: 608.826.3600

FILE: DOMINION_VARIOUS

TRC - GIS

Plot Date: 2/14/2022, 13:32:33 PM by JYONTS -- LAYOUT: ANSI B (11"x17")
Path: U:\Dominion\South_Carolina\7_Cope_SC\2021\Figure2_Cope_CCR_Well_Network.mxd
Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet (Foot US)
Map Rotation: 0

LEGEND

- Monitoring Well
- Class II Landfill
- Class III Landfill

N
W E
S

NOTE: Aerial Image from ESRI World Imagery dated January 2020.

0 500 1,000 Feet

1 " = 500 '
1:6,000

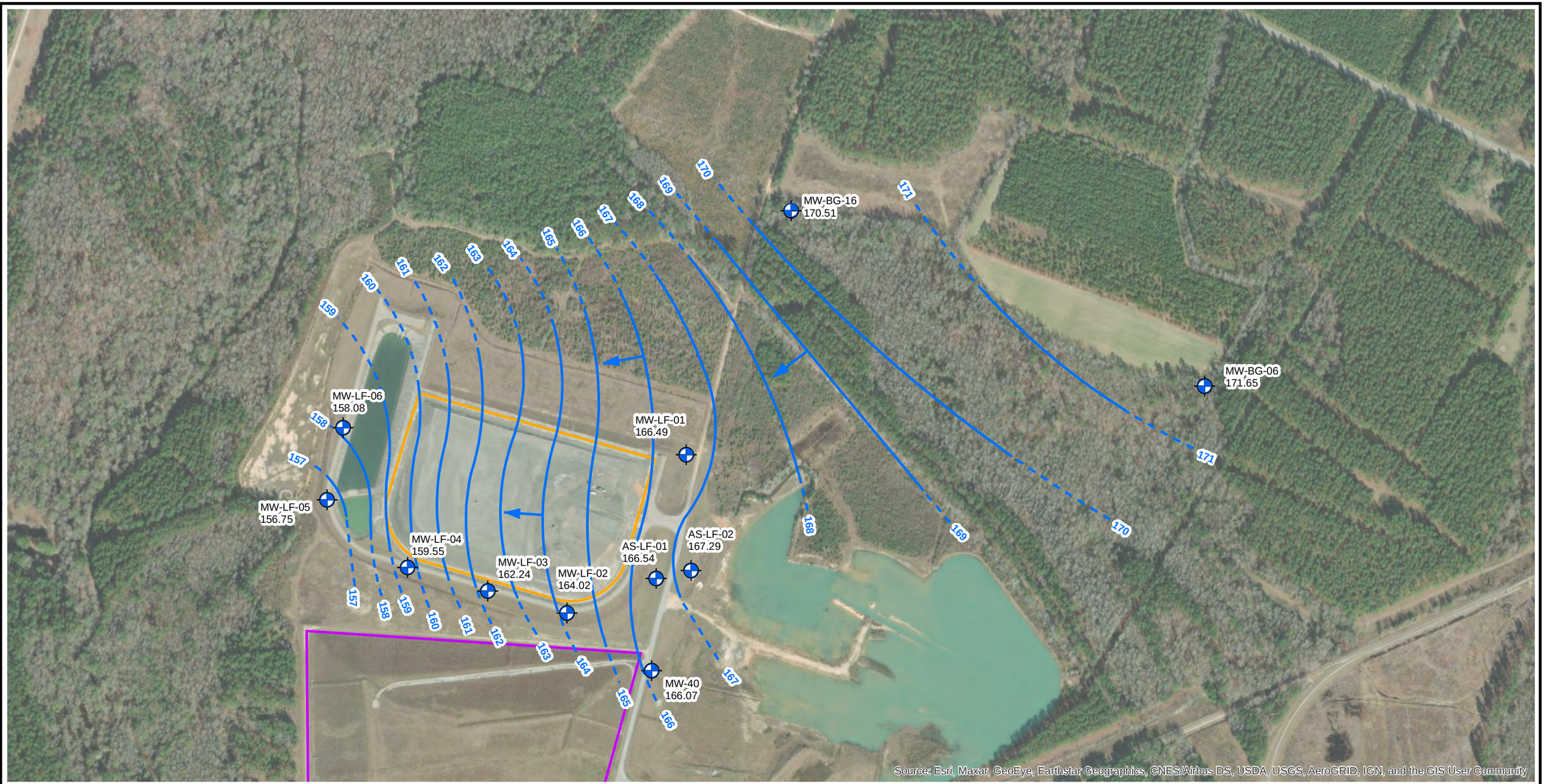
PROJECT:
DESC COPE STATION
CLASS III LANDFILL
COPE, SOUTH CAROLINA

TITLE:
CCR RULE COMPLIANCE
MONITORING WELL NETWORK

DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER		
APPROVED BY:	R. MAYER		**FIGURE 2**
DATE:	FEBRUARY 2022		

TRC
50 International Drive, Suite 150
Patewood Plaza Three
Greenville, SC 29615
Phone: 864.281.0030
www.TRCcompanies.com

FILE NO.: Figure2_Cope_CCR_Well_Network.mxd



LEGEND

- Monitoring Well
- **156.75** Water Elevation (FT MSL)
- Approximate Groundwater Flow Direction
- Water Table Elevation in feet above mean sea level (1' Contour Intervals) - Dashed where inferred.
- Class II Landfill
- Class III Landfill

N W E S

NOTE: Aerial Image from ESRI World Imagery dated January 2020.

0 500 1,000 Feet

1 " = 500 '
1:6,000

PROJECT:
DESC COPE STATION
CLASS III LANDFILL
COPE, SOUTH CAROLINA

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP
SEPTEMBER 28, 2021

DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER		
APPROVED BY:	R. MAYER		**FIGURE 3**
DATE:	FEBRUARY 2022		

TRC
50 International Drive, Suite 150
Patewood Plaza Three
Greenville, SC 29615
Phone: 864.281.0030
www.TRCcompanies.com

FILE NO.: Figure3_Cope_Class_III_CCR_2021Q3.mxd

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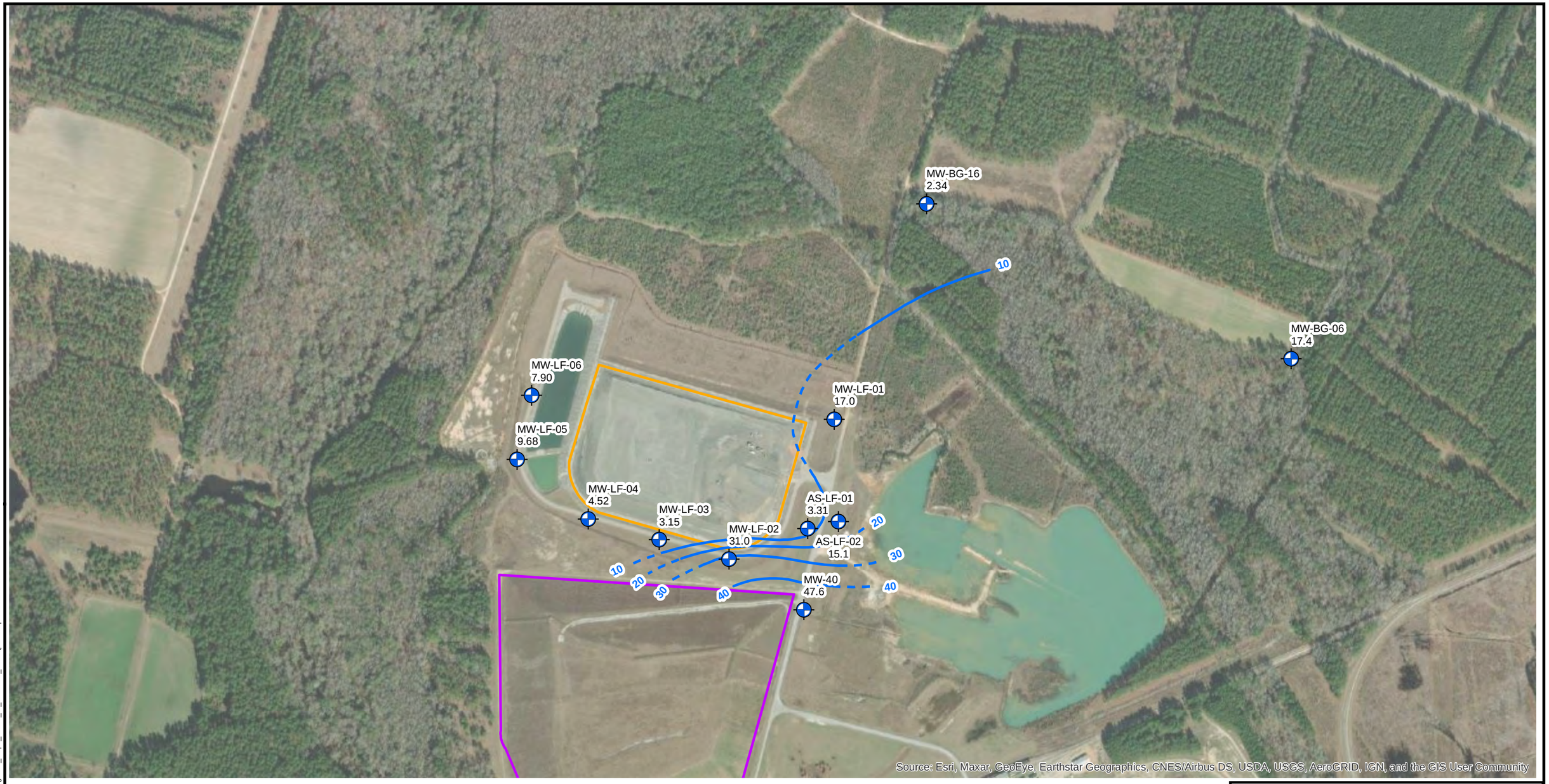
Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet (Foot US)
Map Rotation: 0

TRC - GIS



LEGEND

- Monitoring Well
- Chloride Concentrations in mg/L (10 mg/L Intervals) - Dashed where inferred
  Background threshold is 21.9 mg/L
- Class II Landfill
- Class III Landfill

NOTE: Aerial Image from ESRI World Imagery dated January 2020.

N W E S

0 570 1,140 Feet

1 " = 567 '
1:6,802

PROJECT:
DESC COPE STATION
CLASS III LANDFILL
COPE, SOUTH CAROLINA

TITLE:
CHLORIDE ISOCONCENTRATION MAP
SEPTEMBER 28 & 29, 2021

DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER		
APPROVED BY:	R. MAYER		**FIGURE 4**
DATE:	FEBRUARY 2022		

TRC
50 International Drive, Suite 150
Patewood Plaza Three
Greenville, SC 29615
Phone: 864.281.0030
www.TRCcompanies.com

FILE NO.: Figure4_Cope_Class_III_Chloride_2021Q3.mxd

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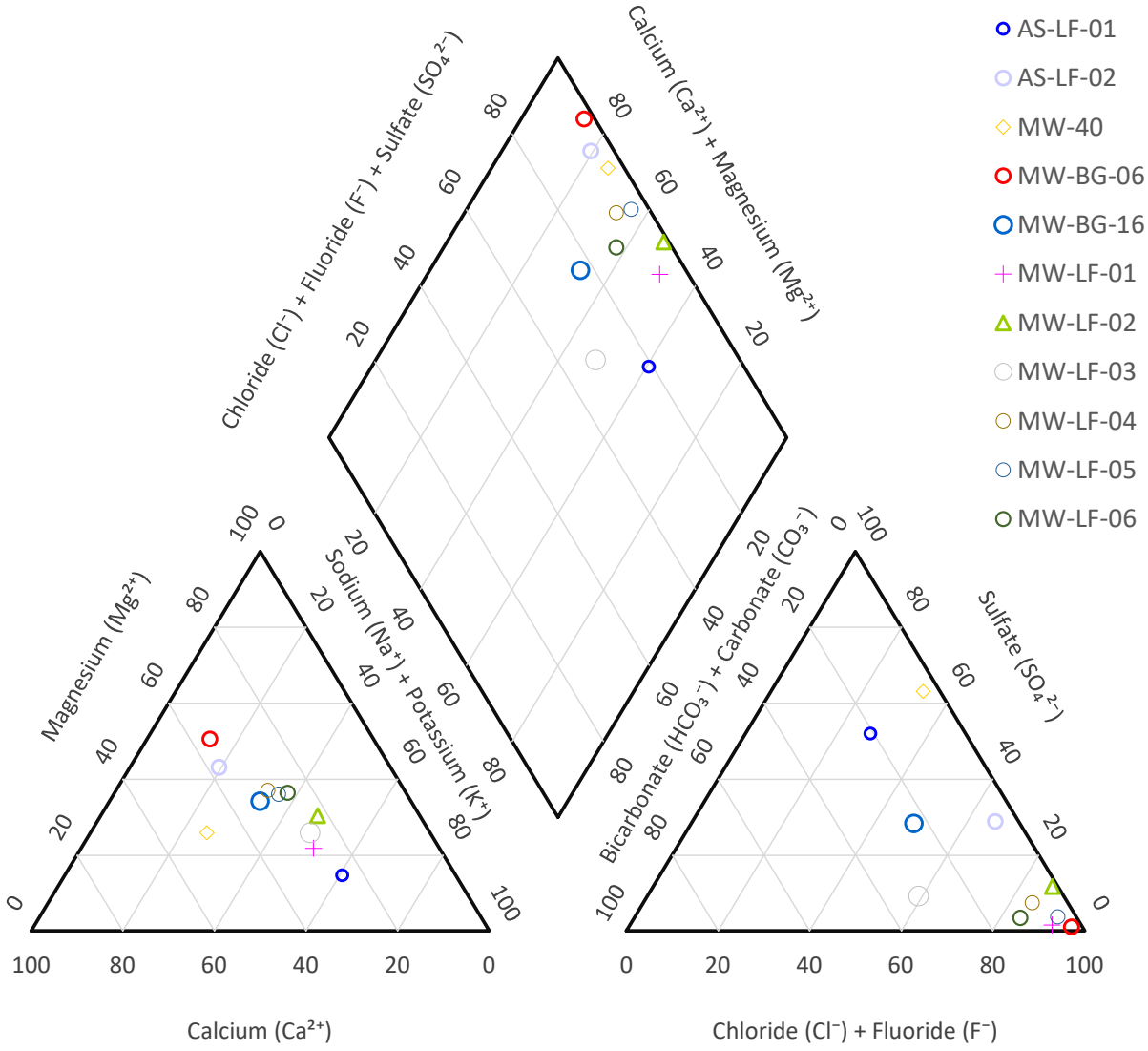
Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet (Foot US)
Map Rotation: 0

TRC - GIS

FIGURE 5
DESC Cope Station
Class III Landfill
Piper Diagram - September 2021



Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet (Foot US)
Map Rotation: 0
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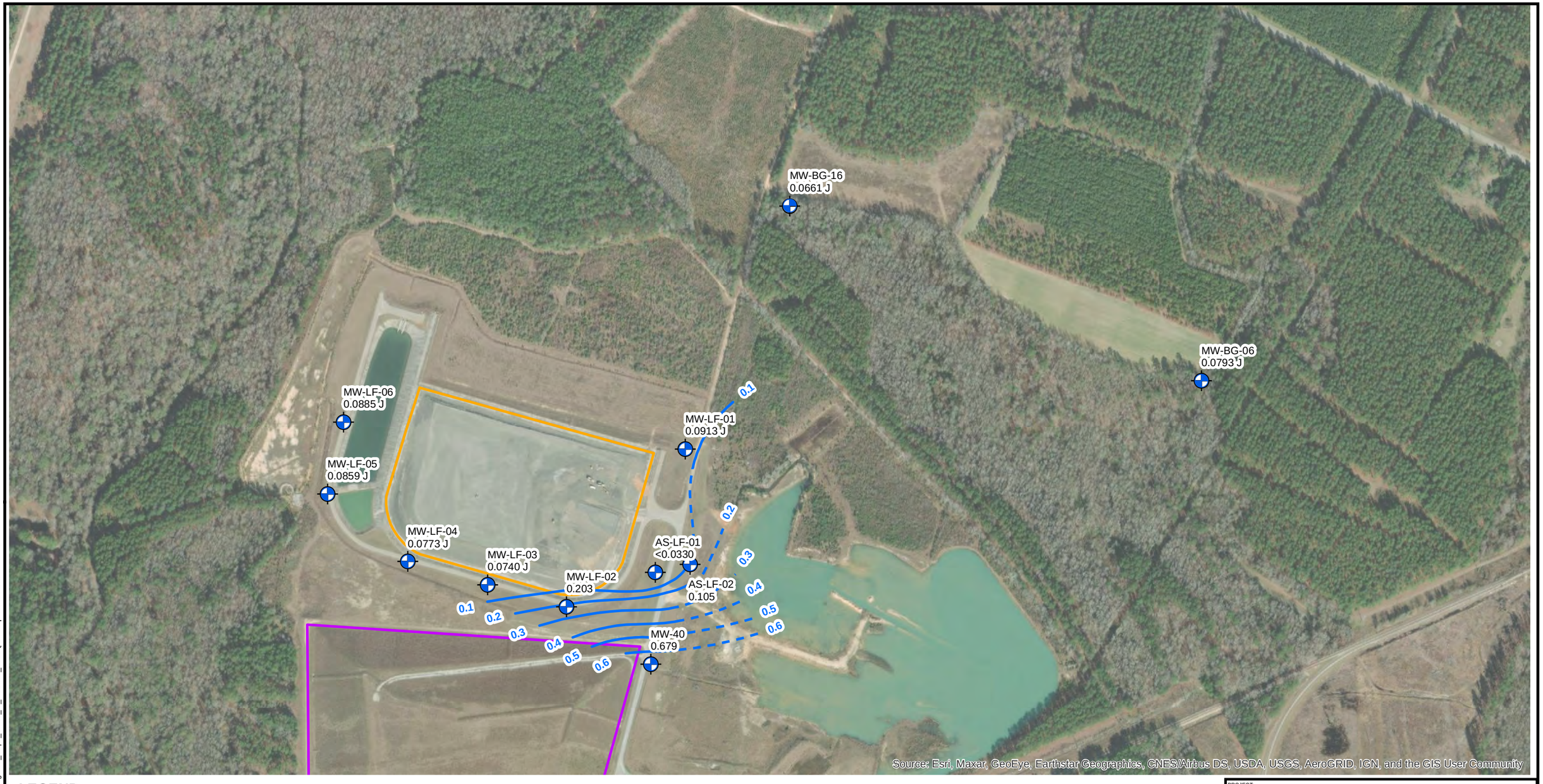

LEGEND

- Monitoring Well
- Fluoride Concentrations in mg/L (0.1 mg/L Intervals) - Dashed where inferred
  Background threshold is 0.165 mg/L
- Class II Landfill
- Class III Landfill

J = Estimated Concentration
< = Less than Method Detection Limit

N
W E
S

NOTE: Aerial Image from ESRI World Imagery dated January 2020.

0 500 1,000 Feet
1 " = 500 '
1:6,000

PROJECT:
DESC COPE STATION
CLASS III LANDFILL
COPE, SOUTH CAROLINA

TITLE:
FLUORIDE ISOCONCENTRATION MAP
SEPTEMBER 28 & 29, 2021

DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER		
APPROVED BY:	R. MAYER		**FIGURE 6**
DATE:	FEBRUARY 2022		

TRC
50 International Drive, Suite 150
Patewood Plaza Three
Greenville, SC 29615
Phone: 864.281.0030
www.TRCcompanies.com

FILE NO.: Figure5_Cope_Class_III_Fluoride_2021Q3.mxd

Tables

Table 1
Summary of Second Semiannual 2021 Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

			Background Wells																			
		Sample ID:	MW-LF-01				MW-BG-06				MW-BG-16				AS-LF-01				AS-LF-02			
		Sample	09/28/2021				09/29/2021				09/29/2021				09/28/2021				09/28/2021			
Parameter Name	**Units**	**Background Threshold Values**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**
CCR Appendix III																						
Boron	µg/L	1000	**10.6**	J	4.00	4.00	**8.58**	J	4.00	4.00	**10.6**	J	4.00	4.00	**18.6**		4.00	4.00	**19.1**		4.00	4.00
Calcium	mg/L	15.8	**3.13**		0.030	0.030	**9.42**		0.030	0.030	**1.62**		0.030	0.030	**1.68**		0.030	0.030	**5.63**		0.030	0.030
Chloride	mg/L	21.9	**17.0**		0.335	0.335	**17.4**		0.335	0.335	**2.34**		0.0670	0.0670	**3.31**		0.0670	0.0670	**15.1**		0.134	0.134
Fluoride	mg/L	0.165	**0.0913**	J	0.0330	0.0330	**0.0793**	J	0.0330	0.0330	**0.0661**	J	0.0330	0.0330	<0.0330	U	0.0330	0.0330	**0.105**		0.0330	0.0330
pH	SU	3.4 - 6.2	**4.27**				**4.19**				**4.64**				**4.56**				**4.35**			
Sulfate	mg/L	21.6	**0.418**		0.133	0.133	**0.273**	J	0.133	0.133	**1.95**		0.133	0.133	**8.71**		0.133	0.133	**9.07**		0.133	0.133
Total Dissolved Solids	mg/L	295.3	**32.9**	J	3.40	3.40	**88.6**	J	3.40	3.40	**12.9**	J	3.40	3.40	**25.7**	J	3.40	3.40	**41.4**	J	3.40	3.40
Field Parameters																						
Conductivity	µS/cm	--	**86.57**		0.1	0.1	**192.65**		0.1	0.1	**40.15**		0.1	0.1	**49.78**		0.1	0.1	**110.17**		0.1	0.1
Dissolved Oxygen	mg/L	--	**2.17**		0.01	0.01	**6.09**		0.01	0.01	**6.76**		0.01	0.01	**2.98**		0.01	0.01	**2.84**		0.01	0.01
Temperature	C	--	**27.29**		0.01	0.01	**21.35**		0.01	0.01	**21.01**		0.01	0.01	**26.97**		0.01	0.01	**24.82**		0.01	0.01
Turbidity	NTU	--	**1.18**		0.1	0.1	**0.79**		0.1	0.1	**0.79**		0.1	0.1	**0.83**		0.1	0.1	**1.42**		0.1	0.1
Depth to Water	ft btoc	--	**9.92**		0.01	0.01	**16.3**		0.01	0.01	**12.01**		0.01	0.01	**10.81**		0.01	0.01	**10.54**		0.01	0.01
Groundwater Elevation	ft msl	--	**166.49**		0.01	0.01	**171.65**		0.01	0.01	**170.51**		0.01	0.01	**166.54**		0.01	0.01	**167.29**		0.01	0.01
Oxidation Reduction Potential	millivolts	--	**269.2**		0.1	0.1	**191.8**		0.1	0.1	**186.1**		0.1	0.1	**200.8**		0.1	0.1	**191.3**		0.1	0.1

Notes:
MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram 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
-- = Not applicable.

Qualifiers (Qual)
J = Estimated Results
J+ = Potentially high value
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent
* - Groundwater Elevation data collected on September 28, 2021

Table 1
Summary of Second 2021 Semiannual Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

			Downgradient Wells																					
		Sample ID:	MW-LF-02				MW-LF-03				MW-LF-04				MW-LF-05				MW-LF-06 DUP				MW-LF-06			
		Sample	09/29/2021				09/29/2021				09/29/2021				09/29/2021				09/28/2021				09/28/2021			
Parameter Name	**Units**	**Background Threshold Values**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**
CCR Appendix III																										
Boron	µg/L	1000	**17.0**		4.00	4.00	**9.29**	J	4.00	4.00	**9.97**	J	4.00	4.00	**10.4**	J	4.00	4.00	**11.9**	J	4.00	4.00	**11.3**	J	4.00	4.00
Calcium	mg/L	15.8	**4.39**		0.030	0.030	**1.09**		0.030	0.030	**1.78**		0.030	0.030	**2.71**		0.030	0.030	**2.06**		0.030	0.030	**2.00**		0.030	0.030
Chloride	mg/L	21.9	**31.0**		0.335	0.335	**3.15**		0.0670	0.0670	**4.52**		0.0670	0.0670	**9.68**		0.0670	0.0670	**7.96**		0.0670	0.0670	**7.90**		0.0670	0.0670
Fluoride	mg/L	0.165	**0.203**		0.0330	0.0330	**0.0740**	J	0.0330	0.0330	**0.0773**	J	0.0330	0.0330	**0.0859**	J	0.0330	0.0330	**0.0868**	J	0.0330	0.0330	**0.0885**	J	0.0330	0.0330
pH	SU	3.4 - 6.2	**4.05**				**4.46**				**4.41**				**4.3**				**4.38**				**4.38**			
Sulfate	mg/L	21.6	**5.70**		0.133	0.133	**0.698**		0.133	0.133	**0.558**		0.133	0.133	**0.541**		0.133	0.133	**0.615**		0.133	0.133	**0.457**		0.133	0.133
Total Dissolved Solids	mg/L	295.3	**97.1**	J	3.40	3.40	**5.71**	J	3.40	3.40	**18.6**	J	3.40	3.40	**18.6**		3.40	3.40	**25.7**	J	3.40	3.40	**35.7**	J	3.40	3.40
Field Parameters																										
Conductivity	µS/cm	--	**164.08**		0.1	0.1	**37.78**		0.1	0.1	**49.81**		0.1	0.1	**79.23**		0.1	0.1	**60.51**		0.1	0.1	**60.51**		0.1	0.1
Dissolved Oxygen	mg/L	--	**0.22**		0.01	0.01	**2.01**		0.01	0.01	**4.38**		0.01	0.01	**4.43**		0.01	0.01	**4.37**		0.01	0.01	**4.37**		0.01	0.01
Temperature	C	--	**25.55**		0.01	0.01	**25.96**		0.01	0.01	**24.86**		0.01	0.01	**23.92**		0.01	0.01	**26.56**		0.01	0.01	**26.56**		0.01	0.01
Turbidity	NTU	--	**0.88**		0.1	0.1	**0.63**		0.1	0.1	**2.49**		0.1	0.1	**0.89**		0.1	0.1	**0.96**		0.1	0.1	**0.96**		0.1	0.1
Depth to Water	ft btoc	--	**26.06**		0.01	0.01	**24.95**		0.01	0.01	**24.65**		0.01	0.01	**21.2**		0.01	0.01	**20.49**		0.01	0.01	**20.49**		0.01	0.01
Groundwater Elevation	ft msl	--	**164.02**		0.01	0.01	**162.24**		0.01	0.01	**159.55**		0.01	0.01	**156.75**		0.01	0.01	**158.08**		0.01	0.01	**158.08**		0.01	0.01
Oxidation Reduction Potential	millivolts	--	**332.6**		0.1	0.1	**203.4**		0.1	0.1	**215.7**		0.1	0.1	**238**		0.1	0.1	**194.9**		0.1	0.1	**194.9**		0.1	0.1

Notes:
MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram 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
DUP = Duplicate sample.
-- = Not applicable.

Qualifiers (Qual)
J = Estimated Results
J+ = Potentially high value
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent
* - Groundwater Elevation data collected on September 28, 2021

Table 2
Summary of Alternate Source Demonstration Parameters
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

			Background Wells																			
		Sample ID:	MW-LF-01				MW-BG-06				MW-BG-16				AS-LF-01				AS-LF-02			
		Sample	09/28/2021				09/29/2021				09/29/2021				09/28/2021				09/28/2021			
Parameter Name	**Units**	**Background Threshold Values**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**
ASD Support Parameters																						
Calcium	mg/L	15.8	**3.13**		0.030	0.030	**9.42**		0.030	0.030	**1.62**		0.030	0.030	**1.68**		0.030	0.030	**5.63**		0.030	0.030
Chloride	mg/L	21.9	**17.0**		0.335	0.335	**17.4**		0.335	0.335	**2.34**		0.0670	0.0670	**3.31**		0.0670	0.0670	**15.1**		0.134	0.134
Fluoride	mg/L	0.165	**0.0913**	J	0.0330	0.0330	**0.0793**	J	0.0330	0.0330	**0.0661**	J	0.0330	0.0330	<0.0330	U	0.0330	0.0330	**0.105**		0.0330	0.0330
Sulfate	mg/L	21.6	**0.418**		0.133	0.133	**0.273**	J	0.133	0.133	**1.95**		0.133	0.133	**8.71**		0.133	0.133	**9.07**		0.133	0.133
Total Dissolved Solids	mg/L	295.3	**32.9**	J	3.40	3.40	**88.6**	J	3.40	3.40	**12.9**	J	3.40	3.40	**25.7**	J	3.40	3.40	**41.4**	J	3.40	3.40
Alkalinity, Total as CaCO3	mg/L	--	**2.01**	J	1.45	1.45	<1.45	U	1.45	1.45	**2.01**	J	1.45	1.45	**4.42**	J+	1.45	1.45	**2.01**	J	1.45	1.45
Lithium	ug/L	--	<2.00	U	2.00	2.00	<2.00	U	2.00	2.00	<2.00	U	2.00	2.00	<2.00	U	2.00	2.00	<2.00	U	2.00	2.00
Magnesium	ug/L	--	**1510**		10.0	10.0	**8100**		10.0	10.0	**1020**		10.0	10.0	**605**		10.0	10.0	**3940**		10.0	10.0
Potassium	ug/L	--	**740**		80.0	80.0	**1700**		80.0	80.0	**1510**		80.0	80.0	**2020**		80.0	80.0	**1830**		80.0	80.0
Sodium	ug/L	--	**6200**		80.0	80.0	**3170**		80.0	80.0	**969**		80.0	80.0	**3540**		80.0	80.0	**2280**		80.0	80.0

Notes:
MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram per liter
µg/L = Microgram per liter
-- = Not applicable.

Qualifiers (Qual)
J = Estimated Results
J+ = Potentially high value
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent

Table 2
Summary of Alternate Source Demonstration Parameters
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

			Downgradient Wells																					
		Sample ID:	MW-LF-02				MW-LF-03				MW-LF-04				MW-LF-05				MW-LF-06 DUP				MW-LF-06			
		Sample	09/29/2021				09/29/2021				09/29/2021				09/29/2021				09/28/2021				09/28/2021			
Parameter Name	**Units**	**Background Threshold Values**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**
ASD Support Parameters																										
Calcium	mg/L	15.8	**4.39**		0.030	0.030	**1.09**		0.030	0.030	**1.78**		0.030	0.030	**2.71**		0.030	0.030	**2.06**		0.030	0.030	**2.00**		0.030	0.030
Chloride	mg/L	21.9	**31.0**		0.335	0.335	**3.15**		0.0670	0.0670	**4.52**		0.0670	0.0670	**9.68**		0.0670	0.0670	**7.96**		0.0670	0.0670	**7.90**		0.0670	0.0670
Fluoride	mg/L	0.165	**0.203**		0.0330	0.0330	**0.0740**	J	0.0330	0.0330	**0.0773**	J	0.0330	0.0330	**0.0859**	J	0.0330	0.0330	**0.0868**	J	0.0330	0.0330	**0.0885**	J	0.0330	0.0330
Sulfate	mg/L	21.6	**5.70**		0.133	0.133	**0.698**		0.133	0.133	**0.558**		0.133	0.133	**0.541**		0.133	0.133	**0.615**		0.133	0.133	**0.457**		0.133	0.133
Total Dissolved Solids	mg/L	295.3	**97.1**	J	3.40	3.40	**5.71**	J	3.40	3.40	**18.6**	J	3.40	3.40	**18.6**		3.40	3.40	**25.7**	J	3.40	3.40	**35.7**	J	3.40	3.40
Alkalinity, Total as CaCO3	mg/L	--	<1.45	U	1.45	1.45	**3.02**	J	1.45	1.45	<1.45	U	1.45	1.45	<1.45	U	1.45	1.45	**2.01**	J	1.45	1.45	**2.01**	J	1.45	1.45
Lithium	ug/L	--	<2.00	U	2.00	2.00	<2.00	U	2.00	2.00	<2.00	U	2.00	2.00	<2.00	U	2.00	2.00	<2.00	U	2.00	2.00	<2.00	U	2.00	2.00
Magnesium	ug/L	--	**3640**		10.0	10.0	**656**		10.0	10.0	**1340**		10.0	10.0	**2120**		10.0	10.0	**1780**		10.0	10.0	**1710**		10.0	10.0
Potassium	ug/L	--	**4880**		80.0	80.0	**1170**		80.0	80.0	**439**		80.0	80.0	**966**		80.0	80.0	**355**		80.0	80.0	**345**		80.0	80.0
Sodium	ug/L	--	**7850**		80.0	80.0	**1610**		80.0	80.0	**2010**		80.0	80.0	**3430**		80.0	80.0	**3240**		80.0	80.0	**3150**		80.0	80.0

Notes:
MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram per liter
µg/L = Microgram per liter
DUP = Duplicate sample.
-- = Not applicable.

Qualifiers (Qual)
J = Estimated Results
J+ = Potentially high value
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent

Appendix B
March 2022 Alternate Source Demonstration

DOMINION ENERGY SOUTH CAROLINA

COPE STATION CLASS III LANDFILL

ORANGEBURG COUNTY, SOUTH CAROLINA

EPA CCR RULE COMPLIANCE

ALTERNATE SOURCE DEMONSTRATION REPORT

First Semiannual 2022 Detection Monitoring Event

September 2022

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Executive Summary

Dominion Energy South Carolina (DESC) completed the most recent semiannual detection monitoring sampling (first semiannual 2022 sampling event) in March 2022 for the Cope Generating Station (Station) Class III Industrial Landfill (Unit) pursuant to the *Criteria for Classification of Solid Waste Disposal Facilities and Practices; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, 40 CFR Part 257 (CCR Rule). The Unit constitutes a coal combustion residuals (CCR) Unit per the CCR Rule. Per 40 CFR §257.94, the samples were analyzed for the Appendix III detection monitoring parameters. Upon receipt of the laboratory analytical results, statistical analysis was performed and evaluated for potential statistically significant increases (SSI) above background concentrations.

The following SSIs above background concentrations were identified based on direct comparisons made between the statistically derived background threshold value (95 percent upper prediction limit) and the downgradient monitoring results:

- Chloride (MW-LF-02).
- Fluoride (MW-LF-02).

The information provided in this report serves as DESC's alternate source demonstration (ASD) prepared in accordance with 40 CFR §257.94(e)(2) and successfully demonstrates that the SSIs are not due to a release from the Unit to groundwater, but are due to the following:

- Natural variation in groundwater quality within the area.

Therefore, based on the information provided in this ASD report, DESC will continue to conduct semiannual detection monitoring for Appendix III constituents in accordance with 40 CFR §257.94 at the certified groundwater monitoring well system (Certified Monitoring Well Network) for the CCR Unit.

Section 1
Introduction

1.1 Background

Dominion Energy South Carolina, Inc. (DESC) operates the Cope Generating Station (Station), a coal-fired power plant, to generate electricity. The Station is located at 405 Teamwork Drive in Cope, Orangeburg County, South Carolina as shown on **Figure 1**. Coal combustion residuals (CCR) are produced as part of the electrical generation operations. The Station has been generating and disposing of CCR on-site in a coal ash disposal landfill (Unit) since it began operations in 1996. The Unit is a Class 3 non-commercial industrial landfill and operates under South Carolina Department of Health and Environmental Control (SCDHEC) Solid Waste Permit No. LF-3-00038.

The Unit receives both fly ash and flue gas desulfurization (FGD) waste from the Station and includes a liner system consisting of a minimum 2-foot-thick compacted clay layer (maximum permeability of 1×10^{-7} cm/sec) overlain by a 60-mil HDPE geomembrane and leachate collection system.

The Unit accepts CCR for disposal in accordance with the federal *Criteria for Classification of Solid Waste Disposal Facilities and Practices; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule* (CCR Rule), effective October 19, 2015, and subsequent Final Rules promulgated by the United States Environmental Protection Agency (USEPA).

1.2 Groundwater Monitoring and Statistical Analysis

In accordance with 40 CFR §257.90 through §257.94, DESC installed a groundwater monitoring system for the Unit, collected samples from the Certified Monitoring Well Network for laboratory analysis for CCR constituents, and performed statistical analysis of the collected samples. The location of the EPA CCR Rule Compliance Monitoring Well Network is presented on **Figure 2**. The Certified Monitoring Well Network consists of 10 wells installed into the subsurface to monitor shallow groundwater as follows:

- Five wells were installed as background monitoring wells and include MW-LF-01, MW-BG-06, MW-BG-16, AS-LF-01, and AS-LF-02.
- Five wells were installed as compliance monitoring wells and include MW-LF-02, MW-LF-03, MW-LF-04, MW-LF-05, and MW-LF-06.
- Additionally, monitoring well MW-40 was installed to support alternate source demonstration activities.

Pursuant to 40 CFR §257.91(f), DESC obtained certification by a qualified South Carolina-registered professional engineer (P.E.) stating that the Certified Monitoring Well Network has been designed and constructed to meet the requirements of 40 CFR §257.91 of the CCR Rule (Garrett & Moore 2017).

As discussed above, the Unit is currently being monitored pursuant to the CCR Rule. A groundwater sampling and analysis plan including selection of statistical procedures to evaluate groundwater data was prepared per the CCR Rule (Nautilus 2016). Eight quarterly background CCR Rule detection monitoring events were performed from May 2016 through July 2017 in accordance with 40 CFR §257.93(d) and §257.94(b). The eight quarterly detection monitoring background samples were analyzed for Appendix III to Part 257 – Constituents for Detection Monitoring and for Appendix IV to Part 257 – Constituents for Assessment Monitoring.

Following completion of quarterly background detection monitoring in July 2017, DESC implemented semiannual detection monitoring per 40 CFR §257.94(b) for the CCR Unit. The second semiannual (initial) detection monitoring event was performed in September 2017. Subsequent detection monitoring events, with associated verification sampling when appropriate, have been performed on a semiannual basis since September 2017. DESC completed the first semiannual 2022 detection monitoring event in March 2022. Per the CCR Rule, the semiannual detection monitoring event samples were analyzed for Appendix III constituents.

After completion of each semiannual detection monitoring event, the Appendix III data were statistically evaluated to identify potential statistically significant increases (SSIs) for Appendix III constituents above background levels. In accordance with 40 CFR §257.93(f)(6), DESC obtained certification by a qualified South Carolina-registered P.E. stating that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR Unit (SCE&G 2017).

Pursuant to 40 CFR §257.93(h), statistical analysis of the laboratory analytical data was performed to identify potential SSIs for the first semiannual 2022 detection monitoring event. Data from the first semiannual 2022 detection monitoring event is presented in **Table 1**. Two SSIs were identified for chloride and fluoride at MW-LF-02.

1.3 Purpose

Pursuant to 40 CFR §257.94(e)(2), DESC may demonstrate that a source other than the CCR Unit caused the SSIs identified or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The purpose of this report is to provide written documentation of the successful ASD for the SSIs identified for the first semiannual 2022 detection monitoring event, pursuant to 40 CFR §257.94(e)(2) of the CCR Rule.

1.4 Site Hydrogeology

The Station is located within the Edisto River Subbasin (Ace Basin watershed) of the Coastal Plain physiographic province. Aquifers and confining units in the South Carolina portion of the Coastal Plain are composed of crystalline carbonate rocks, sand, clay, silt, and gravel that contain large volumes of high-quality groundwater (SAWSC 2016). The Unit groundwater monitoring wells are within the surficial aquifer of the Huber-Congaree geologic formation. This formation consists of thinly layered, well-sorted, fine-grained sand with minimal interstitial clay and thin, laterally continuous clay interlayers (SCDNR 2009). Hydraulic conductivity values in the surficial aquifer at the Station range from 9.87×10^{-5} cm/s to 8.61×10^{-3} cm/s with an estimated groundwater flow velocities of between 0.002 to 0.84 feet/day (Nautilus 2021a).

1.5 General Groundwater Quality

Regionally, groundwater quality in the Edisto River Subbasin consists of a sodium bicarbonate water type grading to a sodium chloride water type with depth and proximity to the coast (SCDNR 2009). As such, the regional groundwater quality contains higher levels of specific constituents, such as chloride and fluoride, than in other regions in South Carolina. The USEPA has established National Primary Drinking Water Regulations that define a permitted maximum contaminant level (MCL) for specific constituents in drinking water. The primary MCLs are legally enforceable standards that were established to protect public health by limiting the levels of contaminants in drinking water. Additionally, the USEPA has established non-enforceable secondary MCLs for guidelines to assist public water systems in managing their drinking water for aesthetic consideration such as taste, color, and odor. Reported water quality concentrations for select primary and/or secondary drinking water contaminants compared to USEPA MCLs are provided in the table below.

Edisto River Subbasin Groundwater Water Quality

Constituent	Concentration Range		USEPA MCL
	Low	High	
Chloride (mg/L)	1.0	1,000	250 (Secondary)
Fluoride (mg/L)	2.0	11	4.0 (Primary)

Note: mg/L = milligram per liter

As noted in the table above, the natural range of chloride and fluoride within the Edisto River Subbasin, exceeds the primary and/or secondary drinking water MCLs established by the USEPA for drinking water (SCDNR 2009).

Section 2
Alternate Source Demonstration

Pursuant to 40 CFR §257.94(e)(2), DESC may demonstrate that a source other than the CCR Unit caused the SSI or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. As discussed previously, the first semiannual 2022 detection monitoring event was performed in March 2022. Statistical analysis of the first semiannual 2022 detection monitoring data was performed pursuant to 40 CFR §257.93(f) and (g) and in accordance with the Statistical Methods Certification (SCE&G 2017) and the Statistical Analysis Plan (OBG 2017). Based on either increasing trends at 95% confidence levels using Thiel-Sen's trend test and/or interwell prediction limits statistical analyses, the following SSIs were identified:

- Chloride (MW-LF-02).
- Fluoride (MW-LF-02).

All other Appendix III constituent concentrations were within their trends at 95% confidence levels using Thiel-Sen's trend and/or interwell prediction limits in all the CCR Rule groundwater monitoring system wells.

A discussion for each of the individual SSIs and associated evidence demonstrating that the SSIs were not caused by a release from the Unit is provided in the subsections below.

2.1 Chloride at MW-LF-02

The chloride SSI identified at MW-LF-02 is a result of natural variation in groundwater quality from areas upgradient from the Unit. The following evidence supports this determination:

- Chloride was detected in MW-LF-02 at a concentration of 39.9 mg/L in the March 2022 sample. This concentration exceeds the background threshold value of 21.9 mg/L. Based on review of potentiometric surface mapping (**Figure 3**), shallow groundwater flow in the Unit is generally to the west-southwest, with local flow to MW-LF-02 to the north-northwest. The location of MW-LF-02 is hydraulically cross-gradient of the southeastern corner of the Unit, consistent with historical delineation of groundwater flow made at the site. Dissolved solutes in groundwater travel by advection and dispersion. In advection, the movement of dissolved solutes in groundwater is dominated by changes in hydraulic head while movement through dispersion is due to changes in solute concentrations. Given the location of MW-LF-02, advection is unlikely to have carried chloride or other solutes from the Unit. Although dispersion of chloride from the Unit remains a possibility, given the distribution of groundwater flow in the MW-LF-02 area, it is more likely that the source of chloride is from upgradient areas of the Unit such as AS-LF-01, AS-LF-02, and MW-40.

- To further evaluate the potential source of chloride in the Unit area, an isoconcentration map was prepared for the March 2022 data and presented as **Figure 4**. Monitoring wells AS-LF-01, AS-LF-02, MW-40, and MW-BG-06 are all located upgradient from MW-LF-02 with chloride concentrations ranging from 5.27 mg/L (AS-LF-01) to 44.5 mg/L (MW-40) based on the March 2022 data. The chloride concentration at MW-LF-02 from March 2022 (39.9 mg/L) falls within this range. Historically, the highest chloride concentrations have been detected at MW-40 with a range of between 45.8 mg/L (December 2017) to 140 mg/L (September 2018) (Nautilus 2021a). The distribution of chloride in groundwater depicted by the isoconcentration map suggests that the source for chloride at MW-LF-02 is to the south-southeast of the monitoring well and the Unit.
- There are several constituents which are good indicators of coal ash impacts with lithium being one of them. Previous analysis of leachate from the Unit have indicated detections of lithium between 3,350 micrograms per liter (µg/L) and 6,254 µg/L (Nautilus 2021a). Total lithium was analyzed during the March 2022 event and was not detected above the laboratory method detection limit (MDL) of 2.00 µg/L at all locations sampled. Historically, lithium has not been detected above the laboratory MDL within the Unit monitoring well network with the exception of MW-LF-03 (2.4 µg/L in March 2019 and 2.02 µg/L in March 2021) and AS-LF-01 (2.41 µg/L in February 2018) (Nautilus 2021b). The general absence of lithium within the Unit monitoring well network suggests that a release of leachate from the Unit has not occurred.
- Most natural waters contain cations and anions found in equilibrium (Piper 1944). Evaluation of the geochemistry of groundwater can assist in understanding the source(s) of the dissolved constituents. A geochemical analysis of major cations (calcium, magnesium, sodium, and potassium) and anions (total alkalinity, chloride, fluoride, and sulfate) was conducted during the March 2022 sampling event and presented in **Table 2**. A useful tool to graph the major distribution of the dissolved constituents in groundwater is through the use of a Piper diagram (Piper 1944). A Piper diagram was prepared using the March 2022 geochemical data and presented as **Figure 5**. The following observations were noted:
  - With respect to anions (bottom right triangle of Piper diagram), MW-LF-02 plotted closely (within the 80 to 100% chloride distribution) with background wells MW-LF-01 and MW-BG-06, along with downgradient wells MW-LF-05 and MW-LF-06.
  - With respect to cations (bottom left triangle of Piper diagram), MW-LF-02 plotted closely (within the 30 to 50% sodium + potassium distribution) with background well AS-LF-01, MW-BG-16, MW-LF-01 and downgradient well MW-LF-03, MW-LF-04, MW-LF-05, MW-LF-06.
  - With respect to the overall hydrochemical distribution (diamond in Piper diagram), MW-LF-02 plotted within the same area of the diamond as background wells AS-LF-01, MW-BG-16, and MW-LF-01 and downgradient wells MW-LF-04, MW-LF-05, and MW-LF-06 within the calcium chloride and sodium chloride mixed type water hydrochemical facies.

Evaluation of the geochemical distribution of cations and anions in the groundwater samples suggests that the water type for MW-LF-02 has similarities to that of background wells MW-LF-01, MW-BG-06, and AS-LF-01. This observation suggests that the source for chloride at MW-02-LF is not from the Unit. The similar geochemical signature of MW-LF-02 with background wells MW-LF-01 and MW-BG-06 further suggests that the SSI for chloride is the result of natural variations of chloride in the groundwater at the site.

2.2 Fluoride at MW-LF-02

The fluoride SSI identified at MW-LF-02 is also a result of natural variation in groundwater quality from areas upgradient from the Unit. The following evidence supports this determination:

- Fluoride was detected in MW-LF-02 at a concentration of 0.171 mg/L in the March 2022 sample. This concentration exceeds the background threshold value of 0.165 mg/L. Based on review of potentiometric surface mapping (**Figure 3**), shallow groundwater flow in the Unit is generally to the west-southwest. The location of MW-LF-02 is hydraulically cross-gradient of the southeastern corner of the Unit, consistent with historical delineation of groundwater flow made at the site. Dissolved solutes in groundwater travel by advection and dispersion. In advection, the movement of dissolved solutes in groundwater is dominated by changes in hydraulic head while movement through dispersion is due to changes in solute concentrations. Given the cross-gradient location of MW-LF-02, advection is unlikely to have carried fluoride or other solutes from the Unit. Although dispersion of fluoride from the Unit remains a possibility, given the distribution of groundwater flow in the MW-LF-02 area, it is more likely that the source of fluoride is from upgradient areas of the Unit such as AS-LF-01, AS-LF-02, and MW-40.
- To further evaluate the potential source of fluoride in the Unit area, an isoconcentration map was prepared for the March 2022 data and presented as **Figure 6**. Monitoring wells AS-LF-01, AS LF-02, MW-40, and MW-BG-06 are all located upgradient from MW-LF-02 with fluoride concentrations ranging from 0.0630 mg/L (estimated; AS-LF-01) to 0.891 mg/L (MW-40) based on the March 2022 data. The fluoride concentration at MW-LF-02 from March 2022 (0.171 mg/L) falls within this range. Fluoride was first detected in MW-40 in March 2020 at a concentration of 0.5 mg/L. Fluoride was again detected in MW-40 in March 2021 (0.625 mg/L) and September 2021 (0.679 mg/L). The distribution of fluoride in groundwater depicted by the isoconcentration map suggests that the source for fluoride at MW-LF-02 is to the south-southeast of the monitoring well and the Unit.
- There are several constituents which are good indicators of coal ash impacts with lithium being one of them. Previous analysis of leachate from the Unit have indicated detections of lithium between 3,350 µg/L and 6,254 µg/L (Nautilus 2021a). Total lithium was analyzed during the March 2022 event and was not detected above the laboratory method detection limit (MDL) of 2.00 µg/L at all locations sampled. Historically, lithium has not been detected above the laboratory MDL within the Unit monitoring well network with the exception of MW-LF-03 (2.4 µg/L in March 2019 and 2.02 µg/L in March 2021) and AS-LF-01 (2.41 µg/L in February 2018) (Nautilus 2021b). The general absence of

lithium within the Unit monitoring well network suggests that a release of leachate from the Unit has not occurred.

- Most natural waters contain cations and anions found in equilibrium (Piper 1944). Evaluation of the geochemistry of groundwater can assist in understanding the source(s) of the dissolved constituents. A geochemical analysis of major cations (calcium, magnesium, sodium, and potassium) and anions (total alkalinity, chloride, fluoride, and sulfate) was conducted during the March 2022 sampling event and presented in **Table 2**. A useful tool to graph the major distribution of the dissolved constituents in groundwater is through the use of a Piper diagram (Piper 1944). A Piper diagram was prepared using the March 2022 geochemical data and presented as **Figure 5**. The following observations were noted:
  - With respect to anions (bottom right triangle of Piper diagram), MW-LF-02 plotted closely (within the 80 to 100% chloride distribution) with background wells MW-LF-01 and MW-BG-06, along with downgradient wells MW-LF-05 and MW-LF-06.
  - With respect to cations (bottom left triangle of Piper diagram), MW-LF-02 plotted closely (within the 30 to 50% sodium + potassium distribution) with background well AS-LF-01, MW-BG-16, MW-LF-01 and downgradient well MW-LF-03, MW-LF-04, MW-LF-05, MW-LF-06.
  - With respect to the overall hydrochemical distribution (diamond in Piper diagram), MW-LF-02 plotted within the same area of the diamond as background wells AS-LF-01, MW-BG-16, and MW-LF-01 and downgradient wells MW-LF-04, MW-LF-05, and MW-LF-06 within the calcium chloride and sodium chloride mixed type water hydrochemical facies.

Evaluation of the geochemical distribution of cations and anions in the groundwater samples suggests that the water type for MW-LF-02 has similarities to that of background wells MW-LF-01, MW-BG-06, and AS-LF-01. This observation suggests that the source for fluoride at MW-02-LF is not from the Unit. The similar geochemical signature of MW-LF-02 with background wells MW-LF-01 and MW-BG-06 further suggests that the SSI for fluoride is the result of natural variations of chloride in the groundwater at the site.

Section 3
Conclusions

The information provided in this report serves as the ASD prepared in accordance with 40 CFR §257.94(e)(2) of the CCR Rule and demonstrates that the SSIs determined based on statistical analysis of the first semiannual 2022 detection monitoring event performed in March of 2022 were not due to a release from the Unit to the subsurface.

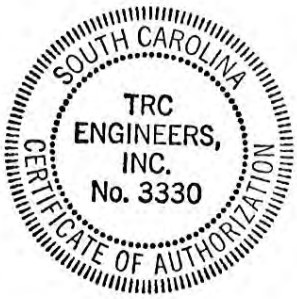
Based on the information provided in this ASD report, DESC will continue to conduct semiannual detection monitoring in accordance with 40 CFR §257.94 at the Certified Monitoring Well Network for the Unit.

Section 4
Certification

I hereby certify that the alternative source demonstration presented within this document for the DESC Cope Generating Station Coal Ash Disposal Landfill CCR Unit has been prepared to meet the requirements of Title 40 CFR §257.94(e)2 of the Federal CCR Rule. This document is accurate and has been prepared in accordance with good engineering practices, including the consideration of applicable industry standards, and with the requirements of Title 40 CFR §257.94(e) 2.

Name: Nakia W. Addison, P.E. **Expiration Date:** June 30, 2024

Company: TRC Engineers, Inc. **Date:** 9/16/2022



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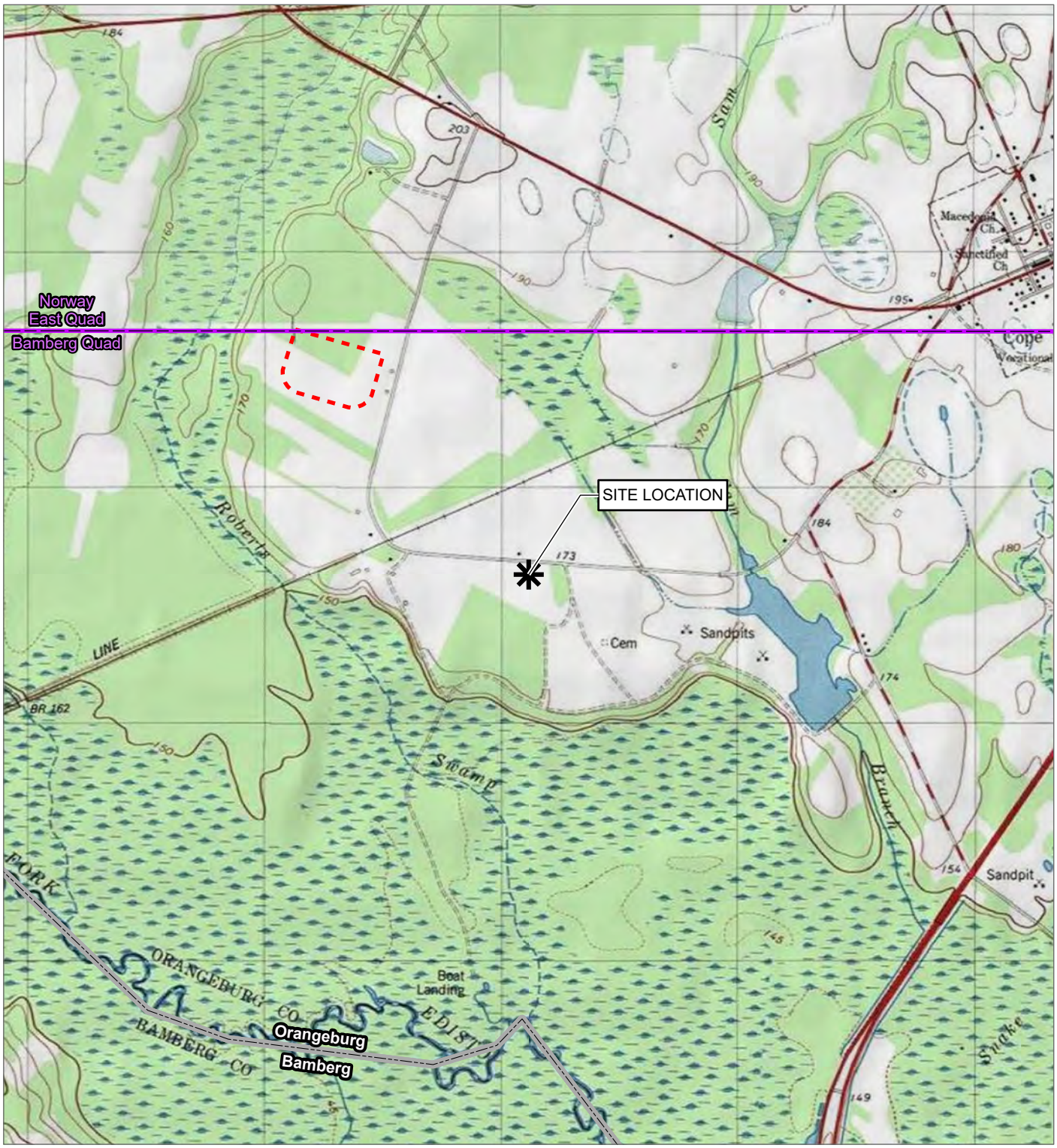
United States Environmental Protection Agency. 2017. Secondary Drinking Water Standards: Guidance for Nuisance Chemicals, March 8, 2017.

Figures



- SITE LOCATION
- CLASS III LANDFILL BOUNDARY
- COUNTY BOUNDARY
- USGS 24K QUAD BOUNDARY

BASE MAP: USGS TOPO MAP
DATA SOURCES: TRC, USGS 7.5' QUADRANGLES: NORWAY EAST (1980) QUAD ID: 33081-D1, SC; BAMBURG (1980) QUAD ID: 33081-C1, SC

0 1,000 2,000 FEET

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

PROJECT: **DOMINION ENERGY SOUTH CAROLINA COPE STATION**
405 TEAMWORK ROAD, COPE, SC 29038

TITLE:

SITE LOCATION MAP

DRAWN BY:	R. BARBER	PROJ. NO.:	416559.0007.0000
CHECKED BY:	A. HORRIE		
APPROVED BY:	R. MAYER		**FIGURE 1**
DATE:	SEPTEMBER 2022		

TRC
708 HEARTLAND TRAIL
SUITE 3000
MADISON, WI 53717
PHONE: 608.826.3600

FILE: DOMINION_VARIOUS

LEGEND

- Monitoring Well
- Class II Landfill
- Class III Landfill

N
W E
S

NOTE: Aerial Image from ESRI World Imagery dated January 2020.

0 400 800 Feet

1 " = 400 '
1:4,800

PROJECT:
DESC COPE STATION
CLASS III LANDFILL
COPE, SOUTH CAROLINA

TITLE:
CCR RULE COMPLIANCE
MONITORING WELL NETWORK

DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER		
APPROVED BY:	R. MAYER		**FIGURE 2**
DATE:	AUGUST 2022		

TRC
50 International Drive, Suite 150
Patewood Plaza Three
Greenville, SC 29615
Phone: 864.281.0030
www.TRCcompanies.com

FILE NO.: Figure2_Cope_CCR_Well_Network.mxd

Plot Date: 8/15/2022, 14:29:02 PM by JYONTS -- LAYOUT: ANSI B (11"x17")
Path: S:\1-PROJECTS\Dominion\South_Carolina\7_Cope_SC\2022\Figure2_Cope_CCR_Well_Network.mxd
Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet (Foot US)
Map Rotation: 0

TRC - GIS

TRC - GIS

Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet (Foot US)
Plot Date: 8/15/2022, 14:39:09 PM by JYONTS -- LAYOUT: ANSI B(11"x17")
Path: S:\1-PROJECTS\Dominion\South_Carolina\7_Cope_SC2022\Figure3_Cope_Class_III_CCR_2022Q1_Rev.mxd

MW-BG-16
171.54

MW-BG-06
173.47

MW-LF-06
158.31

MW-LF-01
167.81

MW-LF-05
157.20

MW-LF-04
159.81

MW-LF-03
162.34

MW-LF-02
163.90

AS-LF-01
164.00

AS-LF-02
164.97

MW-40
166.10

158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173

LEGEND

- Monitoring Well
- Event Piezometer
- **173.47** Water Elevation (FT MSL)
- Approximate Groundwater Flow Direction
- Water Table Elevation in feet above mean sea level (1' Contour Intervals) - Dashed where inferred.
- Class II Landfill
- Class III Landfill

N
W E
S

0 400 800 Feet

1 " = 400 '
1:4,800

NOTE: Aerial Image from ESRI World Imagery dated January 2020.

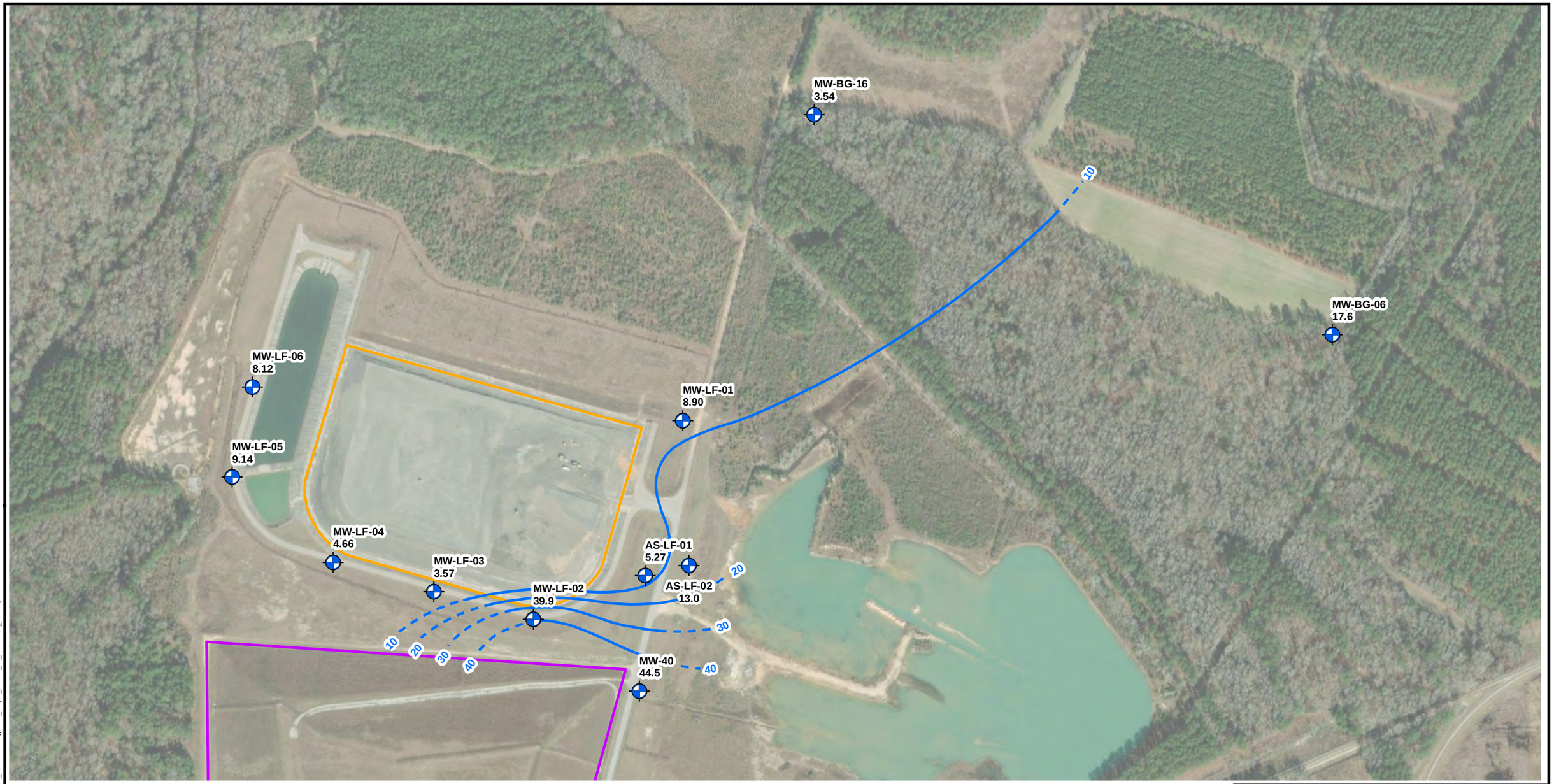
PROJECT:
DESC COPE STATION
CLASS III LANDFILL
COPE, SOUTH CAROLINA

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP - MARCH 8, 2022

DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	J. BRADLEY		
APPROVED BY:	R. MAYER		**FIGURE 3**
DATE:	AUGUST 2022		

TRC
50 International Drive, Suite 150
Patewood Plaza Three
Greenville, SC 29615
Phone: 864.281.0030
www.TRCcompanies.com

FILE NO.: Figure3_Cope_Class_III_CCR_2022Q1_Rev.mxd



LEGEND

- Monitoring Well
- Chloride Concentrations in mg/L (10 mg/L Intervals) - Dashed where inferred
  Background threshold is 21.9 mg/L
- Class II Landfill
- Class III Landfill

N
W E
S

0 400 800 Feet

1 " = 400 '
1:4,800

NOTE: Aerial Image from ESRI World Imagery dated January 2020.

PROJECT:
DESC COPE STATION
CLASS III LANDFILL
COPE, SOUTH CAROLINA

TITLE:
CHLORIDE ISOCONCENTRATION MAP
MARCH 8 & 9, 2022

DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER		
APPROVED BY:	R. MAYER		**FIGURE 4**
DATE:	AUGUST 2022		

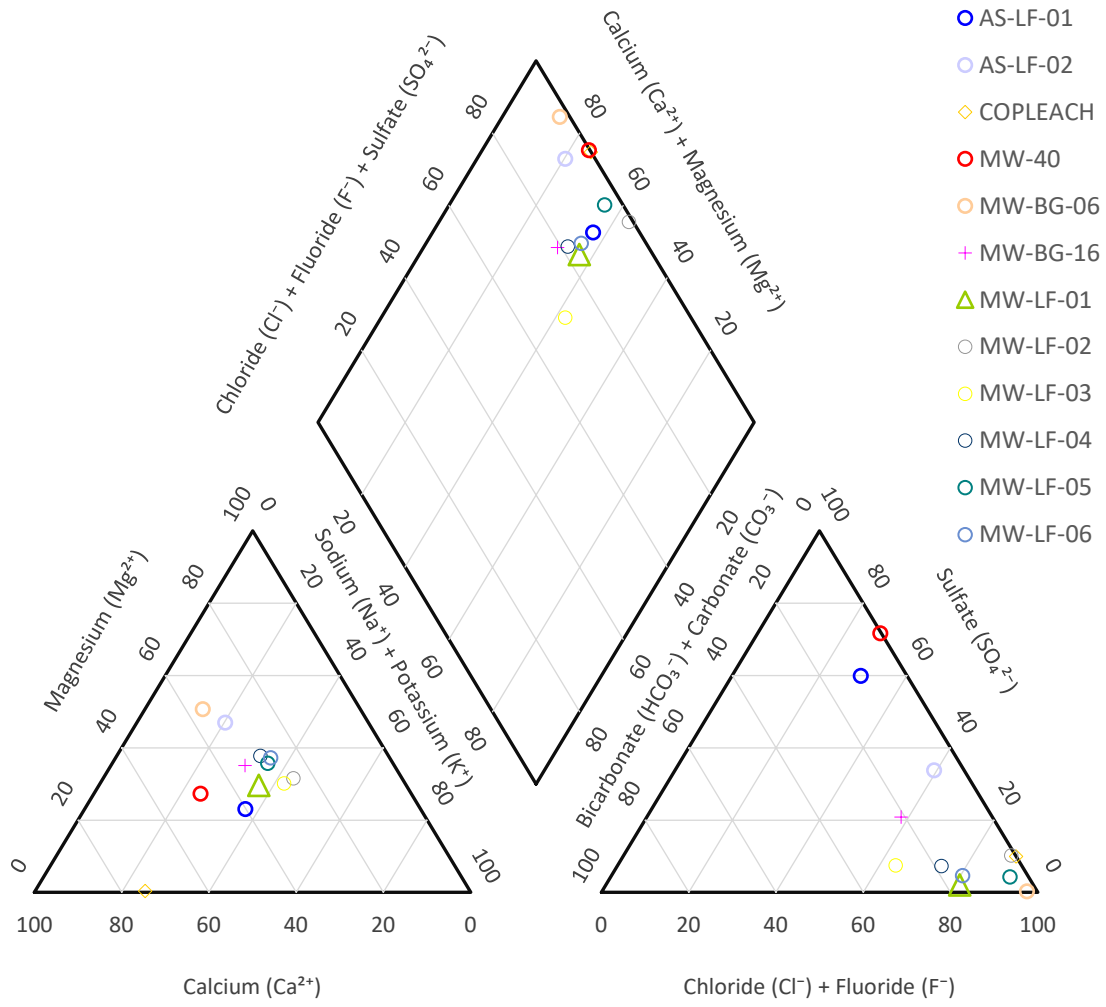
TRC
50 International Drive, Suite 150
Patewood Plaza Three
Greenville, SC 29615
Phone: 864.281.0030
www.TRCcompanies.com

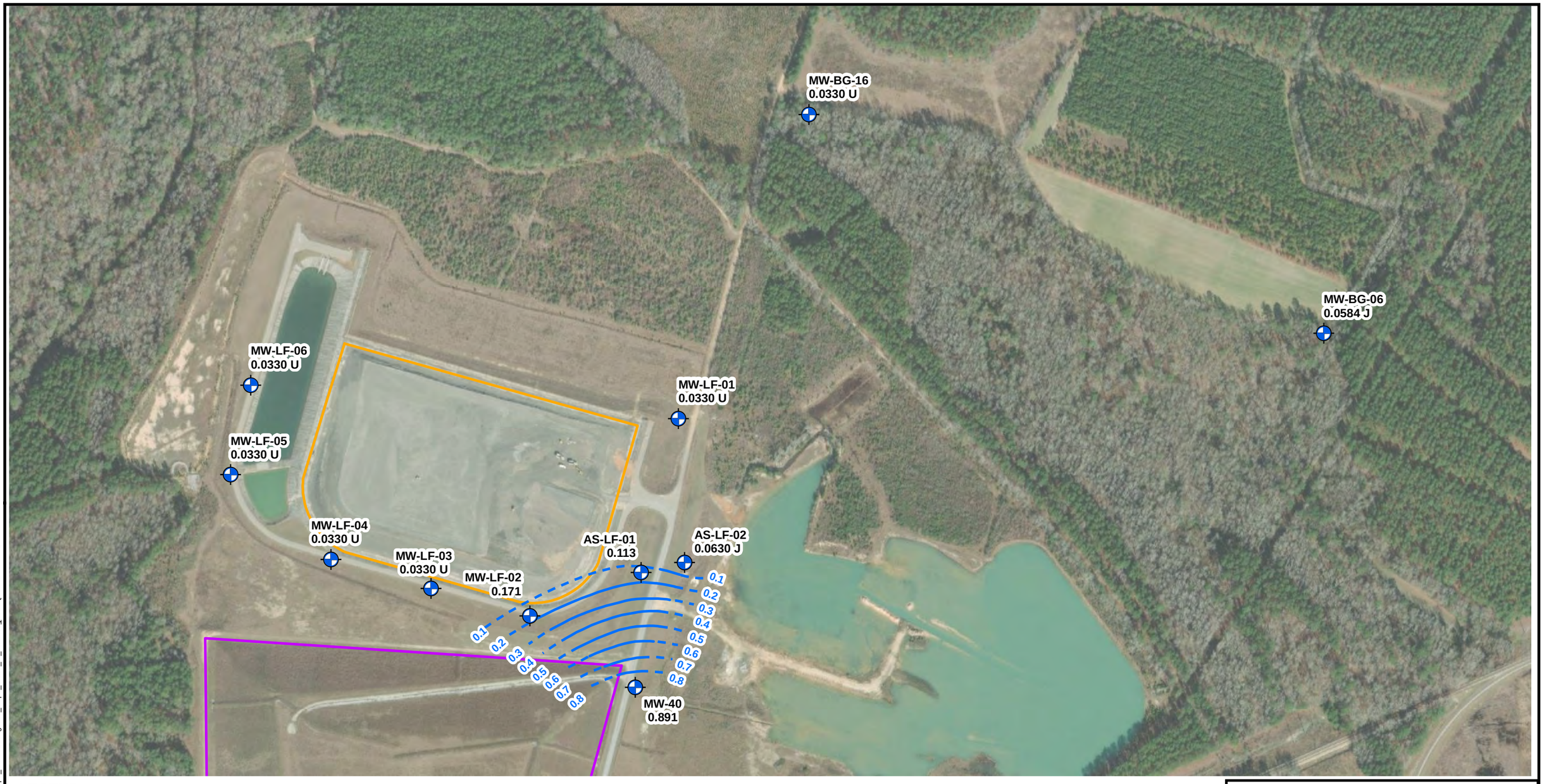
FILE NO.: Figure4_Cope_Class_III_Chloride_2022Q1.mxd

Plot Date: 8/15/2022, 15:35:26 PM by JYONTS -- LAYOUT: ANSI B(11"x17")
Path: S:\1-PROJECTS\Dominion\South_Carolina\7_Cope_SC2022\Figure4_Cope_Class_III_Chloride_2022Q1.mxd
Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet (Foot US)
Map Rotation: 0

TRC - GIS

FIGURE 5
DESC Cope Station
Class III Landfill
Piper Diagram - March 2022





LEGEND

- Monitoring Well
- Fluoride Concentrations in mg/L (0.1 mg/L Intervals) - Dashed where inferred
  Background threshold is 0.165 mg/L
- Class II Landfill
- Class III Landfill

J = Estimated Concentration
U = Less than Method Detection Limit

N W E S

0 400 800 Feet

1 " = 400 '
1:4,800

NOTE: Aerial Image from ESRI World Imagery dated January 2020.

PROJECT:
DESC COPE STATION
CLASS III LANDFILL
COPE, SOUTH CAROLINA

TITLE:
FLUORIDE ISOCONCENTRATION MAP
MARCH 8 & 9, 2022

DRAWN BY:	J. YONTS	PROJ. NO.:	416559.0007.0000
CHECKED BY:	R. MAYER		
APPROVED BY:	R. MAYER		**FIGURE 6**
DATE:	AUGUST 2022		

TRC
50 International Drive, Suite 150
Patewood Plaza Three
Greenville, SC 29615
Phone: 864.281.0030
www.TRCcompanies.com

FILE NO.: Figure5_Cope_Class_III_Fluoride_2022Q1.mxd

Plot Date: 8/16/2022, 12:38:03 PM by JYONTS -- LAYOUT: ANSI B (11"x17")
Path: S:\1-PROJECTS\Dominion\South_Carolina\7_Cope_SC\2022\Figure5_Cope_Class_III_Fluoride_2022Q1.mxd
Coordinate System: NAD 1983 StatePlane South Carolina FIPS 3900 Feet (Foot US)
Map Rotation: 0
TRC - GIS

Tables

Table 1
Summary of First Semiannual 2022 Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

			Background Wells																			
		Sample ID:	MW-LF-01				MW-BG-06				MW-BG-16				AS-LF-01				AS-LF-02			
		Sample	03/09/2022				03/08/2022				03/08/2022				03/09/2022				03/09/2022			
Parameter Name	**Units**	**Background Threshold Values**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**
CCR Appendix III																						
Boron	µg/L	1000	**6.98**	J	4.00	4.00	**8.61**	J	4.00	4.00	**9.64**	J	4.00	4.00	**12.3**	J	4.00	4.00	**16.3**		4.00	4.00
Calcium	mg/L	15.8	**2.20**		0.030	0.030	**9.78**		0.030	0.030	**2.04**		0.030	0.030	**4.01**		0.030	0.030	**4.54**		0.030	0.030
Chloride	mg/L	21.9	**8.90**		0.0670	0.0670	**17.6**		0.335	0.335	**3.54**		0.0670	0.0670	**5.27**		0.0670	0.0670	**13.0**		0.134	0.134
Fluoride	mg/L	0.165	0.0330	U	0.0330	0.0330	**0.0584**	J	0.0330	0.0330	0.0330	U	0.0330	0.0330	**0.113**		0.0330	0.0330	**0.0630**	J	0.0330	0.0330
pH	SU	3.4 - 6.2	**4.42**		0.01	0.01	**4.31**		0.01	0.01	**4.31**		0.01	0.01	**4.52**		0.01	0.01	**4.45**		0.01	0.01
Sulfate	mg/L	21.6	**0.312**	J	0.133	0.133	0.133	U	0.133	0.133	**1.73**		0.133	0.133	**15.1**		0.133	0.133	**10.1**		0.133	0.133
Total Dissolved Solids	mg/L	295.3	**10.0**	J	3.40	3.40	**101**		3.40	3.40	**4.29**	J	3.40	3.40	**24.3**		3.40	3.40	**42.9**	J	3.40	3.40
Field Parameters																						
Conductivity	µS/cm	--	**48.32**		0.1	0.1	**181.72**		0.1	0.1	**45.54**		0.1	0.1	**67.95**		0.1	0.1	**96.69**		0.1	0.1
Dissolved Oxygen	mg/L	--	**3.57**		0.01	0.01	**7.18**		0.01	0.01	**7.45**		0.01	0.01	**5.02**		0.01	0.01	**4.39**		0.01	0.01
Temperature	C	--	**20.22**		0.01	0.01	**17.72**		0.01	0.01	**17.53**		0.01	0.01	**19.61**		0.01	0.01	**20.55**		0.01	0.01
Turbidity	NTU	--	**3.39**		0.1	0.1	**0.56**		0.1	0.1	**1.61**		0.1	0.1	**0.21**		0.1	0.1	**1.23**		0.1	0.1
Depth to Water	ft btoc	--	**8.60**		0.01	0.01	**14.48**		0.01	0.01	**10.98**		0.01	0.01	**10.75**		0.01	0.01	**10.41**		0.01	0.01
Groundwater Elevation(*)	ft msl	--	**167.81**		0.01	0.01	**173.47**		0.01	0.01	**171.54**		0.01	0.01	**164.00**		0.01	0.01	**164.97**		0.01	0.01
Oxidation Reduction Potential	millivolts	--	**222.2**		0.1	0.1	**139.9**		0.1	0.1	**105.5**		0.1	0.1	**106.1**		0.1	0.1	**108.2**		0.1	0.1

Notes:
MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram 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
-- = Not applicable.

Qualifiers (Qual)
J = Estimated Results
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent
* - Groundwater Elevation data collected on March 8, 2022

Table 1
Summary of First Semiannual 2022 Detection Monitoring Program Sampling Event Data
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

			Downgradient Wells																					
		Sample ID:	MW-LF-02				MW-LF-03				MW-LF-04				MW-LF-05				MW-LF-05 DUP				MW-LF-06			
		Sample	03/09/2022				03/09/2022				03/09/2022				03/09/2022				03/09/2022				03/09/2022			
Parameter Name	**Units**	**Background Threshold Values**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**
CCR Appendix III																										
Boron	µg/L	1000	**17.1**		4.00	4.00	**8.19**	J	4.00	4.00	**9.69**	J	4.00	4.00	**10.2**	J	4.00	4.00	**10.6**	J	4.00	4.00	**9.02**	J	4.00	4.00
Calcium	mg/L	15.8	**5.72**		0.030	0.030	**1.07**		0.030	0.030	**1.86**		0.030	0.030	**2.84**		0.030	0.030	**2.79**		0.030	0.030	**2.15**		0.030	0.030
Chloride	mg/L	21.9	**39.9**		0.0670	0.0670	**3.57**		0.0670	0.0670	**4.66**		0.0670	0.0670	**9.14**		0.134	0.134	**9.26**		0.134	0.134	**8.12**		0.0670	0.0670
Fluoride	mg/L	0.165	**0.171**		0.0330	0.0330	0.0330	U	0.0330	0.0330	0.0330	U	0.0330	0.0330	0.0330	U	0.0330	0.0330	0.0330	U	0.0330	0.0330	0.0330	U	0.0330	0.0330
pH	SU	3.4 - 6.2	**4.21**		0.01	0.01	**4.55**		0.01	0.01	**4.51**		0.01	0.01	**4.40**		0.01	0.01	**4.40**		0.01	0.01	**4.41**		0.01	0.01
Sulfate	mg/L	21.6	**6.26**		0.133	0.133	**0.570**		0.133	0.133	**0.620**		0.133	0.133	**0.583**		0.133	0.133	**0.575**		0.133	0.133	**0.638**		0.133	0.133
Total Dissolved Solids	mg/L	295.3	**77.1**	J	3.40	3.40	**8.57**	J	3.40	3.40	**17.1**	J	3.40	3.40	**32.9**	J	3.40	3.40	**42.9**	J	3.40	3.40	**30.0**	J	3.40	3.40
Field Parameters																										
Conductivity	µS/cm	--	**178.86**		0.1	0.1	**34.32**		0.1	0.1	**47.95**		0.1	0.1	**74.90**		0.1	0.1	**--**		0.1	0.1	**58.78**		0.1	0.1
Dissolved Oxygen	mg/L	--	**0.54**		0.01	0.01	**2.72**		0.01	0.01	**4.7**		0.01	0.01	**4.63**		0.01	0.01	**--**		0.01	0.01	**4.48**		0.01	0.01
Temperature	C	--	**22.24**		0.01	0.01	**22.45**		0.01	0.01	**22.99**		0.01	0.01	**21.42**		0.01	0.01	**--**		0.01	0.01	**22.53**		0.01	0.01
Turbidity	NTU	--	**2.08**		0.1	0.1	**1.48**		0.1	0.1	**4.41**		0.1	0.1	**0.45**		0.1	0.1	**--**		0.1	0.1	**3.31**		0.1	0.1
Depth to Water	ft btoc	--	**26.18**		0.01	0.01	**24.85**		0.01	0.01	**24.39**		0.01	0.01	**20.75**		0.01	0.01	**--**		0.01	0.01	**20.26**		0.01	0.01
Groundwater Elevation(*)	ft msl	--	**163.90**		0.01	0.01	**162.34**		0.01	0.01	**159.81**		0.01	0.01	**157.20**		0.01	0.01	**--**		0.01	0.01	**158.31**		0.01	0.01
Oxidation Reduction Potential	millivolts	--	**422.8**		0.1	0.1	**195.8**		0.1	0.1	**190.2**		0.1	0.1	**109.6**		0.1	0.1	**--**		0.1	0.1	**248.1**		0.1	0.1

Notes:
MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram 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
DUP = Duplicate sample.
-- = Not applicable.

Qualifiers (Qual)
J = Estimated Results
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent
* - Groundwater Elevation data collected on March 8, 2022

Table 2
Summary of Alternate Source Demonstration Parameters
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

			Background Wells																			
		Sample ID:	MW-LF-01				MW-BG-06				MW-BG-16				AS-LF-01				AS-LF-02			
		Sample	03/09/2022				03/08/2022				03/08/2022				03/09/2022				03/09/2022			
Parameter Name	**Units**	**Background Threshold Values**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**
ASD Support Parameters																						
Calcium	mg/L	15.8	**2.20**		0.030	0.030	**9.78**		0.030	0.030	**2.04**		0.030	0.030	**4.01**		0.030	0.030	**4.54**		0.030	0.030
Chloride	mg/L	21.9	**8.9**		0.0670	0.0670	**17.6**		0.335	0.335	**3.54**		0.0670	0.0670	**5.27**		0.0670	0.0670	**13.0**		0.134	0.134
Fluoride	mg/L	0.165	0.0330	U	0.0330	0.0330	**0.0584**	J	0.0330	0.0330	0.0330	U	0.0330	0.0330	**0.113**		0.0330	0.0330	**0.0630**	J	0.0330	0.0330
Sulfate	mg/L	21.6	**0.312**	J	0.133	0.133	0.133	U	0.133	0.133	**1.73**		0.133	0.133	**15.1**		0.133	0.133	**10.1**		0.133	0.133
Total Dissolved Solids	mg/L	295.3	**10.0**	J	3.40	3.40	**101**		3.40	3.40	**4.29**	J	3.40	3.40	**24.3**		3.40	3.40	**42.9**	J	3.40	3.40
Alkalinity, Total as CaCO3	mg/L	--	**3.20**	J	1.45	1.45	1.45	U	1.45	1.45	**2.20**	J	1.45	1.45	**3.40**	J	1.45	1.45	**2.60**	J	1.45	1.45
Lithium	ug/L	--	2.00	U	2.00	2.00	2.00	U	2.00	2.00	2.00	U	2.00	2.00	2.00	U	2.00	2.00	2.00	U	2.00	2.00
Magnesium	ug/L	--	**1170**		10.0	10.0	**8340**		10.0	10.0	**1270**		10.0	10.0	**1410**		10.0	10.0	**3940**		10.0	10.0
Potassium	ug/L	--	**413**		80.0	80.0	**1750**		80.0	80.0	**1570**		80.0	80.0	**932**		80.0	80.0	**1630**		80.0	80.0
Sodium	ug/L	--	**2500**		80.0	80.0	**3070**		80.0	80.0	**1180**		80.0	80.0	**3670**		80.0	80.0	**2250**		80.0	80.0

Notes:
MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram per liter
µg/L = Microgram per liter
-- = Not applicable.

Qualifiers (Qual)
J = Estimated Results
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent

Table 2
Summary of Alternate Source Demonstration Parameters
Dominion Energy South Carolina - Cope Station Class III Landfill
Cope, Orangeburg County, South Carolina

			Downgradient Wells																							
		Sample ID:	MW-LF-02				MW-LF-03				MW-LF-04				MW-LF-05				MW-LF-05 DUP				MW-LF-06			
		Sample	03/09/2022				03/09/2022				03/09/2022				03/09/2022				03/09/2022				03/09/2022			
Parameter Name	**Units**	**Background Threshold Values**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**	**Result**	**Qual**	**MDL**	**RL**
ASD Support Parameters																										
Calcium	mg/L	15.8	**5.72**		0.030	0.030	**1.07**		0.030	0.030	**1.86**		0.030	0.030	**2.84**		0.030	0.030	**2.79**		0.030	0.030	**2.15**		0.030	0.030
Chloride	mg/L	21.9	**39.9**		0.0670	0.0670	**3.57**		0.0670	0.0670	**4.66**		0.0670	0.0670	**9.14**		0.134	0.134	**9.26**		0.134	0.134	**8.12**		0.0670	0.0670
Fluoride	mg/L	0.165	**0.171**		0.0330	0.0330	0.0330	U	0.0330	0.0330	0.0330	U	0.0330	0.0330	0.0330	U	0.0330	0.0330	0.0330	U	0.0330	0.0330	0.0330	U	0.0330	0.0330
Sulfate	mg/L	21.6	**6.26**		0.133	0.133	**0.570**		0.133	0.133	**0.620**		0.133	0.133	**0.583**		0.133	0.133	**0.575**		0.133	0.133	**0.638**		0.133	0.133
Total Dissolved Solids	mg/L	295.3	**77.1**	J	3.40	3.40	**8.57**	J	3.40	3.40	**17.1**	J	3.40	3.40	**32.9**	J	3.40	3.40	**42.9**	J	3.40	3.40	**30.0**	J	3.40	3.40
Alkalinity, Total as CaCO3	mg/L	--	1.45	U	1.45	1.45	**2.80**	J	1.45	1.45	**2.00**	J	1.45	1.45	1.45	U	1.45	1.45	**1.80**	J	1.45	1.45	**2.60**	J	1.45	1.45
Lithium	ug/L	--	2.00	U	2.00	2.00	2.00	U	2.00	2.00	2.00	U	2.00	2.00	2.00	U	2.00	2.00	2.00	U	2.00	2.00	2.00	U	2.00	2.00
Magnesium	ug/L	--	**4410**		10.0	10.0	**708**		10.0	10.0	**1450**		10.0	10.0	**2150**		10.0	10.0	**2200**		10.0	10.0	**1780**		10.0	10.0
Potassium	ug/L	--	**5450**		80.0	80.0	**904**		80.0	80.0	**433**		80.0	80.0	**1020**		80.0	80.0	**1040**		80.0	80.0	**319**		80.0	80.0
Sodium	ug/L	--	**8290**		80.0	80.0	**1340**		80.0	80.0	**2140**		80.0	80.0	**3450**		80.0	80.0	**3490**		80.0	80.0	**3030**		80.0	80.0

Notes:
MDL = Method Detection Limit
RL = Reporting Limit
mg/L = Milligram per liter
µg/L = Microgram per liter
DUP = Duplicate sample.
-- = Not applicable.

Qualifiers (Qual)
J = Estimated Results
U = Samples reported below their respective MDL
= Concentration greater than Background Threshold Values
Bold font = Detected constituent

Appendix C
First Semiannual Detection Monitoring Program Event Field Data Sheets, Laboratory Reports, and Data Validation Forms

COPE STATION - Class 3 Landfill - CCR

Date(s) Measured: 3/8/22

Well ID	Well Diameter (inches)	Well Total Depth (ft BTOC)	Well Completion	Screen Length (ft)	Depth to Water (ft below TOC)	Pump Type
MW-LF-01	2	~~17.96~~ 17.98	Stickup	10	8.60	Peristaltic
MW-LF-02	2	32.40	Stickup	10	26.18	Peristaltic
MW-LF-03	2	~~31.40~~ 31.45	Stickup	10	24.85	Peristaltic
MW-LF-04	2	31.25	Stickup	10	24.39	Peristaltic
MW-LF-05	2	29.15	Stickup	10	~~20.75~~	Peristaltic
MW-LF-06	2	~~28.20~~ 28.22	Stickup	10	20.26	Peristaltic
MW-BG-06	2	~~30.30~~ 30.31	Stickup	10	14.48	Peristaltic
MW-BG-16	2	~~29.25~~ 29.30	Stickup	10	10.98	Peristaltic
AS-LF-01	2	22.44	Stickup	10	10.75	Peristaltic
AS-LF-02	2	22.65	Stickup	10	10.41	Peristaltic
MW-40	2	28.14	Stickup	10	11.18	Peristaltic

TRC WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: JAY	DATE: 3/9/22	BY: RAM	DATE: 3-14-22

SAMPLE ID: MW-LF-01 | WELL DIAMETER: [X] 2" [ ] 4" [ ] 6" [ ] OTHER

WELL MATERIAL: [X] PVC [ ] SS [ ] IRON [ ] GALVANIZED STEEL [ ] OTHER

SAMPLE TYPE: [X] GW [ ] WW [ ] SW [ ] DI [ ] LEACHATE [ ] OTHER

PURGING	TIME: 1408	DATE: 3/9/22

PURGE METHOD: [X] PUMP Peristaltic [ ] BAILER

DEPTH TO WATER: 8.51 T/ PVC

DEPTH TO BOTTOM: 17.98 T/ PVC

WELL VOLUME: 1.6 [ ] LITERS [X] GALLONS

VOLUME REMOVED: .93 [ ] LITERS [X] GALLONS

COLOR: Clear ODOR: None

TURBIDITY: [X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY

DISPOSAL METHOD: [ ] GROUND [ ] DRUM [ ] OTHER

SAMPLE	TIME: 1446	DATE: 3/9/22

PH: 4.42 SU CONDUCTIVITY: 48.32 umhos/cm

ORP: 222.2 mV DO: 3.57 mg/L

TURBIDITY: 3.39 NTU

[X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY

TEMPERATURE: 20.22 °C OTHER:

COLOR: Clear ODOR: None

FILTRATE (0.45 um) [ ] YES [X] NO

FILTRATE COLOR: — FILTRATE ODOR: —

QC SAMPLE: [ ] MS/MSD [ ] DUP-

COMMENTS: FBLK-COP-LF-220[illegible] @ 1438

TIME	PURGE RATE (GPM or ~~ML/MIN~~)	PH (SU)	CONDUCTIVITY (umhos/cm)	ORP (mV)	D.O. (mg/L)	TURBIDITY (NTU)	TEMPERATURE (°C)	WATER LEVEL (FEET)	CUMULATIVE PURGE VOLUME (GAL OR L)
1411	100	4.48	48.26	221.3	5.92	3.65	23.83	8.57	INITIAL
1421	100	4.43	47.52	241.5	3.61	3.68	19.96	8.61	
1426	100	4.43	47.92	235.8	3.65	3.74	20.05	8.603	
1431	100	4.43	47.76	231.2	3.56	3.85	20.12	8.63	
1436	100	4.42	47.71	227.4	3.51	3.88	20.17	8.64	
1441	100	4.42	48.93	224.7	3.58	3.58	20.01	8.64	
1446	100	4.42	48.32	222.2	3.57	3.39	20.22	8.64	0.9
1504	—	—	—	—	—	2.86	—	—	—

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

pH: +/- **10 %** COND.: +/- **10 %** ORP: +/- **10 %** D.O.: +/- **10 %** TURB: +/- **10 %** or </= **5** TEMP.: +/- **0.5°C**

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
				[ ] Y [ ] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N

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

REVISED 06/2011

TRC WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: DJS	DATE: 3/9/22	BY: KAM	DATE: 3-14-22

SAMPLE ID: MW-LF-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: 1525	DATE: 3/9/22	SAMPLE	TIME: 1557	DATE: 3/9/22

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 26.18 T/ PVC

DEPTH TO BOTTOM: 32.40 T/ PVC

WELL VOLUME: 1.0 ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 1.18 ☐ LITERS ☑ GALLONS

COLOR: clear ODOR: none

TURBIDITY ☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

PH: 4.21 SU CONDUCTIVITY: 178.86 umhos/cm

ORP: 422.8 mV DO: 0.54 mg/L

TURBIDITY: 2.08 NTU

☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 22.24 °C OTHER:

COLOR: clear ODOR: none

FILTRATE (0.45 um) ☐ YES ☑ NO

FILTRATE COLOR: — FILTRATE ODOR: —

QC SAMPLE: ☐ MS/MSD ☐ DUP-

COMMENTS: post turb. dly = 2.06

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)
1527	150	4.18	210.39	285.8	1.10	5.85	22.85	26.18	INITIAL
1532	150	4.18	207.57	408.5	0.78	4.81	22.58	26.20	
1537	150	4.18	201.67	420.0	0.71	4.37	22.54	26.18	
1542	150	4.21	189.09	423.0	0.63	3.42	22.39	26.18	
1547	150	4.21	190.83	426.0	0.59	2.81	22.36	26.18	
1552	150	4.22	183.83	424.6	0.56	2.69	22.27	26.18	
1557	150	4.21	178.86	422.8	0.54	2.08	22.24	26.18	1.2
post 1604	150	—	—	—	—	2.06	—	26.18	—

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
2	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
2	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

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

TRC WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: DJS	DATE: 3/9/22	BY: RAM	DATE: 3.14.22

SAMPLE ID: MW-LF-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: 3/9/22	DATE: 1424

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 24.85 T/ PVC

DEPTH TO BOTTOM: ~~31.40~~ T/ PVC 31.45

WELL VOLUME: 1.1 ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 1.18 ☐ LITERS ☑ GALLONS

COLOR: clear ODOR: none

TURBIDITY ☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

SAMPLE	TIME: 1457	DATE: 3/9/22

PH: 4.55 SU CONDUCTIVITY: 34.32 umhos/cm

ORP: 195.8 mV DO: 2.22 mg/L

TURBIDITY: 1.48 NTU

☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 22.45 °C OTHER:

COLOR: clear ODOR: none

FILTRATE (0.45 um) ☐ YES ☑ NO

FILTRATE COLOR: — FILTRATE ODOR: —

QC SAMPLE: ☐ MS/MSD ☐ DUP-

COMMENTS: post turbidity = 1.47

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)
1427	150	4.52	34.25	236.2	2.42	1.94	23.52	24.85	INITIAL
1432	150	4.53	34.44	203.7	2.39	1.74	22.77	24.88	
1437	150	4.54	34.42	204.3	2.41	1.56	22.56	24.87	
1442	150	4.54	34.36	200.6	2.38	1.51	22.76	24.85	
1447	150	4.54	34.38	199.0	2.55	1.46	22.72	24.85	
1452	150	4.54	34.34	196.5	2.47	1.48	22.45	24.85	
1457	150	4.55	34.32	195.8	2.72	1.48	22.45	24.85	1.2
post 1502	150	—	—	—	—	1.47	—	24.85	—

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
2	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
2	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

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

TRC

WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: DSS	DATE: 3/9/22	BY: RAM	DATE: 3/14/22

SAMPLE ID: MW-LF-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: 1250	DATE: 3/9/22	SAMPLE	TIME: 1352	DATE: 3/9/22

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 24.26 T/ PVC

DEPTH TO BOTTOM: 31.25 T/ PVC

WELL VOLUME: 1.2 ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 2.4 ☐ LITERS ☑ GALLONS

COLOR: clear ODOR: none

TURBIDITY ☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

PH: 4.51 SU CONDUCTIVITY: 47.95 umhos/cm

ORP: 190.2 mV DO: 4.70 mg/L

TURBIDITY: 4.41 NTU

☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 22.99 °C OTHER:

COLOR: clear ODOR: none

FILTRATE (0.45 um) ☐ YES ☑ NO

FILTRATE COLOR: — FILTRATE ODOR: —

QC SAMPLE: ☐ MS/MSD ☐ DUP-

COMMENTS: past turbidity = 3.86

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)
1252	150	4.58	58.80	195.0	4.95	52.7	21.10	24.26	INITIAL
1257	150	4.54	48.80	232.1	4.91	39.8	21.46	24.77	
1302	150	4.53	48.54	225.5	4.96	34.2	21.55	24.92	
1307	150	4.53	48.23	219.1	4.86	20.10	21.69	24.26	
1312	150	4.52	47.85	214.8	4.81	14.20	21.82	24.26	
1317	150	4.52	47.67	212.5	4.87	11.24	21.96	24.26	
1322	150	4.53	47.95	210.4	4.78	9.86	22.04	24.26	
1327	150	4.53	47.84	209.5	4.78	8.70	22.08	24.26	
1332	150	4.52	48.76	208.7	4.79	7.52	22.13	24.26	
1337	150	4.51	48.42	208.6	4.83	6.99	22.41	24.26	

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
2	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
2	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
				☐ 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:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0002.0000 42 94 2.2	BY: JY / JB / DS	DATE: 3/9/22	BY: RAM	DATE: 3/14/22

SAMPLE ID: MW-LF-04

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 (GAL OR L)
1342	150	4.52	48.32	207.3	4.73	4.97	22.63	24.26	↓
1347	150	4.52	48.24	207.1	4.72	4.73	23.03	24.26	↓
1352	150	4.51	47.95	190.2	4.70	4.41	22.99	24.26	2.4
1358	150	—	—	—	—	3.86	—	24.26	—

SIGNATURE: _____ DATE SIGNED: _____

WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: JMB	DATE: 3/9/2022	BY: RAM	DATE: 3/14/22

SAMPLE ID: MW-LF-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: 1152	DATE: 3/9/2022	SAMPLE	TIME: 1225	DATE: 3/9/2022
PURGE METHOD:	☑ PUMP PERISTALTIC PUMP ☐ BAILER		PH: 4.40 SU	CONDUCTIVITY: 74.90 umhos/cm	
			ORP: 109.6 mV	DO: 4.63 mg/L	
DEPTH TO WATER: 20.69 T/ PVC			TURBIDITY: 0.45 NTU		
DEPTH TO BOTTOM: 29.15 T/ PVC			☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY		
WELL VOLUME: 1.4 ☐ LITERS ☑ GALLONS			TEMPERATURE: 21.42 °C	OTHER:	
VOLUME REMOVED: 1.1 ☐ LITERS ☑ GALLONS			COLOR: clear	ODOR: none	
COLOR: clear ODOR: none			FILTRATE (0.45 um) ☐ YES ☑ NO		
TURBIDITY			FILTRATE COLOR: —	FILTRATE ODOR:	
☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY			QC SAMPLE: ☐ MS/MSD	☒ DUP- COP-LF-22101	
DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER			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)
1152	120	4.63	187.72	150.6	4.93	0.99	22.53	20.69	INITIAL
1210	|	4.41	75.08	116.6	4.55	0.54	21.78	20.69	|
1215	|	4.41	75.17	105.0	4.64	0.57	21.77	20.69	|
1220	|	4.40	75.01	109.5	4.71	0.55	21.59	20.69	|
1225	|	4.40	74.90	109.6	4.63	0.45	21.42	20.69	|
	|								|
post 1250	|	—	—	—	—	0.53	—	20.69	1.1

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	
2	250 mL	PLASTIC	B	☐ Y	☑ N					☐ Y	☐ N
2	250 mL	PLASTIC	A	☐ Y	☑ N					☐ Y	☐ N
1	125 mL	PLASTIC	A	☐ Y	☑ N					☐ Y	☐ N
				☐ Y	☐ N					☐ Y	☐ N
				☐ Y	☐ N					☐ Y	☐ N

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

TRC WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER: 416559.0007.0000.2.2	BY: JAV	DATE: 3/9/22	BY: RAH	DATE: 3/14/22

SAMPLE ID: MW-LF-06 | WELL DIAMETER: [X] 2" [ ] 4" [ ] 6" [✓] OTHER

WELL MATERIAL: [X] PVC [ ] SS [ ] IRON [ ] GALVANIZED STEEL [ ] OTHER

SAMPLE TYPE: [X] GW [ ] WW [ ] SW [ ] DI [ ] LEACHATE [ ] OTHER

PURGING	TIME: 1247	DATE: 3/9/22	SAMPLE	TIME: 1336	DATE: 3/9/22

PURGE METHOD: [X] PUMP PERISTALTIC PUMP [ ] BAILER

DEPTH TO WATER: 20.13 T/ PVC

DEPTH TO BOTTOM: ~~28.20~~ T/ PVC 28.22

WELL VOLUME: 1.4 [ ] LITERS [✓] GALLONS

VOLUME REMOVED: 1.23 [ ] LITERS [✓] GALLONS

COLOR: clear ODOR: none

TURBIDITY [X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY

DISPOSAL METHOD: [ ] GROUND [ ] DRUM [✓] OTHER

PH: 4.41 SU | CONDUCTIVITY: 58.78 umhos/cm

ORP: 248.1 mV | DO: 4.48 mg/L

TURBIDITY: 3.31 NTU

[X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY

TEMPERATURE: 22.53 °C | OTHER:

COLOR: clear | ODOR: none

FILTRATE (0.45 um) [ ] YES [✓] NO

FILTRATE COLOR: — | FILTRATE ODOR:

QC SAMPLE: [ ] MS/MSD [ ] DUP-

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)
1251	150	4.62	87.74	236.7	6.43	3.69	21.82	20.14	INITIAL
1301	150	4.49	59.21	283.2	4.49	2.70	22.26	20.15	
1306	150	4.46	59.47	275.9	4.48	2.03	22.28	20.15	
1311	150	4.45	59.31	268.9	4.49	2.86	22.27	20.15	
1316	150	4.45	58.81	262.6	4.60	2.93	22.36	20.15	
1321	150	4.45	59.02	257.6	4.64	3.11	22.40	20.16	
1326	150	4.42	58.63	253.3	4.45	3.51	22.44	20.16	
1331	150	4.42	58.50	249.5	4.44	3.43	22.48	20.16	
1336	150	4.41	58.78	248.1	4.48	3.31	22.53	20.16	1.2
1350	—	—	—	—	—	2.82	—	—	

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
2	250 mL	PLASTIC	B	[ ] Y [✓] N					[ ] Y [ ] N
2	250 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
1	125 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N

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

TRC

WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.3.2	BY: JMB	DATE: 3/8/2022	BY: CAM	DATE: 3-14-22

SAMPLE ID: MW-06 / BG-06 | WELL DIAMETER: ☑ 2" ☐ 4" ☐ 6" ☑ OTHER

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

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

PURGING	TIME: 0959	DATE: 3/8/2022	SAMPLE	TIME: 1040	DATE: 3/8/2022

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 14.48 T/ PVC

DEPTH TO BOTTOM: 30.31 T/ PVC

WELL VOLUME: 2.7 ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 1.0 ☐ LITERS ☑ GALLONS

COLOR: cloudy ODOR: none

TURBIDITY: ☐ NONE ☒ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

PH: 4.31 SU CONDUCTIVITY: 181.72 umhos/cm

ORP: 139.9 mV DO: 7.18 mg/L

TURBIDITY: 0.56 NTU

☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 17.72 °C OTHER:

COLOR: clear ODOR: none

FILTRATE (0.45 um) ☐ YES ☑ NO

FILTRATE COLOR: FILTRATE ODOR:

QC SAMPLE: ☒ MS/MSD ☐ DUP-

COMMENTS: → RCRA

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)
1003	120	4.51	199.84	185.4	6.74	3.34	20.35	14.48	INITIAL
1020		4.31	182.37	134.1	6.75	1.94	17.45		
1025		4.32	182.09	125.5	6.90	0.68	17.55		
1030		4.31	182.44	137.9	7.05	0.74	17.41		
1035		4.31	183.36	138.9	7.19	0.72	17.46		
1040		4.31	181.72	139.9	7.18	0.56	17.72		
post 1105						0.56			1.0

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
				☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

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

TRC WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.3.2	BY: JAY	DATE: 3/8/22	BY: CAM	DATE: 3.14.22

SAMPLE ID: MW-16 / MW-BG-16 WELL DIAMETER: [X] 2" [ ] 4" [ ] 6" [✓] OTHER

WELL MATERIAL: [ ] PVC [ ] SS [ ] IRON [ ] GALVANIZED STEEL [ ] OTHER

SAMPLE TYPE: [✓] GW [ ] WW [ ] SW [ ] DI [ ] LEACHATE [ ] OTHER

PURGING	TIME: 957	DATE: 3/8/22	SAMPLE	TIME: 1036	DATE: 3/8/22
PURGE METHOD:	[X] PUMP PERISTALTIC PUMP / [ ] BAILER		PH: 4.31 SU	CONDUCTIVITY: 45.54 umhos/cm	
DEPTH TO WATER: 10.98 T/ PVC			ORP: 105.5 mV	DO: 7.45 mg/L	
DEPTH TO BOTTOM: 29.30 T/ PVC			TURBIDITY: 1.61 NTU		
WELL VOLUME: 3.1 [ ] LITERS [✓] GALLONS			[X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY		
VOLUME REMOVED: 2.2 [ ] LITERS [✓] GALLONS			TEMPERATURE: 17.53 °C	OTHER:	
COLOR: clear	ODOR: none		COLOR: clear	ODOR: none	
TURBIDITY [X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY			FILTRATE (0.45 um) [ ] YES [X] NO		
			FILTRATE COLOR: —	FILTRATE ODOR: —	
			QC SAMPLE: [ ] MS/MSD	[ ] DUP-	
DISPOSAL METHOD: [ ] GROUND [ ] DRUM [✓] OTHER			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)
1001	125	4.49	51.15	98.8	7.01	2.11	18.96	11.01	INITIAL
1006	125	4.32	47.24	88.3	7.26	1.54	17.76	11.02	
1011	125	4.30	46.29	90.8	7.36	1.45	17.53	11.02	
1016	150	4.31	46.00	93.3	7.35	1.70	17.55	11.02	
1021	150	4.30	46.96	96.8	7.50	1.33	17.50	11.02	
1026	150	4.31	45.34	99.5	7.45	1.74	17.57	11.02	
1031	150	4.31	45.25	102.5	7.48	1.65	17.54	11.02	
1036	150	4.31	45.54	105.5	7.45	1.61	17.53	11.02	2.2
1057	—	—	—	—	—	1.53	—	—	—

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
3	250 mL	PLASTIC	B	[ ] Y [✓] N					[ ] Y [ ] N
3	250 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
2 3 94	~~125 mL~~ 1x 250	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
	~~2x 250~~			[ ] Y [✓] N					[ ] Y [ ] N
	94 1x 125 mL			[ ] Y [ ] N					[ ] Y [ ] N

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

REVISED 06/2011

TRC

WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER: 416559.0007.0000.2.2	BY: JMB	DATE: 3/9/2022	BY: RAM	DATE: 3/14/22

SAMPLE ID: AS-LF-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: 1306	DATE: 3/9/2022

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER _____

DEPTH TO WATER: 10.64 T/ PVC

DEPTH TO BOTTOM: 22.44 T/ PVC

WELL VOLUME: 2.0 ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 1.2 ☐ LITERS ☑ GALLONS

COLOR: clear ODOR: none

TURBIDITY: ☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

SAMPLE	TIME: 1340	DATE: 3/9/2022

PH: 4.52 SU CONDUCTIVITY: 67.95 umhos/cm

ORP: 106.1 mV DO: 5.02 mg/L

TURBIDITY: 0.21 NTU

☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 19.61 °C OTHER: _____

COLOR: clear ODOR: none

FILTRATE (0.45 um) ☐ YES ☑ NO

FILTRATE COLOR: _____ FILTRATE ODOR: _____

QC SAMPLE: ☒ MS/MSD ☐ DUP- _____

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)
1309	125	4.54	66.63	103.7	5.22	0.39	20.60	10.80	INITIAL
1325		4.53	67.54	104.8	5.22	0.31	19.33	10.80	
1330		4.52	67.42	105.7	5.22	0.35	19.33	10.80	
1335		4.51	67.87	106.2	5.10	0.43	19.46	10.80	
1340		4.52	67.95	106.1	5.02	0.21	19.61	10.80	
1401						0.27		10.80	1.2

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
2	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
2	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

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

REVISED 06/2011

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WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: JMB	DATE: 3/9/2022	BY: CAM	DATE: 3/14/22

SAMPLE ID: AS-LF-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: 1410	DATE: 3/9/2022	SAMPLE	TIME: 1445	DATE: 3/9/2022
PURGE METHOD:	☑ PUMP PERISTALTIC PUMP ☐ BAILER		PH: 4.45 SU	CONDUCTIVITY: 96.69 umhos/cm	
			ORP: 108.2 mV	DO: 4.39 mg/L	
DEPTH TO WATER: 10.30 T/ PVC			TURBIDITY: 1.23 NTU		
DEPTH TO BOTTOM: 22.65 T/ PVC			☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY		
WELL VOLUME: 2.1 ☐ LITERS ☑ GALLONS			TEMPERATURE: 20.55 °C	OTHER:	
VOLUME REMOVED: 1.1 ☐ LITERS ☑ GALLONS			COLOR: clear	ODOR: none	
COLOR: clear ODOR: none			FILTRATE (0.45 um) ☐ YES ☑ NO		
TURBIDITY			FILTRATE COLOR: —	FILTRATE ODOR: —	
☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY			QC SAMPLE: ☐ MS/MSD ☐ DUP-		
DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER			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)
1412	115	4.53	76.52	113.0	4.56	0.78	24.42	10.35	INITIAL
1430		4.48	87.89	105.8	4.35	0.91	20.37		
1435		4.47	91.63	106.5	4.37	1.43	20.25		
1440		4.46	93.18	107.1	4.35	1.01	20.25		
1445		4.45	96.69	108.2	4.39	1.23	20.55		
post 1300		—	—	—	—	0.79	—		1.1

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
2	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
2	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

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

TRC WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: JMB	DATE: 3/9/2022	BY: RAM	DATE: 3/14/22

SAMPLE ID: MW-40	WELL DIAMETER: ☑ 2" ☐ 4" ☐ 6" ☑ OTHER
WELL MATERIAL:	☑ PVC ☐ SS ☐ IRON ☐ GALVANIZED STEEL ☐ OTHER
SAMPLE TYPE:	☑ GW ☐ WW ☐ SW ☐ DI ☐ LEACHATE ☐ OTHER

PURGING	TIME: 1508	DATE: 3-9-22	SAMPLE	TIME: 1540	DATE: 3/9/2022
PURGE METHOD:	☑ PUMP PERISTALTIC PUMP ☐ BAILER		PH: 4.13 SU	CONDUCTIVITY: 510.09 umhos/cm	
			ORP: 191.9 mV	DO: 0.33 mg/L	
DEPTH TO WATER:	11.10 T/ PVC		TURBIDITY: 0.43 NTU		
DEPTH TO BOTTOM:	28.14 T/ PVC		☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY		
WELL VOLUME:	2.9 ☐ LITERS ☑ GALLONS		TEMPERATURE: 20.72 °C	OTHER:	
VOLUME REMOVED:	0.8 ☐ LITERS ☑ GALLONS		COLOR: clear	ODOR: none	
COLOR:	clear ODOR: none		FILTRATE (0.45 um) ☐ YES	☑ NO	
TURBIDITY			FILTRATE COLOR: —	FILTRATE ODOR: —	
☐ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY			QC SAMPLE: ☐ MS/MSD	☐ DUP-	
DISPOSAL METHOD:	☐ GROUND ☐ DRUM ☑ OTHER		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)
1511	115	4.08	514.35	179.4	0.45	0.45	21.57	11.11	INITIAL
1525		4.09	520.00	188.5	0.37	0.49	20.58	11.11	
1530		4.10	513.46	192.9	0.35	0.54	20.95	11.11	
1535		4.11	509.63	193.2	0.34	0.38	20.87	11.11	
1540		4.13	510.09	191.9	0.33	0.43	20.72	11.11	
post 1556						0.35	—	11.11	0.8

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
3	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
2	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

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

REVISED 06/2011

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WATER QUALITY METER CALIBRATION LOG

PROJECT NAME: Dominion - Cope Station	MODEL: AQUA TROLL 400	SAMPLER: (JY) / JB / DS
PROJECT NO.: 416559.7.0	SERIAL #: 851425	DATE: 3/8/22

PH CALIBRATION CHECK AC

pH 7 (LOT #): 1945017 (EXP. DATE): 4/22 PRE-CAL. READING / STANDARD	pH 4 / (10) (LOT #): 2108089 (EXP. DATE): 6/22 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
6.48 / 7.00	7.02 / 7.00	[X] WITHIN RANGE	912
9.95 / 10.00	/	[X] WITHIN RANGE	916
4.68 / 4.00	3.99 / 4.00	[X] WITHIN RANGE	918
/	/	[ ] WITHIN RANGE	

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): AC (EXP. DATE): 8/22 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4442.1 / 4490	20.03	[ ] WITHIN RANGE	
4474.8 / 4490	20.03	[X] WITHIN RANGE	919
/		[ ] WITHIN RANGE	
/		[ ] WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21140141 (EXP. DATE): 8/22 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
226.8 / 228	21.75	[X] WITHIN RANGE	921
/		[ ] WITHIN RANGE	
/		[ ] WITHIN RANGE	
/		[ ] WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Baro: 1014.7 mbar Temp: 20.03 °C Act: 8.49 mg/L Calc: 9.1 mg/L	[X] WITHIN RANGE	911
	[ ] 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
0.00 / 0.00	/	[X] WITHIN RANGE	910
1.01 / 1.00	/	[X] WITHIN RANGE	922
9.90 / 10.00	/	[X] WITHIN RANGE	924
/	/	[ ] WITHIN RANGE	

COMMENTS

[X] AUTOCAL SOLUTION (LOT #): 21070193 (EXP. DATE): 8/22

[ ] 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

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
None	None

SIGNED _____ DATE 3/8/22

CHECKED BY C. M. Mayer DATE 3/14/22

REVISED 06/2011

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME: Dominion - Cope Station	MODEL: AQUA TROLL 400	SAMPLER: JY / JB / DS
PROJECT NO.: 416559.7.0	SERIAL #: 728566	DATE: 3/8/2022

PH CALIBRATION CHECK

	pH 7 (LOT #): RL150117 (EXP. DATE): 4/22 PRE-CAL. READING / STANDARD	pH 4 (10) (LOT #): 21080189 (EXP. DATE): 6/22 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
pre	6.87 / 7.00	9.90 / 10.00	☒ WITHIN RANGE	0910
pre	/	4.29 / 4.00	☐ WITHIN RANGE	0916
post	7.02 / 7.00	10.06 / 10.00	☒ WITHIN RANGE	0914
post	/	4.00 / 4.00	☒ WITHIN RANGE	0917

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

	CAL. READING (LOT #): AC (EXP. DATE): 8/22 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
pre	4500 / 4490	22.18	☒ WITHIN RANGE	0918
post	4485 / 4490	22.29	☒ WITHIN RANGE	0919
	/		☐ WITHIN RANGE	
	/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

	CAL. READING (LOT #): (EXP. DATE): PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
pre	227.2 / 228	22.04	☒ WITHIN RANGE	0921
post	227.6 / 228	22.04	☒ WITHIN RANGE	0922
	/		☐ WITHIN RANGE	
	/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Temp: 22.90°C	☐ WITHIN RANGE	0905
Baro: 1,013.7 mbar	☐ WITHIN RANGE	
Act: 8.69 mg/L	☐ WITHIN RANGE	
Calc: 8.7 mg/L	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) SN 2949			
(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	☒ WITHIN RANGE	0924
1.61 / 1.00	1.60 / 1.00	☒ WITHIN RANGE	0928
8.75 / 10.00	10.02 / 10.00	☒ WITHIN RANGE	0927
/	/	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): 21070193 (EXP. DATE): 8/22

☐ 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

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
None	None

Jacob Bradley — SIGNED — 3/8/2022 — DATE

CHECKED BY — 3/14/22 — DATE

REVISED 06/2011

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Dominion - Cope Station	MODEL: AQUA TROLL 400	SAMPLER:	JY / JB / DS
PROJECT NO.:	416559.7.0	SERIAL #: 728550	DATE:	3/8/22

PH CALIBRATION CHECK

pH 7 (LOT #): 2101006 6 (EXP. DATE): 8/22 PRE-CAL. READING / STANDARD	pH 4 (10) (LOT #): 210 1006 7 (EXP. DATE): 2/22 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
7.08 / 7	9.68 / 10	☒ WITHIN RANGE	1300
/	lot # 21070193 8/22	☐ WITHIN RANGE	
/	4.21 / 4	☒ WITHIN RANGE	1300
/	/	☐ WITHIN RANGE	

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 21070193 (EXP. DATE): 8/22 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
5.08 / 4.49 mS/cm		☒ WITHIN RANGE	1300
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21140143 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
229.7 / 228	23.59	☒ WITHIN RANGE	1300
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Bar 1,013.9 mbar/760 mmHg	☒ WITHIN RANGE	
Temp 25.96 °C	☐ WITHIN RANGE	
RDO 8.54 mg/L	☐ WITHIN RANGE	
actual 8.2 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
0.2 / 0.0	/	☒ WITHIN RANGE	1300
1.3 / 1.0	/	☒ WITHIN RANGE	1300
9.8 / 10.0	/	☒ WITHIN RANGE	1300
/	/	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): 21070193 (EXP. DATE): 8/22 — ☐ 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

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
None	None

SIGNED _____ DATE 3/8/22

CHECKED BY _____ DATE 3/14/22

REVISED 06/2011

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Dominion - Cope Station	MODEL: AQUA TROLL 400	SAMPLER: (JY) / JB / DS
PROJECT NO.:	416559.700	SERIAL #: 851425	DATE: 3/9/22

PH CALIBRATION CHECK

AC

pH 7 (LOT #): 1945011 (EXP. DATE): 4/22 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): 21080189 (EXP. DATE): 6/22 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
6.44 / 7.00	7.03 / 7.00	☑ WITHIN RANGE	836
/	9.97 / 10.00	☒ WITHIN RANGE	838
4.77 / 4.00	3.93 / 4.00	☒ WITHIN RANGE	841
/	/	☐ WITHIN RANGE	

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

AC

CAL. READING (LOT #): 21070193 (EXP. DATE): 8/22 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4615.2 / 4490		☐ WITHIN RANGE	
44866 / 4490	20.92	☒ WITHIN RANGE	843
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21140141 (EXP. DATE): 8/22 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
231.4 / 228	20.86	☐ WITHIN RANGE	
228.4 / 228	20.85	☒ WITHIN RANGE	844
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Baro: 1007.9 mbar	☐ WITHIN RANGE	833
Temp: 20.48°C	☐ WITHIN RANGE	
Act: ~~9.04 mg/L~~ 8.43 mg/L	☐ WITHIN RANGE	
Calc: 9.1 mg/L	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): N/A (EXP. DATE): N/A PRE-CAL. READING / STANDARD	POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.05 / 0.00	/	☒ WITHIN RANGE	835
1.10 / 1.00	/	☒ WITHIN RANGE	837
9.96 / 10.00	/	☒ WITHIN RANGE	838
/	/	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): 21070193 (EXP. DATE): 8/22

☐ 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 _____ 3/9/22 DATE

CHECKED BY _____ R. Mayo 3/14/22 DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME: Dominion - Cope Station	MODEL: AQUA TROLL 400	SAMPLER: JY / JB / DS
PROJECT NO.:	SERIAL #: 728566	DATE: 3/9/2022

PH CALIBRATION CHECK

	pH 7 (LOT #): (EXP. DATE): PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): (EXP. DATE): PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
pre	6.86 / 7.00	9.88 / 10.00	☑ WITHIN RANGE	1117
pre	/	4.37 / 4.00	☐ WITHIN RANGE	1119
post	7.02 / 7.00	10.04 / 10.00	☑ WITHIN RANGE	1120
post	/	3.98 / 4.00	☑ WITHIN RANGE	1125

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

	CAL. READING (LOT #): 2147003a (EXP. DATE): 04/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
pre	4488 / 4490	21.68	☒ WITHIN RANGE	1126
post	4488 / 4490	21.68	☒ WITHIN RANGE	1127
	/		☐ WITHIN RANGE	
	/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): (EXP. DATE): PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
229.3 / 228	21.39	☒ WITHIN RANGE	1130
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (~~mg~~/L)	CAL. RANGE	TIME
Temp: 28.97 Baro: ~~1006.1~~ 754.61 mm Hg Act: 8.73 Calc: 7.7	☐ WITHIN RANGE	1110
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): N/A (EXP. DATE): N/A PRE-CAL. READING / STANDARD	POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.06 / 0.00	0.06 / 0.00	☒ WITHIN RANGE	1121
2.12 / 1.00	1.95 / 1.00	☐ WITHIN RANGE	1122
8.85 / 10.00	10.02 / 10.00	☒ WITHIN RANGE	1118
/	/	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): 2147003a (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	
☐	_____		

NOTES

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS
None	None

Jack Bradley — SIGNED — 3/9/2022 — DATE

CHECKED BY — 3/14/22 — DATE

REVISED 06/2011

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Dominion - Cope Station	MODEL: AQUA TROLL 400	SAMPLER:	JY / JB / DS
PROJECT NO.:	416559.7.0	SERIAL #: 728550	DATE:	3/9/22

PH CALIBRATION CHECK

pH 7 (LOT #): 21010066 (EXP. DATE): 8/22 PRE-CAL. READING / STANDARD	pH 4 (10) (LOT #): 21010067 (EXP. DATE): 2/22 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
6.78 / 7	9.79 / 10	☐ WITHIN RANGE	0830
7 / 7	10 / 10	☒ WITHIN RANGE	0832
/	21070931 8/22	☐ WITHIN RANGE	
/	4.1 / 4	☒ WITHIN RANGE	0835

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): 21070193 (EXP. DATE): 8/22 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4.501 4.49	21.32	☒ WITHIN RANGE	0835
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21140143 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
233 / 228	21.32	☒ WITHIN RANGE	0835
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
RDO 8.80 mg/L Baro 756.04 mm Hg Temp 22.93 °C actual 8.70 mg/L	☒ WITHIN RANGE	
	☐ 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
0.1 / 0.0	/	☒ WITHIN RANGE	0835
0.9 / 1.0	/	☒ WITHIN RANGE	0835
10 / 10.0	/	☒ WITHIN RANGE	0835
/	/	☐ WITHIN RANGE	

COMMENTS

☒ AUTOCAL SOLUTION (LOT #): 21070193 (EXP. DATE): 8/22

☐ 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 3/9/22

CHECKED BY _____ DATE 3/14/22

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

March 31, 2022

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

Re: CCR Groundwater Monitoring - Level 1 Package
Work Order: 572610

Dear Kelly Hicks:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 09, 2022. This revised data report has been prepared and reviewed in accordance with GEL's standard operating procedures. REV 1: The client requested a revised report due to Barium being reported instead of Boron.

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,

Meredith Boddiford

Meredith Boddiford
Project Manager

Purchase Order: 50149867
Chain of Custody: 2021133
Enclosures

Table of Contents

Case Narrative

REV 1: The client requested a revised report due to Barium being reported instead of Boron.

Receipt Narrative
for
Dominion Energy (50149867)
SDG: 572610

March 31, 2022

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 09, 2022 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
572610001	MW-BG-06-2022Q1
572610002	MW-BG-16-2022Q1

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 and Metals.

Meredith Boddiford

Meredith Boddiford
Project Manager

Chain of Custody and Supporting Documentation

Page: ______ of ______
Project # 416559.0007.0000.2.2
GEL Quote #:
COC Number [1]:
PO Number: PO 50149867

GEL Laboratories LLC
gel.com
Chemistry | Radiochemistry | Radiobioassay | Specialty Analytics
Chain of Custody and Analytical Request

572610

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

GEL Work Order Number: 203881 **GEL Project Manager: Meredith Boddiford**

Client Name: Dominion Energy — Phone # 803-258-1528
Project/Site Name: Cope Station Landfill CCR 2022Q1 — Fax #
Address: Cope, South Carolina
Collected By: J. Bradley — 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]	Radioactive (If yes, please supply isotopic info.)	(7) Known or possible Hazards	Total number of containers	TDS SM2540C	Cl, FL, SO4 EPA 300.0	Total Metals B, Ca EPA 200.8 (NI)								Comments: Note: extra sample is required for sample specific QC
~~MW-LF-01-2022Q1~~			~~N~~	~~N~~	~~GW~~	~~N~~													
~~MW-LF-02-2022Q1~~			~~N~~	~~N~~	~~GW~~	~~N~~													
~~MW-LF-03-2022Q1~~			~~N~~	~~N~~	~~GW~~	~~N~~													
~~MW-LF-04-2022Q1~~			~~N~~	~~N~~	~~GW~~	~~N~~													
~~MW-LF-05-2022Q1~~			~~N~~	~~N~~	~~GW~~	~~N~~													
~~FBLK-COP-LF-22101~~			~~FB~~	~~N~~	~~AQ~~	~~N~~													see attached work
~~MW-LF-06-2022Q1~~			~~N~~	~~N~~	~~GW~~	~~N~~													order for details
MW-BG-06-2022Q1	3/8/22	1040	N	N	GW	N		3	1	1	1								
MW-BG-16-2022Q1	3/8/22	1036	N	N	GW	N		3	1	1	1								
~~DU-COP-LF-22101~~			~~FD~~	~~N~~	~~GW~~	~~N~~													

<-- Preservative Type (6)

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time		Received by (signed)	Date	Time
1	Jacob Bradley	3/9/2022	0900	1	[signature]	3/9/22	9:00
2				2			
3				3			

TAT Requested: Normal: X Rush: ____ Specify: ____
Fax Results: [ ] Yes [X] No
Select Deliverable: [ ] C of A [ ] QC Summary [ ] level 1 [ ] Level 2 [X] 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: 572610
Received By: Stacy Boone	Date Received: 3-9-22
Enter one tracking number per line below. Enter courier if applicable and no tracking available.	IR temperature gun # IRI-22 Daily Calibration performed? (Y) / N
N/A	Uncorrected temperature readings are to the 0.1 degree with final recorded temperatures rounded to the 0.5 degree. Provide individual container details when a cooler requiring 0 </=6oC is identified as out of specification.
N/A	Uncorrected Temp: 1 C IR Correction Factor: + / - Final Recorded Temp: 1 C Within 0.0-6.0C? (Y) / N
N/A	Uncorrected Temp: 1 C IR Correction Factor: + / - Final Recorded Temp: 1 C Within 0.0-6.0C? (Y) / N
	Uncorrected Temp: 1 C IR Correction Factor: + / - Final Recorded Temp: 1 C 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

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#: UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___ If
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. Flammable Foreign Soil RCRA Asbestos Beryllium Other: PCB's

	Sample Receipt Criterin	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 chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
5	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:
6	Samples received within holding time?	✓			ID's and tests affected:
7	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
8	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
9	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
10	Are sample containers identifiable as GEL provided by use of GEL labels?	✓			
11	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 AM Date 3/15/22 Page 1 of 1

Laboratory Certifications

List of current GEL Certifications as of 31 March 2022

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	SC000122021−1
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	2019−165
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	T104704235−21−19
Utah NELAP	SC000122021−36
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
Dominion Energy
SDG #: 572610

Product: Determination of Metals by ICP-MS
Analytical Method: EPA 200.8 SC_NPDES
Analytical Procedure: GL-MA-E-014 REV# 35
Analytical Batch: 2239024

Preparation Method: EPA 200.2
Preparation Procedure: GL-MA-E-016 REV# 18
Preparation Batch: 2239022

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

GEL Sample ID#	Client Sample Identification
572610001	MW-BG-06-2022Q1
572610002	MW-BG-16-2022Q1
1205037441	Method Blank (MB)**ICP-MS**
1205037442	Laboratory Control Sample (LCS)
1205037445	572613001(NonSDGL) Serial Dilution (SD)
1205037443	572613001(NonSDGD) Sample Duplicate (DUP)
1205037444	572613001(NonSDGS) 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.

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: 572610 GEL Work Order: 572610

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: Alan Stanley**

Date: 18 MAR 2022 **Title: Team Leader**

Sample Data Summary

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572610 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 572610001 **BASIS:** As Received **DATE COLLECTED** 08−MAR−22

CLIENT ID: MW−BG−06−2022Q1 **LEVEL:** Low **DATE RECEIVED** 09−MAR−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	8.61	ug/L	J	4.00	15.0	15.0	1	MS	PRB	03/15/22 23:23	220315−1	2239024
7440−70−2	Calcium	9780	ug/L		30.0	100	100	1	MS	PRB	03/15/22 23:23	220315−1	2239024

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2239024	2239022	EPA 200.2	50	mL	50	mL	03/09/22	RG1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572610 **CONTRACT:** DMNN00101 **METHOD TYPE:** EPA

SAMPLE ID: 572610002 **BASIS:** As Received **DATE COLLECTED** 08−MAR−22

CLIENT ID: MW−BG−16−2022Q1 **LEVEL:** Low **DATE RECEIVED** 09−MAR−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	9.64	ug/L	J	4.00	15.0	15.0	1	MS	PRB	03/15/22 23:27	220315−1	2239024
7440−70−2	Calcium	2040	ug/L		30.0	100	100	1	MS	PRB	03/15/22 23:27	220315−1	2239024

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2239024	2239022	EPA 200.2	50	mL	50	mL	03/09/22	RG1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

Quality Control Summary

METALS
−2a−
Initial and Continuing Calibration Verification

SDG No: 572610

Contract: DMNN00101 **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	101	ug/L	100	ug/L	100.8	90.0 − 110.0	MS	15−MAR−22 20:58	220315−1
	Calcium	5130	ug/L	5000	ug/L	102.6	90.0 − 110.0	MS	15−MAR−22 20:58	220315−1
CCV01										
	Boron	99.4	ug/L	100	ug/L	99.4	90.0 − 110.0	MS	15−MAR−22 21:19	220315−1
	Calcium	5010	ug/L	5000	ug/L	100.2	90.0 − 110.0	MS	15−MAR−22 21:19	220315−1
CCV02										
	Boron	99.1	ug/L	100	ug/L	99.1	90.0 − 110.0	MS	15−MAR−22 21:31	220315−1
	Calcium	5100	ug/L	5000	ug/L	102.1	90.0 − 110.0	MS	15−MAR−22 21:31	220315−1
CCV03										
	Boron	99.9	ug/L	100	ug/L	99.9	90.0 − 110.0	MS	15−MAR−22 22:35	220315−1
	Calcium	4980	ug/L	5000	ug/L	99.7	90.0 − 110.0	MS	15−MAR−22 22:35	220315−1
CCV04										
	Boron	96.7	ug/L	100	ug/L	96.7	90.0 − 110.0	MS	15−MAR−22 23:15	220315−1
	Calcium	4930	ug/L	5000	ug/L	98.5	90.0 − 110.0	MS	15−MAR−22 23:15	220315−1
CCV05										
	Boron	98.4	ug/L	100	ug/L	98.4	90.0 − 110.0	MS	15−MAR−22 23:56	220315−1
	Calcium	4820	ug/L	5000	ug/L	96.4	90.0 − 110.0	MS	15−MAR−22 23:56	220315−1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
−2b−
CRDL Standard for ICP & ICPMS

SDG No: 572610

Contract: DMNN00101 **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	15.2	ug/L	15	ug/L	101.2	70.0 − 130.0	MS	15−MAR−22 21:07	220315−1
	Calcium	232	ug/L	200	ug/L	115.8	70.0 − 130.0	MS	15−MAR−22 21:07	220315−1
CRDL02										
	Boron	15.6	ug/L	15	ug/L	103.7	70.0 − 130.0	MS	15−MAR−22 22:23	220315−1
	Calcium	223	ug/L	200	ug/L	111.6	70.0 − 130.0	MS	15−MAR−22 22:23	220315−1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

Metals
−3a−
Initial and Continuing Calibration Blank Summary

SDG No.: 572610

Contract: DMNN00101

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	15−MAR−22 21:02	220315−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	15−MAR−22 21:02	220315−1
CCB01										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	15−MAR−22 21:23	220315−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	15−MAR−22 21:23	220315−1
CCB02										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	15−MAR−22 21:35	220315−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	15−MAR−22 21:35	220315−1
CCB03										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	15−MAR−22 22:39	220315−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	15−MAR−22 22:39	220315−1
CCB04										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	15−MAR−22 23:19	220315−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	15−MAR−22 23:19	220315−1
CCB05										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	16−MAR−22 00:00	220315−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	16−MAR−22 00:00	220315−1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 572610
Contract: DMNN00101
Matrix: GW

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1205037441								
	Boron	4.00	ug/L	+/−7.5	U	MS	4.00	15.0
	Calcium	30.0	ug/L	+/−50	U	MS	30.0	100

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−4−
Interference Check Sample

SDG No: 572610

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									
	Boron	2.07	ug/L					15−MAR−22 21:11	220315−1
	Calcium	98100	ug/L	100000	ug/L	98.1	80.0 − 120.0	15−MAR−22 21:11	220315−1
ICSAB01									
	Boron	19.4	ug/L	20	ug/L	97.2	80.0 − 120.0	15−MAR−22 21:15	220315−1
	Calcium	96500	ug/L	100000	ug/L	96.5	80.0 − 120.0	15−MAR−22 21:15	220315−1
ICSA02									
	Boron	2.17	ug/L					15−MAR−22 22:27	220315−1
	Calcium	94500	ug/L	100000	ug/L	94.5	80.0 − 120.0	15−MAR−22 22:27	220315−1
ICSAB02									
	Boron	20.1	ug/L	20	ug/L	101	80.0 − 120.0	15−MAR−22 22:31	220315−1
	Calcium	92500	ug/L	100000	ug/L	92.5	80.0 − 120.0	15−MAR−22 22:31	220315−1

METALS
−5a−

Matrix Spike Summary

SDG NO. 572610 **Client ID** GW−03B−2022Q1S

Contract: DMNN00101 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 572613001 **Spike ID:** 1205037444

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Boron	ug/L	75−125	105		6.81	B	100	98.3		MS
Calcium	ug/L		25900		24500		2000	73.2	N/A	MS

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

Metals
−6−
Duplicate Sample Summary

SDG No.: 572610 **Lab Code:** GEL

Contract: DMNN00101 **Client ID:** GW−03B−2022Q1D

Matrix: GROUND WATER **Level:** Low

Sample ID: 572613001 **Duplicate ID:** 1205037443 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Boron	ug/L	+/−30	6.81	B	6.41	B	6.13		MS
Calcium	ug/L	+/−20%	24500		23600		3.53		MS

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

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 572610

Contract: DMNN00101

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

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1205037442								
	Boron	ug/L	100	101		101	85−115	MS
	Calcium	ug/L	2000	2180		109	85−115	MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 572610 **Client ID** GW−03B−2022Q1L

Contract: DMNN00101

Matrix: LIQUID **Level:** Low

Sample ID: 572613001 **Serial Dilution ID:** 1205037445

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Boron	6.81	B	20	U	15.221			MS
Calcium	24500		24400		.393		10	MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−13−
SAMPLE PREPARATION SUMMARY

SDG No: 572610 **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 2239022							
1205037441	MB for batch 2239022	MB	G	09−MAR−22	50mL	50mL	
1205037442	LCS for batch 2239022	LCS	G	09−MAR−22	50mL	50mL	
1205037444	GW−03B−2022Q1S	MS	G	09−MAR−22	50mL	50mL	
1205037443	GW−03B−2022Q1D	DUP	G	09−MAR−22	50mL	50mL	
572610001	MW−BG−06−2022Q1	SAMPLE	W	09−MAR−22	50mL	50mL	
572610002	MW−BG−16−2022Q1	SAMPLE	W	09−MAR−22	50mL	50mL	

EPA

General Chem Analysis

Case Narrative

General Chemistry
Technical Case Narrative
Dominion Energy
SDG #: 572610

Product: **Ion Chromatography**
Analytical Method: EPA 300.0
Analytical Procedure: GL-GC-E-086 REV# 30
Analytical Batch: 2239054

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

GEL Sample ID#	Client Sample Identification
572610001	MW-BG-06-2022Q1
572610002	MW-BG-16-2022Q1
1205037525	Method Blank (MB)
1205037526	Laboratory Control Sample (LCS)
1205037527	572613001(GW-03B-2022Q1) Sample Duplicate (DUP)
1205037528	572613001(GW-03B-2022Q1) 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 sample 572610001 (MW-BG-06-2022Q1) was diluted because target analyte concentrations exceeded the calibration range. 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	572610 001
Chloride	5X

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# 19
Analytical Batch: 2241213

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

GEL Sample ID#	Client Sample Identification
572610001	MW-BG-06-2022Q1
572610002	MW-BG-16-2022Q1
1205041526	Method Blank (MB)
1205041527	Laboratory Control Sample (LCS)
1205041528	572616003(MW-06-2022Q1) Sample Duplicate (DUP)
1205041529	572686001(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
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: 572610 GEL Work Order: 572610

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: 18 MAR 2022 **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 18, 2022

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-BG-06-2022Q1
Sample ID: 572610001
Matrix: GW
Collect Date: 08-MAR-22 10:40
Receive Date: 09-MAR-22
Collector: Client

Project: DMNN00101
Client ID: DMNN001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride	J	0.0584	0.0330	0.100	mg/L		1	HXC1	03/09/22	1503	2239054	1
Sulfate	U	ND	0.133	0.400	mg/L		1					
Chloride		17.6	0.335	1.00	mg/L		5	HXC1	03/09/22	2230	2239054	2
Solids Analysis												
SM2540C TDS "As Received"												
Total Dissolved Solids		101	3.40	14.3	mg/L			KLP1	03/15/22	1422	2241213	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: March 18, 2022

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-BG-16-2022Q1
Sample ID: 572610002
Matrix: GW
Collect Date: 08-MAR-22 10:36
Receive Date: 09-MAR-22
Collector: Client

Project: DMNN00101
Client ID: DMNN001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		3.54	0.0670	0.200	mg/L		1	HXC1	03/09/22	1533	2239054	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		1.73	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C TDS "As Received"												
Total Dissolved Solids	J	4.29	3.40	14.3	mg/L			KLP1	03/15/22	1422	2241213	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 18, 2022

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

Contact: **Kelly Hicks**

Workorder: **572610**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography										
Batch 2239054										
QC1205037527 572613001 DUP										
Chloride		7.10		7.04	mg/L	0.853		(0%-20%)	HXC1	03/09/22 21:01
Fluoride		0.203		0.194	mg/L	4.44 ^		(+/-.2)		
Sulfate		8.46		8.40	mg/L	0.651		(0%-20%)		
QC1205037526 LCS										
Chloride	5.00			4.82	mg/L		96.3	(90%-110%)		03/09/22 20:31
Fluoride	2.50			2.35	mg/L		94	(90%-110%)		
Sulfate	10.0			9.93	mg/L		99.3	(90%-110%)		
QC1205037525 MB										
Chloride			U	ND	mg/L					03/09/22 20:01
Fluoride			U	ND	mg/L					
Sulfate			U	ND	mg/L					
QC1205037528 572613001 PS										
Chloride	5.00	7.10		12.4	mg/L		107	(90%-110%)		03/09/22 21:31
Fluoride	2.50	0.203		2.54	mg/L		93.4	(90%-110%)		
Sulfate	10.0	8.46		18.9	mg/L		104	(90%-110%)		

QC Summary

Workorder: **572610**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Solids Analysis										
Batch 2241213										
QC1205041528 572616003 DUP										
Total Dissolved Solids		75.7		77.1	mg/L	1.87		(0%-5%)	KLP1	03/15/22 14:22
QC1205041529 572686001 DUP										
Total Dissolved Solids		374		371	mg/L	0.766		(0%-5%)		03/15/22 14:22
QC1205041527 LCS										
Total Dissolved Solids	300			300	mg/L		100	(95%-105%)		03/15/22 14:22
QC1205041526 MB										
Total Dissolved Solids			U	ND	mg/L					03/15/22 14:22

Notes:

The Qualifiers in this report are defined as follows:

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

QC Summary

Workorder: **572610**

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

reporting purposes

h Preparation or preservation holding time was exceeded

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.

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

March 31, 2022

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

Re: CCR Groundwater Monitoring - Level 3 Package
Work Order: 572838

Dear Kelly Hicks:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 10, 2022. This revised data report has been prepared and reviewed in accordance with GEL's standard operating procedures. The client requested a revised report due to the WO being reported under the incorrect project.

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,

Meredith Boddiford

Meredith Boddiford
Project Manager

Purchase Order: 50149867
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Dominion Energy (50149867)
SDG: 572838

March 31, 2022

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 10, 2022 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
572838001	MW-LF-01-2022Q1
572838002	MW-LF-02-2022Q1
572838003	MW-LF-03-2022Q1
572838004	MW-LF-04-2022Q1
572838005	MW-LF-05-2022Q1
572838006	FBLK-COP-LF-22101
572838007	MW-LF-06-2022Q1
572838008	DU-COP-LF-22101
572838009	AS-LF-01-2022Q1
572838010	AS-LF-02-2022Q1
572838011	MW-40-2022Q1

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 and Metals.

Meredith Boddiford

Meredith Boddiford
Project Manager

Chain of Custody and Supporting Documentation

Page: ______ of ______
Project # 416559.0007.0000.2.2
GEL Quote #:
COC Number [1]:
PO Number: PO 50149867

GEL Laboratories LLC
Chemistry | Radiochemistry | Radiobioassay | Specialty Analytics
gel.com

~~572825~~ Sam 3/11/22 572838

Chain of Custody and Analytical Request

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

GEL Work Order Number: 203881 **GEL Project Manager:** Meredith Boddiford

Client Name: Dominion Energy Phone # 803-258-1528
Project/Site Name: Cope Station Landfill CCR 2022Q1 Fax #
Address: Cope, South Carolina
Collected By: J. Bradley 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]	Radioactive (If yes, please supply isotopic info.)	(7) Known or possible Hazards	Total number of containers	TDS SM2540C	Cl, FL, SO4 EPA 300.0	Total Metals B, Ca EPA 200.8	Comments
<-- Preservative Type (6)											NI	Note: extra sample is required for sample specific QC
MW-LF-01-2022Q1	3/9/22	1446	N	N	GW	N		3	1	1	1	
MW-LF-02-2022Q1	3/9/22	1557	N	N	GW	N		3	1	1	1	
MW-LF-03-2022Q1	3/9/22	1457	N	N	GW	N		~~5~~3	1	1	1	
MW-LF-04-2022Q1	3/9/22	1352	N	N	GW	N		3	1	1	1	
MW-LF-05-2022Q1	3/9/22	1225	N	N	GW	N		3	1	1	1	
FBLK-COP-LF-22101	3/9/22	1438	FB	N	AQ	N		3	1	1	1	see attached work
MW-LF-06-2022Q1	3/9/22	1336	N	N	GW	N		3	1	1	1	order for details
~~MW-BG-06-2022Q1~~			~~N~~	~~N~~	~~GW~~	~~N~~						
~~MW-BG-16-2022Q1~~			~~N~~	~~N~~	~~GW~~	~~N~~						
DU-COP-LF-22101	3/9/22	—	FD	N	GW	N		3	1	1	1	

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time		Received by (signed)	Date	Time
1	Jacob Bradley	3/10/2022	1343	1	[signature]	3/10/22	1343
2				2			
3				3			

TAT Requested: Normal: X Rush: ____ Specify: ____
Fax Results: [ ] Yes [X] No
Select Deliverable: [ ] C of A [ ] QC Summary [ ] level 1 [ ] Level 2 [X] 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.)*

Page: _____ of _____
Project # 416559.0007.0000.2.2
GEL Quote #: _____
QC Number [1]: _____
PO Number: PO 50149867

GEL Laboratories LLC
gel.com
Chemistry | Radiochemistry | Radiobioassay | Specialty Analytics

Chain of Custody and Analytical Request

GEL Work Order Number: 203881 **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: Cope Station Landfill CCR 2022Q1 Fax #
Address: Cope, South Carolina
Collected By: J. Bradley 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	TDS SM2540C	Cl, Fl, SO4 EPA 300.0	Total Metals B, Ca EPA 200.8	NI	<-- Preservative Type (6)	Comments
AS-LF-01-2022Q1 MS/MSD	3/9/22	1340	N	N	GW	N		6	2	2	2			
AS-LF-02-2022Q1	3/9/22	1445	N	N	GW	N		3	1	1	1			
MW-40-2022Q1	3/9/22	1540	N	N	GW	N		3	1	1	1			
~~FBLK-COP-LF-22102~~			~~FB~~	~~N~~	~~AQ~~	~~N~~								
														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	Jacob Bradley	3/10/2022	1343	[illegible]	3/10/22	1343
2						
3						

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

Fax Results: [ ] Yes [X] No

Select Deliverable: [ ] C of A [ ] QC Summary [ ] level 1 [ ] Level 2 [X] 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, **IIX** = 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.)*

DG: 472838 Rev1

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: DMNN	SDG/AR/COC/Work Order: ~~572825~~ AM 3/14 572838
Received By: SB	Date Received: 3/10/22
Enter one tracking number per line below. Enter courier if applicable and no tracking available.	IR temperature gun #: IR1-22 Daily Calibration performed? (Y) / N
	Uncorrected temperature readings are to the 0.1 degree with final recorded temperatures rounded to the 0.5 degree. Provide individual container details when a cooler requiring 0 </=6oC is identified as out of specification.
NA	Uncorrected Temp: 1.6 IR Correction Factor: + / - Final Recorded Temp: 1.6 Within 0.0-6.0C? (Y) / N
N/A	Uncorrected Temp: 1.6 IR Correction Factor: + / - Final Recorded Temp: 1.6 Within 0.0-6.0C? (Y) / N
N/A	Uncorrected Temp: 1.6 IR Correction Factor: + / - Final Recorded Temp: 1.6 Within 0.0-6.0C? Y / N
N/A	Uncorrected Temp: 1.6 IR Correction Factor: + / - Final Recorded Temp: 1.6 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

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#: UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___ If
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 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. Flammable Foreign Soil RCRA Asbestos Beryllium Other: PCB's

	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 chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
5	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:
6	Samples received within holding time?	✓			ID's and tests affected:
7	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
8	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
9	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
10	Are sample containers identifiable as GEL provided by use of GEL labels?	✓			
11	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 AM Date 3/14/22 Page 1 of 1

Laboratory Certifications

List of current GEL Certifications as of 31 March 2022

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	SC000122021−1
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	2019−165
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	T104704235−21−19
Utah NELAP	SC000122021−36
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
Dominion Energy
SDG #: 572838

Product: Determination of Metals by ICP-MS
Analytical Method: EPA 200.8 SC_NPDES
Analytical Procedure: GL-MA-E-014 REV# 35
Analytical Batch: 2241762

Preparation Method: EPA 200.2
Preparation Procedure: GL-MA-E-016 REV# 18
Preparation Batch: 2241761

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

GEL Sample ID#	Client Sample Identification
572838001	MW-LF-01-2022Q1
572838002	MW-LF-02-2022Q1
572838003	MW-LF-03-2022Q1
572838004	MW-LF-04-2022Q1
572838005	MW-LF-05-2022Q1
572838006	FBLK-COP-LF-22101
572838007	MW-LF-06-2022Q1
572838008	DU-COP-LF-22101
572838009	AS-LF-01-2022Q1
572838010	AS-LF-02-2022Q1
572838011	MW-40-2022Q1
1205042339	Method Blank (MB)**ICP-MS**
1205042340	Laboratory Control Sample (LCS)
1205042343	572838009(AS-LF-01-2022Q1L) Serial Dilution (SD)
1205042346	572838011(MW-40-2022Q1L) Serial Dilution (SD)
1205042341	572838009(AS-LF-01-2022Q1D) Sample Duplicate (DUP)
1205042344	572838011(MW-40-2022Q1D) Sample Duplicate (DUP)
1205042342	572838009(AS-LF-01-2022Q1S) Matrix Spike (MS)
1205042345	572838011(MW-40-2022Q1S) 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.

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: 572838 GEL Work Order: 572838

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

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: 21 MAR 2022 **Title: Group Leader**

Sample Data Summary

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572838 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 572838001 **BASIS:** As Received **DATE COLLECTED** 09−MAR−22

CLIENT ID: MW−LF−01−2022Q1 **LEVEL:** Low **DATE RECEIVED** 10−MAR−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	6.98	ug/L	J	4.00	15.0	15.0	1	MS	PRB	03/18/22 20:04	220318−1	2241762
7440−70−2	Calcium	2200	ug/L		30.0	100	100	1	MS	PRB	03/18/22 20:04	220318−1	2241762

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2241762	2241761	EPA 200.2	50	mL	50	mL	03/16/22	RG1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572838 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 572838002 **BASIS:** As Received **DATE COLLECTED** 09−MAR−22

CLIENT ID: MW−LF−02−2022Q1 **LEVEL:** Low **DATE RECEIVED** 10−MAR−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	17.1	ug/L		4.00	15.0	15.0	1	MS	PRB	03/18/22 20:08	220318−1	2241762
7440−70−2	Calcium	5720	ug/L		30.0	100	100	1	MS	PRB	03/18/22 20:08	220318−1	2241762

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2241762	2241761	EPA 200.2	50	mL	50	mL	03/16/22	RG1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572838 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 572838003 **BASIS:** As Received **DATE COLLECTED** 09−MAR−22

CLIENT ID: MW−LF−03−2022Q1 **LEVEL:** Low **DATE RECEIVED** 10−MAR−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	8.19	ug/L	J	4.00	15.0	15.0	1	MS	PRB	03/18/22 20:11	220318−1	2241762
7440−70−2	Calcium	1070	ug/L		30.0	100	100	1	MS	PRB	03/18/22 20:11	220318−1	2241762

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2241762	2241761	EPA 200.2	50	mL	50	mL	03/16/22	RG1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572838 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 572838004 **BASIS:** As Received **DATE COLLECTED** 09−MAR−22

CLIENT ID: MW−LF−04−2022Q1 **LEVEL:** Low **DATE RECEIVED** 10−MAR−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	9.69	ug/L	J	4.00	15.0	15.0	1	MS	PRB	03/18/22 20:14	220318−1	2241762
7440−70−2	Calcium	1860	ug/L		30.0	100	100	1	MS	PRB	03/18/22 20:14	220318−1	2241762

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2241762	2241761	EPA 200.2	50	mL	50	mL	03/16/22	RG1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572838 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 572838005 **BASIS:** As Received **DATE COLLECTED** 09−MAR−22

CLIENT ID: MW−LF−05−2022Q1 **LEVEL:** Low **DATE RECEIVED** 10−MAR−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	10.2	ug/L	J	4.00	15.0	15.0	1	MS	PRB	03/18/22 20:17	220318−1	2241762
7440−70−2	Calcium	2840	ug/L		30.0	100	100	1	MS	PRB	03/18/22 20:17	220318−1	2241762

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2241762	2241761	EPA 200.2	50	mL	50	mL	03/16/22	RG1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572838 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 572838006 **BASIS:** As Received **DATE COLLECTED** 09−MAR−22

CLIENT ID: FBLK−COP−LF−22101 **LEVEL:** Low **DATE RECEIVED** 10−MAR−22

MATRIX: AQ **%SOLIDS:** 0

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	03/18/22 20:27	220318−1	2241762
7440−70−2	Calcium	30.0	ug/L	U	30.0	100	100	1	MS	PRB	03/18/22 20:27	220318−1	2241762

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2241762	2241761	EPA 200.2	50	mL	50	mL	03/16/22	RG1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572838 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 572838007 **BASIS:** As Received **DATE COLLECTED** 09−MAR−22

CLIENT ID: MW−LF−06−2022Q1 **LEVEL:** Low **DATE RECEIVED** 10−MAR−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	9.02	ug/L	J	4.00	15.0	15.0	1	MS	PRB	03/18/22 20:31	220318−1	2241762
7440−70−2	Calcium	2150	ug/L		30.0	100	100	1	MS	PRB	03/18/22 20:31	220318−1	2241762

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2241762	2241761	EPA 200.2	50	mL	50	mL	03/16/22	RG1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572838 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 572838008 **BASIS:** As Received **DATE COLLECTED** 09−MAR−22

CLIENT ID: DU−COP−LF−22101 **LEVEL:** Low **DATE RECEIVED** 10−MAR−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	10.6	ug/L	J	4.00	15.0	15.0	1	MS	PRB	03/18/22 20:34	220318−1	2241762
7440−70−2	Calcium	2790	ug/L		30.0	100	100	1	MS	PRB	03/18/22 20:34	220318−1	2241762

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2241762	2241761	EPA 200.2	50	mL	50	mL	03/16/22	RG1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572838 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 572838009 **BASIS:** As Received **DATE COLLECTED** 09−MAR−22

CLIENT ID: AS−LF−01−2022Q1 **LEVEL:** Low **DATE RECEIVED** 10−MAR−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	12.3	ug/L	J	4.00	15.0	15.0	1	MS	PRB	03/18/22 20:37	220318−1	2241762
7440−70−2	Calcium	4010	ug/L		30.0	100	100	1	MS	PRB	03/18/22 20:37	220318−1	2241762

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2241762	2241761	EPA 200.2	50	mL	50	mL	03/16/22	RG1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572838 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 572838010 **BASIS:** As Received **DATE COLLECTED** 09−MAR−22

CLIENT ID: AS−LF−02−2022Q1 **LEVEL:** Low **DATE RECEIVED** 10−MAR−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	16.3	ug/L		4.00	15.0	15.0	1	MS	PRB	03/18/22 20:57	220318−1	2241762
7440−70−2	Calcium	4540	ug/L		30.0	100	100	1	MS	PRB	03/18/22 20:57	220318−1	2241762

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2241762	2241761	EPA 200.2	50	mL	50	mL	03/16/22	RG1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 572838 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 572838011 **BASIS:** As Received **DATE COLLECTED** 09−MAR−22

CLIENT ID: MW−40−2022Q1 **LEVEL:** Low **DATE RECEIVED** 10−MAR−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	37.7	ug/L		4.00	15.0	15.0	1	MS	PRB	03/18/22 21:00	220318−1	2241762
7440−70−2	Calcium	31700	ug/L		30.0	100	100	1	MS	PRB	03/18/22 21:00	220318−1	2241762

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2241762	2241761	EPA 200.2	50	mL	50	mL	03/16/22	RG1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

Quality Control Summary

METALS
−2a−
Initial and Continuing Calibration Verification

SDG No: 572838

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	97.3	ug/L	100	ug/L	97.3	90.0 − 110.0	MS	18−MAR−22 19:25	220318−1
	Calcium	4960	ug/L	5000	ug/L	99.2	90.0 − 110.0	MS	18−MAR−22 19:25	220318−1
CCV01										
	Boron	101	ug/L	100	ug/L	100.5	90.0 − 110.0	MS	18−MAR−22 19:41	220318−1
	Calcium	5000	ug/L	5000	ug/L	100.1	90.0 − 110.0	MS	18−MAR−22 19:41	220318−1
CCV02										
	Boron	98.9	ug/L	100	ug/L	98.9	90.0 − 110.0	MS	18−MAR−22 19:51	220318−1
	Calcium	4920	ug/L	5000	ug/L	98.3	90.0 − 110.0	MS	18−MAR−22 19:51	220318−1
CCV03										
	Boron	96.8	ug/L	100	ug/L	96.8	90.0 − 110.0	MS	18−MAR−22 20:21	220318−1
	Calcium	5010	ug/L	5000	ug/L	100.1	90.0 − 110.0	MS	18−MAR−22 20:21	220318−1
CCV04										
	Boron	98.6	ug/L	100	ug/L	98.6	90.0 − 110.0	MS	18−MAR−22 20:50	220318−1
	Calcium	4900	ug/L	5000	ug/L	98	90.0 − 110.0	MS	18−MAR−22 20:50	220318−1
CCV05										
	Boron	97.2	ug/L	100	ug/L	97.2	90.0 − 110.0	MS	18−MAR−22 21:23	220318−1
	Calcium	4860	ug/L	5000	ug/L	97.2	90.0 − 110.0	MS	18−MAR−22 21:23	220318−1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
−2b−
CRDL Standard for ICP & ICPMS

SDG No: 572838

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	14.6	ug/L	15	ug/L	97.6	70.0 − 130.0	MS	18−MAR−22 19:31	220318−1
	Calcium	220	ug/L	200	ug/L	110.1	70.0 − 130.0	MS	18−MAR−22 19:31	220318−1
CRDL02										
	Boron	13.8	ug/L	15	ug/L	91.8	70.0 − 130.0	MS	18−MAR−22 21:13	220318−1
	Calcium	216	ug/L	200	ug/L	107.8	70.0 − 130.0	MS	18−MAR−22 21:13	220318−1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

Metals
−3a−
Initial and Continuing Calibration Blank Summary

SDG No.: 572838

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	18−MAR−22 19:28	220318−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	18−MAR−22 19:28	220318−1
CCB01										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	18−MAR−22 19:45	220318−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	18−MAR−22 19:45	220318−1
CCB02										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	18−MAR−22 19:54	220318−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	18−MAR−22 19:54	220318−1
CCB03										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	18−MAR−22 20:24	220318−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	18−MAR−22 20:24	220318−1
CCB04										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	18−MAR−22 20:54	220318−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	18−MAR−22 20:54	220318−1
CCB05										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	18−MAR−22 21:26	220318−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	18−MAR−22 21:26	220318−1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 572838
Contract: DMNN00102
Matrix: GW

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1205042339								
	Boron	4.00	ug/L	+/−7.5	U	MS	4.00	15.0
	Calcium	30.0	ug/L	+/−50	U	MS	30.0	100

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−4−
Interference Check Sample

SDG No: 572838

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									
	Boron	1.87	ug/L					18−MAR−22 19:35	220318−1
	Calcium	95100	ug/L	100000	ug/L	95.1	80.0 − 120.0	18−MAR−22 19:35	220318−1
ICSAB01									
	Boron	19.8	ug/L	20	ug/L	98.9	80.0 − 120.0	18−MAR−22 19:38	220318−1
	Calcium	95600	ug/L	100000	ug/L	95.6	80.0 − 120.0	18−MAR−22 19:38	220318−1
ICSA02									
	Boron	1.74	ug/L					18−MAR−22 21:16	220318−1
	Calcium	92400	ug/L	100000	ug/L	92.4	80.0 − 120.0	18−MAR−22 21:16	220318−1
ICSAB02									
	Boron	19.2	ug/L	20	ug/L	95.9	80.0 − 120.0	18−MAR−22 21:20	220318−1
	Calcium	93200	ug/L	100000	ug/L	93.2	80.0 − 120.0	18−MAR−22 21:20	220318−1

METALS
−5a−

Matrix Spike Summary

SDG NO. 572838 **Client ID** AS−LF−01−2022Q1S

Contract: DMNN00102 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 572838009 **Spike ID:** 1205042342

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Boron	ug/L	75−125	113		12.3	B	100	101		MS
Calcium	ug/L	75−125	6090		4010		2000	104		MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−5a−

Matrix Spike Summary

SDG NO. 572838 **Client ID** MW−40−2022Q1S

Contract: DMNN00102 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 572838011 **Spike ID:** 1205042345

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Calcium	ug/L		34200		31700		2000	123	N/A	MS
Boron	ug/L	75−125	135		37.7		100	97.4		MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

Metals
−6−
Duplicate Sample Summary

SDG No.: 572838 **Lab Code:** GEL

Contract: DMNN00102 **Client ID:** AS−LF−01−2022Q1D

Matrix: GROUND WATER **Level:** Low

Sample ID: 572838009 **Duplicate ID:** 1205042341 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Boron	ug/L	+/−30	12.3	B	11.8	B	3.79		MS
Calcium	ug/L	+/−20%	4010		3940		1.72		MS

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

Metals
−6−
Duplicate Sample Summary

SDG No.: 572838 **Lab Code:** GEL

Contract: DMNN00102 **Client ID:** MW−40−2022Q1D

Matrix: GROUND WATER **Level:** Low

Sample ID: 572838011 **Duplicate ID:** 1205042344 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Boron	ug/L	+/−30	37.7		38.8		2.68		MS
Calcium	ug/L	+/−20%	31700		32100		1.17		MS

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

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 572838

Contract: DMNN00102

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

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1205042340								
	Calcium	ug/L	2000	2150		108	85−115	MS
	Boron	ug/L	100	101		101	85−115	MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 572838 **Client ID** AS−LF−01−2022Q1L

Contract: DMNN00102

Matrix: LIQUID **Level:** Low

Sample ID: 572838009 **Serial Dilution ID:** 1205042343

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Boron	12.3	B	20	U	22.378			MS
Calcium	4010		3750		6.413			MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 572838 **Client ID** MW−40−2022Q1L

Contract: DMNN00102

Matrix: LIQUID **Level:** Low

Sample ID: 572838011 **Serial Dilution ID:** 1205042346

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Boron	37.7		41.9	B	11.054			MS
Calcium	31700		31700		.187		10	MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−13−
SAMPLE PREPARATION SUMMARY

SDG No: 572838 **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 2241761							
1205042339	MB for batch 2241761	MB	G	16−MAR−22	50mL	50mL	
1205042340	LCS for batch 2241761	LCS	G	16−MAR−22	50mL	50mL	
1205042342	AS−LF−01−2022Q1S	MS	G	16−MAR−22	50mL	50mL	
1205042345	MW−40−2022Q1S	MS	G	16−MAR−22	50mL	50mL	
1205042341	AS−LF−01−2022Q1D	DUP	G	16−MAR−22	50mL	50mL	
1205042344	MW−40−2022Q1D	DUP	G	16−MAR−22	50mL	50mL	
572838001	MW−LF−01−2022Q1	SAMPLE	G	16−MAR−22	50mL	50mL	
572838002	MW−LF−02−2022Q1	SAMPLE	G	16−MAR−22	50mL	50mL	
572838003	MW−LF−03−2022Q1	SAMPLE	G	16−MAR−22	50mL	50mL	
572838004	MW−LF−04−2022Q1	SAMPLE	G	16−MAR−22	50mL	50mL	
572838005	MW−LF−05−2022Q1	SAMPLE	G	16−MAR−22	50mL	50mL	
572838006	FBLK−COP−LF−22101	SAMPLE	G	16−MAR−22	50mL	50mL	
572838007	MW−LF−06−2022Q1	SAMPLE	G	16−MAR−22	50mL	50mL	
572838008	DU−COP−LF−22101	SAMPLE	G	16−MAR−22	50mL	50mL	
572838009	AS−LF−01−2022Q1	SAMPLE	G	16−MAR−22	50mL	50mL	
572838010	AS−LF−02−2022Q1	SAMPLE	G	16−MAR−22	50mL	50mL	
572838011	MW−40−2022Q1	SAMPLE	G	16−MAR−22	50mL	50mL	

EPA

General Chem Analysis

Case Narrative

General Chemistry
Technical Case Narrative
Dominion Energy
SDG #: 572838

Product: **Ion Chromatography**
Analytical Method: EPA 300.0
Analytical Procedure: GL-GC-E-086 REV# 30
Analytical Batch: 2240214

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

GEL Sample ID#	Client Sample Identification
572838001	MW-LF-01-2022Q1
572838002	MW-LF-02-2022Q1
572838003	MW-LF-03-2022Q1
572838004	MW-LF-04-2022Q1
572838005	MW-LF-05-2022Q1
572838006	FBLK-COP-LF-22101
572838007	MW-LF-06-2022Q1
572838008	DU-COP-LF-22101
572838009	AS-LF-01-2022Q1
572838010	AS-LF-02-2022Q1
572838011	MW-40-2022Q1
1205039461	Method Blank (MB)
1205039462	Laboratory Control Sample (LCS)
1205039463	572838009(AS-LF-01-2022Q1) Sample Duplicate (DUP)
1205039464	572838009(AS-LF-01-2022Q1) Post Spike (PS)
1205039465	572838011(MW-40-2022Q1) Sample Duplicate (DUP)
1205039466	572838011(MW-40-2022Q1) 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 1205039465 (MW-40-2022Q1DUP), 1205039466 (MW-40-2022Q1PS), 572838002 (MW-LF-02-2022Q1), 572838005 (MW-LF-05-2022Q1), 572838008 (DU-COP-LF-22101), 572838010 (AS-LF-02-2022Q1) and 572838011 (MW-40-2022Q1) were diluted because target analyte concentrations exceeded the calibration range. 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	572838				
	002	**005**	**008**	**010**	**011**
Chloride	10X	2X	2X	2X	20X
Sulfate	1X	1X	1X	1X	20X

Miscellaneous Information

Manual Integrations
Sample 572838009 (AS-LF-01-2022Q1) was manually integrated to correctly position the baseline as set in the calibration standards.

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# 19
Analytical Batch: 2241802

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

GEL Sample ID#	Client Sample Identification
572838001	MW-LF-01-2022Q1
572838002	MW-LF-02-2022Q1
572838003	MW-LF-03-2022Q1
572838004	MW-LF-04-2022Q1
572838005	MW-LF-05-2022Q1
572838006	FBLK-COP-LF-22101
572838007	MW-LF-06-2022Q1
572838008	DU-COP-LF-22101
572838009	AS-LF-01-2022Q1
572838010	AS-LF-02-2022Q1
572838011	MW-40-2022Q1
1205042415	Method Blank (MB)
1205042416	Laboratory Control Sample (LCS)
1205042417	572735001(NonSDG) Sample Duplicate (DUP)
1205042418	572742009(NonSDG) Sample Duplicate (DUP)
1205042419	572752005(NonSDG) Sample Duplicate (DUP)
1205042420	572838009(AS-LF-01-2022Q1) Sample Duplicate (DUP)
1205042421	572948002(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.

Quality Control (QC) Information

Duplicate Relative Percent Difference (RPD) Statement
The Relative Percent Difference (RPD) between the sample and duplicate falls outside of the established acceptance limits because of the heterogeneous matrix of the sample:

Analyte	Sample	Value
Total Dissolved Solids	1205042420 (AS-LF-01-2022Q1DUP)	abs(47.1 - 24.3)* (+/-14.3 mg/L)

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: 572838 GEL Work Order: 572838

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: 24 MAR 2022 **Title: Group Leader**

Sample Data Summary

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: March 31, 2022

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-LF-01-2022Q1
Sample ID: 572838001
Matrix: GW
Collect Date: 09-MAR-22 14:46
Receive Date: 10-MAR-22
Collector: Client

Project: DMNN00102
Client ID: DMNN001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		8.90	0.0670	0.200	mg/L		1	JLD1	03/11/22	1051	2240214	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate	J	0.312	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids	J	10.0	3.40	14.3	mg/L			KLP1	03/16/22	1545	2241802	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
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Certificate of Analysis

Report Date: March 31, 2022

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-LF-02-2022Q1	Project:	DMNN00102
Sample ID:	572838002	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	09-MAR-22 15:57		
Receive Date:	10-MAR-22		
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		0.171	0.0330	0.100	mg/L		1	JLD1	03/11/22	1121	2240214	1
Sulfate		6.26	0.133	0.400	mg/L		1					
Chloride		39.9	0.670	2.00	mg/L		10	JLD1	03/11/22	2019	2240214	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		77.1	3.40	14.3	mg/L			KLP1	03/16/22	1545	2241802	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 31, 2022

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-LF-03-2022Q1
Sample ID: 572838003
Matrix: GW
Collect Date: 09-MAR-22 14:57
Receive Date: 10-MAR-22
Collector: Client

Project: DMNN00102
Client ID: DMNN001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		3.57	0.0670	0.200	mg/L		1	JLD1	03/11/22	1151	2240214	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		0.570	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids	J	8.57	3.40	14.3	mg/L			KLP1	03/16/22	1545	2241802	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

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Certificate of Analysis

Report Date: March 31, 2022

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-LF-04-2022Q1
Sample ID: 572838004
Matrix: GW
Collect Date: 09-MAR-22 13:52
Receive Date: 10-MAR-22
Collector: Client

Project: DMNN00102
Client ID: DMNN001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		4.66	0.0670	0.200	mg/L		1	JLD1	03/11/22	1221	2240214	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		0.620	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		17.1	3.40	14.3	mg/L			KLP1	03/16/22	1545	2241802	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

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Certificate of Analysis

Report Date: March 31, 2022

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-LF-05-2022Q1
Sample ID: 572838005
Matrix: GW
Collect Date: 09-MAR-22 12:25
Receive Date: 10-MAR-22
Collector: Client

Project: DMNN00102
Client ID: DMNN001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Fluoride	U	ND	0.0330	0.100	mg/L		1	JLD1	03/11/22	1251	2240214	1
Sulfate		0.583	0.133	0.400	mg/L		1					
Chloride		9.14	0.134	0.400	mg/L		2	JLD1	03/11/22	2049	2240214	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		32.9	3.40	14.3	mg/L			KLP1	03/16/22	1545	2241802	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

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Certificate of Analysis

Report Date: March 31, 2022

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-COP-LF-22101
Sample ID: 572838006
Matrix: AQ
Collect Date: 09-MAR-22 14:38
Receive Date: 10-MAR-22
Collector: Client

Project: DMNN00102
Client ID: DMNN001

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	JLD1	03/11/22	1320	2240214	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	3.40	14.3	mg/L			KLP1	03/16/22	1545	2241802	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

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Certificate of Analysis

Report Date: March 31, 2022

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-LF-06-2022Q1
Sample ID: 572838007
Matrix: GW
Collect Date: 09-MAR-22 13:36
Receive Date: 10-MAR-22
Collector: Client

Project: DMNN00102
Client ID: DMNN001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
EPA 300.0 Anions Liquid "As Received"												
Chloride		8.12	0.0670	0.200	mg/L		1	JLD1	03/11/22	1350	2240214	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		0.638	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		30.0	3.40	14.3	mg/L			KLP1	03/16/22	1545	2241802	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

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Certificate of Analysis

Report Date: March 31, 2022

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-COP-LF-22101	Project:	DMNN00102
Sample ID:	572838008	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	09-MAR-22 12:00		
Receive Date:	10-MAR-22		
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	U	ND	0.0330	0.100	mg/L		1	JLD1	03/11/22	1420	2240214	1
Sulfate		0.575	0.133	0.400	mg/L		1					
Chloride		9.26	0.134	0.400	mg/L		2	JLD1	03/11/22	2248	2240214	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		42.9	3.40	14.3	mg/L			KLP1	03/16/22	1545	2241802	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

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Certificate of Analysis

Report Date: March 31, 2022

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:	AS-LF-01-2022Q1	Project:	DMNN00102
Sample ID:	572838009	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	09-MAR-22 13:40		
Receive Date:	10-MAR-22		
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		5.27	0.0670	0.200	mg/L		1	JLD1	03/11/22	1620	2240214	1
Fluoride		0.113	0.0330	0.100	mg/L		1					
Sulfate		15.1	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		24.3	3.40	14.3	mg/L			KLP1	03/16/22	1545	2241802	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
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Certificate of Analysis

Report Date: March 31, 2022

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:	AS-LF-02-2022Q1	Project:	DMNN00102
Sample ID:	572838010	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	09-MAR-22 14:45		
Receive Date:	10-MAR-22		
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	0.0630	0.0330	0.100	mg/L		1	JLD1	03/11/22	1749	2240214	1
Sulfate		10.1	0.133	0.400	mg/L		1					
Chloride		13.0	0.134	0.400	mg/L		2	JLD1	03/11/22	2318	2240214	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		42.9	3.40	14.3	mg/L			KLP1	03/16/22	1545	2241802	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 31, 2022

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-40-2022Q1	Project:	DMNN00102
Sample ID:	572838011	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	09-MAR-22 15:40		
Receive Date:	10-MAR-22		
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		0.891	0.0330	0.100	mg/L		1	JLD1	03/11/22	1819	2240214	1
Chloride		44.5	1.34	4.00	mg/L		20	JLD1	03/11/22	2348	2240214	2
Sulfate		160	2.66	8.00	mg/L		20					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		301	3.40	14.3	mg/L			KLP1	03/16/22	1545	2241802	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

Quality Control Summary

QC Summary

Report Date: March 31, 2022

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

Contact: **Kelly Hicks**

Workorder: **572838**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography										
Batch 2240214										
QC1205039463 572838009 DUP										
Chloride		5.27		5.21	mg/L	1.26		(0%-20%)	JLD1	03/11/22 16:50
Fluoride		0.113		0.102	mg/L	10.7 ^		(+/-.2)		
Sulfate		15.1		15.0	mg/L	0.625		(0%-20%)		
QC1205039465 572838011 DUP										
Chloride		44.5		44.5	mg/L	0.0675		(0%-20%)		03/12/22 00:18
Fluoride		0.891		0.882	mg/L	0.993		(0%-20%)		03/11/22 18:49
Sulfate		160		160	mg/L	0.0751		(0%-20%)		03/12/22 00:18
QC1205039462 LCS										
Chloride	5.00			4.73	mg/L		94.5	(90%-110%)		03/11/22 10:22
Fluoride	2.50			2.29	mg/L		91.4	(90%-110%)		
Sulfate	10.0			9.68	mg/L		96.8	(90%-110%)		
QC1205039461 MB										
Chloride			U	ND	mg/L					03/11/22 09:52
Fluoride			U	ND	mg/L					
Sulfate			U	ND	mg/L					
QC1205039464 572838009 PS										
Chloride	5.00	5.27		10.7	mg/L		108	(90%-110%)		03/11/22 17:20

QC Summary

Workorder: **572838**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography										
Batch 2240214										
Fluoride	2.50	0.113		2.54	mg/L		97.1	(90%-110%)	JLD1	03/11/22 17:20
Sulfate	10.0	15.1		24.9	mg/L		98	(90%-110%)		
QC1205039466 572838011 PS										
Chloride	5.00	2.22		7.14	mg/L		98.3	(90%-110%)		03/12/22 00:48
Fluoride	2.50	0.891		3.44	mg/L		102	(90%-110%)		03/11/22 19:19
Sulfate	10.0	7.98		17.4	mg/L		93.9	(90%-110%)		03/12/22 00:48
Solids Analysis										
Batch 2241802										
QC1205042417 572735001 DUP										
Total Dissolved Solids		451		451	mg/L	0		(0%-5%)	KLP1	03/16/22 15:45
QC1205042418 572742009 DUP										
Total Dissolved Solids		297		299	mg/L	0.48		(0%-5%)		03/16/22 15:45
QC1205042419 572752005 DUP										
Total Dissolved Solids		226		221	mg/L	1.92		(0%-5%)		03/16/22 15:45
QC1205042420 572838009 DUP										
Total Dissolved Solids		24.3		47.1	mg/L	64 ^		(+/-28.6)		03/16/22 15:45
QC1205042421 572948002 DUP										
Total Dissolved Solids		140		136	mg/L	3.11		(0%-5%)		03/16/22 15:45
QC1205042416 LCS										
Total Dissolved Solids	300			286	mg/L		95.2	(95%-105%)		03/16/22 15:45
QC1205042415 MB										
Total Dissolved Solids			U	ND	mg/L					03/16/22 15:45

QC Summary

Workorder: **572838**

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

Notes:

The Qualifiers in this report are defined as follows:

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

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.

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

Cope Power Station Groundwater Sampling
Samples Collected between: 3/8/2022 and 3/10/2022

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:

572610

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	Anayte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
MW-BG-06-2022Q1	MW-06	N	EPA 200.8	Boron	T	8.61	J	RL	4.00	15.0		ug/L
MW-BG-06-2022Q1	MW-06	N	EPA 300.0	Fluoride	N	0.0584	J	RL	0.0330	0.100		mg/L
MW-BG-16-2022Q1	MW-BG-16	N	EPA 200.8	Boron	T	9.64	J	RL	4.00	15.0		ug/L
MW-BG-16-2022Q1	MW-BG-16	N	SM 2540C	Total Dissolved Solids	N	4.29	J	RL	3.40	14.3		mg/L

Data Qualifiers	
U	The analyte was not detected above the level of the reported sample quantitation 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	This analyte was not detected, but the reporting limit may or may not be higher due to a bias identified during data validation.
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.
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: Cope Generating Station
SDG: 572610

Lab Sample ID	572610001
Sys Sample Code	MW-BG-06-2022Q1
Sample Name	MW-BG-06-2022Q1
Sample Date	3/8/2022 10:40:00 AM
Location	COP-MW-06 / MW-06
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	8.61	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	9780				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	17.6				0.335	0.335	1.00	Y	Yes	5	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.0584	J	RL		0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L		U			0.133	0.133	0.400	N	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	101				3.40	3.40	14.3	Y	Yes	1	NA

Facility: Cope Generating Station
SDG: 572610

Lab Sample ID	572610002
Sys Sample Code	MW-BG-16-2022Q1
Sample Name	MW-BG-16-2022Q1
Sample Date	3/8/2022 10:36:00 AM
Location	COP-MW-BG-16 / MW-BG-16
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	9.64	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2040				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	3.54				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	1.73				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	4.29	J	RL		3.40	3.40	14.3	Y	Yes	1	NA

ENVIRONMENTAL® STANDARDS
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Cope Power Station Groundwater Sampling
Samples Collected between: 3/8/2022 and 3/10/2022

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:

572838

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	Anayte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
MW-LF-01-2022Q1	MW-LF-01	N	EPA 200.8	Boron	T	6.98	J	RL	4.00	15.0		ug/L
MW-LF-01-2022Q1	MW-LF-01	N	EPA 300.0	Sulfate	N	0.312	J	RL	0.133	0.400		mg/L
MW-LF-01-2022Q1	MW-LF-01	N	SM 2540C	Total Dissolved Solids	N	10.0	J	LD	3.40	14.3		mg/L
MW-LF-02-2022Q1	MW-LF-02	N	SM 2540C	Total Dissolved Solids	N	77.1	J	LD	3.40	14.3		mg/L
MW-LF-03-2022Q1	MW-LF-03	N	EPA 200.8	Boron	T	8.19	J	RL	4.00	15.0		ug/L
MW-LF-03-2022Q1	MW-LF-03	N	SM 2540C	Total Dissolved Solids	N	8.57	J	LD	3.40	14.3		mg/L
MW-LF-04-2022Q1	MW-LF-04	N	EPA 200.8	Boron	T	9.69	J	RL	4.00	15.0		ug/L
MW-LF-04-2022Q1	MW-LF-04	N	SM 2540C	Total Dissolved Solids	N	17.1	J	LD	3.40	14.3		mg/L
MW-LF-05-2022Q1	MW-LF-05	N	EPA 200.8	Boron	T	10.2	J	RL	4.00	15.0		ug/L
MW-LF-05-2022Q1	MW-LF-05	N	SM 2540C	Total Dissolved Solids	N	32.9	J	LD	3.40	14.3		mg/L
MW-LF-06-2022Q1	MW-LF-06	N	EPA 200.8	Boron	T	9.02	J	RL	4.00	15.0		ug/L
MW-LF-06-2022Q1	MW-LF-06	N	SM 2540C	Total Dissolved Solids	N	30.0	J	LD	3.40	14.3		mg/L
DU-COP-LF-22101	MW-LF-05	FD	EPA 200.8	Boron	T	10.6	J	RL	4.00	15.0		ug/L
DU-COP-LF-22101	MW-LF-05	FD	SM 2540C	Total Dissolved Solids	N	42.9	J	LD	3.40	14.3		mg/L
AS-LF-01-2022Q1	MW-AS-01	N	EPA 200.8	Boron	T	12.3	J	RL	4.00	15.0		ug/L
AS-LF-01-2022Q1	MW-AS-01	N	SM 2540C	Total Dissolved Solids	N	24.3	J	LD	3.40	14.3		mg/L
AS-LF-02-2022Q1	MW-AS-02	N	EPA 300.0	Fluoride	N	0.0630	J	RL	0.0330	0.100		mg/L
AS-LF-02-2022Q1	MW-AS-02	N	SM 2540C	Total Dissolved Solids	N	42.9	J	LD	3.40	14.3		mg/L
MW-40-2022Q1	MW-40	N	SM 2540C	Total Dissolved Solids	N	301	J	LD	3.40	14.3		mg/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.
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: Cope Generating Station
SDG: 572838

Lab Sample ID	572838001
Sys Sample Code	MW-LF-01-2022Q1
Sample Name	MW-LF-01-2022Q1
Sample Date	3/9/2022 2:46:00 PM
Location	COP-MW-LF-01 / MW-LF-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	6.98	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2200				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	8.90				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	0.312	J	RL		0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	10.0	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	572838002
Sys Sample Code	MW-LF-02-2022Q1
Sample Name	MW-LF-02-2022Q1
Sample Date	3/9/2022 3:57:00 PM
Location	COP-MW-LF-02 / MW-LF-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	17.1				4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	5720				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.171				0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	6.26				0.133	0.133	0.400	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	39.9				0.670	0.670	2.00	Y	Yes	10	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	77.1	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	572838003
Sys Sample Code	MW-LF-03-2022Q1
Sample Name	MW-LF-03-2022Q1
Sample Date	3/9/2022 2:57:00 PM
Location	COP-MW-LF-03 / MW-LF-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	8.19	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	1070				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	3.57				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	0.570				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	8.57	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	572838004
Sys Sample Code	MW-LF-04-2022Q1
Sample Name	MW-LF-04-2022Q1
Sample Date	3/9/2022 1:52:00 PM
Location	COP-MW-LF-04 / MW-LF-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	9.69	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	1860				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	4.66				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	0.620				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	17.1	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	572838005
Sys Sample Code	MW-LF-05-2022Q1
Sample Name	MW-LF-05-2022Q1
Sample Date	3/9/2022 12:25:00 PM
Location	COP-MW-LF-05 / MW-LF-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	10.2	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2840				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	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	0.583				0.133	0.133	0.400	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	9.14				0.134	0.134	0.400	Y	Yes	2	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	32.9	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Facility: Cope Generating Station
SDG: 572838

Lab Sample ID	572838006
Sys Sample Code	FBLK-COP-LF-22101_1438
Sample Name	FBLK-COP-LF-22101
Sample Date	3/9/2022 2:38:00 PM
Location	COP-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
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
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U			3.40	3.40	14.3	N	Yes	1	NA

Lab Sample ID	572838007
Sys Sample Code	MW-LF-06-2022Q1
Sample Name	MW-LF-06-2022Q1
Sample Date	3/9/2022 1:36:00 PM
Location	COP-MW-LF-06 / MW-LF-06
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	9.02	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2150				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	8.12				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	0.638				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	30.0	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	572838008
Sys Sample Code	DU-COP-LF-22101
Sample Name	DU-COP-LF-22101
Sample Date	3/9/2022 12:00:00 PM
Location	COP-MW-LF-05 / MW-LF-05
Sample Type	FD
Matrix	GW
Parent Sample	MW-LF-05-2022Q1

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	10.6	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2790				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	9.26				0.134	0.134	0.400	Y	Yes	2	NA
EPA 300.0	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	0.575				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	42.9	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	572838009
Sys Sample Code	AS-LF-01-2022Q1
Sample Name	AS-LF-01-2022Q1
Sample Date	3/9/2022 1:40:00 PM
Location	COP-MW-AS-01 / MW-AS-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	12.3	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	4010				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	5.27				0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.113				0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	15.1				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	24.3	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Lab Sample ID	572838010
Sys Sample Code	AS-LF-02-2022Q1
Sample Name	AS-LF-02-2022Q1
Sample Date	3/9/2022 2:45:00 PM
Location	COP-MW-AS-02 / MW-AS-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	16.3				4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	4540				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	13.0				0.134	0.134	0.400	Y	Yes	2	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.0630	J	RL		0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	10.1				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	42.9	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Facility: Cope Generating Station
SDG: 572838

Lab Sample ID	572838011
Sys Sample Code	MW-40-2022Q1
Sample Name	MW-40-2022Q1
Sample Date	3/9/2022 3:40:00 PM
Location	COP-MW-40 / MW-40
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	37.7				4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	31700				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	44.5				1.34	1.34	4.00	Y	Yes	20	NA
	Sulfate	14808-79-8	N	mg/L	160				2.66	2.66	8.00	Y	Yes	20	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.891				0.0330	0.0330	0.100	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	301	J	LD		3.40	3.40	14.3	Y	Yes	1	NA

Appendix D
Second Semiannual Detection Monitoring Program Event Field Data Sheets, Laboratory Reports, and Data Validation Forms

COPE STATION - Class 3 Landfill - CCR

Date(s) Measured: 8/24/22

Well ID	Well Diameter (inches)	Well Total Depth (ft BTOC)	Well Completion	Screen Length (ft)	Depth to Water (ft below TOC)	Pump Type
MW-LF-01	2	~~17.98~~ 17.96	Stickup	10	9.63	Peristaltic
MW-LF-02	2	32.40	Stickup	10	25.87	Peristaltic
MW-LF-03	2	31.45	Stickup	10	24.64	Peristaltic
MW-LF-04	2	31.25	Stickup	10	24.48	Peristaltic
MW-LF-05	2	29.15	Stickup	10	21.14	Peristaltic
MW-LF-06	2	28.22	Stickup	10	20.45	Peristaltic
MW-BG-06	2	~~30.31~~ 30.33	Stickup	10	16.93	Peristaltic
MW-BG-16	2	~~29.30~~ 29.28	Stickup	10	18.50	Peristaltic
AS-LF-01	2	~~22.44~~ 22.45	Stickup	10	10.69	Peristaltic
AS-LF-02	2	22.65	Stickup	10	10.46	Peristaltic
MW-40	2	28.14	Stickup	10	11.04	Peristaltic

WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER: 416559.0007.0000.2.2	BY: JAY	DATE: 8/29/22	BY: DJS	DATE: 9/1/22

SAMPLE ID: MW-LF-01 WELL DIAMETER: [X] 2" [ ] 4" [ ] 6" [✓] OTHER

WELL MATERIAL: [X] PVC [ ] SS [ ] IRON [ ] GALVANIZED STEEL [ ] OTHER

SAMPLE TYPE: [X] GW [ ] WW [ ] SW [ ] DI [ ] LEACHATE [ ] OTHER

PURGING	TIME: 1434	DATE: 8/29/22	SAMPLE	TIME: 1532	DATE:
PURGE METHOD: [X] PUMP PERISTALTIC PUMP [ ] BAILER			PH: 4.43 SU	CONDUCTIVITY: 52.90 umhos/cm	
			ORP: 70.1 mV	DO: 2.25 mg/L	
DEPTH TO WATER: 9.29 T/ PVC			TURBIDITY: 2.17 NTU		
DEPTH TO BOTTOM: 17.96 T/ PVC			[X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY		
WELL VOLUME: [ ] LITERS [✓] GALLONS			TEMPERATURE: 25.40 °C	OTHER:	
VOLUME REMOVED: 0.7 [ ] LITERS [X] GALLONS			COLOR: clear	ODOR: None	
COLOR: clear ODOR: None			FILTRATE (0.45 um) [ ] YES [X] NO		
TURBIDITY [X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY			FILTRATE COLOR:	FILTRATE ODOR:	
			QC SAMPLE: [ ] MS/MSD	[ ] DUP-	
DISPOSAL METHOD: [ ] GROUND [ ] DRUM [X] OTHER			COMMENTS: Post turbidity 2.33 NTU at 1554		

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)
1442	75	4.39	48.78	65.8	2.60	3.80	27.63	9.38	INITIAL
1447	50	4.40	48.44	64.2	2.32	4.95	27.89	9.40	
1457	50	4.40	51.52	63.1	2.19	2.29	27.32	9.40	
1502	50	4.40	52.11	64.7	2.20	2.41	27.10	9.40	DO=2.20mg/L
1507	50	4.41	52.35	65.4	2.21	2.29	26.42	9.41	
1512	50	4.41	52.03	67.3	2.19	2.44	25.87	9.41	
1517	50	4.41	52.29	67.6	2.19	2.15	25.81	9.41	
1522	50	4.42	52.25	67.9	2.20	2.31	25.75	9.41	
1527	50	4.43	53.05	74.7	2.25	2.21	25.51	9.41	
1532	50	4.43	52.90	70.1	2.25	2.17	25.40	9.41	

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
2	250 mL	PLASTIC	B	[ ] Y [✓] N					[ ] Y [ ] N
2	250 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
1	125 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N

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

TRC

WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER: 416559.0007.0000.2.2	BY: JMB	DATE: 8-30-22	BY: DJS	DATE: 9/11/22

SAMPLE ID: MW-LF-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: 1020	DATE: 8-30-22	SAMPLE	TIME: 1100	DATE: 8-30-22

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 25.66 T/ PVC

DEPTH TO BOTTOM: 32.40 T/ PVC

WELL VOLUME: ____ ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 1.1 ☐ LITERS ☑ GALLONS

COLOR: clear w/ iron oxides ODOR: none

TURBIDITY ☐ NONE ☒ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

PH: 3.88 SU CONDUCTIVITY: 163.77 umhos/cm

ORP: 146.4 mV DO: 0.50 mg/L

TURBIDITY: 0.75 NTU

☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 24.37°C OTHER: ____

COLOR: clear ODOR: none

FILTRATE (0.45 um) ☐ YES ☑ NO

FILTRATE COLOR: ____ FILTRATE ODOR: ____

QC SAMPLE: ☒ MS/MSD ☐ DUP- ____

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)
1023	125	3.77	225.54	148.6	0.87	6.36	26.00	25.72	INITIAL
1040		3.85	174.65	145.4	0.48	4.03	24.50	25.79	
1045		3.85	177.91	145.5	0.48	2.46	24.37	25.79	
1050		3.88	163.92	145.5	0.49	1.79	24.33	25.79	
1055		3.86	164.41	146.2	0.50	1.21	24.41	25.79	
1100		3.88	163.77	146.4	0.50	0.75	24.37	25.79	1.1
post 1125						0.57			

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
2	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
2	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

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

TRC WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: JMB	DATE: 8-30-22	BY: DJS	DATE: 9/1/22

SAMPLE ID: MW-LF-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: 0910	DATE: 8-30-22	SAMPLE	TIME: 0950	DATE: 8-30-22
PURGE METHOD:	☑ PUMP PERISTALTIC PUMP ☐ BAILER		PH: 4.03 SU	CONDUCTIVITY: 38.19 umhos/cm	
DEPTH TO WATER: 24.62 T/ PVC			ORP: 112.3 mV	DO: 2.66 mg/L	
DEPTH TO BOTTOM: 31.40 T/ PVC			TURBIDITY: 0.14 NTU		
WELL VOLUME: ☐ LITERS ☑ GALLONS			☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY		
VOLUME REMOVED: 0.6 ☐ LITERS ☑ GALLONS			TEMPERATURE: 24.72 °C	OTHER:	
COLOR: clear	ODOR: none		COLOR: clear	ODOR: none	
TURBIDITY ☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY			FILTRATE (0.45 um) ☐ YES ☑ NO		
			FILTRATE COLOR:	FILTRATE ODOR:	
DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER			QC SAMPLE: ☐ MS/MSD ☐ DUP-		
			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)
0914	125	3.90	39.19	101.1	2.40	0.56	24.38	24.74	INITIAL
0930	125	3.97	39.20	99.7	2.82	0.51	24.26	25.21	
0935	70	4.00	38.81	105.2	2.70	0.47	24.59	25.31	
0940	|	4.02	38.54	107.5	2.61	0.39	24.55	25.38	|
0945	|	4.02	38.30	110.3	2.64	0.22	24.53	25.40	|
0950	|	4.03	38.19	112.3	2.66	0.14	24.72	25.42	|
	~	~	~	~	~	~	~	~	~
post 1014	|	—	—	—	—	0.16	—	25.42	|
									0.6

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
2	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
2	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

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

WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER: 416559.0007.0000.2.2	BY: JMB	DATE: 8-29-22	BY: DJS	DATE: 9/1/22

SAMPLE ID: MW-LF-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: 1440	DATE: 8-29-22	SAMPLE	TIME: 1515	DATE: 8-29-22
PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER			PH: 4.13 SU	CONDUCTIVITY: 49.89 umhos/cm	
			ORP: 195.4 mV	DO: 4.63 mg/L	
DEPTH TO WATER: 24.41 T/ PVC			TURBIDITY: 2.15 NTU		
DEPTH TO BOTTOM: 31.25 T/ PVC			☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY		
WELL VOLUME: ☐ LITERS ☑ GALLONS			TEMPERATURE: 24.06 °C	OTHER:	
VOLUME REMOVED: 0.8 ☐ LITERS ☑ GALLONS			COLOR: clear	ODOR: none	
COLOR: sli hazy ODOR: none			FILTRATE (0.45 um) ☐ YES ☑ NO		
TURBIDITY			FILTRATE COLOR:	FILTRATE ODOR:	
☐ NONE ☒ SLIGHT ☐ MODERATE ☐ VERY			QC SAMPLE: ☐ MS/MSD	☐ DUP-	
DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER			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)
1443	115	4.08	46.05	189.05	4.00	13.5	28.00	24.45	INITIAL
1500		4.14	48.35	191.8	4.59	5.08	24.55	24.45	
1505		4.15	49.38	192.4	4.61	3.57	24.37	24.45	
1510		4.15	49.90	193.3	4.62	2.35	24.18	24.45	
1515		4.13	49.89	195.4	4.63	2.15	24.06	24.45	0.8
1523						1.30		24.45	

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	
2	250 mL	PLASTIC	B	☐ Y	☑ N					☐ Y	☐ N
2	250 mL	PLASTIC	A	☐ Y	☑ N					☐ Y	☐ N
1	125 mL	PLASTIC	A	☐ Y	☑ N					☐ Y	☐ N
				☐ Y	☐ N					☐ Y	☐ N
				☐ Y	☐ N					☐ Y	☐ N

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

WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: JMB	DATE: 8-29-22	BY: DJS	DATE: 9/1/22

SAMPLE ID: **MW-LF-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: 1342	DATE: 8-29-22	SAMPLE	TIME: 1420	DATE: 8-29-22
PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER _____			PH: 4.01 SU	CONDUCTIVITY: 76.91 umhos/cm	
			ORP: 191.6 mV	DO: 4.45 mg/L	
DEPTH TO WATER: 20.85 T/ PVC			TURBIDITY: 0.35 NTU		
DEPTH TO BOTTOM: 29.15 T/ PVC			☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY		
WELL VOLUME: _____ ☐ LITERS ☑ GALLONS			TEMPERATURE: 27.01 °C	OTHER: _____	
VOLUME REMOVED: _____ ☐ LITERS ☑ GALLONS			COLOR: clear	ODOR: none	
COLOR: clear ODOR: none			FILTRATE (0.45 um) ☐ YES ☑ NO		
TURBIDITY ☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY			FILTRATE COLOR: _____	FILTRATE ODOR: _____	
			QC SAMPLE: ☐ MS/MSD	☐ DUP- _____	
DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER			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)
1344	125	3.91	72.56	185.9	4.19	0.92	30.29	20.88	INITIAL
1400		3.99	76.52	187.2	4.37	0.57	26.89	20.88	
1405		4.00	76.65	188.8	4.36	0.46	26.55	20.88	
1410		4.00	76.61	189.5	4.39	0.34	26.78	20.88	
1415		4.01	76.32	190.8	4.31	0.36	26.81	20.88	
1420		4.01	76.91	191.6	4.45	0.35	27.01	20.88	1.1
1432						0.32			

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
2	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
2	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N
				☐ Y ☐ N					☐ Y ☐ N

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

WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: JMB	DATE: 8-29-22	BY: DJS	DATE: 9/1/22

SAMPLE ID: MW-LF-06 WELL DIAMETER: ☑ 2" ☐ 4" ☐ 6" ☑ OTHER

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

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

PURGING	TIME: 1153	DATE: 8-29-22	SAMPLE	TIME: 1255	DATE: 8-29-22

PURGE METHOD: ☑ PUMP PERISTALTIC PUMP ☐ BAILER

DEPTH TO WATER: 20.41 T/ PVC

DEPTH TO BOTTOM: 28.20 T/ PVC

WELL VOLUME: ☐ LITERS ☑ GALLONS

VOLUME REMOVED: 2.9 ☐ LITERS ☑ GALLONS

COLOR: hazy ODOR: none

TURBIDITY ☐ NONE ☒ SLIGHT ☐ MODERATE ☐ VERY

DISPOSAL METHOD: ☐ GROUND ☐ DRUM ☑ OTHER

PH: 4.01 SU CONDUCTIVITY: 60.75 umhos/cm

ORP: 161.9 mV DO: 4.10 mg/L

TURBIDITY: 0.57 NTU

☒ NONE ☐ SLIGHT ☐ MODERATE ☐ VERY

TEMPERATURE: 26.42 °C OTHER:

COLOR: clear ODOR: none

FILTRATE (0.45 um) ☐ YES ☑ NO

FILTRATE COLOR: FILTRATE ODOR:

QC SAMPLE: ☐ MS/MSD ☒ DUP- COP-LF-22302

COMMENTS: FBLK-COP-LF-22302 collected @ 1320

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)
1150	160	4.16	63.54	111.7	5.14	14.0	28.91	20.42	INITIAL
1210		3.98	61.04	110.6	4.33	7.07	26.23	20.42	
1215		3.98	61.02	116.5	4.26	3.55	26.23	20.42	
1220		4.04	61.11	121.0	4.21	2.72	25.98	20.42	
1225		3.96	60.85	131.0	4.18	1.54	26.05	20.42	
1230		4.03	61.08	133.9	4.17	1.31	26.25	20.42	
1235		4.00	60.87	142.9	4.13	1.08	26.30	20.42	
1240		4.02	60.83	143.8	4.12	0.82	26.20	20.42	
1245		3.99	60.93	153.9	4.11	0.74	26.23	20.42	
1250		4.02	60.92	157.1	4.08	0.61	26.28	20.42	

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
2	250 mL	PLASTIC	B	☐ Y ☑ N					☐ Y ☐ N
2	250 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
1	125 mL	PLASTIC	A	☐ Y ☑ N					☐ Y ☐ N
				☐ 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:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.3.2	BY: JY / JB	DATE: 8-29-22	BY: DJS	DATE: 9/1/22

SAMPLE ID: MW-LF-06

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 (GAL OR L)
1255	160	4.01	60.75	161.9	4.10	0.57	26.42	20.42	1
1317	"	"	"	"	"	0.43	"	"	2.9

SIGNATURE: _____ DATE SIGNED: _____

TRC WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: JAY	DATE: 8/29/22	BY: DJS	DATE: 9/1/22

SAMPLE ID: MW-BG-06 | WELL DIAMETER: [X] 2" [ ] 4" [ ] 6" [✓] OTHER

WELL MATERIAL: [X] PVC [ ] SS [ ] IRON [ ] GALVANIZED STEEL [ ] OTHER

SAMPLE TYPE: [X] GW [ ] WW [ ] SW [ ] DI [ ] LEACHATE [ ] OTHER

PURGING	TIME: 1210	DATE: 8/29/22	SAMPLE	TIME: 1247	DATE: 8/29/22
PURGE METHOD:	[X] PUMP PERISTALTIC PUMP		PH: 4.23 SU	CONDUCTIVITY: 183.56	umhos/cm
	[ ] BAILER		ORP: 80.1 mV	DO: 6.26	mg/L
DEPTH TO WATER:	16.72 T/ PVC		TURBIDITY: 1.95 NTU		
DEPTH TO BOTTOM:	~~30.30~~ T/ PVC 30.33		[X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY		
WELL VOLUME:	[ ] LITERS [✓] GALLONS		TEMPERATURE: 21.18 °C	OTHER:	
VOLUME REMOVED:	1.2 [ ] LITERS [X] GALLONS		COLOR: clear	ODOR: none	
COLOR:	clear ODOR: none		FILTRATE (0.45 um) [ ] YES	[X] NO	
TURBIDITY			FILTRATE COLOR:	FILTRATE ODOR:	
[X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY			QC SAMPLE: [ ] MS/MSD	[ ] DUP-	
DISPOSAL METHOD:	[ ] GROUND [ ] DRUM [✓] OTHER		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)
1212	100	4.13	176.80	80.9	5.84	1.95	23.49	16.72	INITIAL
1217	125	4.15	181.65	78.6	6.12	1.88	21.80	16.73	
1222	125	4.19	184.22	78.4	6.28	2.23	21.22	16.74	
1227	125	4.21	184.36	78.0	6.27	2.34	21.29	16.74	
1232	125	4.22	182.45	77.7	6.10	2.51	21.33	16.74	
1237	125	4.23	184.89	79.2	6.28	2.30	21.21	16.74	
1242	125	4.24	184.10	79.2	6.26	1.99	21.20	16.74	
1247	~~1247~~ 125	4.23	183.56	80.1	6.26	1.95	21.18	16.74	
1300	125	—	—	—	—	1.51	—	16.74	Post

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
2	250 mL	PLASTIC	B	[ ] Y [✓] N					[ ] Y [ ] N
2	250 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
1	125 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N

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

REVISED 06/2011

TRC WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: JAY	DATE: 8/29/22	BY: DJS	DATE: 9/1/22

SAMPLE ID: MW-BG-16 | WELL DIAMETER: [X] 2" [ ] 4" [ ] 6" [✓] OTHER

WELL MATERIAL: [X] PVC [ ] SS [ ] IRON [ ] GALVANIZED STEEL [ ] OTHER

SAMPLE TYPE: [X] GW [ ] WW [ ] SW [ ] DI [ ] LEACHATE [ ] OTHER

PURGING	TIME: 1318	DATE: 8/29/22	SAMPLE	TIME: 1402	DATE: 8/29/22
PURGE METHOD:	[X] PUMP PERISTALTIC PUMP		PH: 4.66 SU	CONDUCTIVITY: 41.46 umhos/cm	
	[ ] BAILER		ORP: 91.3 mV	DO: 6.91 mg/L	
DEPTH TO WATER:	12.30 T/ PVC		TURBIDITY: 2.05 NTU		
DEPTH TO BOTTOM:	~~29.25~~ T/ PVC 29.28		[X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY		
WELL VOLUME:	____ [ ] LITERS [✓] GALLONS		TEMPERATURE: 21.48 °C	OTHER:	
VOLUME REMOVED:	1.10 [ ] LITERS [X] GALLONS		COLOR: clear	ODOR: none	
COLOR:	Clear ODOR: none		FILTRATE (0.45 um) [ ] YES	[X] NO	
TURBIDITY			FILTRATE COLOR:	FILTRATE ODOR:	
[X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY			QC SAMPLE: [ ] MS/MSD	[ ] DUP-	
DISPOSAL METHOD: [ ] GROUND [ ] DRUM [X] OTHER			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)
1322	100	4.61	38.95	84.8	6.45	1.77	23.30	12.33	INITIAL
1327	125	4.62	40.09	87.9	6.69	1.59	22.04	12.33	
1332	125	4.62	40.44	89.8	6.71	1.46	21.83	12.33	
1337	125	4.63	40.63	89.1	6.85	2.65	21.51	12.33	
1342	125	4.63	40.75	89.7	6.82	2.31	21.46	12.33	
1347	125	4.65	41.01	90.5	6.86	1.96	21.51	12.33	
1352	125	4.65	41.23	90.5	6.88	1.89	21.56	12.33	
1357	125	4.66	41.45	91.6	6.92	1.97	21.54	12.33	
1402	125	4.66	41.46	91.3	6.91	2.05	21.48	12.33	
1417	125	—	—	—	—	1.53	—	12.33	Post

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
2	250 mL	PLASTIC	B	[ ] Y [✓] N					[ ] Y [ ] N
2	250 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
1	125 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N

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

REVISED 06/2011

TRC

WATER SAMPLE LOG

PROJECT NAME:	Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER:	416559.0007.0000.2.2	BY: JAY	DATE: 8/30/22	BY: DJS	DATE: 9/11/22

SAMPLE ID: AS-LF-01 | WELL DIAMETER: [X] 2" [ ] 4" [ ] 6" [✓] OTHER _____

WELL MATERIAL: [X] PVC [ ] SS [ ] IRON [ ] GALVANIZED STEEL [ ] OTHER _____

SAMPLE TYPE: [X] GW [ ] WW [ ] SW [ ] DI [ ] LEACHATE [ ] OTHER _____

PURGING	TIME: 904	DATE: 8/30/22	SAMPLE	TIME: 0942	DATE: 8/30/22
PURGE METHOD:	[X] PUMP PERISTALTIC PUMP		PH: 4.30 SU	CONDUCTIVITY: 57.68 umhos/cm	
	[ ] BAILER _____		ORP: 73.4 mV	DO: 4.06 mg/L	
DEPTH TO WATER: 10.21 T/ PVC			TURBIDITY: 1.58 NTU		
DEPTH TO BOTTOM: ~~22.44~~ T/ PVC 22.45			[X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY		
WELL VOLUME: _____ [ ] LITERS [✓] GALLONS			TEMPERATURE: 25.51 °C	OTHER: _____	
VOLUME REMOVED: 0.8 [ ] LITERS [X] GALLONS			COLOR: clear	ODOR: None	
COLOR: clear ODOR: None			FILTRATE (0.45 um) [ ] YES [X] NO		
TURBIDITY			FILTRATE COLOR: _____	FILTRATE ODOR: _____	
[X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY			QC SAMPLE: [ ] MS/MSD [ ] DUP- _____		
DISPOSAL METHOD: [ ] GROUND [ ] DRUM [X] OTHER			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)
0907	75	4.88	60.98	105.3	5.48	2.37	23.93	10.30	INITIAL
0912	75	4.82	55.55	99.9	4.43	2.54	25.30	10.30	
0917	75	4.53	51.59	89.2	4.24	2.30	25.61	10.30	
0922	75	4.37	56.33	80.3	4.04	1.83	25.48	10.30	
0927	75	4.30	57.66	77.9	4.08	1.88	25.51	10.30	
0932	75	4.31	57.74	74.9	4.05	1.71	25.59	10.30	
0937	75	4.31	57.55	73.9	4.07	1.64	25.49	10.30	
0942	75	4.30	57.68	73.4	4.06	1.58	25.51	10.30	
0957	75	—	—	—	—	1.47	—	10.30	Post

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
2	250 mL	PLASTIC	B	[ ] Y [✓] N					[ ] Y [ ] N
2	250 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
1	125 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N

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

REVISED 06/2011

TRC WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER: 416559.0007.0000.2.2	BY: JAH	DATE: 8/30/22	BY: DJS	DATE: 9/1/22

SAMPLE ID: AS-LF-02 WELL DIAMETER: [X] 2" [ ] 4" [ ] 6" [✓] OTHER

WELL MATERIAL: [X] PVC [ ] SS [ ] IRON [ ] GALVANIZED STEEL [ ] OTHER

SAMPLE TYPE: [X] GW [ ] WW [ ] SW [ ] DI [ ] LEACHATE [ ] OTHER

PURGING	TIME: 1004	DATE: 8-30-22	SAMPLE	TIME: 1047	DATE: 8/30/22
PURGE METHOD: [X] PUMP PERISTALTIC PUMP [ ] BAILER			PH: 4.41 SU	CONDUCTIVITY: 82.10 umhos/cm	
			ORP: 91.9 mV	DO: 3.29 mg/L	
DEPTH TO WATER: 9.78 T/ PVC			TURBIDITY: 2.06 NTU		
DEPTH TO BOTTOM: 22.65 T/ PVC			[X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY		
WELL VOLUME: [ ] LITERS [✓] GALLONS			TEMPERATURE: 25.29 °C	OTHER:	
VOLUME REMOVED: 0.8 [ ] LITERS [X] GALLONS			COLOR: clear	ODOR: None	
COLOR: clear ODOR: None			FILTRATE (0.45 um) [ ] YES [X] NO		
TURBIDITY [X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY			FILTRATE COLOR:	FILTRATE ODOR:	
			QC SAMPLE: [ ] MS/MSD [ ] DUP-		
DISPOSAL METHOD: [ ] GROUND [ ] DRUM [X] OTHER			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)
1012	75	4.39	86.21	89.4	3.95	2.64	25.93	9.82	INITIAL
1022	75	4.40	83.86	91.1	3.30	2.21	25.04	9.83	
1027	75	4.40	82.76	90.5	3.28	1.81	25.06	9.83	
1032	75	4.39	82.66	91.4	3.29	1.94	26.06	9.83	
1037	75	4.40	82.60	91.8	3.28	2.01	25.30	9.83	
1042	75	4.41	81.98	91.7	3.30	2.14	25.33	9.83	
1047	75	4.41	82.10	91.9	3.29	2.06	25.29	9.83	
1103	75	—	—	—	—	1.93	—	9.83	Post

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
2	250 mL	PLASTIC	B	[ ] Y [✓] N					[ ] Y [ ] N
2	250 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
1	125 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N
				[ ] Y [ ] N					[ ] Y [ ] N

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

TRC WATER SAMPLE LOG

PROJECT NAME: Dominion - Cope Station	PREPARED		CHECKED	
PROJECT NUMBER: 416559.0007.0000.2.2	BY: JAH	DATE: 8/30/22	BY: DJS	DATE: 9/1/22

SAMPLE ID: MW-40 WELL DIAMETER: [X] 2" [ ] 4" [ ] 6" [✓] OTHER

WELL MATERIAL: [X] PVC [ ] SS [ ] IRON [ ] GALVANIZED STEEL [ ] OTHER

SAMPLE TYPE: [X] GW [ ] WW [ ] SW [ ] DI [ ] LEACHATE [ ] OTHER

PURGING	TIME: 1109	DATE: 8/30/22	SAMPLE	TIME: 1152	DATE: 8/30/22
PURGE METHOD: [X] PUMP PERISTALTIC PUMP / [ ] BAILER			PH: 4.01 SU	CONDUCTIVITY: 480.97 umhos/cm	
			ORP: 111.7 mV	DO: 0.17 mg/L	
DEPTH TO WATER: 10.64 T/ PVC			TURBIDITY: 1.84 NTU		
DEPTH TO BOTTOM: 28.14 T/ PVC			[X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY		
WELL VOLUME: [ ] LITERS [✓] GALLONS			TEMPERATURE: 24.44 °C	OTHER:	
VOLUME REMOVED: [ ] LITERS [✓] GALLONS			COLOR: clear	ODOR: none	
COLOR: clear ODOR: None			FILTRATE (0.45 um) [ ] YES [X] NO		
TURBIDITY [X] NONE [ ] SLIGHT [ ] MODERATE [ ] VERY			FILTRATE COLOR:	FILTRATE ODOR:	
			QC SAMPLE: [ ] MS/MSD [ ] DUP-		
DISPOSAL METHOD: [ ] GROUND [ ] DRUM [X] OTHER			COMMENTS: FBLK-COP-LF-22303 at 1200		

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)
1112	100	3.91	491.62	90.1	0.55	2.00	25.97	10.66	INITIAL
1117	100	3.90	496.66	90.4	0.30	1.85	25.37	10.67	
1122	100	3.91	~~492~~ 492.23	92.3	0.24	1.94	25.11	10.68	
1127	100	3.93	484.41	97.5	0.23	1.89	24.94	10.68	
1132	100	3.96	479.28	104.0	0.18	1.94	26.08	10.68	
1137	100	3.98	477.02	107.3	0.17	1.98	25.11	10.68	
1142	100	3.99	479.90	109.4	0.17	2.03	24.65	10.68	
1147	100	4.00	482.88	111.7	0.17	1.86	24.53	10.68	
1152	100	4.01	480.97	111.7	0.17	1.84	24.44	10.68	
1209	100	—	—	—	—	1.72	—	10.68	Post

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
3	250 mL	PLASTIC	B	[ ] Y [✓] N					[ ] Y [ ] N
2	250 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
1	125 mL	PLASTIC	A	[ ] Y [✓] N					[ ] Y [ ] N
				[ ] 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:	Dominion - Cope Station	MODEL: 909826	SAMPLER: (JY) JB
PROJECT NO.:	416559.0007.0000.2.2	SERIAL #: AquaTroll 400	DATE: 8/29/22

PH CALIBRATION CHECK AK

pH 7 (LOT #): 21380102 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): 20080056 (EXP. DATE): 4/23 ~~PRE-CAL.~~ Post READING / STANDARD	CAL. RANGE	TIME
6.67 / 7.00	7.00 / 7.00	☒ WITHIN RANGE	1118
9.82 / 10.00	9.98 / 10.00	☒ WITHIN RANGE	1121
4.26 / 4.00	3.99 / 4.00	☒ WITHIN RANGE	1125
/	/	☐ WITHIN RANGE	

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): A/C (EXP. DATE): PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4452.3 / 4490	27.44	☒ WITHIN RANGE	1126
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21140143 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
219.0 / 228	27.62	☐ WITHIN RANGE	
227.9 / 228	27.65	☒ WITHIN RANGE	1129
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
BARO: 761.03 mmHg Temp: 27.25 °C Actual: 8.00 mg/L Calc: 7.9 mg/L	☒ WITHIN RANGE	1115
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): 21380139 (10) (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	(LOT #): 21320048 (1.0) (EXP. DATE): 2/23 POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.02 / 0.00	/	☒ WITHIN RANGE	1133
1.14 / 1.00	/	☒ WITHIN RANGE	1134
9.92 / 10.00	/	☒ WITHIN RANGE	1134
/	/	☐ 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
☐ _____	

NOTES

10 NTU Lot# 21400981 Exp: 4/23

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS

SIGNED _____ DATE 8/31/22

CHECKED BY _____ DATE 9/1/22

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Dominion - Cope Station	MODEL: Aqua Troll 400	SAMPLER: JY / JB
PROJECT NO.:	416559.0007.0000.2.2	SERIAL #: 851425	DATE: 8-29-2022

PH CALIBRATION CHECK (A)(C)

pH 7 (LOT #): 21380192 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): 20080086 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
6.61 / 7.00	9.66 / 10.00	☐ WITHIN RANGE	1114
/	4.39 / 4.00	☐ WITHIN RANGE	1121
6.98 / 7.00	9.96 / 10.00	☒ WITHIN RANGE	1119
/	4.01 / 4.00	☒ WITHIN RANGE	1122

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): A/C (EXP. DATE): PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4464 / 4490	27.98	☐ WITHIN RANGE	1124
4495 / 4490	28.27	☒ WITHIN RANGE	1127
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21140143 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
226 / 228	28.82	☐ WITHIN RANGE	1129
227.8 / 228	28.85	☒ WITHIN RANGE	1130
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Baro: 760.25 mm Hg Temp: 29.50°C Act: 7.67 mg/L Calc: 7.6 mg/L	☒ WITHIN RANGE	1138
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): 21380129 (10) (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	(LOT #): 21390048 (1) (EXP. DATE): 2/23 POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.01 / 0.00	0.01 / 0.00	☒ WITHIN RANGE	1132
1.12 / 1.00	0.98 / 1.00	☒ WITHIN RANGE	1134
8.86 / 10.00	10.00 / 10.00	☐ WITHIN RANGE	1136
/	/	☐ 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	
☐	_____		

NOTES

10 NTU Lot# 21400081 Exp: 4/23

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS

Jacob Bradley — SIGNED — 8-31-2022 — DATE

CHECKED BY — 9/1/22 — DATE

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Dominion - Cope Station	MODEL: AquaTroll 400	SAMPLER: JY / JB
PROJECT NO.:	416559.0007.0000.2.2	SERIAL #: 909826	DATE: 8/30/22

PH CALIBRATION CHECK A/C

pH 7 (LOT #): 2138010 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): 20080056 (EXP. DATE): 4/23 ~~PRE-CAL~~ Post READING / STANDARD	CAL. RANGE	TIME
7.03 / 7.00	/	☒ WITHIN RANGE	825
9.80 / 10.00	10.01 / 10.00	☒ WITHIN RANGE	828
4.25 / 4.00	4.00 / 4.00	☒ WITHIN RANGE	830
/	/	☐ WITHIN RANGE	

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): N/C (EXP. DATE): PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4448.9 / 4490	23.82	☐ WITHIN RANGE	
4494.9 / 4490	23.84	☒ WITHIN RANGE	832
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21140143 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
233.6 / 228	23.76	☐ WITHIN RANGE	
227.8 / 228	23.79	☒ WITHIN RANGE	835
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING ~~(mg/L)~~	CAL. RANGE	TIME
Baro: 759.56 mmHg Temp: 23.26 °C Actual: 8.55 mg/L Calc: 8.6 mg/L	☒ WITHIN RANGE	823
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	
	☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): 21380189 (20) (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	(LOT #): 21320048 (10) (EXP. DATE): 2/23 POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.00 / 0.00	/	☒ WITHIN RANGE	839
1.09 / 1.00	/	☒ WITHIN RANGE	840
9.91 / 10.00	/	☒ WITHIN RANGE	840
/	/	☐ 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	
☐	_____		

NOTES

10 NTU Lot# 21400081 Exp: 4/23

PROBLEMS ENCOUNTERED	CORRECTIVE ACTIONS

SIGNED — DATE: 8/31/22

CHECKED BY — DATE: 9/1/22

TRC

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME:	Dominion - Cope Station	MODEL: Aqua Troll 400	SAMPLER: JY / JB
PROJECT NO.:	416559.0007.0000.2.2	SERIAL #: 851425	DATE: 8-30-2022

PH CALIBRATION CHECK

A/C

pH 7 (LOT #): 21380102 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	pH 4 / 10 (LOT #): 20080056 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	CAL. RANGE	TIME
7.20 / 7.00	9.62 / 10.00	☐ WITHIN RANGE	0829
/	4.41 / 4.00	☐ WITHIN RANGE	0832
6.98 / 7.00	10.00 / 10.00	☒ WITHIN RANGE	0830
/	3.99 / 4.00	☒ WITHIN RANGE	0834

ORP CALIBRATION CHECK

CAL. READING (LOT #): 21140143 (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
231.4 / 228	24.76	☐ WITHIN RANGE	0839
228.7 / 228	24.78	☒ WITHIN RANGE	0841
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

TURBIDITY CALIBRATION CHECK

CALIBRATION READING (NTU) (LOT #): 21380129 (10) (EXP. DATE): 4/23 PRE-CAL. READING / STANDARD	(LOT #): 21320048 (1.0) (EXP. DATE): 2/23 POST-CAL. READING / STANDARD	CAL. RANGE	TIME
0.01 / 0.00	0.01 / 0.00	☒ WITHIN RANGE	0840
1.55 / 1.00	1.02 / 1.00	☒ WITHIN RANGE	0845
10.56 / 10.00	10.00 / 10.00	☒ WITHIN RANGE	0847
/	/	☐ WITHIN RANGE	

NOTES

10 NTU Lot #21400081 Exp: 4/23

SPECIFIC CONDUCTIVITY CALIBRATION CHECK

CAL. READING (LOT #): A/C (EXP. DATE): PRE-CAL. READING / STANDARD	TEMPERATURE (°CELSIUS)	CAL. RANGE	TIME
4364 / 4490	24.55	☐ WITHIN RANGE	0836
4484 / 4490	24.63	☒ WITHIN RANGE	0837
/		☐ WITHIN RANGE	
/		☐ WITHIN RANGE	

D.O. CALIBRATION CHECK

CALIBRATION READING (mg/L)	CAL. RANGE	TIME
Baro: 758.78 mm Hg Temp: 23.51°C Act: 8.50 Calc: 8.50	☒ WITHIN RANGE	0823
	☐ 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

Jacob Bradley — SIGNED — 8-31-2022 DATE

CHECKED BY — 9/1/22 DATE

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

September 12, 2022

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

Re: CCR Groundwater Monitoring - Level 3 Package
Work Order: 591443

Dear Kelly Hicks:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 30, 2022. 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,

Meredith Boddiford

Meredith Boddiford
Project Manager

Purchase Order: 50149867
Chain of Custody: 206609
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Dominion Energy (50149867)
SDG: 591443

September 12, 2022

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 August 30, 2022 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
591443001	MW-LF-01-2022Q3
591443002	MW-LF-02-2022Q3
591443003	MW-LF-03-2022Q3
591443004	MW-LF-04-2022Q3
591443005	MW-LF-05-2022Q3
591443006	FBLK-COP-LF-22302
591443007	MW-LF-06-2022Q3
591443008	MW-BG-06-2022Q3
591443009	MW-BG-16-2022Q3
591443010	DU-COP-LF-22302
591443011	AS-LF-01-2022Q3
591443012	AS-LF-02-2022Q3
591443013	MW-40-2022Q3
591443014	FBLK-COP-LF-22303

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 and Metals.

Meredith Boddiford

Meredith Boddiford
Project Manager

Chain of Custody and Supporting Documentation

Page 1 of 2
Project # 416559.0007.0000.2.2
GEL Quote #:
COC Number (1):
PO Number: PO 50149867

591443

GEL Laboratories LLC
gel.com Chemistry | Radiochemistry | Radiobioassay | Specialty Analytics

Chain of Custody and Analytical Request

GEL Work Order Number: 206609 **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: Cope Station Landfill CCR 2022Q3 Fax #
Address: Cope, South Carolina
Collected By: 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)	Radioactive (If yes, please supply isotopic info.)	(7) Known or possible Hazards	Total number of containers	TDS SM2540C	Cl, FL, SO4 EPA 300.0	Total Metals B, Ca EPA 200.8 (NI)								Comments (<-- Preservative Type (6))
MW-LF-01-2022Q3	08-29-22	1532	N	N	GW	N		3	X	X	X								Note: extra sample is required for sample specific QC
MW-LF-02-2022Q3 MS/MSD	08-30-22	1100	N	N	GW	N		6	X	X	X								
MW-LF-03-2022Q3	08-30-22	0950	N	N	GW	N		3	X	X	X								
MW-LF-04-2022Q3	08-29-22	1515	N	N	GW	N		3	X	X	X								
MW-LF-05-2022Q3	08-29-22	1420	N	N	GW	N		3	X	X	X								
~~FBLK-COP-LF-22301~~ FBLK-COP-LF-22302	08-29-22	1320	FB	N	AQ	N		3	X	X	X								see attached work
MW-LF-06-2022Q3	08-29-22	1255	N	N	GW	N		3	X	X	X								order for details
MW-BG-06-2022Q3	08-29-22	1247	N	N	GW	N		3	X	X	X								
MW-BG-16-2022Q3	08-29-22	1402	N	N	GW	N		3	X	X	X								
~~DU-COP-LF-22301~~ DU-COP-LF-22302	08-29-22	–	FD	N	GW	N		3	X	X	X								

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time		Received by (signed)	Date	Time
1	Jacob Bradley	8-30-22	1425	1	[signature]	8/30/22	1425
2				2	~~[signature]~~		
3				3			

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

Fax Results: [ ] Yes [X] No
Select Deliverable: [ ] C of A [ ] QC Summary [ ] level 1 [ ] Level 2 [X] 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.)*

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Project # 416559.0007.0000.2.2
GEL Quote #:
COC Number (1):
PO Number: PO 50149867

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SDG: 591443

GEL Laboratories LLC

gel.com | Chemistry | Radiochemistry | Radiobioassay | Specialty Analytics

Chain of Custody and Analytical Request

GEL Work Order Number: 206609 **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: Cope Station Landfill CCR 2022Q3 Fax #

Address: Cope, South Carolina

Collected By: 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	TDS SM2540C	Cl, FL, SO4 EPA 300.0	Total Metals B, Ca EPA 200.8	NI	<-- Preservative Type (6)	Comments
AS-LF-01-2022Q3	08-30-22	0942	N	N	GW	N		3	X	X	X			
AS-LF-02-2022Q3	08-30-22	1047	N	N	GW	N		3	X	X	X			
MW-40-2022Q3	08-30-22	1152	N	N	GW	N		3	X	X	X			
~~FBLK-COP-LF-22302~~ FBLK-COP-LF-22303	08-30-22	1205	FB	N	AQ	N		3	X	X	X			
														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	Jacob Bradley	8-30-22	1425	[signature]	8/30/22	1425
2						
3						

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

Fax Results: [ ] Yes [X] No

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

M.S

Client: DMNN	SDG/AR/COC/Work Order: 591437 / 591443 / 591445
Received By: SP	Date Received: 8-22-22
Enter one tracking number per line below.	IR temperature gun #: 22 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.
5741 2069 3633	Uncorrected Temp: 3.1 IR Correction Factor: +/- 0.0 Final Recorded Temp: 3.0 Within 0.0-6.0C? Y/N
5741 2069 3666	Uncorrected Temp: 2.6 IR Correction Factor: +/- 0.0 Final Recorded Temp: 2.5 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

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?		X	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?		X	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		X	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		X	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		X	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?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	X			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Sample containers intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
4	Samples requiring cold preservation were unpacked directly into cold storage?	X	X	pi 8/30/22	Uncorrected Temp: 4.4 Correction Factor: +/- 0.0 Final Recorded Temp: 4.5 Within 0.0-6.0C? Y/N NA Response = Samples are for radiochemistry testing only
5	Samples requiring chemical preservation at proper pH?	X			Sample ID's and Containers Affected: If Preservative added, Lot#:
6	Do any samples require Volatile Analysis?			X	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?	X			ID's and tests affected:
8	Sample ID's on COC match ID's on bottles?	X			ID's and containers affected:
9	Date & time on COC match date & time on bottles?	X			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?	X			Circle Applicable: No container count on COC Other (describe)
11	Are sample containers identifiable as GEL provided by use of GEL labels?	X			
12	COC form is properly signed in relinquished/received sections?	X			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials AM Date 8/31/22 Page 1 of 1

GL-CHL-SR-001A Rev 1

Laboratory Certifications

List of current GEL Certifications as of 12 September 2022

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	SC000122023−3
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	2019−165
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	SC000122021−36
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
Dominion Energy
SDG #: 591443

Product: Determination of Metals by ICP-MS
Analytical Method: EPA 200.8 SC_NPDES
Analytical Procedure: GL-MA-E-014 REV# 35
Analytical Batch: 2310684

Preparation Method: EPA 200.2
Preparation Procedure: GL-MA-E-016 REV# 18
Preparation Batch: 2310683

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

GEL Sample ID#	Client Sample Identification
591443001	MW-LF-01-2022Q3
591443002	MW-LF-02-2022Q3
591443003	MW-LF-03-2022Q3
591443004	MW-LF-04-2022Q3
591443005	MW-LF-05-2022Q3
591443006	FBLK-COP-LF-22302
591443007	MW-LF-06-2022Q3
591443008	MW-BG-06-2022Q3
591443009	MW-BG-16-2022Q3
591443010	DU-COP-LF-22302
591443011	AS-LF-01-2022Q3
591443012	AS-LF-02-2022Q3
591443013	MW-40-2022Q3
591443014	FBLK-COP-LF-22303
1205179563	Method Blank (MB)**ICP-MS**
1205179564	Laboratory Control Sample (LCS)
1205179567	591443002(MW-LF-02-2022Q3L) Serial Dilution (SD)
1205179570	591443013(MW-40-2022Q3L) Serial Dilution (SD)
1205179565	591443002(MW-LF-02-2022Q3D) Sample Duplicate (DUP)
1205179568	591443013(MW-40-2022Q3D) Sample Duplicate (DUP)
1205179566	591443002(MW-LF-02-2022Q3S) Matrix Spike (MS)
1205179569	591443013(MW-40-2022Q3S) 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.

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: 591443 GEL Work Order: 591443

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: Alan Stanley**

Date: 12 SEP 2022 **Title: Team Leader**

Sample Data Summary

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443001 **BASIS:** As Received **DATE COLLECTED** 29−AUG−22

CLIENT ID: MW−LF−01−2022Q3 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	11.2	ug/L	J	4.00	15.0	15.0	1	MS	PRB	09/11/22 10:28	220911−1	2310684
7440−70−2	Calcium	2040	ug/L		30.0	100	100	1	MS	PRB	09/11/22 10:28	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443002 **BASIS:** As Received **DATE COLLECTED** 30−AUG−22

CLIENT ID: MW−LF−02−2022Q3 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	16.4	ug/L		4.00	15.0	15.0	1	MS	PRB	09/11/22 10:31	220911−1	2310684
7440−70−2	Calcium	4870	ug/L		30.0	100	100	1	MS	PRB	09/11/22 10:31	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443003 **BASIS:** As Received **DATE COLLECTED** 30−AUG−22

CLIENT ID: MW−LF−03−2022Q3 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	7.62	ug/L	J	4.00	15.0	15.0	1	MS	PRB	09/11/22 10:55	220911−1	2310684
7440−70−2	Calcium	1220	ug/L		30.0	100	100	1	MS	PRB	09/11/22 10:55	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443004 **BASIS:** As Received **DATE COLLECTED** 29−AUG−22

CLIENT ID: MW−LF−04−2022Q3 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	9.88	ug/L	J	4.00	15.0	15.0	1	MS	PRB	09/11/22 10:58	220911−1	2310684
7440−70−2	Calcium	1730	ug/L		30.0	100	100	1	MS	PRB	09/11/22 10:58	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443005 **BASIS:** As Received **DATE COLLECTED** 29−AUG−22

CLIENT ID: MW−LF−05−2022Q3 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	10.2	ug/L	J	4.00	15.0	15.0	1	MS	PRB	09/11/22 11:01	220911−1	2310684
7440−70−2	Calcium	2680	ug/L		30.0	100	100	1	MS	PRB	09/11/22 11:01	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443006 **BASIS:** As Received **DATE COLLECTED** 29−AUG−22

CLIENT ID: FBLK−COP−LF−22302 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: AQ **%SOLIDS:** 0

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	09/11/22 11:05	220911−1	2310684
7440−70−2	Calcium	30.0	ug/L	U	30.0	100	100	1	MS	PRB	09/11/22 11:05	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443007 **BASIS:** As Received **DATE COLLECTED** 29−AUG−22

CLIENT ID: MW−LF−06−2022Q3 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	10.6	ug/L	J	4.00	15.0	15.0	1	MS	PRB	09/11/22 11:09	220911−1	2310684
7440−70−2	Calcium	2140	ug/L		30.0	100	100	1	MS	PRB	09/11/22 11:09	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443008 **BASIS:** As Received **DATE COLLECTED** 29−AUG−22

CLIENT ID: MW−BG−06−2022Q3 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	7.70	ug/L	J	4.00	15.0	15.0	1	MS	PRB	09/11/22 11:12	220911−1	2310684
7440−70−2	Calcium	9630	ug/L		30.0	100	100	1	MS	PRB	09/11/22 11:12	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443009 **BASIS:** As Received **DATE COLLECTED** 29−AUG−22

CLIENT ID: MW−BG−16−2022Q3 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	9.26	ug/L	J	4.00	15.0	15.0	1	MS	PRB	09/11/22 11:15	220911−1	2310684
7440−70−2	Calcium	1890	ug/L		30.0	100	100	1	MS	PRB	09/11/22 11:15	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443010 **BASIS:** As Received **DATE COLLECTED** 29−AUG−22

CLIENT ID: DU−COP−LF−22302 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	10.4	ug/L	J	4.00	15.0	15.0	1	MS	PRB	09/11/22 11:20	220911−1	2310684
7440−70−2	Calcium	2290	ug/L		30.0	100	100	1	MS	PRB	09/11/22 11:20	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443011 **BASIS:** As Received **DATE COLLECTED** 30−AUG−22

CLIENT ID: AS−LF−01−2022Q3 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	19.5	ug/L		4.00	15.0	15.0	1	MS	PRB	09/11/22 11:24	220911−1	2310684
7440−70−2	Calcium	1810	ug/L		30.0	100	100	1	MS	PRB	09/11/22 11:24	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443012 **BASIS:** As Received **DATE COLLECTED** 30−AUG−22

CLIENT ID: AS−LF−02−2022Q3 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	31.7	ug/L		4.00	15.0	15.0	1	MS	PRB	09/11/22 11:27	220911−1	2310684
7440−70−2	Calcium	3620	ug/L		30.0	100	100	1	MS	PRB	09/11/22 11:27	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443013 **BASIS:** As Received **DATE COLLECTED** 30−AUG−22

CLIENT ID: MW−40−2022Q3 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: GW **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−42−8	Boron	48.6	ug/L		4.00	15.0	15.0	1	MS	PRB	09/11/22 11:41	220911−1	2310684
7440−70−2	Calcium	30100	ug/L		30.0	100	100	1	MS	PRB	09/11/22 11:41	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 591443 **CONTRACT:** DMNN00102 **METHOD TYPE:** EPA

SAMPLE ID: 591443014 **BASIS:** As Received **DATE COLLECTED** 30−AUG−22

CLIENT ID: FBLK−COP−LF−22303 **LEVEL:** Low **DATE RECEIVED** 30−AUG−22

MATRIX: AQ **%SOLIDS:** 0

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	09/11/22 11:37	220911−1	2310684
7440−70−2	Calcium	30.0	ug/L	U	30.0	100	100	1	MS	PRB	09/11/22 11:37	220911−1	2310684

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2310684	2310683	EPA 200.2	50	mL	50	mL	08/31/22	EM2

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

Quality Control Summary

METALS
−2a−
Initial and Continuing Calibration Verification

SDG No: 591443

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	99.8	ug/L	100	ug/L	99.8	90.0 − 110.0	MS	11−SEP−22 09:47	220911−1
	Calcium	4950	ug/L	5000	ug/L	99.1	90.0 − 110.0	MS	11−SEP−22 09:47	220911−1
CCV01										
	Boron	97.6	ug/L	100	ug/L	97.6	90.0 − 110.0	MS	11−SEP−22 10:04	220911−1
	Calcium	5010	ug/L	5000	ug/L	100.1	90.0 − 110.0	MS	11−SEP−22 10:04	220911−1
CCV02										
	Boron	96.1	ug/L	100	ug/L	96.1	90.0 − 110.0	MS	11−SEP−22 10:14	220911−1
	Calcium	4930	ug/L	5000	ug/L	98.6	90.0 − 110.0	MS	11−SEP−22 10:14	220911−1
CCV03										
	Boron	94.2	ug/L	100	ug/L	94.2	90.0 − 110.0	MS	11−SEP−22 10:48	220911−1
	Calcium	4990	ug/L	5000	ug/L	99.8	90.0 − 110.0	MS	11−SEP−22 10:48	220911−1
CCV04										
	Boron	95.7	ug/L	100	ug/L	95.7	90.0 − 110.0	MS	11−SEP−22 11:30	220911−1
	Calcium	4960	ug/L	5000	ug/L	99.1	90.0 − 110.0	MS	11−SEP−22 11:30	220911−1
CCV05										
	Boron	94.2	ug/L	100	ug/L	94.2	90.0 − 110.0	MS	11−SEP−22 12:04	220911−1
	Calcium	4930	ug/L	5000	ug/L	98.7	90.0 − 110.0	MS	11−SEP−22 12:04	220911−1

***Analytical Methods:**

MS EPA 200.8 SC_NPDES

METALS
−2b−
CRDL Standard for ICP & ICPMS

SDG No: 591443

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	13.6	ug/L	15	ug/L	90.8	70.0 − 130.0	MS	11−SEP−22 09:54	220911−1
	Calcium	220	ug/L	200	ug/L	109.9	70.0 − 130.0	MS	11−SEP−22 09:54	220911−1
CRDL02										
	Boron	14	ug/L	15	ug/L	93.5	70.0 − 130.0	MS	11−SEP−22 12:07	220911−1
	Calcium	252	ug/L	200	ug/L	125.8	70.0 − 130.0	MS	11−SEP−22 12:07	220911−1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

Metals
−3a−
Initial and Continuing Calibration Blank Summary

SDG No.: 591443

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	11−SEP−22 09:51	220911−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	11−SEP−22 09:51	220911−1
CCB01										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	11−SEP−22 10:08	220911−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	11−SEP−22 10:08	220911−1
CCB02										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	11−SEP−22 10:18	220911−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	11−SEP−22 10:18	220911−1
CCB03										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	11−SEP−22 10:51	220911−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	11−SEP−22 10:51	220911−1
CCB04										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	11−SEP−22 11:34	220911−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	11−SEP−22 11:34	220911−1
CCB05										
	Boron	4.0	+/−7.5	U	4.0	15.0	LIQ	MS	11−SEP−22 12:11	220911−1
	Calcium	30.0	+/−50	U	30.0	100	LIQ	MS	11−SEP−22 12:11	220911−1

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−3b−
PREPARATION BLANK SUMMARY

SDG NO. 591443
Contract: DMNN00102
Matrix: GW

Sample ID	Analyte	Result	Units	Acceptance Window	Conc Qual	M*	MDL	RDL
1205179563								
	Boron	4.00	ug/L	+/−7.5	U	MS	4.00	15.0
	Calcium	30.0	ug/L	+/−50	U	MS	30.0	100

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−4−
Interference Check Sample

SDG No: 591443

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									
	Boron	2.46	ug/L					11−SEP−22 09:57	220911−1
	Calcium	96900	ug/L	100000	ug/L	96.9	80.0 − 120.0	11−SEP−22 09:57	220911−1
ICSAB01									
	Boron	19.1	ug/L	20	ug/L	95.5	80.0 − 120.0	11−SEP−22 10:01	220911−1
	Calcium	96500	ug/L	100000	ug/L	96.5	80.0 − 120.0	11−SEP−22 10:01	220911−1
ICSA02									
	Boron	1.88	ug/L					11−SEP−22 11:57	220911−1
	Calcium	97700	ug/L	100000	ug/L	97.7	80.0 − 120.0	11−SEP−22 11:57	220911−1
ICSAB02									
	Boron	19.7	ug/L	20	ug/L	98.3	80.0 − 120.0	11−SEP−22 12:01	220911−1
	Calcium	97000	ug/L	100000	ug/L	97	80.0 − 120.0	11−SEP−22 12:01	220911−1

METALS
−5a−

Matrix Spike Summary

SDG NO. 591443 **Client ID** MW−LF−02−2022Q3S

Contract: DMNN00102 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 591443002 **Spike ID:** 1205179566

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Boron	ug/L	75−125	112		16.4		100	95.2		MS
Calcium	ug/L	75−125	6890		4870		2000	101		MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−5a−

Matrix Spike Summary

SDG NO. 591443 **Client ID** MW−40−2022Q3S

Contract: DMNN00102 **Level:** Low

Matrix: GROUND WATER **% Solids:**

Sample ID: 591443013 **Spike ID:** 1205179569

Analyte	Units	Acceptance Limit	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M*
Boron	ug/L	75−125	145		48.6		100	96.1		MS
Calcium	ug/L		32900		30100		2000	138	N/A	MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

Metals
−6−
Duplicate Sample Summary

SDG No.: 591443 **Lab Code:** GEL

Contract: DMNN00102 **Client ID:** MW−LF−02−2022Q3D

Matrix: GROUND WATER **Level:** Low

Sample ID: 591443002 **Duplicate ID:** 1205179565 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Boron	ug/L	+/−30	16.4		16.9		2.97		MS
Calcium	ug/L	+/−20%	4870		4760		2.38		MS

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

Metals
−6−
Duplicate Sample Summary

SDG No.: 591443 **Lab Code:** GEL

Contract: DMNN00102 **Client ID:** MW−40−2022Q3D

Matrix: GROUND WATER **Level:** Low

Sample ID: 591443013 **Duplicate ID:** 1205179568 **Percent Solids for Dup:** N/A

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M*
Boron	ug/L	+/−30	48.6		50.9		4.66		MS
Calcium	ug/L	+/−20%	30100		31100		3.06		MS

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

METALS
−7−
Laboratory Control Sample Summary

SDG NO. 591443

Contract: DMNN00102

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

Sample ID	Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limit	M*
1205179564								
	Boron	ug/L	100	97.1		97.1	85−115	MS
	Calcium	ug/L	2000	2080		104	85−115	MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 591443 **Client ID** MW−LF−02−2022Q3L

Contract: DMNN00102

Matrix: LIQUID **Level:** Low

Sample ID: 591443002 **Serial Dilution ID:** 1205179567

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Boron	16.4		20	U	21.388			MS
Calcium	4870		4780		1.847			MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−9−
Serial Dilution Sample Summary

SDG NO. 591443 **Client ID** MW−40−2022Q3L

Contract: DMNN00102

Matrix: LIQUID **Level:** Low

Sample ID: 591443013 **Serial Dilution ID:** 1205179570

Analyte	Initial Value ug/L	C	Serial Value ug/L	C	% Difference	Qual	Acceptance Limit	M*
Boron	48.6		58.2	B	19.811			MS
Calcium	30100		29200		3.002		10	MS

***Analytical Methods:**

MS **EPA 200.8 SC_NPDES**

METALS
−13−
SAMPLE PREPARATION SUMMARY

SDG No: 591443 **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 2310683							
1205179563	MB for batch 2310683	MB	G	31−AUG−22	50mL	50mL	
1205179564	LCS for batch 2310683	LCS	G	31−AUG−22	50mL	50mL	
1205179566	MW−LF−02−2022Q3S	MS	G	31−AUG−22	50mL	50mL	
1205179569	MW−40−2022Q3S	MS	G	31−AUG−22	50mL	50mL	
1205179565	MW−LF−02−2022Q3D	DUP	G	31−AUG−22	50mL	50mL	
1205179568	MW−40−2022Q3D	DUP	G	31−AUG−22	50mL	50mL	
591443001	MW−LF−01−2022Q3	SAMPLE	G	31−AUG−22	50mL	50mL	
591443002	MW−LF−02−2022Q3	SAMPLE	G	31−AUG−22	50mL	50mL	
591443003	MW−LF−03−2022Q3	SAMPLE	G	31−AUG−22	50mL	50mL	
591443004	MW−LF−04−2022Q3	SAMPLE	G	31−AUG−22	50mL	50mL	
591443005	MW−LF−05−2022Q3	SAMPLE	G	31−AUG−22	50mL	50mL	
591443006	FBLK−COP−LF−22302	SAMPLE	G	31−AUG−22	50mL	50mL	
591443007	MW−LF−06−2022Q3	SAMPLE	G	31−AUG−22	50mL	50mL	
591443008	MW−BG−06−2022Q3	SAMPLE	G	31−AUG−22	50mL	50mL	
591443009	MW−BG−16−2022Q3	SAMPLE	G	31−AUG−22	50mL	50mL	
591443010	DU−COP−LF−22302	SAMPLE	G	31−AUG−22	50mL	50mL	
591443011	AS−LF−01−2022Q3	SAMPLE	G	31−AUG−22	50mL	50mL	
591443012	AS−LF−02−2022Q3	SAMPLE	G	31−AUG−22	50mL	50mL	
591443013	MW−40−2022Q3	SAMPLE	G	31−AUG−22	50mL	50mL	

EPA

METALS
−13−
SAMPLE PREPARATION SUMMARY

SDG No: 591443 **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
591443014	FBLK−COP−LF−22303	SAMPLE	G	31−AUG−22	50mL	50mL	

General Chem Analysis

Case Narrative

General Chemistry
Technical Case Narrative
Dominion Energy
SDG #: 591443

Product: **Ion Chromatography**
Analytical Method: EPA 300.0
Analytical Procedure: GL-GC-E-086 REV# 30
Analytical Batch: 2311042

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

GEL Sample ID#	Client Sample Identification
591443001	MW-LF-01-2022Q3
591443002	MW-LF-02-2022Q3
591443003	MW-LF-03-2022Q3
591443004	MW-LF-04-2022Q3
591443005	MW-LF-05-2022Q3
591443006	FBLK-COP-LF-22302
591443007	MW-LF-06-2022Q3
591443008	MW-BG-06-2022Q3
591443009	MW-BG-16-2022Q3
591443010	DU-COP-LF-22302
591443011	AS-LF-01-2022Q3
591443012	AS-LF-02-2022Q3
591443013	MW-40-2022Q3
591443014	FBLK-COP-LF-22303
1205180228	Method Blank (MB)
1205180229	Laboratory Control Sample (LCS)
1205180230	591443002(MW-LF-02-2022Q3) Sample Duplicate (DUP)
1205180231	591443002(MW-LF-02-2022Q3) Post Spike (PS)
1205180232	591443013(MW-40-2022Q3) Sample Duplicate (DUP)
1205180233	591443013(MW-40-2022Q3) 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	1205180231 (MW-LF-02-2022Q3PS)	116* (90%-110%)
	1205180233 (MW-40-2022Q3PS)	111* (90%-110%)

Technical Information

Sample Dilutions

The following samples 1205180230 (MW-LF-02-2022Q3DUP), 1205180231 (MW-LF-02-2022Q3PS), 1205180232 (MW-40-2022Q3DUP), 1205180233 (MW-40-2022Q3PS), 591443002 (MW-LF-02-2022Q3), 591443008 (MW-BG-06-2022Q3) and 591443013 (MW-40-2022Q3) were diluted because target analyte concentrations exceeded the calibration range. 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	591443		
	002	008	013
Chloride	5X	5X	10X
Sulfate	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.

Product: **Solids, Total Dissolved**
Analytical Method: SM 2540C
Analytical Procedure: GL-GC-E-001 REV# 19
Analytical Batch: 2311293

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

GEL Sample ID#	Client Sample Identification
591443001	MW-LF-01-2022Q3
591443002	MW-LF-02-2022Q3
591443003	MW-LF-03-2022Q3
591443004	MW-LF-04-2022Q3
591443005	MW-LF-05-2022Q3
591443006	FBLK-COP-LF-22302
591443007	MW-LF-06-2022Q3
591443008	MW-BG-06-2022Q3
591443009	MW-BG-16-2022Q3
591443010	DU-COP-LF-22302
591443011	AS-LF-01-2022Q3
591443012	AS-LF-02-2022Q3
591443013	MW-40-2022Q3
591443014	FBLK-COP-LF-22303
1205180738	Method Blank (MB)
1205180739	Laboratory Control Sample (LCS)
1205180740	591366001(NonSDG) Sample Duplicate (DUP)
1205180741	591443002(MW-LF-02-2022Q3) 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: 591443 GEL Work Order: 591443

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: 09 SEP 2022 **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: September 9, 2022

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-LF-01-2022Q3	Project:	DMNN00102
Sample ID:	591443001	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	29-AUG-22 15:32		
Receive Date:	30-AUG-22		
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		9.52	0.0670	0.200	mg/L		1	JLD1	08/31/22	1732	2311042	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate	J	0.371	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	09/01/22	1553	2311293	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: September 9, 2022

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-LF-02-2022Q3	Project:	DMNN00102
Sample ID:	591443002	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	30-AUG-22 11:00		
Receive Date:	30-AUG-22		
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		0.124	0.0330	0.100	mg/L		1	JLD1	08/31/22	1802	2311042	1
Sulfate		7.34	0.133	0.400	mg/L		1					
Chloride		30.1	0.335	1.00	mg/L		5	JLD1	09/01/22	0529	2311042	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		55.0	2.38	10.0	mg/L			CH6	09/01/22	1553	2311293	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: September 9, 2022

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-LF-03-2022Q3	Project:	DMNN00102
Sample ID:	591443003	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	30-AUG-22 09:50		
Receive Date:	30-AUG-22		
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		3.34	0.0670	0.200	mg/L		1	JLD1	08/31/22	1931	2311042	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		0.491	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	09/01/22	1553	2311293	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: September 9, 2022

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-LF-04-2022Q3	Project:	DMNN00102
Sample ID:	591443004	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	29-AUG-22 15:15		
Receive Date:	30-AUG-22		
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		4.87	0.0670	0.200	mg/L		1	JLD1	08/31/22	2001	2311042	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		0.682	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		14.0	2.38	10.0	mg/L			CH6	09/01/22	1553	2311293	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: September 9, 2022

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-LF-05-2022Q3	Project:	DMNN00102
Sample ID:	591443005	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	29-AUG-22 14:20		
Receive Date:	30-AUG-22		
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		9.74	0.0670	0.200	mg/L		1	JLD1	08/31/22	2031	2311042	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		0.656	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		32.0	2.38	10.0	mg/L			CH6	09/01/22	1553	2311293	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: September 9, 2022

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-COP-LF-22302	Project:	DMNN00102
Sample ID:	591443006	Client ID:	DMNN001
Matrix:	AQ		
Collect Date:	29-AUG-22 13:20		
Receive Date:	30-AUG-22		
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		0.218	0.0670	0.200	mg/L		1	JLD1	08/31/22	2231	2311042	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	09/01/22	1553	2311293	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

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Certificate of Analysis

Report Date: September 9, 2022

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-LF-06-2022Q3	Project:	DMNN00102
Sample ID:	591443007	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	29-AUG-22 12:55		
Receive Date:	30-AUG-22		
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		8.62	0.0670	0.200	mg/L		1	JLD1	08/31/22	2301	2311042	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		0.592	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		17.0	2.38	10.0	mg/L			CH6	09/01/22	1553	2311293	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

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Certificate of Analysis

Report Date: September 9, 2022

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-BG-06-2022Q3	Project:	DMNN00102
Sample ID:	591443008	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	29-AUG-22 12:47		
Receive Date:	30-AUG-22		
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	U	ND	0.0330	0.100	mg/L		1	JLD1	08/31/22	2331	2311042	1
Sulfate	J	0.284	0.133	0.400	mg/L		1					
Chloride		18.0	0.335	1.00	mg/L		5	JLD1	09/01/22	1037	2311042	2
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		87.0	2.38	10.0	mg/L			CH6	09/01/22	1553	2311293	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: September 9, 2022

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-BG-16-2022Q3	Project:	DMNN00102
Sample ID:	591443009	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	29-AUG-22 14:02		
Receive Date:	30-AUG-22		
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		3.09	0.0670	0.200	mg/L		1	JLD1	09/01/22	0000	2311042	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		2.26	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		10.0	2.38	10.0	mg/L			CH6	09/01/22	1553	2311293	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

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Certificate of Analysis

Report Date: September 9, 2022

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-COP-LF-22302	Project:	DMNN00102
Sample ID:	591443010	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	29-AUG-22 12:00		
Receive Date:	30-AUG-22		
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		8.58	0.0670	0.200	mg/L		1	JLD1	09/01/22	0030	2311042	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		0.571	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		14.0	2.38	10.0	mg/L			CH6	09/01/22	1553	2311293	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

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Certificate of Analysis

Report Date: September 9, 2022

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:	AS-LF-01-2022Q3	Project:	DMNN00102
Sample ID:	591443011	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	30-AUG-22 09:42		
Receive Date:	30-AUG-22		
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		2.62	0.0670	0.200	mg/L		1	JLD1	09/01/22	0100	2311042	1
Fluoride	U	ND	0.0330	0.100	mg/L		1					
Sulfate		12.0	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids	J	9.00	2.38	10.0	mg/L			CH6	09/01/22	1553	2311293	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

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Certificate of Analysis

Report Date: September 9, 2022

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:	AS-LF-02-2022Q3	Project:	DMNN00102
Sample ID:	591443012	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	30-AUG-22 10:47		
Receive Date:	30-AUG-22		
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		5.34	0.0670	0.200	mg/L		1	JLD1	09/01/22	0130	2311042	1
Fluoride	J	0.0375	0.0330	0.100	mg/L		1					
Sulfate		16.4	0.133	0.400	mg/L		1					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		36.0	2.38	10.0	mg/L			CH6	09/01/22	1553	2311293	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: September 9, 2022

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-40-2022Q3	Project:	DMNN00102
Sample ID:	591443013	Client ID:	DMNN001
Matrix:	GW		
Collect Date:	30-AUG-22 11:52		
Receive Date:	30-AUG-22		
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		0.589	0.0330	0.100	mg/L		1	JLD1	09/01/22	0200	2311042	1
Chloride		45.9	0.670	2.00	mg/L		10	JLD1	09/01/22	1106	2311042	2
Sulfate		139	1.33	4.00	mg/L		10					
Solids Analysis												
SM2540C Dissolved Solids "As Received"												
Total Dissolved Solids		263	2.38	10.0	mg/L			CH6	09/01/22	1553	2311293	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: September 9, 2022

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-COP-LF-22303	Project:	DMNN00102
Sample ID:	591443014	Client ID:	DMNN001
Matrix:	AQ		
Collect Date:	30-AUG-22 12:00		
Receive Date:	30-AUG-22		
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	0.148	0.0670	0.200	mg/L		1	JLD1	09/01/22	0459	2311042	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	09/01/22	1553	2311293	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: September 9, 2022

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

Contact: **Kelly Hicks**

Workorder: **591443**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography										
Batch 2311042										
QC1205180230 591443002 DUP										
Chloride		30.1		30.1	mg/L	0.0449		(0%-20%)	JLD1	09/01/22 05:59
Fluoride		0.124		0.125	mg/L	0.723 ^		(+/-.2)		08/31/22 18:32
Sulfate		7.34		7.47	mg/L	1.65		(0%-20%)		
QC1205180232 591443013 DUP										
Chloride		45.9		45.8	mg/L	0.244		(0%-20%)		09/01/22 11:36
Fluoride		0.589		0.588	mg/L	0.153		(0%-20%)		09/01/22 02:30
Sulfate		139		139	mg/L	0.425		(0%-20%)		09/01/22 11:36
QC1205180229 LCS										
Chloride	5.00			4.87	mg/L		97.3	(90%-110%)		08/31/22 17:02
Fluoride	2.50			2.38	mg/L		95.1	(90%-110%)		
Sulfate	10.0			10.1	mg/L		101	(90%-110%)		
QC1205180228 MB										
Chloride			U	ND	mg/L					08/31/22 16:32
Fluoride			U	ND	mg/L					
Sulfate			U	ND	mg/L					
QC1205180231 591443002 PS										
Chloride	5.00	6.02		11.8	mg/L		116*	(90%-110%)		09/01/22 06:29

QC Summary

Workorder: **591443**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography										
Batch 2311042										
Fluoride	2.50	0.124		2.80	mg/L		107	(90%-110%)	JLD1	08/31/22 19:02
Sulfate	10.0	7.34		16.4	mg/L		90.1	(90%-110%)		
QC1205180233 591443013 PS										
Chloride	5.00	4.59		10.1	mg/L		111*	(90%-110%)		09/01/22 12:06
Fluoride	2.50	0.589		3.29	mg/L		108	(90%-110%)		09/01/22 03:00
Sulfate	10.0	13.9		23.2	mg/L		92.9	(90%-110%)		09/01/22 12:06
Solids Analysis										
Batch 2311293										
QC1205180740 591366001 DUP										
Total Dissolved Solids		246		237	mg/L	3.73		(0%-5%)	CH6	09/01/22 15:53
QC1205180741 591443002 DUP										
Total Dissolved Solids		55.0		45.0	mg/L	20 ^		(+/-20)		09/01/22 15:53
QC1205180739 LCS										
Total Dissolved Solids	300			301	mg/L		100	(95%-105%)		09/01/22 15:53
QC1205180738 MB										
Total Dissolved Solids			U	ND	mg/L					09/01/22 15:53

Notes:

The Qualifiers in this report are defined as follows:

- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J See case narrative for an explanation

QC Summary

Workorder: **591443**

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

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

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 the 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.

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

Cope Power Station Groundwater Sampling
Samples Collected between: 8/24/2022 and 8/30/2022

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:

591443

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	Anayte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit
MW-LF-01-2022Q3	MW-LF-01	N	EPA 200.8	Boron	T	11.2	J	RL	4.00	15.0		ug/L
MW-LF-01-2022Q3	MW-LF-01	N	EPA 300.0	Sulfate	N	0.371	J	RL	0.133	0.400		mg/L
MW-LF-03-2022Q3	MW-LF-03	N	EPA 200.8	Boron	T	7.62	J	RL	4.00	15.0		ug/L
MW-LF-04-2022Q3	MW-LF-04	N	EPA 200.8	Boron	T	9.88	J	RL	4.00	15.0		ug/L
MW-LF-05-2022Q3	MW-LF-05	N	EPA 200.8	Boron	T	10.2	J	RL	4.00	15.0		ug/L
MW-LF-06-2022Q3	MW-LF-06	N	EPA 200.8	Boron	T	10.6	J	RL	4.00	15.0		ug/L
MW-BG-06-2022Q3	MW-06	N	EPA 200.8	Boron	T	7.70	J	RL	4.00	15.0		ug/L
MW-BG-06-2022Q3	MW-06	N	EPA 300.0	Sulfate	N	0.284	J	RL	0.133	0.400		mg/L
MW-BG-16-2022Q3	MW-BG-16	N	EPA 200.8	Boron	T	9.26	J	RL	4.00	15.0		ug/L
DU-COP-LF-22302	MW-LF-06	FD	EPA 200.8	Boron	T	10.4	J	RL	4.00	15.0		ug/L
AS-LF-01-2022Q3	MW-AS-01	N	SM 2540C	Total Dissolved Solids	N	9.00	J	RL	2.38	10.0		mg/L
AS-LF-02-2022Q3	MW-AS-02	N	EPA 300.0	Fluoride	N	0.0375	J	RL	0.0330	0.100		mg/L
FBLK-COP-LF-22303	Field Blank	FB	EPA 300.0	Chloride	N	0.148	J	RL	0.0670	0.200		mg/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: Cope Generating Station
SDG: 591443

Lab Sample ID	591443001
Sys Sample Code	MW-LF-01-2022Q3
Sample Name	MW-LF-01-2022Q3
Sample Date	8/29/2022 3:32:00 PM
Location	COP-MW-LF-01 / MW-LF-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	11.2	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2040				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	9.52				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	0.371	J	RL		0.133	0.133	0.400	Y	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	591443002
Sys Sample Code	MW-LF-02-2022Q3
Sample Name	MW-LF-02-2022Q3
Sample Date	8/30/2022 11:00:00 AM
Location	COP-MW-LF-02 / MW-LF-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	16.4				4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	4870				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.124				0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	7.34				0.133	0.133	0.400	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	30.1				0.335	0.335	1.00	Y	Yes	5	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	55.0				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	591443003
Sys Sample Code	MW-LF-03-2022Q3
Sample Name	MW-LF-03-2022Q3
Sample Date	8/30/2022 9:50:00 AM
Location	COP-MW-LF-03 / MW-LF-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	7.62	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	1220				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	3.34				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	0.491				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U			2.38	2.38	10.0	N	Yes	1	NA

Facility: Cope Generating Station
SDG: 591443

Lab Sample ID	591443004
Sys Sample Code	MW-LF-04-2022Q3
Sample Name	MW-LF-04-2022Q3
Sample Date	8/29/2022 3:15:00 PM
Location	COP-MW-LF-04 / MW-LF-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	9.88	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	1730				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	4.87				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	0.682				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	14.0				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	591443005
Sys Sample Code	MW-LF-05-2022Q3
Sample Name	MW-LF-05-2022Q3
Sample Date	8/29/2022 2:20:00 PM
Location	COP-MW-LF-05 / MW-LF-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	10.2	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2680				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	9.74				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	0.656				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	32.0				2.38	2.38	10.0	Y	Yes	1	NA

Facility: Cope Generating Station
SDG: 591443

Lab Sample ID	591443006
Sys Sample Code	FBLK-COP-LF-22302
Sample Name	FBLK-COP-LF-22302
Sample Date	8/29/2022 1:20:00 PM
Location	COP-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
EPA 300.0	Chloride	16887-00-6	N	mg/L	0.218				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
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U			2.38	2.38	10.0	N	Yes	1	NA

Lab Sample ID	591443007
Sys Sample Code	MW-LF-06-2022Q3
Sample Name	MW-LF-06-2022Q3
Sample Date	8/29/2022 12:55:00 PM
Location	COP-MW-LF-06 / MW-LF-06
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	10.6	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2140				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	8.62				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	0.592				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	17.0				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	591443008
Sys Sample Code	MW-BG-06-2022Q3
Sample Name	MW-BG-06-2022Q3
Sample Date	8/29/2022 12:47:00 PM
Location	COP-MW-06 / MW-06
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	7.70	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	9630				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	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	0.284	J	RL		0.133	0.133	0.400	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	18.0				0.335	0.335	1.00	Y	Yes	5	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	87.0				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	591443009
Sys Sample Code	MW-BG-16-2022Q3
Sample Name	MW-BG-16-2022Q3
Sample Date	8/29/2022 2:02:00 PM
Location	COP-MW-BG-16 / MW-BG-16
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	9.26	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	1890				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	3.09				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	2.26				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	10.0				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	591443010
Sys Sample Code	DU-COP-LF-22302
Sample Name	DU-COP-LF-22302
Sample Date	8/29/2022 12:00:00 AM
Location	COP-MW-LF-06 / MW-LF-06
Sample Type	FD
Matrix	GW
Parent Sample	MW-LF-06-2022Q3

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	10.4	J	RL		4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	2290				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	8.58				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	0.571				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	14.0				2.38	2.38	10.0	Y	Yes	1	NA

Lab Sample ID	591443011
Sys Sample Code	AS-LF-01-2022Q3
Sample Name	AS-LF-01-2022Q3
Sample Date	8/30/2022 9:42:00 AM
Location	COP-MW-AS-01 / MW-AS-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	19.5				4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	1810				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	2.62				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	12.0				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	9.00	J	RL		2.38	2.38	10.0	Y	Yes	1	NA

Facility: Cope Generating Station
SDG: 591443

Lab Sample ID	591443012
Sys Sample Code	AS-LF-02-2022Q3
Sample Name	AS-LF-02-2022Q3
Sample Date	8/30/2022 10:47:00 AM
Location	COP-MW-AS-02 / MW-AS-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	31.7				4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	3620				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	5.34				0.0670	0.0670	0.200	Y	Yes	1	NA
	Fluoride	16984-48-8	N	mg/L	0.0375	J	RL		0.0330	0.0330	0.100	Y	Yes	1	NA
	Sulfate	14808-79-8	N	mg/L	16.4				0.133	0.133	0.400	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	36.0				2.38	2.38	10.0	Y	Yes	1	NA

Facility: Cope Generating Station
SDG: 591443

Lab Sample ID	591443013
Sys Sample Code	MW-40-2022Q3
Sample Name	MW-40-2022Q3
Sample Date	8/30/2022 11:52:00 AM
Location	COP-MW-40 / MW-40
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	48.6				4.00	4.00	15.0	Y	Yes	1	NA
	Calcium	7440-70-2	T	ug/L	30100				30.0	30.0	100	Y	Yes	1	NA
EPA 300.0	Chloride	16887-00-6	N	mg/L	45.9				0.670	0.670	2.00	Y	Yes	10	NA
	Sulfate	14808-79-8	N	mg/L	139				1.33	1.33	4.00	Y	Yes	10	NA
EPA 300.0	Fluoride	16984-48-8	N	mg/L	0.589				0.0330	0.0330	0.100	Y	Yes	1	NA
SM 2540C	Total Dissolved Solids	TDS	N	mg/L	263				2.38	2.38	10.0	Y	Yes	1	NA

Facility: Cope Generating Station
SDG: 591443

Lab Sample ID	591443014
Sys Sample Code	FBLK-COP-LF-22303
Sample Name	FBLK-COP-LF-22303
Sample Date	8/30/2022 12:00:00 PM
Location	COP-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
EPA 300.0	Chloride	16887-00-6	N	mg/L	0.148	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
SM 2540C	Total Dissolved Solids	TDS	N	mg/L		U			2.38	2.38	10.0	N	Yes	1	NA

Appendix E
First Semiannual Detection Monitoring Program Statistical Evaluation

DOMINION ENERGY SOUTH CAROLINA

COPE STATION CLASS III LANDFILL

SEMIANNUAL DETECTION MONITORING

ORANGEBURG COUNTY, SOUTH CAROLINA

CCR GROUNDWATER DETECTION MONITORING STATISTICAL ANALYSIS REPORT

For the

March 2022 Sampling Event

July 2022

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Senior Environmental Engineer

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Project Manager

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Statistical Analysis Report

Groundwater Sampling

TRC Environmental Corporation (TRC) is providing this Statistically Significant Increases (SSI) notification for the Cope Station Class III Landfill for the tenth semiannual detection monitoring event. Samples were collected on March 8th – 9th, 2022. The final laboratory analytical data packages for the event were received on March 31st, 2022, and the data validation report was received on April 12th, 2022. This report addresses results from Detection Monitoring wells MW-LF-02, MW-LF-03, MW-LF-04, MW-LF-05, and MW-LF-06. Background wells for the Class III Landfill include MW-LF-01, MW-BG-06, MW-BG-16, AS-LF-01, AS-LF-02, and MW-40 (not used in background concentration calculations).

Statistical Analysis

Statistically Significant Level (SSL) exceedances above background concentrations include the following:

- MW-LF-02: chloride and fluoride
- MW-LF-03: none
- MW-LF-04: none
- MW-LF-05: none
- MW-LF-06: none

As has been done since the initiation of detection monitoring at the Cope Station, the evaluation of potential SSIs was conducted using prediction limits to compare data from the background set of monitoring wells to the most recent results from the downgradient monitoring wells. The statistical calculations have been conducted using United States Environmental Protection Agency's (USEPA's) ProUCL (v.5.1) software. Updates to the Site's Statistical Analysis Plan (StAP) are in progress to formally establish and describe the statistical methods being employed. The prediction limits used for the first monitoring event in 2021 were calculated to be used for four semiannual sampling events, of which this is the third.

Appendix A presents the background data used for the prediction limit calculations. **Table 1** presents the BTVs calculated based on the background data. **Table 2** presents the data set for the tenth detection monitoring event and highlights results that are potential SSIs. **Appendix B** includes ProUCL outputs for the trend tests used to evaluate potential SSI for sulfate because the background data set has a statistically significant upward trend. An Alternative Source Demonstration (ASD) should be prepared for these potential SSIs.

Table 1
Background Threshold Values for 2021 and 2022

Table 1
Background Threshold Values for 2021 and 2022
Dominion Energy South Carolina
Cope Station Class III Landfill

CONSTITUENT	NUMBER of RESULTS	PERCENT DETECTED	DISTRIBUTION	TREND	BACKGROUND THRESHOLD VALUE	BASIS
Boron (mg/L)	53	8	Nonparametric	N/A	1.0	95% USL
Calcium (mg/L)	51[1]	100	Nonparametric	None	15.8	95% USL
Chloride (mg/L)	53	100	Nonparametric	None	21.9	95% USL
Fluoride (mg/L)	53	40	Nonparametric	N/A	0.165	95% USL
pH (s.u.)	53	100	Gamma	None	3.4 - 6.2	95% HW UPL (k = 20); LCL is the minimum background result
Sulfate (mg/L	53	60	Nonparametric	Increasing	0.00562 (21.6)[2]	95% UCL of trend (95% USL)
TDS (mg/L)	53	98	Gamma	None	295.3	95% HW UPL (k = 20)

[1] Outlier excluded from data set.

[2] BTV for sulfate is the UCL of the trend slope. 95% UPL follows in parentheses.

N/A Not Applicable – trend test not conducted for data sets with fewer than 50 percent detections.

Table 2
March 2022 Downgradient Results and Potential SSIs

Table 2
March 2022 Downgradient Results and Potential SSIs
Dominion Energy South Carolina
Cope Station Class III Landfill

WELL	CONSTITUENT / BTV / RESULT (mg/L except as noted)[1]						
	BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE[3]	TDS
	1.0	15.8	21.9	0.165	3.4 - 6.2	0.00562[2] (21.6)	295.3
BACKGROUND WELLS							
MW-LF-01	0.00698 J	2.2	8.90	0.033 U	4.42	0.312 J	10.0 J
MW-BG-06	0.00861 J	9.78	17.6	0.0584 J	4.31	0.133 U	101
MW-BG-16	0.00964 J	2.04	3.54	0.033 U	4.31	1.73	4.29 J
AS-LF-01	0.0123 J	4.01	5.27	0.113	4.52	15.1	24.3 J
AS-LF-02	0.0163	4.54	13.0	0.0630 J	4.45	10.1	42.9 J
MW-40[4]	0.0377	31.7	44.5	0.891	4.13	160	301 J
DOWNGRADIENT WELLS							
MW-LF-02	0.0171	5.72	**39.9**	**0.171**	4.21	0.00106 (6.26)	77.1 J
MW-LF-03	0.00819 J	1.07	3.57	0.033 U	4.55	0 (0.570)	8.57 J
MW-LF-04	0.00969 J	1.86	4.66	0.033 U	4.51	0 (0.620)	17.1 J
MW-LF-05	0.0102 J	2.84	9.14	0.033 U	4.40	0 (0.583)	32.9 J
MW-LF-06	0.00902 J	2.15	8.12	0.033 U	4.41	0 (0.638)	30.0 J

Shaded cells indicate an SSI.

[1] pH expressed in standard units (s.u.).

[2] Sulfate had an increasing trend in background concentrations; comparison value is UCL of background slope (95% UPL in parentheses).

[3] Values for sulfate are LCL of trend followed by concentration in parentheses.

[4] Upgradient well not used in background concentration calculations.

U The analyte was not detected above the level of the sample reporting limit.

J Estimated concentration.

Appendix A
Background Data Set for 2021 and 2022 Semiannual Detection Monitoring Events

Appendix A

Background Data Set for 2021 and 2022 Semiannual Detection Monitoring Events

Dominion Energy South Carolina

Cope Station Class III Landfill

EVENT	WELL	CONSTITUENT/RESULT (mg/L except as noted) [1]						
		BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE	TDS
BL-1	MW-LF-01	0.0557 U	4.84	13.7	0.0679	5.4	2.72	72
BL-2	MW-LF-01	0.0557 U	3.77	19	0.14	4.2	1.9	56
BL-3	MW-LF-01	0.0557 U	2.35	6.67	0.033 U	5.0	0.69	24
BL-4	MW-LF-01	0.0557 U	2.63	11.23	0.0548	4.2	0.63	30
BL-5	MW-LF-01	0.0442 U	2	7.92	0.044	5.4	0.5 U	130
BL-6	MW-LF-01	0.0442 U	2.805	12.48	0.0865	4.6	0.5 U	41
BL-7	MW-LF-01	0.0442 U	2.66	10.87	0.0364	4.4	0.5 U	45
BL-8	MW-LF-01	0.0442 U	2.47	16.03	0.0624	4.2	0.5 U	70
DM-1	MW-LF-01	0.0442 U	1.818	9.06	0.033 U	4.8	0.5 U	32
DM-2	MW-LF-01	0.0442 U	1.93	7.14	0.033 U	4.6	0.129 U	23
DM-3	MW-LF-01	0.0219 U	2.56	15.4	0.025 U	4.3	0.75	41
DM-4	MW-LF-01	0.2 U	2.75	13.2	0.1 U	4.7	0.5 U	46
DM-5	MW-LF-01	0.2 U	2.68	20.6	0.1 U	4.4	0.5 U	51
DM-6	MW-LF-01	0.0545	2.42	9.21	0.1 U	4.6	0.5 U	39
DM-7	MW-LF-01	0.2 U	1.76	7.04	0.1 U	4.1	0.5 U	36
BL-4	MW-BG-06	0.0557 U	9.49	18.69	0.0624	3.9	1	106
BL-5	MW-BG-06	0.0442 U	8.86	19.28	0.0631	4.4	0.5 U	84
BL-6	MW-BG-06	0.0442 U	10.02	18.12	0.0883	4.3	0.5 U	118
BL-7	MW-BG-06	0.0442 U	10.1	17.96	0.0621	3.8	0.5 U	103
BL-8	MW-BG-06	0.0442 U	10.6	19.72	0.165	4.1	0.5 U	123
DM-1	MW-BG-06	0.0442 U	9.973	18.3	0.033 U	4.0	0.5 U	109
DM-2	MW-BG-06	0.0442 U	10.9	19.8	0.0571	4.7	0.129 U	82

[1] pH expressed in standard units (s.u.).

[2] Outlier with no verification resample – removed from data set.

[3] Outlier data replaced by verification resample result (value shown on table).

Appendix A (Continued)
Background Data Set for 2021 and 2022 Semiannual Detection Monitoring Events
Dominion Energy South Carolina
Cope Station Class III Landfill

EVENT	WELL	CONSTITUENT/RESULT (mg/L except as noted) [1]						
		BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE	TDS
DM-3	MW-BG-06	0.0219 U	9.15	18.3	0.025 U	3.98	0.129 U	110
DM-4	MW-BG-06	0.2 U	8.84	18.7	0.1 U	4.40	0.5 U	101
DM-5	MW-BG-06	0.176	9.42	18.6	0.1 U	4.10	0.5 U	109
DM-6	MW-BG-06	0.2 U	11.4	18.9	0.1 U	4.40	0.5 U	143
DM-7	MW-BG-06	0.2 U	10.2	18.3	0.1 U	3.40	0.5 U	125
BL-4	MW-BG-16	0.0557 U	2.06	4.11	0.0356	4.10	1.09	14
BL-5	MW-BG-16	0.0442 U	1.87	3.98	0.0598	5.00	1.35	15
BL-6	MW-BG-16	0.0442 U	1.711	3.37	0.0495	4.60	1.31	23
BL-7	MW-BG-16	0.0442 U	1.78	3.03	0.033 U	4.20	1.16	24
BL-8	MW-BG-16	0.0442 U	1.97	3.38	0.033 U	4.10	1.03	43
DM-1	MW-BG-16	0.0442 U	2.145	3.81	0.033 U	4.20	0.79	31
DM-2	MW-BG-16	0.0442 U	2.54	5.22	0.034	4.70	0.83	28
DM-3	MW-BG-16	0.0219 U	1.81	3.75	0.025 U	4.14	1.13	26
DM-4	MW-BG-16	0.2 U	1.7	4.12	0.1 U	4.80	1.48	12
DM-5	MW-BG-16	0.2 U	1.58	3.29	0.1 U	4.50	1.41	2 U
DM-6	MW-BG-16	0.2 U	1.93	4.17	0.1 U	4.80	0.87	43
DM-7	MW-BG-16	0.2 U	1.78	2.86	0.1 U	3.80	1.43	31
DM-1	AS-LF-01	1 U	7.872	6.29	0.0854	5.30	4.65	59
DM-2	AS-LF-01	0.0442 U	4.03	7.07	0.0804	5.00	2.08	40
DM-3	AS-LF-01	0.0219 U	2.69	7.19	0.025 U[3]	4.28	2.85	33
DM-4	AS-LF-01	0.2 U	3.12	4.5	0.1 U	4.70	8.86	28
DM-5	AS-LF-01	0.0745	2.09	5.2	0.1 U	4.40	5.35	22
DM-6	AS-LF-01	0.2 U	3.09	3.02	0.1 U	4.70	12.8	38

[1] pH expressed in standard units (s.u.).

[2] Outlier with no verification resample – removed from data set.

[3] Outlier data replaced by verification resample result (value shown on table).

Appendix A (Continued)

Background Data Set for 2021 and 2022 Semiannual Detection Monitoring Events

Dominion Energy South Carolina

Cope Station Class III Landfill

EVENT	WELL	CONSTITUENT/RESULT (mg/L except as noted) [1]						
		BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE	TDS
DM-7	AS-LF-01	0.2 U	2.19	2.14	0.1 U	4.1	13.4	45
DM-1	AS-LF-02	1 U	24.06[4]	21.9	0.025[3]	6.3	14.3	203
DM-2	AS-LF-02	0.0442 U	24.4[2]	20.3	0.108	5.8	3.35	107
DM-3	AS-LF-02	0.0219 U	15.8	19.1	0.025 U	5.3	4.7	104
DM-4	AS-LF-02	0.2 U	5.74	14.4	0.1 U	5.0	14.5	76
DM-5	AS-LF-02	0.2 U	6.98	16.1	0.1 U	4.8	7.02	64
DM-6	AS-LF-02	0.2 U	4.22	9.67	0.1 U	4.7	16.1	75
DM-7	AS-LF-02	0.0577	4.63	5.71	0.1 U	4.2	21.6	64

[1] pH expressed in standard units (s.u.).

[2] Outlier with no verification resample – removed from data set.

[3] Outlier data replaced by verification resample result (value shown on table).

Appendix B
Trend Test Outputs

Theil-Sen Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.15/10/2022 3:26:49 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

Sulfate-mw-lf-02

General Statistics	
Number of Events	18
Number of Values Reported (n)	18
Number of Values After Averaging	18
Number of Replicates	0
Minimum	1.73
Maximum	7.19
Mean	3.672
Geometric Mean	3.392
Median	3.535
Standard Deviation	1.526
Coefficient of Variation	0.415
Mann-Kendall Statistics	
M-K Test Value (S)	89
Tabulated p-value	0
Standard Deviation of S	26.4
Standardized Value of S	3.333
Approximate p-value	4.29E-04
Approximate inference for Theil-Sen Trend Test	
Number of Slopes	153
Theil-Sen Slope	0.00181
Theil-Sen Intercept	-74.59
M1'	54.79

			BG Slope	Exceed?
One-sided 95% lower limit of Slope	0.00121			
95% LCL of Slope (0.025)	**0.00106**	**95% LCL of Slope (0.025)**	**0.00193**	No
95% UCL of Slope (0.975)	**0.0024**	**95% UCL of Slope (0.975)**	**0.00503**	

Statistically significant evidence of an increasing trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42503	1.81	2.467	-0.657
2	42566	3.1	2.581	0.519
3	42628	3.25	2.694	0.556

4	42683	2.63	2.793	-0.163
5	42761	3.82	2.935	0.885
6	42824	1.86	3.049	-1.189
7	42871	1.73	3.134	-1.404
8	42944	2.62	3.267	-0.647
9	43003	2.8	3.375	-0.575
10	43180	2.61	3.695	-1.085
11	43361	4.08	4.024	0.0564
12	43544	4.07	4.355	-0.285
13	43727	4.03	4.687	-0.657
14	43906	4.06	5.012	-0.952
15	44095	4.48	5.354	-0.874
16	44271	7.19	5.673	1.517
17	44469	5.7	6.032	-0.332
18	44628	6.26	6.321	-0.0607

Sulfate-mw-lf-03

General Statistics	
Number of Events	18
Number of Values Reported (n)	18
Number of Values After Averaging	18
Number of Replicates	0
Minimum	0.129
Maximum	4.2
Mean	0.802
Geometric Mean	0.61
Median	0.5
Standard Deviation	0.892
Coefficient of Variation	1.112
Mann-Kendall Statistics	
M-K Test Value (S)	34
Tabulated p-value	0.1
Standard Deviation of S	23.92
Standardized Value of S	1.38
Approximate p-value	0.0838
Approximate inference for Theil-Sen Trend Test	
Number of Slopes	153
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	53.06
M2	99.94
95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	1.07E-04

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	42503	1.43	0.5	0.93
2	42566	0.5	0.5	0
3	42628	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43003	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.55	0.5	0.05
12	43544	0.76	0.5	0.26
13	43727	0.5	0.5	0
14	43906	4.2	0.5	3.7
15	44095	0.5	0.5	0
16	44271	1.1	0.5	0.6
17	44468	0.698	0.5	0.198
18	44628	0.57	0.5	0.07

Sulfate-mw-lf-04

General Statistics	
Number of Events	18
Number of Values Reported (n)	18
Number of Values After Averaging	18
Number of Replicates	0
Minimum	0.129
Maximum	8.05
Mean	1.091
Geometric Mean	0.595
Median	0.5
Standard Deviation	1.9
Coefficient of Variation	1.741
Mann-Kendall Statistics	
M-K Test Value (S)	11
Tabulated p-value	0.354
Standard Deviation of S	23.9
Standardized Value of S	0.418
Approximate p-value	0.338
Approximate inference for Theil-Sen Trend Test	
Number of Slopes	153
Theil-Sen Slope	0

Theil-Sen Intercept	0.5
M1	53.08
M2	99.92
95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	3.79E-05

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	42503	0.63	0.5	0.13
2	42566	0.83	0.5	0.33
3	42628	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43003	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.129	0.5	-0.371
12	43544	0.5	0.5	0
13	43727	0.5	0.5	0
14	43906	8.05	0.5	7.55
15	44095	0.5	0.5	0
16	44270	3.7	0.5	3.2
17	44468	0.558	0.5	0.058
18	44628	0.62	0.5	0.12

Sulfate-mw-lf-05

General Statistics	
Number of Events	18
Number of Values Reported (n)	18
Number of Values After Averaging	18
Number of Replicates	0
Minimum	0.129
Maximum	0.821
Mean	0.484
Geometric Mean	0.448
Median	0.5
Standard Deviation	0.15
Coefficient of Variation	0.31
Mann-Kendall Statistics	
M-K Test Value (S)	34
Tabulated p-value	0.1

Standard Deviation of S	20.67
Standardized Value of S	1.596
Approximate p-value	0.0552
Approximate inference for Theil-Sen Trend Test	
Number of Slopes	153
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	56.24
M2	96.76
95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	0

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	42503	0.5	0.5	0
2	42566	0.5	0.5	0
3	42628	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43003	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.129	0.5	-0.371
12	43544	0.5	0.5	0
13	43727	0.5	0.5	0
14	43906	0.5	0.5	0
15	44092	0.5	0.5	0
16	44270	0.821	0.5	0.321
17	44468	0.541	0.5	0.041
18	44628	0.583	0.5	0.083

Sulfate-mw-lf-06

General Statistics

Number of Events	18
Number of Values Reported (n)	18
Number of Values After Averaging	18
Number of Replicates	0
Minimum	0.129
Maximum	0.821
Mean	0.482
Geometric Mean	0.446

Median	0.5
Standard Deviation	0.152
Coefficient of Variation	0.316
Mann-Kendall Statistics	
M-K Test Value (S)	8
Tabulated p-value	0.383
Standard Deviation of S	20.67
Standardized Value of S	0.339
Approximate p-value	0.367
Approximate inference for Theil-Sen Trend Test	
Number of Slopes	153
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	56.24
M2	96.76
95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	0

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	42503	0.5	0.5	0
2	42566	0.5	0.5	0
3	42629	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43004	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.129	0.5	-0.371
12	43544	0.5	0.5	0
13	43727	0.5	0.5	0
14	43906	0.5	0.5	0
15	44092	0.5	0.5	0
16	44270	0.821	0.5	0.321
17	44468	0.457	0.5	-0.043
18	44628	0.638	0.5	0.138

Appendix F
Second Semiannual Detection Monitoring Program Statistical Evaluation

DOMINION ENERGY SOUTH CAROLINA

COPE STATION CLASS III LANDFILL

SEMIANNUAL DETECTION MONITORING

ORANGEBURG COUNTY, SOUTH CAROLINA

CCR GROUNDWATER DETECTION MONITORING STATISTICAL ANALYSIS REPORT

For the

August 2022 Sampling Event

November 2022

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Senior Environmental Engineer

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Statistical Analysis Report

Groundwater Sampling

TRC Environmental Corporation (TRC) is providing this Statistically Significant Increases (SSI) notification for the Cope Station Class III Landfill for the tenth semiannual detection monitoring event. Samples were collected on August 29th – 30th, 2022. The final laboratory analytical data packages for the event were received on September 12th, 2022, and the data validation report was received on September 16th, 2022. This report addresses results from Detection Monitoring wells MW-LF-02, MW-LF-03, MW-LF-04, MW-LF-05, and MW-LF-06. Background wells for the Class III Landfill include MW-LF-01, MW-BG-06, MW-BG-16, AS-LF-01, AS-LF-02, and MW-40 (not used in background concentration calculations).

Statistical Analysis

Statistically Significant Level (SSL) exceedances above background concentrations include the following:

- MW-LF-02: chloride
- MW-LF-03: none
- MW-LF-04: none
- MW-LF-05: none
- MW-LF-06: none

As has been done since the initiation of detection monitoring at the Cope Station, the evaluation of potential SSIs was conducted using prediction limits to compare data from the background set of monitoring wells to the most recent results from the downgradient monitoring wells. The statistical calculations have been conducted using United States Environmental Protection Agency's (USEPA's) ProUCL (v.5.1) software. Updates to the Site's Statistical Analysis Plan (StAP) are in progress to formally establish and describe the statistical methods being employed. The prediction limits used for the first monitoring event in 2021 were calculated to be used for four semiannual sampling events, of which this is the fourth. The prediction limits will be updated prior to the first semiannual event in 2023.

Appendix A presents the background data used for the prediction limit calculations. **Table 1** presents the BTVs calculated based on the background data. **Table 2** presents the data set for the eleventh detection monitoring event and highlights results that are potential SSIs. **Appendix B** includes ProUCL outputs for the trend tests used to evaluate potential SSI for sulfate because the background data set has a statistically significant upward trend.

DESC conducted a Well Network Evaluation in July 2022 to reevaluate the monitoring system for this CCR unit. The following recommendations were presented based on the Evaluation:

- Revise the background monitoring wells for the CCR Unit to include MW-LF-01, AS-LF-01, and AS-LF-02 (excluding MW-BG-06 and MW-BG-16).
- Install three new downgradient monitoring wells along the western edge of the CCR Unit boundary to replace existing downgradient monitoring wells MW-LF-05 and MW-LF-06.
- Install two new side-gradient monitoring wells along the north side of the CCR unit.
- Remove MW-LF-02 from the existing CCR well network as this well does not appear to monitor groundwater passing beneath the CCR Unit.

The new wells will be installed during December 2022. Meanwhile, an Alternative Source Demonstration (ASD) should be prepared for these potential SSIs.

Table 1
Background Threshold Values for 2021 and 2022

Table 1
Background Threshold Values for 2021 and 2022
Dominion Energy South Carolina
Cope Station Class III Landfill

CONSTITUENT	NUMBER of RESULTS	PERCENT DETECTED	DISTRIBUTION	TREND	BACKGROUND THRESHOLD VALUE	BASIS
Boron (mg/L)	53	8	Nonparametric	N/A	1.0	95% USL
Calcium (mg/L)	51[1]	100	Nonparametric	None	15.8	95% USL
Chloride (mg/L)	53	100	Nonparametric	None	21.9	95% USL
Fluoride (mg/L)	53	40	Nonparametric	N/A	0.165	95% USL
pH (s.u.)	53	100	Gamma	None	3.4 - 6.2	95% HW UPL (k = 20); LCL is the minimum background result
Sulfate (mg/L	53	60	Nonparametric	Increasing	0.00562 (21.6)[2]	95% UCL of trend (95% USL)
TDS (mg/L)	53	98	Gamma	None	295.3	95% HW UPL (k = 20)

[1] Outlier excluded from data set.

[2] BTV for sulfate is the UCL of the trend slope. 95% UPL follows in parentheses.

N/A Not Applicable – trend test not conducted for data sets with fewer than 50 percent detections.

Table 2
August 2022 Downgradient Results and Potential SSIs

Table 2
August 2022 Downgradient Results and Potential SSIs
Dominion Energy South Carolina
Cope Station Class III Landfill

WELL	CONSTITUENT / BTV / RESULT (mg/L except as noted)[1]						
	BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE[3]	TDS
	1.0	15.8	21.9	0.165	3.4 - 6.2	0.00427[2] (21.6)	295.3
BACKGROUND WELLS							
MW-LF-01	0.0112 J	2.04	9.52	0.0330 U	4.43	0.371 J	< 2.38
MW-BG-06	0.0077 J	9.63	18.0	0.0330 U	4.23	0.284	87.0
MW-BG-16	0.00926 J	1.89	3.09	0.0330 U	4.66	2.26	10.0
AS-LF-01	0.0195	1.81	2.62	0.0330 U	4.30	12.0	9.0
AS-LF-02	0.0317	3.62	5.34	0.0375 J	4.41	16.4	36.0
MW-40[4]	0.0486	30.1	45.9	0.589	4.01	139	263
DOWNGRADIENT WELLS							
MW-LF-02	0.0164	4.87	**30.1**	0.124	3.88	0.00127 (7.34)	55.0
MW-LF-03	0.00762 J	1.22	3.34	0.0330 U	4.03	0 (0.491)	< 10.0
MW-LF-04	0.00988 J	1.73	4.87	0.0330 U	4.13	0 (0.682)	14.0
MW-LF-05	0.0102 J	2.68	9.74	0.0330 U	4.01	0 (0.656)	32.0
MW-LF-06	0.0106 J	2.14	8.62	0.0330 U	4.01	0 (0.592)	17.0

Shaded cells indicate an SSI.

[1] pH expressed in standard units (s.u.).

[2] Sulfate had an increasing trend in background concentrations; comparison value is UCL of background slope (95% UPL in parentheses).

[3] Values for sulfate are LCL of trend followed by concentration in parentheses.

[4] Upgradient well not used in background concentration calculations.

U The analyte was not detected above the level of the sample reporting limit.

J Estimated concentration.

Appendix A
Background Data Set for 2021 and 2022 Semiannual Detection Monitoring Events

Appendix A

Background Data Set for 2021 and 2022 Semiannual Detection Monitoring Events

Dominion Energy South Carolina

Cope Station Class III Landfill

EVENT	WELL	CONSTITUENT/RESULT (mg/L except as noted) [1]						
		BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE	TDS
BL-1	MW-LF-01	0.0557 U	4.84	13.7	0.0679	5.4	2.72	72
BL-2	MW-LF-01	0.0557 U	3.77	19	0.14	4.2	1.9	56
BL-3	MW-LF-01	0.0557 U	2.35	6.67	0.033 U	5.0	0.69	24
BL-4	MW-LF-01	0.0557 U	2.63	11.23	0.0548	4.2	0.63	30
BL-5	MW-LF-01	0.0442 U	2	7.92	0.044	5.4	0.5 U	130
BL-6	MW-LF-01	0.0442 U	2.805	12.48	0.0865	4.6	0.5 U	41
BL-7	MW-LF-01	0.0442 U	2.66	10.87	0.0364	4.4	0.5 U	45
BL-8	MW-LF-01	0.0442 U	2.47	16.03	0.0624	4.2	0.5 U	70
DM-1	MW-LF-01	0.0442 U	1.818	9.06	0.033 U	4.8	0.5 U	32
DM-2	MW-LF-01	0.0442 U	1.93	7.14	0.033 U	4.6	0.129 U	23
DM-3	MW-LF-01	0.0219 U	2.56	15.4	0.025 U	4.3	0.75	41
DM-4	MW-LF-01	0.2 U	2.75	13.2	0.1 U	4.7	0.5 U	46
DM-5	MW-LF-01	0.2 U	2.68	20.6	0.1 U	4.4	0.5 U	51
DM-6	MW-LF-01	0.0545	2.42	9.21	0.1 U	4.6	0.5 U	39
DM-7	MW-LF-01	0.2 U	1.76	7.04	0.1 U	4.1	0.5 U	36
BL-4	MW-BG-06	0.0557 U	9.49	18.69	0.0624	3.9	1	106
BL-5	MW-BG-06	0.0442 U	8.86	19.28	0.0631	4.4	0.5 U	84
BL-6	MW-BG-06	0.0442 U	10.02	18.12	0.0883	4.3	0.5 U	118
BL-7	MW-BG-06	0.0442 U	10.1	17.96	0.0621	3.8	0.5 U	103
BL-8	MW-BG-06	0.0442 U	10.6	19.72	0.165	4.1	0.5 U	123
DM-1	MW-BG-06	0.0442 U	9.973	18.3	0.033 U	4.0	0.5 U	109
DM-2	MW-BG-06	0.0442 U	10.9	19.8	0.0571	4.7	0.129 U	82

[1] pH expressed in standard units (s.u.).

[2] Outlier with no verification resample – removed from data set.

[3] Outlier data replaced by verification resample result (value shown on table).

Appendix A (Continued)
Background Data Set for 2021 and 2022 Semiannual Detection Monitoring Events
Dominion Energy South Carolina
Cope Station Class III Landfill

EVENT	WELL	CONSTITUENT/RESULT (mg/L except as noted) [1]						
		BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE	TDS
DM-3	MW-BG-06	0.0219 U	9.15	18.3	0.025 U	3.98	0.129 U	110
DM-4	MW-BG-06	0.2 U	8.84	18.7	0.1 U	4.40	0.5 U	101
DM-5	MW-BG-06	0.176	9.42	18.6	0.1 U	4.10	0.5 U	109
DM-6	MW-BG-06	0.2 U	11.4	18.9	0.1 U	4.40	0.5 U	143
DM-7	MW-BG-06	0.2 U	10.2	18.3	0.1 U	3.40	0.5 U	125
BL-4	MW-BG-16	0.0557 U	2.06	4.11	0.0356	4.10	1.09	14
BL-5	MW-BG-16	0.0442 U	1.87	3.98	0.0598	5.00	1.35	15
BL-6	MW-BG-16	0.0442 U	1.711	3.37	0.0495	4.60	1.31	23
BL-7	MW-BG-16	0.0442 U	1.78	3.03	0.033 U	4.20	1.16	24
BL-8	MW-BG-16	0.0442 U	1.97	3.38	0.033 U	4.10	1.03	43
DM-1	MW-BG-16	0.0442 U	2.145	3.81	0.033 U	4.20	0.79	31
DM-2	MW-BG-16	0.0442 U	2.54	5.22	0.034	4.70	0.83	28
DM-3	MW-BG-16	0.0219 U	1.81	3.75	0.025 U	4.14	1.13	26
DM-4	MW-BG-16	0.2 U	1.7	4.12	0.1 U	4.80	1.48	12
DM-5	MW-BG-16	0.2 U	1.58	3.29	0.1 U	4.50	1.41	2 U
DM-6	MW-BG-16	0.2 U	1.93	4.17	0.1 U	4.80	0.87	43
DM-7	MW-BG-16	0.2 U	1.78	2.86	0.1 U	3.80	1.43	31
DM-1	AS-LF-01	1 U	7.872	6.29	0.0854	5.30	4.65	59
DM-2	AS-LF-01	0.0442 U	4.03	7.07	0.0804	5.00	2.08	40
DM-3	AS-LF-01	0.0219 U	2.69	7.19	0.025 U[3]	4.28	2.85	33
DM-4	AS-LF-01	0.2 U	3.12	4.5	0.1 U	4.70	8.86	28
DM-5	AS-LF-01	0.0745	2.09	5.2	0.1 U	4.40	5.35	22
DM-6	AS-LF-01	0.2 U	3.09	3.02	0.1 U	4.70	12.8	38

[1] pH expressed in standard units (s.u.).

[2] Outlier with no verification resample – removed from data set.

[3] Outlier data replaced by verification resample result (value shown on table).

Appendix A (Continued)

Background Data Set for 2021 and 2022 Semiannual Detection Monitoring Events

Dominion Energy South Carolina

Cope Station Class III Landfill

EVENT	WELL	CONSTITUENT/RESULT (mg/L except as noted) [1]						
		BORON	CALCIUM	CHLORIDE	FLUORIDE	pH	SULFATE	TDS
DM-7	AS-LF-01	0.2 U	2.19	2.14	0.1 U	4.1	13.4	45
DM-1	AS-LF-02	1 U	24.06[4]	21.9	0.025[3]	6.3	14.3	203
DM-2	AS-LF-02	0.0442 U	24.4[2]	20.3	0.108	5.8	3.35	107
DM-3	AS-LF-02	0.0219 U	15.8	19.1	0.025 U	5.3	4.7	104
DM-4	AS-LF-02	0.2 U	5.74	14.4	0.1 U	5.0	14.5	76
DM-5	AS-LF-02	0.2 U	6.98	16.1	0.1 U	4.8	7.02	64
DM-6	AS-LF-02	0.2 U	4.22	9.67	0.1 U	4.7	16.1	75
DM-7	AS-LF-02	0.0577	4.63	5.71	0.1 U	4.2	21.6	64

[1] pH expressed in standard units (s.u.).

[2] Outlier with no verification resample – removed from data set.

[3] Outlier data replaced by verification resample result (value shown on table).

Appendix B
Trend Test Outputs

Theil-Sen Trend Test Analysis

User Selected Options	
Date/Time of Computation	ProUCL 5.2 11/2/2022 2:27:25 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

Sulfate-mw-lf-02

General Statistics

Number of Events	19
Number of Values Reported (n)	19
Number of Values After Averaging	19
Number of Replicates	0
Minimum	1.73
Maximum	7.34
Mean	3.865
Geometric Mean	3.532
Median	3.82
Standard Deviation	1.705
Coefficient of Variation	0.441

Mann-Kendall Statistics

M-K Test Value (S)	107
Tabulated p-value	0
Standard Deviation of S	28.58
Standardized Value of S	3.708
Approximate p-value	1.0426E-4

Approximate inference for Theil-Sen Trend Test

Number of Slopes	171
Theil-Sen Slope	0.00198
Theil-Sen Intercept	-81.63
M1'	61.99
One-sided 95% lower limit of Slope	0.00137
95% LCL of Slope (0.025)	0.00127
95% UCL of Slope (0.975)	0.00242

Statistically significant evidence of an increasing trend at the specified level of significance.

Theil-Sen Trend Test Estimates and Residuals

#	Events	Values	Estimates	Residuals
1	42503	1.81	2.479	-0.669
2	42566	3.1	2.604	0.496
3	42628	3.25	2.727	0.523
4	42683	2.63	2.836	-0.206
5	42761	3.82	2.99	0.83
6	42824	1.86	3.115	-1.255
7	42871	1.73	3.208	-1.478
8	42944	2.62	3.352	-0.732
9	43003	2.8	3.47	-0.67
10	43180	2.61	3.82	-1.21
11	43361	4.08	4.178	-0.0982

12	43544	4.07	4.54	-0.47	
13	43727	4.03	4.902	-0.872	
14	43906	4.06	5.257	-1.197	
15	44095	4.48	5.631	-1.151	
16	44271	7.19	5.979	1.211	
17	44469	5.7	6.37	-0.67	
18	44628	6.26	6.685	-0.425	
19	44803	7.34	7.032	0.308	

Sulfate-mw-lf-03

General Statistics

Number of Events	19
Number of Values Reported (n)	19
Number of Values After Averaging	19
Number of Replicates	0
Minimum	0.129
Maximum	4.2
Mean	0.786
Geometric Mean	0.603
Median	0.5
Standard Deviation	0.87
Coefficient of Variation	1.107

Mann-Kendall Statistics

M-K Test Value (S)	18
Tabulated p-value	0.267
Standard Deviation of S	26.31
Standardized Value of S	0.646
Approximate p-value	0.259

Approximate inference for Theil-Sen Trend Test

Number of Slopes	171
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	59.72
M2	111.3
95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	7.4809E-5

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	42503	1.43	0.5	0.93
2	42566	0.5	0.5	0
3	42628	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43003	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.55	0.5	0.05
12	43544	0.76	0.5	0.26

13	43727	0.5	0.5	0	
14	43906	4.2	0.5	3.7	
15	44095	0.5	0.5	0	
16	44271	1.1	0.5	0.6	
17	44468	0.698	0.5	0.198	
18	44628	0.57	0.5	0.07	
19	44803	0.491	0.5	-0.009	

Sulfate-mw-lf-04

General Statistics

Number of Events	19
Number of Values Reported (n)	19
Number of Values After Averaging	19
Number of Replicates	0
Minimum	0.129
Maximum	8.05
Mean	1.07
Geometric Mean	0.599
Median	0.5
Standard Deviation	1.849
Coefficient of Variation	1.728

Mann-Kendall Statistics

M-K Test Value (S)	23
Tabulated p-value	0.223
Standard Deviation of S	26.29
Standardized Value of S	0.837
Approximate p-value	0.201

Approximate inference for Theil-Sen Trend Test

Number of Slopes	171
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	59.74
M2	111.3
95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	6.9050E-5

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	42503	0.63	0.5	0.13
2	42566	0.83	0.5	0.33
3	42628	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43003	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.129	0.5	-0.371
12	43544	0.5	0.5	0
13	43727	0.5	0.5	0

14	43906	8.05	0.5	7.55	
15	44095	0.5	0.5	0	
16	44270	3.7	0.5	3.2	
17	44468	0.558	0.5	0.058	
18	44628	0.62	0.5	0.12	
19	44802	0.682	0.5	0.182	

Sulfate-mw-lf-05

General Statistics

Number of Events	19
Number of Values Reported (n)	19
Number of Values After Averaging	19
Number of Replicates	0
Minimum	0.129
Maximum	0.821
Mean	0.493
Geometric Mean	0.457
Median	0.5
Standard Deviation	0.151
Coefficient of Variation	0.306

Mann-Kendall Statistics

M-K Test Value (S)	50
Tabulated p-value	0.04
Standard Deviation of S	23.4
Standardized Value of S	2.094
Approximate p-value	0.0181

Approximate inference for Theil-Sen Trend Test

Number of Slopes	171
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	62.57
M2	108.4
95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	2.7353E-5

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	42503	0.5	0.5	0
2	42566	0.5	0.5	0
3	42628	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43003	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.129	0.5	-0.371
12	43544	0.5	0.5	0
13	43727	0.5	0.5	0
14	43906	0.5	0.5	0

15	44092	0.5	0.5	0	
16	44270	0.821	0.5	0.321	
17	44468	0.541	0.5	0.041	
18	44628	0.583	0.5	0.083	
19	44802	0.656	0.5	0.156	

Sulfate-mw-lf-06

General Statistics

Number of Events	19
Number of Values Reported (n)	19
Number of Values After Averaging	19
Number of Replicates	0
Minimum	0.129
Maximum	0.821
Mean	0.488
Geometric Mean	0.453
Median	0.5
Standard Deviation	0.15
Coefficient of Variation	0.307

Mann-Kendall Statistics

M-K Test Value (S)	22
Tabulated p-value	0.223
Standard Deviation of S	23.4
Standardized Value of S	0.898
Approximate p-value	0.185

Approximate inference for Theil-Sen Trend Test

Number of Slopes	171
Theil-Sen Slope	0
Theil-Sen Intercept	0.5
M1	62.57
M2	108.4
95% LCL of Slope (0.025)	0
95% UCL of Slope (0.975)	0

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	42503	0.5	0.5	0
2	42566	0.5	0.5	0
3	42629	0.5	0.5	0
4	42683	0.5	0.5	0
5	42761	0.5	0.5	0
6	42825	0.5	0.5	0
7	42871	0.5	0.5	0
8	42944	0.5	0.5	0
9	43004	0.5	0.5	0
10	43180	0.129	0.5	-0.371
11	43361	0.129	0.5	-0.371
12	43544	0.5	0.5	0
13	43727	0.5	0.5	0
14	43906	0.5	0.5	0
15	44092	0.5	0.5	0

	A	B	C	D	E	F	G	H	I	J	K	L
281	16	44270	0.821	0.5	0.321							
282	17	44468	0.457	0.5	-0.043							
283	18	44628	0.638	0.5	0.138							
284	19	47359	0.592	0.5	0.092							