

Annual Groundwater Monitoring Report

Public Service Company of Oklahoma

Northeastern Power Station

Landfill CCR Management Unit

Permit Number: FA3566010

7300 E HWY 88

Oologah, Oklahoma

January 31, 2023

Prepared by:

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An **AEP** Company

BOUNDLESS ENERGY™

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Abbreviations:

ASD - Alternate Source Demonstration

CCR – Coal Combustion Residual

GWPS - Groundwater protection standards

LF – Landfill

NPS – Northeastern Power Station

SSI - Statistically Significant Increase

I. Overview

This *Annual Groundwater Monitoring Report* (Report) has been prepared to report the status of activities for the preceding year for an existing Coal Combustion Residual (CCR) unit at Public Service Company of Oklahoma's (PSO's), a wholly owned subsidiary of American Electric Power Company (AEP), Northeastern Power Station (NPS). The Oklahoma Department of Environmental Quality (ODEQ) CCR rules require that the Annual Groundwater Monitoring Report be posted to the operating record for the preceding year no later than January 31, 2023.

In general, the following activities were completed:

- At the start of the current annual reporting period, the LF was operating under the Detection monitoring program.
- At the end of the current annual reporting period, the LF was operating under the Detection monitoring program.
- A statistical process in accordance with OAC 252:517 to evaluate groundwater data was updated, certified, and posted to AEP's CCR website in 2022 titled: *Statistical Analysis Plan* (Geosyntec Nov 2021). The statistical process was guided by USEPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* ("Unified Guidance," USEPA, 2009). This report was approved by ODEQ January 20, 2022.
- Semi-Annual groundwater samples were collected and analyzed for Appendix A constituents, as specified in OAC 255:517-9-5 Detection Monitoring program and AEP's *Groundwater Sampling and Analysis Plan* (2021).
- The background data was re-established in December 2021.
- Data and statistical analysis not available for the previous reporting period indicated that during the 2nd semi-annual 2021 sampling event (December 2021):
 - No SSIs were detected.
- During the 1st semi-annual 2022 sampling event (June and August 2022):
 - No SSIs were detected.
- Statistical evaluation of the 2nd semi-annual 2022 groundwater sampling event (November 2022) is underway.
- NPS installed two (2) background groundwater monitoring wells during 2022 and submitted a Revised Groundwater Monitoring Well Network Report to ODEQ for approval.

The major components of this annual report, to the extent applicable at this time, are presented in sections that follow:

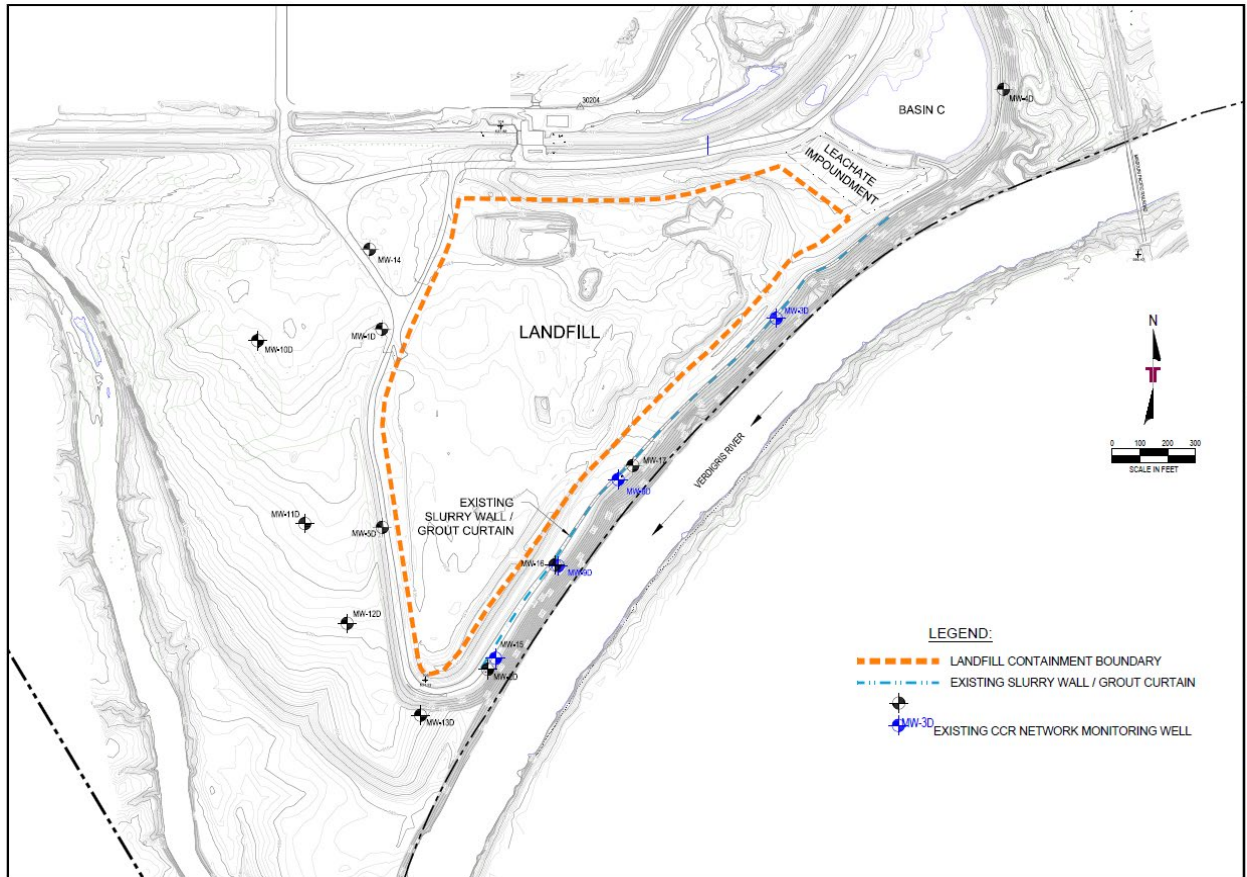
- A map, aerial photograph or a drawing showing the LF CCR management unit, all groundwater monitoring wells and monitoring well identification numbers;
- All of the monitoring data collected, including the rate and direction of groundwater flow, plus a summary showing the number of samples collected per monitoring well, the dates the samples were collected and whether the sample was collected as part of detection monitoring programs is included in Appendix 1;
- Statistical comparison of monitoring data to determine if there have been SSI(s) (Attached as Appendix 2, where applicable);
- A discussion of whether any alternate source demonstrations (ASDs) were performed, and the conclusions (Attached as Appendix 3, where applicable);
- A summary of any transition between monitoring programs or an alternate monitoring frequency (Appendix 4, where applicable).
- Identification of any monitoring wells that were installed, or decommissioned during the preceding year, along with a statement as to why that happened (Attached as Appendix 5, where applicable); and
- Other information required to be included in the annual report such field sheets, analytical reports, etc., (if applicable).

In addition, this report summarizes key actions completed, and where applicable, describes any problems encountered and actions taken to resolve those problems. The report includes a projection of key activities for the upcoming year.

II. Groundwater Monitoring Well Locations and Identification Numbers

The figure that follows depicts the PE-certified groundwater monitoring network, the monitoring well locations and their corresponding identification numbers.

Landfill Monitoring Wells	
Background	Down Gradient
Pending	MW-1D through MW-6D, MW-9D through MW-13D
	MW-14 through MW-17



III. Monitoring Wells Installed or Decommissioned

Two (2) groundwater monitoring wells (MWs 18 and 19) were installed during this reporting period, see Appendix 5. These wells were needed to evaluate the background groundwater conditions. A revised groundwater monitoring well network design report that discusses the hydrogeological setting, the hydrostratigraphic units, the uppermost aquifer, and the background monitoring well locations was submitted to the ODEQ December 5, 2022 (via email) for approval.

IV. Groundwater Quality Data and Static Water Elevation Data, With Flow Rate and Direction and Discussion

Appendix 1 contains tables showing the applicable groundwater quality data obtained under OAC 252:517-9-4 through 252:517-9-5 relevant to this reporting period. Static water elevation data from each monitoring event also are shown in Appendix 1, along with the groundwater velocity calculations groundwater flow directions and potentiometric maps developed after each sampling event.

The site-wide groundwater flow velocity varies from the velocity computed in residence time calculations because assumptions used in these calculations vary based on the scale of the application of groundwater flow. The site-wide groundwater flow velocity is determined as a representative average over the entire CCR unit, which is a large area (multiple acres) consisting of different rock formations. The residence time calculation is a localized estimate used to establish the residence time of groundwater within a single well (<100 sq ft). The site-wide groundwater flow velocity utilizes the maximum and minimum hydraulic gradient based on groundwater elevation differences between two widely spaced site monitoring wells. For a localized hydraulic gradient, the residence time calculations use the elevation difference between the target monitoring well and the nearest groundwater elevation contour line. Additionally, the hydraulic conductivity and effective porosity used in the site-wide groundwater flow velocity are represented by average parameters based on field tests conducted at the Unit. The residence time calculation uses an estimated hydraulic conductivity and effective porosity from a reference work representative of the formation in contact with the well.

Groundwater samples were collected semi-annually and analyzed for Appendix A constituents as specified in OAC 255:517-9-5 Detection Monitoring program and AEP's Groundwater Sampling and Analysis Plan, which was approved by ODEQ September 2018.

Appendix 6 contains the field sheets and laboratory analytical reports that are available for this reporting period.

V. **Groundwater Quality Data Statistical Analysis**

Semi-Annual groundwater samples were collected and analyzed for Appendix A constituents, as specified in OAC 255:517-9-5 Detection Monitoring program and AEP's *Groundwater Sampling and Analysis Plan* (2021) and approved by ODEQ January 20, 2022.

ODEQ issued a Notice Of Deficiency (NOD) January 30, 2020, for the boron ASD submitted October 2018, which presented revised statistical results through intra-well analysis. ODEQ agreed that a statistical error had occurred related to inappropriate background wells MWs 7D and 8D and background concentrations could not be established; therefore prior to instituting an assessment monitoring program, a background well or wells representative of the aquifer must be established. Until the background concentrations can be established, statistical analysis will be completed through intra-well comparison.

- Data and statistical analysis not available for the previous reporting period and certified February 16, 2022 indicated that during the 2nd semi-annual 2021 groundwater sampling event conducted December 27-28, 2021:
 - No potential SSIs were identified
- During the 1st semi-annual 2022 sampling event conducted June 14, 2022, with 2 of 2 confirmatory sampling conducted August 15, 2022 and certified September 15, 2022:
 - No potential SSIs were identified
- The 2nd semi-annual 2022 statistical evaluation for the groundwater samples collected in November 7-8, 2022 is underway.

The statistical reports available for this reporting period are found in Appendix 2.

VI. **Alternate Source Demonstrations completed**

No alternate source demonstrations (ASDs) were completed since no SSIs were identified.

VII. **Discussion About Transition Between Monitoring Requirements or Alternate Monitoring Frequency**

This CCR Unit remained in detection monitoring throughout 2022.

The semi-annually sampling frequency will be maintained for the current monitoring program.

VIII. Other Required Information - NA

IX. Description of Any Problems Encountered and Actions Taken

As required by OAC 252:517-9-1(b)(1)(c), a minimum of eight independent samples are to be collected from each downgradient well within the monitoring well network. NPS continues to attempt to collect background data from wells 1D, 2D, 10D, 11D, 13D, 14, 16, and 17, which often lack sufficient water volume for sample collection after allowing for 24 hours of recharge.

Of these wells:

During the 1st semi-annual sampling event, groundwater samples were successfully collected from wells 2D and 13D for Appendix A parameters.

During the 2nd semi-annual sampling event, groundwater samples were successfully collected from MWs 1D, 13D, 14 (no mercury), for Appendix A and Appendix B metals only, except as noted. MW-17 was sampled for Appendix A parameters.

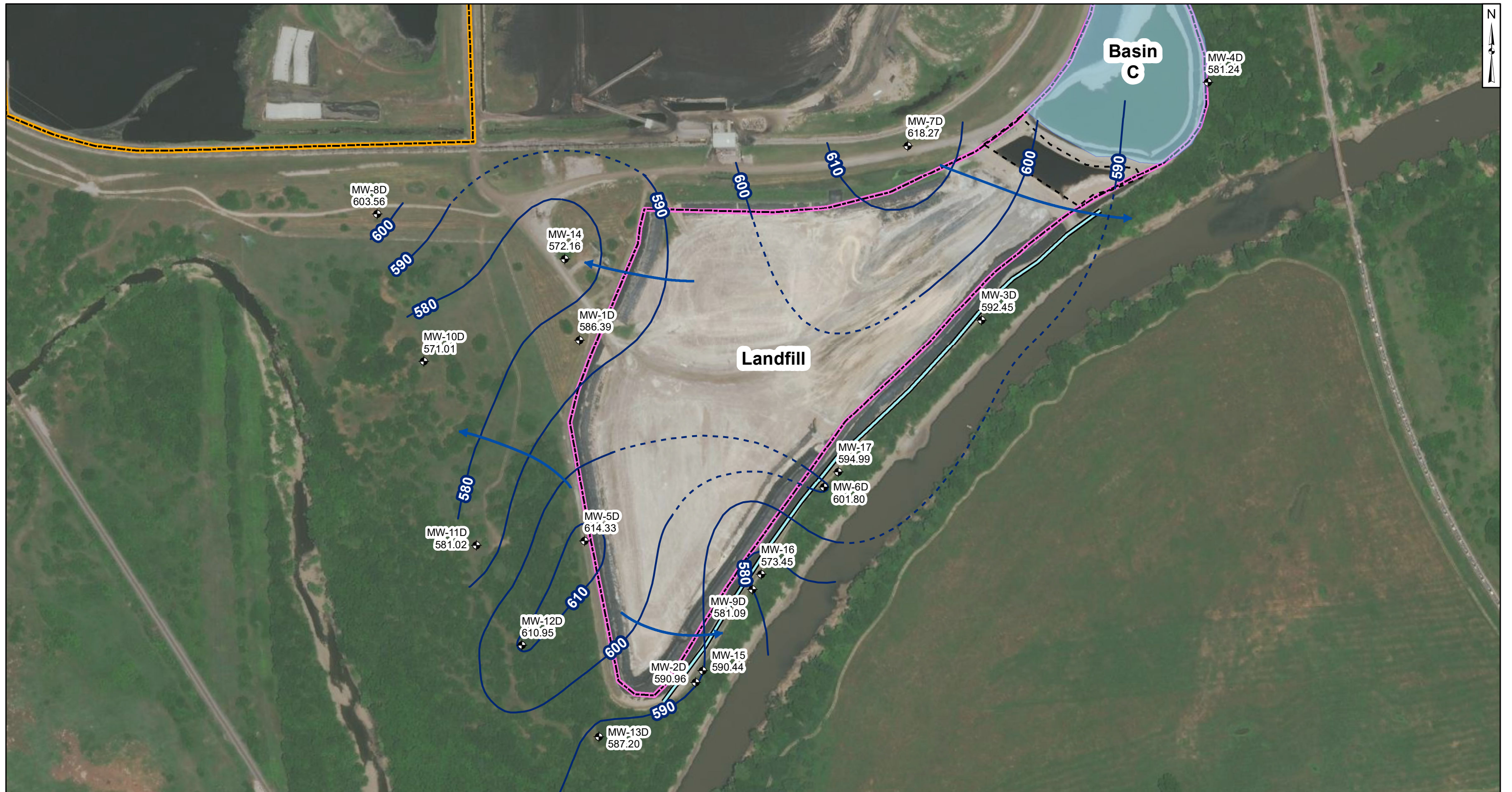
X. A Projection of Key Activities for the Upcoming Year

Key activities for the upcoming year include:

- As required by OAC 252:517-9-5, conduct detection monitoring of the groundwater for the LF CCR unit on a semi-annual bases;
- Evaluation of the detection monitoring results from a statistical analysis viewpoint, looking for SSIs above background;
- Complete ASDs for potential SSIs, as needed, and submit to ODEQ for approval;
- Collect groundwater samples from the newly installed background wells;
- Preparation of the next annual groundwater report.

APPENDIX 1

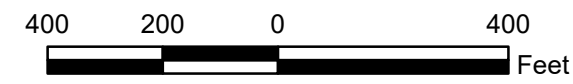
Potentiometric Maps and Tables follow, showing the groundwater monitoring data collected, the rate and direction of groundwater flow, and a summary showing the number of samples collected per monitoring well. The dates that the samples were collected also is shown.



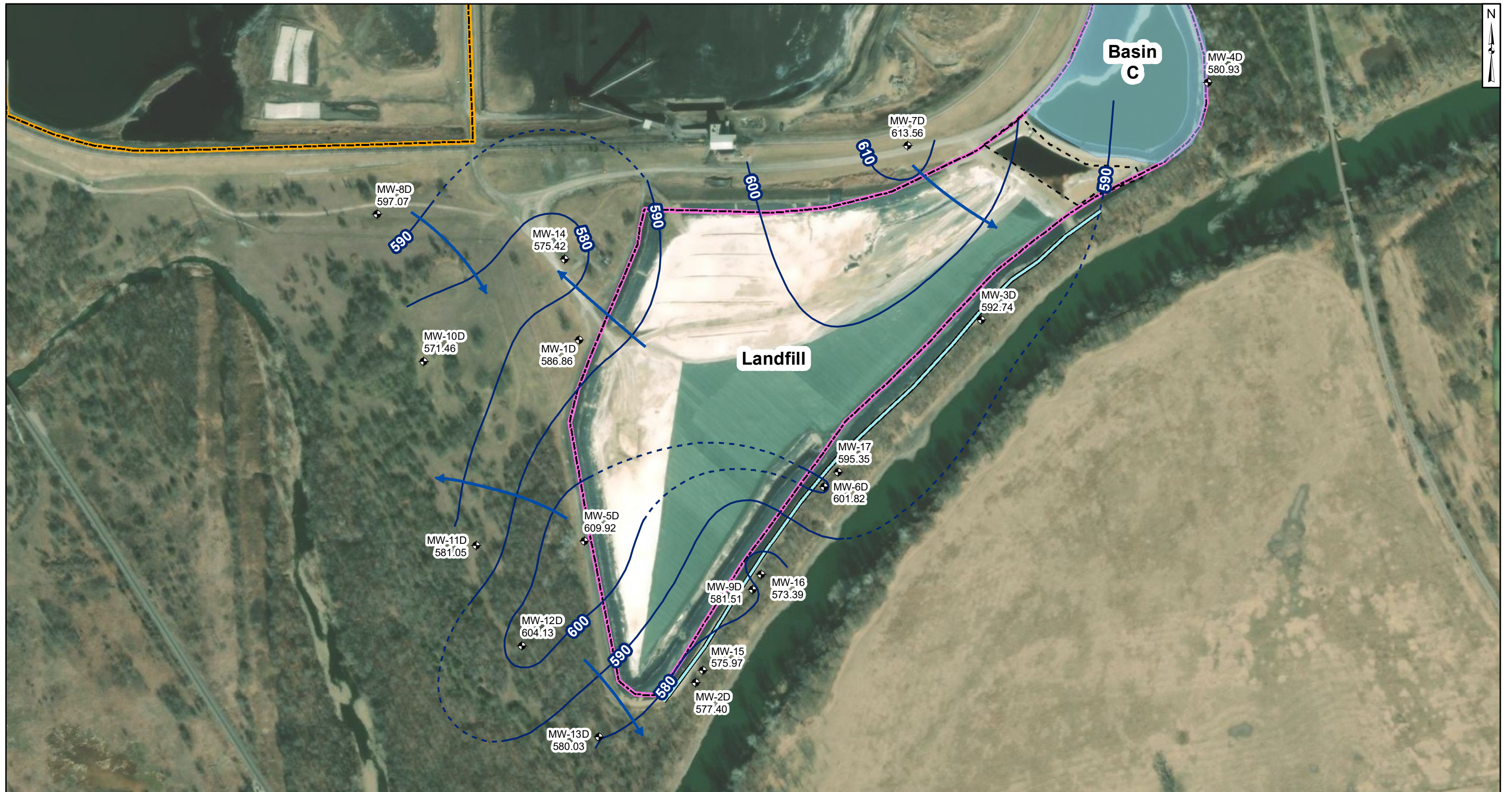
- Legend**
- ◆ Groundwater Monitoring Well
 - Groundwater Elevation Contour
 - - - Groundwater Elevation Contour (Inferred)
 - ➔ Approximate Groundwater Flow Direction
 - ▭ Bottom Ash Pond
 - ▭ Landfill
 - - - Impoundment
 - ▭ Slurry Wall

Notes

- Monitoring well coordinates and water level data (collected June 14, 2022) provided by AEP.
- Groundwater elevation units are feet above mean sea level (ft. msl).
- River water elevation was 536.24 ft. msl on June 14, 2022 (USGS 07178452)

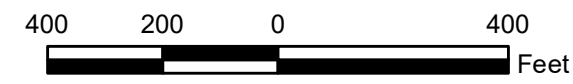


Potentiometric Map June 2022		Figure 1
AEP Northeastern Power Plant - Landfill Oologah, Oklahoma		
Geosyntec consultants		
Columbus, Ohio	2022/08/19	



- Legend**
- ◆ Groundwater Monitoring Well
 - Groundwater Elevation Contour
 - - - Groundwater Elevation Contour (Inferred)
 - ➔ Approximate Groundwater Flow Direction
 - ▭ Bottom Ash Pond
 - ▭ Landfill
 - - - Impoundment
 - ▬ Slurry Wall

- Notes**
- Monitoring well coordinates and water level data (collected November 7 and 8, 2022) provided by AEP.
 - Groundwater elevation units are feet above mean sea level (ft. msl).
 - River water elevation was 533.05 ft. msl on November 7, 2022 (USGS 07178452)
 - Satellite imagery provided by ESRI.



Potentiometric Map - Uppermost Aquifer November 2022		Figure 2
AEP Northeastern Power Plant - Landfill Oologah, Oklahoma		
Geosyntec consultants		
Columbus, Ohio	2022/12/06	

**Table 1: Residence Time Calculation Summary
Northeastern Landfill**

Geosyntec Consultants, Inc.

CCR Management Unit	Monitoring Well	Well Diameter (inches)	2022-06		2022-08 ^[3]		2022-11		2022-12 ^[3]	
			Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)
Landfill	MW-3D ^[2]	2.0	1.0	63	NC	NC	0.8	75	NC	NC
	MW-4D ^[2]	2.0	0.8	76	NC	NC	0.7	84	NC	NC
	MW-5D ^[2]	2.0	1.9	31	NC	NC	1.8	33	NC	NC
	MW-6D ^[2]	2.0	1.9	31	NC	NC	1.9	31	NC	NC
	MW-7D ^[1]	2.0	1.2	49	NC	NC	1.1	56	NC	NC
	MW-8D ^[1]	2.0	1.9	33	NC	NC	1.4	42	NC	NC
	MW-9D ^[2]	2.0	1.3	45	1.2	53	1.1	57	1.0	64
	MW-12D ^[2]	2.0	2.0	30	NC	NC	1.4	43	NC	NC
	MW-15 ^[2]	2.0	1.2	52	NC	NC	1.3	47	NC	NC

Notes:

[1] - Observation Well

[2] - Downgradient Well

[3] - Only select wells were gauged as part of two-of-two verification sampling

NC - Not Calculated

**Table 1 - Groundwater Data Summary: MW-1D
 Northeastern - LF
 Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/30/2018	Background	1.2	135	--	--	7.4	--	--
11/7/2022	Background	1.20	163	237	1.41	7.4	1,330	2,740
12/12/2022	Background	2.22	328	265	1.44	7.5	1,340	3,170

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-1D
Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
5/30/2018	Background	4.57 J1	< 1.05 U1	18.1	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.36 J1	--	--	< 0.68 U1	0.05481	< 0.005 U1	10.73	3.11 J1	43
11/7/2022	Background	0.40	1.74	62.9	0.26 J1	0.325	5.38	3.39	--	1.41	4.67	0.114	--	14.2	1.03	0.12 J1
12/12/2022	Background	0.4 J1	23.0	758	3.51	4.80	70.0	52.9	--	1.44	46.2	0.152	0.070 J1	28	9.8	0.9 J1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-2D
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/2/2018	Background	10.5	7.52	14	2.028	10.6	628	1,206
5/30/2018	Background	10.1	19.2	--	--	10.4	--	--
2/27/2019	Background	9.67	9.26	16.4	1.56	11.0	612	1,218
8/26/2019	Background	10.7	14.3	12	1.661	12.8	591	1,236
6/29/2020	Background	11.3	11.9	11.5	1.91	13.7	732	1,310
4/13/2021	Background	10.6	12.5	12.1	1.81	11.0	654	1,250
6/14/2022	Background	8.46	18.5	15.5	1.22	10.1	617	1,180 L1

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.

In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.

**Table 1 - Groundwater Data Summary: MW-2D
Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
5/2/2018	Background	2.12 J1	37.15	9.62	< 0.02 U1	0.3 J1	< 0.23 U1	0.36 J1	1.259	2.028	< 0.68 U1	0.0006 J1	0.046	588	82.77	1.1 J1
5/30/2018	Background	1.95 J1	34.61	29.17	< 0.02 U1	0.44 J1	1.4	0.3 J1	--	--	1.28 J1	0.00125	0.04	552	72.31	2
2/27/2019	Background	--	--	--	--	--	--	--	--	1.56	--	--	0.028	--	--	--
8/26/2019	Background	--	--	--	--	--	--	--	--	1.661	--	--	--	--	--	--
6/29/2020	Background	--	--	--	--	--	--	--	--	1.91	--	--	--	--	--	--
4/13/2021	Background	--	--	--	--	--	--	--	--	1.81	--	--	--	--	--	--

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-3D
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
1/25/2017	Background	0.919	111	16	< 1 U1	7.5	174	658
3/14/2017	Background	0.913	120	14	1	--	175	648
4/25/2017	Background	0.972	110	14	0.77 J1	7.9	181	662
5/18/2017	Background	0.789	163	12	< 0.083 U1	--	192	598
6/15/2017	Background	0.873	137	12	0.8472 J1	7.3	225	742
6/27/2017	Background	0.84	194	13	0.7591 J1	7.3	232	766
7/12/2017	Background	0.864	129	13	< 0.083 U1	6.9	210	728
8/4/2017	Background	0.856	135	12	0.7381 J1	6.7	227	710
8/17/2017	Background	0.841	138	23	< 0.083 U1	6.8	213	728
8/30/2017	Background	0.84	136	12	0.7144 J1	6.9	216	696
9/13/2017	Background	0.877	152	11	< 0.083 U1	6.8	212	848
9/20/2017	Background	0.853	139	11	< 0.083 U1	6.9	214	724
10/11/2017	Detection	0.878	134	13	< 0.083 U1	6.9	218	722
5/2/2018	Detection	1.08	127	13	0.757 J1	7.3	196	736
5/30/2018	Detection	0.952	129	13	0.896 J1	7.5	214	724
10/22/2018	Detection	1.02	142	14.89	1.09	7.2	210.57	702
11/28/2018	Detection	0.964	--	--	0.648 J1	8.0	--	--
2/27/2019	Detection	0.973	127	13.2	0.71	7.8	223	700
5/7/2019	Detection	1.56	--	--	--	--	--	--
8/26/2019	Detection	0.979	130	12	0.608 J1	8.5	181	686
12/3/2019	Detection	--	--	--	--	7.4	--	--
6/30/2020	Detection	0.941	116	13.7	0.77	8.6	206	680
7/28/2020	Detection	--	--	--	--	8.3	--	--
10/21/2020	Detection	0.833	120	12.6	0.77	8.7	189	667
12/16/2020	Detection	--	--	--	--	6.9	--	--
4/13/2021	Detection	0.924	114	12.6	0.84	7.4	184	633
12/28/2021	Detection	0.829	114 M1	12.3	0.82	7.1	175	620
6/14/2022	Detection	0.882	124	12.5	0.84	7.2	177	630 L1
11/7/2022	Detection	0.864	121	12.9	0.81	7.2	181	650

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.

In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.

M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.

Table 1 - Groundwater Data Summary: MW-3D

**Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
1/25/2017	Background	< 5 U1	< 5 U1	111	< 1 U1	< 1 U1	2	< 5 U1	2.153	< 1 U1	< 5 U1	0.017	< 0.025 U1	< 5 U1	< 5 U1	< 2 U1
3/14/2017	Background	< 5 U1	< 5 U1	100	< 1 U1	< 1 U1	< 1 U1	< 5 U1	1.456	1	< 5 U1	0.016	< 0.025 U1	< 5 U1	< 5 U1	< 2 U1
4/25/2017	Background	< 0.93 U1	3.3 J1	89.64	< 0.02 U1	0.26 J1	0.35 J1	1.3 J1	0.419	0.77 J1	< 0.68 U1	0.01508	< 0.005 U1	1.97 J1	< 0.99 U1	< 0.86 U1
5/18/2017	Background	< 0.93 U1	10.64	1,040	0.92 J1	0.61 J1	18.06	5.32	2.443	< 0.083 U1	3.24 J1	0.01943	0.01 J1	4.15 J1	< 0.99 U1	< 0.86 U1
6/15/2017	Background	1.44 J1	1.48 J1	150	0.08 J1	0.22 J1	1.23	1.09 J1	1.706	0.8472 J1	0.83 J1	0.01451	< 0.005 U1	3.04 J1	< 0.99 U1	< 0.86 U1
6/27/2017	Background	< 0.93 U1	< 1.05 U1	97.64	0.09 J1	0.45 J1	4.8	2.69 J1	2.431	0.7591 J1	2.99 J1	0.01836	0.007 J1	79.28	< 0.99 U1	< 0.86 U1
7/12/2017	Background	< 0.93 U1	< 1.05 U1	118	0.05 J1	0.08 J1	0.41 J1	0.82 J1	14.283	< 0.083 U1	< 0.68 U1	0.01435	< 0.005 U1	3.22 J1	< 0.99 U1	< 0.86 U1
8/4/2017	Background	< 0.93 U1	< 1.05 U1	124	0.07 J1	0.21 J1	0.82 J1	0.84 J1	2.242	0.7381 J1	0.8 J1	0.01344	0.013 J1	3.08 J1	< 0.99 U1	< 0.86 U1
8/17/2017	Background	< 0.93 U1	< 1.05 U1	274	0.17 J1	0.24 J1	3.11	1.83 J1	2.328	< 0.083 U1	< 0.68 U1	0.01495	< 0.005 U1	2.91 J1	1 J1	< 0.86 U1
8/30/2017	Background	< 0.93 U1	2.6 J1	244	0.16 J1	0.33 J1	2.36	1.54 J1	2.215	0.7144 J1	< 0.68 U1	0.01465	< 0.005 U1	2.68 J1	< 0.99 U1	< 0.86 U1
9/13/2017	Background	< 0.93 U1	4.52 J1	430	0.35 J1	0.49 J1	6.32	2.97 J1	1.566	< 0.083 U1	1.55 J1	0.01639	< 0.005 U1	2.74 J1	< 0.99 U1	1.02 J1
9/20/2017	Background	1.63 J1	1.14 J1	267	0.17 J1	0.21 J1	2.74	1.41 J1	2.162	< 0.083 U1	< 0.68 U1	0.01508	< 0.005 U1	3.33 J1	< 0.99 U1	< 0.86 U1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-4D
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
3/15/2017	Background	--	209	25	< 1 U1	--	237	848
5/2/2018	Background	1.21	192	22	< 0.083 U1	7.1	328	984
5/30/2018	Background	1.27	164	20	0.4188 J1	7.0	279	910
6/27/2018	Background	1.16	177	20	< 0.083 U1	7.9	258	882
7/31/2018	Background	1.04	196	31	< 0.083 U1	7.8	294	856
8/30/2018	Background	1.26	183	--	--	8.1	--	886
9/19/2018	Background	1.13	174	31	< 0.083 U1	7.8	260	884
10/15/2018	Background	0.656	195	37.9	< 0.083 U1	7.6	289.3	846
10/22/2018	Background	--	--	39.8	< 0.083 U1	7.9	306	--
11/28/2018	Background	1.24	193	27	0.3357 J1	7.9	295	972
1/15/2019	Detection	1.16	183	24.6	0.37 J1	7.5	417.6	--
2/27/2019	Detection	1.42	187	31.2	0.30	7.7	463	696
5/7/2019	Detection	--	--	--	--	--	419	--
8/26/2019	Detection	0.987	184	23	0.171 J1	8.1	274	830
6/30/2020	Detection	0.988	176	22.2	0.27	8.4	336	867
10/21/2020	Detection	0.761	163	24.3	0.27	8.4	272	813
4/12/2021	Detection	1.20	195	23.0	0.33	7.3	429	979
6/22/2021	Detection	--	--	--	--	7.1	398	--
12/28/2021	Detection	0.881	167	29.4	0.26	6.9	281	810
6/14/2022	Detection	0.865	161	36.3	0.32	7.1	283	850 L1
11/7/2022	Detection	0.762	181	36.9	0.26	7.2	258	810

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.

In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.

**Table 1 - Groundwater Data Summary: MW-4D
Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
3/15/2017	Background	< 5 U1	5	225	< 1 U1	< 1 U1	4	< 5 U1	--	< 1 U1	< 5 U1	--	< 0.025 U1	--	< 5 U1	< 2 U1
5/2/2018	Background	4.05 J1	2.3 J1	171	< 0.02 U1	0.14 J1	1.37	2.36 J1	1.625	< 0.083 U1	1.47 J1	0.00533	< 0.005 U1	6.74	< 0.99 U1	1.19 J1
5/30/2018	Background	< 0.93 U1	< 1.05 U1	173	< 0.02 U1	< 0.07 U1	< 0.23 U1	1.28 J1	1.991	0.4188 J1	< 0.68 U1	0.0033	< 0.005 U1	4.91 J1	< 0.99 U1	2.94
6/27/2018	Background	< 0.93 U1	< 1.05 U1	167	< 0.02 U1	< 0.07 U1	1.93	1.82 J1	1.244	< 0.083 U1	< 0.68 U1	0.00491	< 0.005 U1	4.64 J1	< 0.99 U1	2.94
7/31/2018	Background	0.05	1.25	173	0.01 J1	0.04	< 7 U1	0.521	1.506	< 0.083 U1	0.130	0.00315	< 0.005 U1	4.59	0.2	0.02 J1
8/30/2018	Background	0.1	1.6	163	0.049	0.11	0.551	0.807	0.912	--	0.804	0.00296	0.007 J1	4.48	0.3	0.02 J1
9/19/2018	Background	0.04 J1	1.20	177	0.02 J1	0.03 J1	0.273	0.551	3.91	< 0.083 U1	0.595	0.00289	< 0.005 U1	3.71	0.2	< 0.1 U1
10/15/2018	Background	0.15	2.28	166	0.06 J1	0.16	0.872	0.873	3.056	< 0.083 U1	1.41	0.00336	< 0.005 U1	4.58	0.3	< 0.1 U1
10/22/2018	Background	--	--	--	--	--	--	--	--	< 0.083 U1	--	--	--	--	--	--
11/28/2018	Background	< 0.1 U1	1.31	171	< 0.1 U1	0.06 J1	0.3 J1	0.677	1.629	0.3357 J1	0.3 J1	0.00378	< 0.005 U1	8 J1	0.2 J1	< 0.5 U1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-5D
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
3/14/2017	Background	--	127	--	--	--	--	--
5/2/2018	Background	0.476	132	25	0.703 J1	7.3	126	636
5/30/2018	Background	0.468	136	24	0.711 J1	7.2	113	628
6/27/2018	Background	0.478	134	26	0.7487 J1	8.2	122	658
7/31/2018	Background	0.491	142	30	0.8769 J1	8.3	662	628
8/30/2018	Background	0.52	158	--	--	8.1	--	648
9/19/2018	Background	0.444	156	30	0.7519 J1	7.7	134	662
10/15/2018	Background	0.439	141	30.2	0.845 J1	7.8	138.7	636
10/22/2018	Background	--	--	30.3	0.806 J1	8.0	138	--
11/28/2018	Background	0.612	143	24	0.371 J1	8.1	143	614
1/15/2019	Detection	0.540	157	24	0.316 J1	7.8	127.6	--
2/27/2019	Detection	0.531	130	26.7	0.50	8.5	153	616
5/7/2019	Detection	--	--	--	--	--	158	--
8/26/2019	Detection	0.568	146	24	0.412 J1	9.8	134	670
12/3/2019	Detection	--	--	--	--	7.2	--	--
6/29/2020	Detection	0.508	124	26.7	0.57	8.7	165	641
7/28/2020	Detection	--	--	--	--	8.3	--	--
10/21/2020	Detection	0.469	122	26.3	0.54	8.8	158	655
4/13/2021	Detection	0.539	131	27.3	0.59	7.6	160	632
12/28/2021	Detection	0.458	123	26.9	0.60	7.1	157	590
6/14/2022	Detection	0.479	131	26.5	0.61	7.4	150	620 L1
11/7/2022	Detection	0.445	123	26.3	0.58	7.1	148	610

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.

In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.

**Table 1 - Groundwater Data Summary: MW-5D
Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
3/14/2017	Background	< 5 U1	< 5 U1	99	< 1 U1	< 1 U1	< 1 U1	< 5 U1	--	--	< 5 U1	--	< 0.025 U1	--	< 5 U1	< 2 U1
5/2/2018	Background	2.91 J1	1.24 J1	127	< 0.02 U1	0.36 J1	0.59 J1	1.14 J1	2.449	0.703 J1	1.01 J1	0.01243	< 0.005 U1	1.33 J1	1.35 J1	1.25 J1
5/30/2018	Background	< 0.93 U1	< 1.05 U1	139	< 0.02 U1	< 0.07 U1	1.53	1.31 J1	3.06	0.711 J1	1.09 J1	0.01199	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/27/2018	Background	2.5 J1	< 1.05 U1	126	< 0.02 U1	< 0.07 U1	0.8 J1	0.63 J1	2.512	0.7487 J1	< 0.68 U1	0.01208	< 0.005 U1	0.96 J1	< 0.99 U1	2
7/31/2018	Background	0.16	1.27	143	0.103	0.21	0.355	0.482	2.876	0.8769 J1	1.43	0.011	< 0.005 U1	1.21	0.4	0.02 J1
8/30/2018	Background	0.1	0.98	111	0.076	0.1	0.518	0.3	2.906	--	0.706	0.0112	0.006 J1	1.24	0.3	0.04 J1
9/19/2018	Background	0.13	1.18	118	0.08 J1	0.09	0.745	0.336	5.163	0.7519 J1	0.720	0.0107	< 0.005 U1	2 J1	0.4	< 0.1 U1
10/15/2018	Background	0.07 J1	0.99	103	0.07 J1	0.08	0.423	0.289	5.319	0.845 J1	0.379	0.00977	< 0.005 U1	1 J1	0.3	< 0.1 U1
10/22/2018	Background	--	--	--	--	--	--	--	--	0.806 J1	--	--	--	--	--	--
11/28/2018	Background	< 0.1 U1	1.15	113	< 0.1 U1	0.06 J1	0.5 J1	0.324	2.393	0.371 J1	0.4 J1	0.0121	< 0.005 U1	0.2 J1	0.3 J1	< 0.5 U1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-6D
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/15/2017	Background	3.51	201	28	0.8054 J1	7.5	508	1,054
6/27/2017	Background	0.877	133	29	0.7596 J1	7.9	524	1,024
7/12/2017	Background	3.49	218	30	< 0.083 U1	7.3	504	1,044
8/4/2017	Background	3.64	222	31	0.7656 J1	6.4	532	1,022
8/17/2017	Background	3.55	211	30	0.729 J1	6.9	509	1,016
8/30/2017	Background	3.41	210	30	0.7158 J1	7.2	522	986
9/13/2017	Background	2.96	237	32	0.5406 J1	7.1	521	1,140
9/20/2017	Background	3.81	196	32	< 0.083 U1	7.1	505	1,008
10/11/2017	Detection	3.74	165	29	0.9597 J1	6.9	545	1,032
1/22/2018	Detection	4.24	--	--	0.76 J1	6.9	494	--
5/2/2018	Detection	3.52	173	31	0.806 J1	7.3	406	1,062
5/30/2018	Detection	3.35	269	32	0.9218 J1	7.4	401	1,090
10/22/2018	Detection	4.34	237	31.68	1.28	7.3	471.81	1,152
11/28/2018	Detection	--	--	--	0.844 J1	7.7	--	--
2/27/2019	Detection	3.63	360	26.9	0.89	7.6	496	1,144
5/7/2019	Detection	--	185	--	--	--	--	1,038
8/26/2019	Detection	2.88	181	13	0.634 J1	8.6	401	1,044
12/3/2019	Detection	--	--	--	--	7.5	--	--
6/30/2020	Detection	3.07	180	24.9	0.76	8.8	533	1,080
7/28/2020	Detection	--	--	--	--	8.4	--	--
10/21/2020	Detection	3.00	170	29.9	0.75	8.7	426	1,060
12/16/2020	Detection	--	--	--	--	7.1	--	--
4/13/2021	Detection	3.35	170	28.4	0.93	8.1	478	1,090
12/28/2021	Detection	2.98	163	27.0	0.93	7.1	469	1,040
6/14/2022	Detection	3.04	203	28.7	1.01	7.3	451	1,090 L1
11/7/2022	Detection	3.00	171	30.2	0.92	7.1	455	1,050

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.

In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.

**Table 1 - Groundwater Data Summary: MW-6D
Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/15/2017	Background	< 0.93 U1	1.99 J1	113	0.18 J1	0.8 J1	5.99	3.73 J1	1.822	0.8054 J1	3.48 J1	0.02203	0.012 J1	85.01	< 0.99 U1	< 0.86 U1
6/27/2017	Background	1.28 J1	< 1.05 U1	170	0.06 J1	0.37 J1	0.86 J1	1.09 J1	1.917	0.7596 J1	0.76 J1	0.01356	< 0.005 U1	2.79 J1	< 0.99 U1	< 0.86 U1
7/12/2017	Background	< 0.93 U1	< 1.05 U1	107	0.22 J1	0.56 J1	6.82	3.82 J1	1.784	< 0.083 U1	5	0.02244	0.007 J1	61.81	< 0.99 U1	< 0.86 U1
8/4/2017	Background	< 0.93 U1	< 1.05 U1	128	0.22 J1	0.93 J1	6.62	3.39 J1	1.115	0.7656 J1	4.96 J1	0.01921	0.016 J1	82.11	< 0.99 U1	< 0.86 U1
8/17/2017	Background	1.26 J1	1.18 J1	99.54	0.19 J1	0.44 J1	6.77	3.07 J1	1.155	0.729 J1	3.25 J1	0.01925	0.011 J1	81.32	< 0.99 U1	< 0.86 U1
8/30/2017	Background	< 0.93 U1	2.06 J1	103	0.22 J1	0.36 J1	6.68	3.03 J1	1.057	0.7158 J1	2.5 J1	0.01829	< 0.005 U1	85.75	< 0.99 U1	< 0.86 U1
9/13/2017	Background	< 0.93 U1	1.19 J1	109	0.31 J1	0.49 J1	8.15	3.71 J1	1.377	0.5406 J1	3.28 J1	0.02105	< 0.005 U1	58	< 0.99 U1	< 0.86 U1
9/20/2017	Background	1.18 J1	1.93 J1	75.04	0.14 J1	0.22 J1	3.86	2.27 J1	1.43	< 0.083 U1	2.33 J1	0.01701	< 0.005 U1	81	< 0.99 U1	< 0.86 U1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-9D
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/15/2017	Background	7.09	229	100	0.9857 J1	7.1	781	1,458
6/27/2017	Background	7.01	191	232	0.8986 J1	7.7	876	1,114
7/12/2017	Background	7.63	244	98	2.191	7.4	1,048	2,146
8/4/2017	Background	7.59	337	60	0.6947 J1	7.0	1,217	2,256
8/17/2017	Background	7.46	328	216	0.681 J1	7.1	1,193	2,486
8/30/2017	Background	6.93	354	64	< 0.083 U1	7.3	1,192	2,392
9/13/2017	Background	6.78	366	293	0.37 J1	7.2	1,244	2,826
10/4/2017	Background	6.68	304	180	< 0.083 U1	7.3	1,079	2,296
10/11/2017	Detection	7.07	288	314	1.5191	7.1	1,075	2,188
1/22/2018	Detection	7.43	--	--	--	7.1	--	--
10/22/2018	Detection	7.19	199	106	0.6 J1	7.1	519.42	1,258
2/27/2019	Detection	6.49	155	28.9	0.89	7.6	555	1,174
8/26/2019	Detection	6.95	136	24	0.758 J1	8.8	526	1,084
12/3/2019	Detection	--	--	--	--	7.6	--	--
6/30/2020	Detection	6.51	128	26.2	0.95	10.9	602	1,070
7/28/2020	Detection	--	--	--	--	8.7	--	--
10/21/2020	Detection	6.12	129	25.3	0.97	8.9	547	1,160
12/16/2020	Detection	--	--	--	--	7.5	--	--
4/13/2021	Detection	6.70	158	26.1	0.99	8.2	594	1,180
6/22/2021	Detection	--	--	--	--	7.6	--	--
6/14/2022	Detection	6.19	196	25.9	0.93	7.3	775	1,560 L1
8/15/2022	Detection	--	--	--	--	7.2	--	1,250
11/7/2022	Detection	6.11	160	26.2	0.92	8.5	624	1,270

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.

In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

L1 - The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.

**Table 1 - Groundwater Data Summary: MW-9D
Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/15/2017	Background	< 0.93 U1	< 1.05 U1	188	0.32 J1	0.81 J1	12.34	6.18	0.931	0.9857 J1	7.02	0.02386	0.009 J1	173	5	< 0.86 U1
6/27/2017	Background	< 0.93 U1	< 1.05 U1	58.15	< 0.02 U1	0.26 J1	0.89 J1	7.14	--	0.8986 J1	1.24 J1	0.01647	< 0.005 U1	166	< 0.99 U1	< 0.86 U1
7/12/2017	Background	< 0.93 U1	< 1.05 U1	69.89	0.05 J1	< 0.07 U1	4.09	5.69	--	2.191	2.36 J1	0.02221	< 0.005 U1	151	1.32 J1	< 0.86 U1
8/4/2017	Background	< 0.93 U1	< 1.05 U1	132	0.17 J1	0.54 J1	7.15	7.34	--	0.6947 J1	4.26 J1	0.02155	0.017 J1	117	3.57 J1	< 0.86 U1
8/17/2017	Background	< 0.93 U1	< 1.05 U1	196	0.22 J1	0.25 J1	9.52	8.17	--	0.681 J1	5.33	0.02401	0.011 J1	98.19	3.53 J1	< 0.86 U1
8/30/2017	Background	< 0.93 U1	< 1.05 U1	323	0.37 J1	0.91 J1	20.06	15.08	--	< 0.083 U1	9.27	0.02964	0.016 J1	93.84	2.94 J1	< 0.86 U1
9/13/2017	Background	< 0.93 U1	< 1.05 U1	399	0.4 J1	0.68 J1	13.34	12.88	--	0.37 J1	8.28	0.03257	0.016 J1	78.39	2.8 J1	< 0.86 U1
10/4/2017	Background	< 0.93 U1	< 1.05 U1	410	0.43 J1	2.4	14.79	8.38	--	< 0.083 U1	9.69	0.03222	0.015 J1	73.77	3.83 J1	< 0.86 U1
12/12/2022	Background	--	--	--	--	--	--	--	1.93	--	--	--	--	--	--	--

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-10D
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/30/2018	Background	1.15	54.9	--	--	7.5	--	--
6/27/2018	Background	1.16	52.5	--	--	--	--	--

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-10D
Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
5/30/2018	Background	2.47 J1	< 1.05 U1	102	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.61 J1	--	--	< 0.68 U1	0.451	< 0.005 U1	19.72	7.02	< 0.86 U1
6/27/2018	Background	1.74 J1	1.59 J1	131	< 0.02 U1	< 0.07 U1	< 0.23 U1	1.01 J1	--	--	< 0.68 U1	0.461	< 0.005 U1	16.2	5.03	< 0.86 U1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-11D
 Northeastern - LF
 Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/30/2018	Background	0.641	114	--	--	7.3	--	--

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-11D
Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
5/30/2018	Background	< 0.93 U1	1.77 J1	55.76	< 0.02 U1	< 0.07 U1	2.1	0.43 J1	--	--	< 0.68 U1	0.03979	< 0.005 U1	12.14	< 0.99 U1	1.8 J1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-12D
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
3/15/2017	Background	--	76.9	16	2	--	613	1,142
5/2/2018	Background	8.63	184	17	2.199	7.4	541	1,044
5/30/2018	Background	8.35	89.9	91	2.379	7.7	542	1,088
6/27/2018	Background	8.45	74.9	17	1.988	8.2	586	1,070
7/31/2018	Background	8.72	108	22	2.6173	8.7	662	1,034
8/30/2018	Background	9.71	141	--	--	9.2	--	1,050
9/19/2018	Background	9.02	110	21	2.8416	8.1	582	1,052
10/15/2018	Background	8.68	70.0	21	2.99	9.4	561.2	1,060
10/22/2018	Background	--	--	19.44	2.8	9.0	504.3	--
11/28/2018	Background	9.69	103	16	2.2238	8.9	570	1,068
1/15/2019	Detection	9.08	68.0	14.6	2.028	8.1	437.4	--
2/27/2019	Detection	8.88	64.7	16.8	2.11	8.5	564	1,014
8/26/2019	Detection	8.90	96.3	14	1.6	8.7	540	1,018
6/29/2020	Detection	8.04	82.2	15.0	1.92	8.8	602	945
10/20/2020	Detection	7.19	118	16.1	2.06	9.1	585	1,060
4/13/2021	Detection	7.96	79.0	16.1	2.00	8.4	590	1,030
12/27/2021	Detection	6.38	80.7	12.1	1.90	8.3	498	920
6/14/2022	Detection	6.89	68.3	13.4	1.88	8.1	511	940 L1
11/8/2022	Detection	7.11	61.2	13.1	1.93	8.5	507	920

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.

In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.

Table 1 - Groundwater Data Summary: MW-12D

**Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
3/15/2017	Background	< 5 U1	< 5 U1	31	< 1 U1	< 1 U1	< 1 U1	< 5 U1	--	2	< 5 U1	--	< 0.025 U1	--	< 5 U1	< 2 U1
5/2/2018	Background	< 0.93 U1	1.56 J1	121	0.13 J1	0.8 J1	7.95	3.52 J1	1.625	2.199	7.03	0.00841	0.013 J1	693	4.5 J1	< 0.86 U1
5/30/2018	Background	< 0.93 U1	1.24 J1	77.75	< 0.02 U1	0.25 J1	2.74	1.49 J1	1.213	2.379	3.04 J1	0.00608	< 0.005 U1	667	3.88 J1	2.2
6/27/2018	Background	< 0.93 U1	< 1.05 U1	36.18	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.39 J1	1.331	1.988	< 0.68 U1	0.00541	< 0.005 U1	666	1.55 J1	1.99 J1
7/31/2018	Background	0.11	3.00	42.0	0.053	0.07	0.414	0.674	0.721	2.6173	2.32	0.006	< 0.005 U1	818	1.7	0.106
8/30/2018	Background	0.2	3.39	65.8	0.097	0.31	1.82	2.17	3.137	--	5.43	0.00396	< 0.005 U1	872	3.1	0.241
9/19/2018	Background	0.36	4.67	82.6	0.1 J1	0.33	2.03	1.57	4.417	2.8416	5.18	0.00410	0.012 J1	828	2.9	0.2 J1
10/15/2018	Background	0.43	6.46	50.2	0.06 J1	0.20	1.60	1.31	3.541	2.99	3.51	0.00308	0.007 J1	774	4.6	0.3 J1
10/22/2018	Background	--	--	--	--	--	--	--	--	2.8	--	--	--	--	--	--
11/28/2018	Background	0.3 J1	3.99	71.7	0.1 J1	0.33	1.70	0.989	1.486	2.2238	4.12	0.00483	0.007 J1	744	1.9	< 0.5 U1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-13D
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
3/15/2017	Background	--	203	7	< 1 U1	7.5	402	1,116
5/2/2018	Background	1.08	172	5	< 0.083 U1	7.1	354	1,064
5/30/2018	Background	0.864	171	6	0.4361 J1	6.9	343	1,068
6/27/2018	Background	1.35	212	--	--	7.3	--	--
6/29/2020	Background	0.954	188	4.68	0.32	8.3	476	1,100
4/13/2021	Background	1.39	192	5.83	0.46	7.7	519	1,170
12/27/2021	Background	0.832	184	4.82	0.38	7.0	435	1,120
6/14/2022	Background	0.742	167	4.36	0.37	7.3	341	990 L1
11/8/2022	Background	0.752	181	4.41	0.34	7.0	397	1,060
12/12/2022	Background	1.08	199	--	--	7.2	--	--

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.

In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.

Table 1 - Groundwater Data Summary: MW-13D

**Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
3/15/2017	Background	< 5 U1	< 5 U1	64	< 1 U1	< 1 U1	2	< 5 U1	--	< 1 U1	< 5 U1	--	< 0.025 U1	--	< 5 U1	< 2 U1
5/2/2018	Background	< 0.93 U1	< 1.05 U1	48.84	< 0.02 U1	0.13 J1	0.8 J1	1.61 J1	3.214	< 0.083 U1	< 0.68 U1	0.02997	< 0.005 U1	12.38	11.93	< 0.86 U1
5/30/2018	Background	< 0.93 U1	< 1.05 U1	76.07	0.03 J1	< 0.07 U1	1.48	4.37 J1	4.03	0.4361 J1	< 0.68 U1	0.03287	< 0.005 U1	13.07	11.96	< 0.86 U1
6/27/2018	Background	< 0.93 U1	1.13 J1	119	0.12 J1	< 0.07 U1	3.74	4.96 J1	--	--	1.84 J1	0.02781	< 0.005 U1	24.56	10.11	< 0.86 U1
6/29/2020	Background	--	--	--	--	--	--	--	--	0.32	--	--	--	--	--	--
4/13/2021	Background	--	--	--	--	--	--	--	--	0.46	--	--	--	--	--	--
12/27/2021	Background	--	--	--	--	--	--	--	--	0.38	--	0.0233	--	--	--	--
6/14/2022	Background	--	--	--	--	--	--	--	--	0.37	--	--	--	--	--	--
11/8/2022	Background	0.35	1.21	57.6	0.12 J1	0.088	1.43	2.15	--	0.34	0.83	0.0276	--	8.9	8.69	0.05 J1
12/12/2022	Background	0.21	1.37	114	0.118	0.143	1.92	1.91	--	--	1.44	0.0242	< 0.002 U1	11.6	6.11	0.05 J1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-14
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/30/2018	Background	1.47	77.1	--	--	6.7	--	--
6/27/2018	Background	1.56	71	--	--	--	--	--
7/31/2018	Background	1.50	68.0	--	--	7.4	--	--
8/30/2018	Background	2.09	181	--	--	7.8	--	--
8/26/2019	Background	1.69	110	3,117	3.066	8.6	357	6,198
6/30/2020	Background	1.36	60.8	2,980	3.97	8.5	189	5,370
10/21/2020	Background	1.39	64.3	2,830	4.22	8.6	226	11,900
12/28/2021	Background	1.20	58.2	2,920	4.5	7.2	278	5,890
11/7/2022	Background	1.29	100 M1	2,870	4.9	7.2	214	5,600
12/12/2022	Background	1.23	75.3	--	--	7.3	--	--

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.

In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.

Table 1 - Groundwater Data Summary: MW-14

**Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
5/30/2018	Background	0.93 J1	1.15 J1	157	< 0.02 U1	< 0.07 U1	< 0.23 U1	3.29 J1	--	--	< 0.68 U1	0.361	0.009 J1	20.67	5.51	< 0.86 U1
6/27/2018	Background	< 0.93 U1	< 1.05 U1	161	< 0.02 U1	< 0.07 U1	< 0.23 U1	3.14 J1	--	--	< 0.68 U1	0.378	0.006 J1	20.16	4.35 J1	42
7/31/2018	Background	1.35	0.58	172	0.029	0.18	< 7 U1	2.63	--	--	0.037	0.362	0.008 J1	27.8	3.5	0.05 J1
8/30/2018	Background	1.61	0.57	153	0.034	0.21	0.286	1.71	--	--	1.06	0.38	< 0.005 U1	31.7	2.2	0.03 J1
8/26/2019	Background	--	--	--	--	--	--	--	--	3.066	--	--	--	--	--	--
6/30/2020	Background	--	--	--	--	--	--	--	--	3.97	--	--	--	--	--	--
10/21/2020	Background	--	--	--	--	--	--	--	--	4.22	--	--	--	--	--	--
12/28/2021	Background	--	--	--	--	--	--	--	--	4.5	--	0.268	--	--	--	--
11/7/2022	Background	0.81	0.95	353 M1	0.053	0.165	4.61	2.08	--	4.9	1.12	0.322	--	12.9	0.72	< 0.04 U1
12/12/2022	Background	0.84	1.14	283	0.029 J1	0.163	1.80	3.28	--	--	0.58	0.265	0.002 J1	14.1	1.34	< 0.04 U1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.

**Table 1 - Groundwater Data Summary: MW-15
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
1/25/2017	Background	9.45	87	19	2	8.0	530	1,112
3/13/2017	Background	8.23	104	28	2	--	551	1,110
4/25/2017	Background	9.44	73.1	78	1.83	7.6	558	1,128
5/18/2017	Background	10.2	52.2	111	2	--	596	1,092
6/15/2017	Background	9.74	126	24	1.96	7.9	559	1,060
6/27/2017	Background	9.75	79.2	22	1.8739	8.5	616	1,072
7/12/2017	Background	9.87	110	19	1.894	8.2	632	1,076
8/4/2017	Background	9.66	86.3	19	1.759	7.6	612	1,032
8/17/2017	Background	9.53	93.1	18	1.691	7.8	572	1,110
8/30/2017	Background	9.59	64.9	17	2.0289	6.7	590	1,038
9/13/2017	Background	9.13	68	17	1.671	8.6	584	1,080
9/20/2017	Background	9.65	67.6	15	0.642 J1	7.5	543	1,036
10/11/2017	Detection	9.62	80.1	46	1.9468	7.6	593	1,124
1/22/2018	Detection	9.16	--	--	--	7.2	--	--
5/30/2018	Detection	8.76	105	33	2.331	7.7	549	1,128
10/15/2018	Detection	--	--	--	2.27	--	--	--
10/22/2018	Detection	8.90	250	46.81	2.17	7.8	549.46	1,082
11/28/2018	Detection	--	119	--	--	8.3	--	--
2/27/2019	Detection	8.34	96.9	24.3	1.45	8.6	574	1,046
8/26/2019	Detection	8.28	119	20	1.252	10.5	587	1,072
12/3/2019	Detection	--	--	--	--	7.7	--	--
6/30/2020	Detection	8.00	105	17.9	1.55	9.3	706	1,100
7/28/2020	Detection	--	--	--	--	9.0	--	--
10/21/2020	Detection	7.79	117	15.7	1.53	11.0	631	1,140
12/16/2020	Detection	--	--	--	--	7.8	--	--
4/13/2021	Detection	8.40	93.5	15.5	1.71	8.8	659	1,100
6/22/2021	Detection	--	--	--	--	7.8	662	--
12/28/2021	Detection	7.28	123	15.9	1.49	7.5	631	1,090
6/14/2022	Detection	8.71	85.5	15.3	1.71	8.7	643	1,080 L1, S7
11/7/2022	Detection	7.08	122	17.0	1.32	7.9	628	1,090

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.

In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

L1: The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.

S7: Sample did not achieve constant weight.

**Table 1 - Groundwater Data Summary: MW-15
Northeastern - LF
Appendix B Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
1/25/2017	Background	< 5 U1	< 5 U1	107	< 1 U1	< 1 U1	3	< 5 U1	0.505	2	< 5 U1	0.012	< 0.025 U1	643	< 5 U1	< 2 U1
3/13/2017	Background	< 5 U1	< 5 U1	100	< 1 U1	< 1 U1	3	< 5 U1	1.241	2	< 5 U1	0.01	< 0.025 U1	550	< 5 U1	< 2 U1
4/25/2017	Background	1.31 J1	2.85 J1	55.73	< 0.02 U1	< 0.07 U1	0.23 J1	0.64 J1	0.203	1.83	< 0.68 U1	0.00786	< 0.005 U1	614	1.83 J1	1.05 J1
5/18/2017	Background	1.38 J1	13.61	52.06	< 0.02 U1	0.26 J1	0.96 J1	0.62 J1	1.097	2	1.7 J1	0.00834	0.022 J1	605	22.28	< 0.86 U1
6/15/2017	Background	< 0.93 U1	7.56	212	0.25 J1	0.64 J1	8.57	3.96 J1	1.215	1.96	5.25	0.01148	0.02 J1	662	12.46	< 0.86 U1
6/27/2017	Background	< 0.93 U1	4.4 J1	98.67	0.02 J1	< 0.07 U1	1.79	1.29 J1	1.652	1.8739	2.42 J1	0.00722	0.022 J1	644	5.76	< 0.86 U1
7/12/2017	Background	1.63 J1	3.77 J1	150	0.12 J1	0.09 J1	4.03	2.64 J1	0.287	1.894	2.87 J1	0.0091	0.009 J1	668	9	< 0.86 U1
8/4/2017	Background	1.56 J1	3.73 J1	94.19	0.08 J1	0.09 J1	1.51	1.4 J1	0.914	1.759	1.36 J1	0.00752	0.021 J1	647	6	< 0.86 U1
8/17/2017	Background	0.99 J1	4.44 J1	133	0.09 J1	< 0.07 U1	3.3	1.69 J1	0.649	1.691	1.44 J1	0.00823	0.015 J1	642	5.95	< 0.86 U1
8/30/2017	Background	< 0.93 U1	6.32	64.87	0.04 J1	< 0.07 U1	0.86 J1	0.78 J1	0.393	2.0289	< 0.68 U1	0.00629	0.01 J1	656	9.24	< 0.86 U1
9/13/2017	Background	< 0.93 U1	4.18 J1	54.34	0.03 J1	< 0.07 U1	< 0.23 U1	0.66 J1	1.07	1.671	< 0.68 U1	0.00635	0.008 J1	638	1.45 J1	< 0.86 U1
9/20/2017	Background	< 0.93 U1	3.87 J1	49.23	< 0.02 U1	< 0.07 U1	0.23 J1	0.77 J1	0.887	0.642 J1	< 0.68 U1	0.00621	< 0.005 U1	652	3.77 J1	< 0.86 U1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

- -: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-16
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/18/2017	Background	4.77	338	62	< 0.083 U1	--	499	1,314
6/15/2017	Background	4.1	154	56	0.879 J1	8.5	467	1,328
8/17/2017	Background	6.48	201	36	0.84 J1	7.2	745	1,856

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

Table 1 - Groundwater Data Summary: MW-16
Northeastern - LF
Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
5/18/2017	Background	< 0.93 U1	6.8	494	1.01	2.94	36.5	15.32	0.969	< 0.083 U1	16.64	0.05597	0.032	198	10.98	< 0.86 U1
6/15/2017	Background	< 0.93 U1	< 1.05 U1	83.73	0.07 J1	< 0.07 U1	2.51	2.43 J1	1.258	0.879 J1	1.44 J1	0.02944	0.007 J1	212	3.86 J1	< 0.86 U1
8/17/2017	Background	< 0.93 U1	< 1.05 U1	139	0.16 J1	0.41 J1	7.64	5.26	0.653	0.84 J1	3.4 J1	0.04163	0.012 J1	204	14.41	< 0.86 U1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

**Table 1 - Groundwater Data Summary: MW-17
Northeastern - LF
Appendix A Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
1/25/2017	Background	--	--	--	--	7.8	--	--
6/27/2017	Background	1.13	894	38	0.9268 J1	7.5	820	1,592
8/17/2017	Background	1.2	789	28	0.699 J1	7.4	1,078	2,046
5/30/2018	Assessment	0.702	191	--	--	8.0	--	--
6/27/2018	Assessment	0.715	205	--	--	--	--	--
7/31/2018	Assessment	0.843	234	--	--	8.6	--	--
9/19/2018	Assessment	0.767	330	--	--	7.9	--	--
11/7/2022	Detection	--	--	11.3	0.89	7.0	440	1,010
11/11/2022	Detection	1	231	--	--	--	--	--

Notes:

mg/L: milligrams per liter

SU: standard unit

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.

In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

Table 1 - Groundwater Data Summary: MW-17

Northeastern - LF

Appendix B Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/27/2017	Background	< 0.93 U1	20.5	975	2.77	6.77	74.59	47.64	--	0.9268 J1	76.11	0.06776	0.144	30.24	19.31	< 0.86 U1
8/17/2017	Background	< 0.93 U1	18.23	763	2.66	3.88	91.46	47.25	--	0.699 J1	56.22	0.07669	0.097	29.04	17.5	< 0.86 U1
5/30/2018	Assessment	1.61 J1	< 1.05 U1	40.12	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.31 J1	--	--	< 0.68 U1	0.01139	< 0.005 U1	8.38	26.7	< 0.86 U1
6/27/2018	Assessment	2.57 J1	< 1.05 U1	41.52	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.75 J1	--	--	< 0.68 U1	0.01282	< 0.005 U1	7.94	12.46	1.63 J1
7/31/2018	Assessment	0.28	0.28	39.5	0.005 J1	0.10	< 0.007 U1	1.84	--	--	0.056	0.017	< 0.005 U1	8.66	5.4	0.057
9/19/2018	Assessment	0.20	0.27	36.7	< 0.02 U1	0.07	< 0.04 U1	2.98	--	--	0.06 J1	0.0121	< 0.005 U1	9.62	4.4	< 0.1 U1

Notes:

µg/L: micrograms per liter

mg/L: milligrams per liter

pCi/L: picocuries per liter

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag. In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

--: Not analyzed

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit. In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

APPENDIX 2

Where applicable, shown in this appendix are the results from statistical analyses, and a description of the statistical analysis method chosen.

Memorandum

Date: February 9, 2022

To: David Miller (AEP)

Copies to: Jill Parker-Witt (AEP)

From: Allison Kreinberg (Geosyntec)

Subject: Evaluation of Detection Monitoring Data at Northeastern Plant's Landfill (LF)

In accordance with Oklahoma Department of Environmental Quality rules regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (OAC 252.517), the second semi-annual detection monitoring event of 2021 at the Landfill (LF), an existing CCR unit at the Northeastern Power Plant located in Oologah, Oklahoma, was completed on December 27-28, 2021.

Background values for the LF were previously calculated for wells MW-3D, MW-6D, MW-9D, MW-12D, and MW-15 in January 2018. Background values for wells MW-4D, MW-5D, and MW-12D were previously calculated in July 2019. After a minimum of four detection monitoring events, the results of those events were compared to the existing background dataset, and the background dataset was updated as appropriate. Revised upper prediction limits (UPLs) were calculated for each Appendix A parameter to represent background values. Lower prediction limits (LPLs) were also calculated for pH. Details on the calculation of the most recent revision to background values are described in Geosyntec's *Statistical Analysis Summary – Background Update Calculations* report, dated December 28, 2021.

To achieve an acceptably high statistical power while maintaining a site-wide false-positive rate (SWFPR) of 10% per year or less, prediction limits were calculated based on a one-of-two retesting procedure. With this procedure, a statistically significant increase (SSI) is only concluded if both samples in a series of two exceeds the UPL. In practice, if the initial result did not exceed the UPL, a second sample was not collected or analyzed.

Detection monitoring results and the relevant background values are compared in Table 1. No SSIs were observed at the Northeastern LF CCR unit, and as a result the Northeastern LF will remain in detection monitoring.

Evaluation of Detection Monitoring Data – Northeastern LF
February 9, 2022
Page 2

The statistical analysis was conducted within 90 days of completion of sampling and analysis in accordance with OAC 252:517-9-4(h)(6). A certification of these statistics by a qualified professional engineer is provided in Attachment A.

**Table 1: Detection Monitoring Data Comparison
Northeastern Plant - Landfill**

Analyte	Unit	Description	MW-3D	MW-4D	MW-5D	MW-6D	MW-9D	MW-12D	MW-15
			12/28/2021	12/28/2021	12/28/2021	12/28/2021	--	12/27/2021	12/28/2021
Boron	mg/L	Intrawell Background Value (UPL)	1.06	1.59	0.621	4.52	7.94	10.2	10.6
		Analytical Result	0.829	0.881	0.458	2.98	--	6.38	7.28
Calcium	mg/L	Intrawell Background Value (UPL)	175	214	166	272	295	172	137
		Analytical Result	114	167	123	163	--	80.7	123
Chloride	mg/L	Intrawell Background Value (UPL)	15.5	41.0	32.6	34.1	147	23.3	111
		Analytical Result	12.3	29.4	26.9	27.0	--	12.1	15.9
Fluoride	mg/L	Intrawell Background Value (UPL)	1.02	0.500	1.05	1.18	2.03	3.16	2.59
		Analytical Result	0.82	0.26	0.60	0.93	--	1.90	1.49
pH	SU	Intrawell Background Value (UPL)	8.2	8.7	9.5	8.1	7.7	9.8	9.3
		Intrawell Background Value (LPL)	6.3	6.7	6.6	6.3	6.8	7.2	6.7
		Analytical Result	7.1	6.9	7.1	7.1	--	8.3	7.5
Sulfate	mg/L	Intrawell Background Value (UPL)	243	485	178	581	1,010	683	690
		Analytical Result	175	281	157	469	--	498	631
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	815	1,050	682	1,170	1,550	1,150	1,160
		Analytical Result	620	810	590	1,040	--	920	1,090

Notes:

UPL: Upper prediction limit

LPL: Lower prediction limit

Bold values exceed the background value.

Background values are shaded gray.

Monitoring well MW-9D was dry and a sample could not be collected.

ATTACHMENT A

Certification by a Qualified Professional Engineer

CERTIFICATION BY QUALIFIED PROFESSIONAL ENGINEER

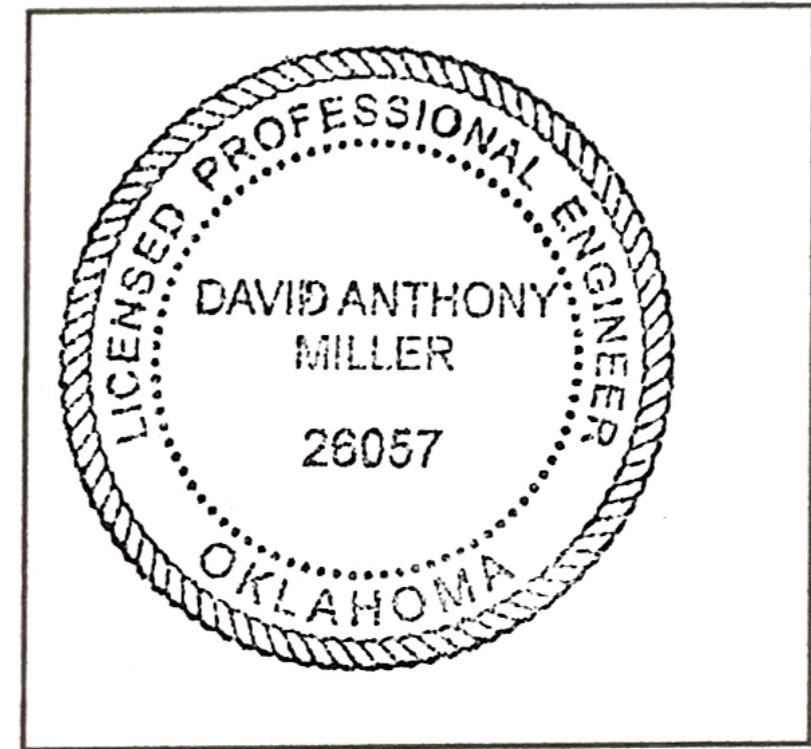
I certify that the selected statistical method, described above and in the December 28, 2021 *Statistical Analysis Summary – Background Update Calculations* report, is appropriate for evaluating the groundwater monitoring data for the Northeastern LF CCR management area and that the requirements of OAC 252:517-9-4(g) have been met.

DAVID ANTHONY MILLER

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature



26057

License Number

OKLAHOMA

Licensing State

02.16.22

Date

Memorandum

Date: September 9, 2022

To: David Miller (AEP)

Copies to: Jill Parker-Witt (AEP)

From: Allison Kreinberg (Geosyntec)

Subject: Evaluation of Detection Monitoring Data at Northeastern Plant's Landfill (LF)

The first semi-annual detection monitoring event of 2022 at the Landfill (LF), an existing CCR unit at the Northeastern Power Plant located in Oologah, Oklahoma, was completed on June 14, 2022 in accordance with Oklahoma Department of Environmental Quality rules regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (OAC 252.517). Based on these results, verification sampling was completed on August 15, 2022.

Background values for the LF were previously calculated for wells MW-3D, MW-6D, MW-9D, MW-12D, and MW-15 in January 2018. Background values for wells MW-4D, MW-5D, and MW-12D were previously calculated in July 2019. After a minimum of four detection monitoring events, the results of those events were compared to the existing background dataset, and the background dataset was updated as appropriate. Revised upper prediction limits (UPLs) were calculated for each Appendix A parameter to represent background values. Lower prediction limits (LPLs) were also calculated for pH. Details on the calculation of the most recent revision to background values are described in Geosyntec's *Statistical Analysis Summary – Background Update Calculations* report, dated December 28, 2021.

To achieve an acceptably high statistical power while maintaining a site-wide false-positive rate (SWFPR) of 10% per year or less, prediction limits were calculated based on a one-of-two retesting procedure. With this procedure, a statistically significant increase (SSI) is only concluded if both samples in a series of two exceeds the UPL. In practice, if the initial result did not exceed the UPL, a second sample was not collected or analyzed.

Detection monitoring results and the relevant background values are compared in Table 1. No SSIs were observed at the Northeastern LF CCR unit, and as a result the Northeastern LF will remain in detection monitoring.

Evaluation of Detection Monitoring Data – Northeastern LF
September 9, 2022
Page 2

The statistical analysis was conducted within 90 days of completion of sampling and analysis in accordance with OAC 252:517-9-4(h)(6). A certification of these statistics by a qualified professional engineer is provided in Attachment A.

**Table 1: Detection Monitoring Data Comparison
Northeastern Plant - Landfill**

Analyte	Unit	Description	MW-3D	MW-4D	MW-5D	MW-6D	MW-9D		MW-12D	MW-15
			6/14/2022	6/14/2022	6/14/2022	6/14/2022	6/14/2022	8/15/2022	6/14/2022	6/14/2022
Boron	mg/L	Intrawell Background Value (UPL)	1.06	1.59	0.621	4.52	7.94		10.2	10.6
		Analytical Result	0.882	0.865	0.479	3.04	6.19	--	6.89	8.71
Calcium	mg/L	Intrawell Background Value (UPL)	175	214	166	272	295		172	137
		Analytical Result	124	161	131	203	196	--	68.3	85.5
Chloride	mg/L	Intrawell Background Value (UPL)	15.5	41.0	32.6	34.1	147		23.3	111
		Analytical Result	12.5	36.3	26.5	28.7	25.9	--	13.4	15.3
Fluoride	mg/L	Intrawell Background Value (UPL)	1.02	0.500	1.05	1.18	2.03		3.16	2.59
		Analytical Result	0.84	0.32	0.61	1.01	0.93	--	1.88	1.71
pH	SU	Intrawell Background Value (UPL)	8.2	8.7	9.5	8.1	7.7		9.8	9.3
		Intrawell Background Value (LPL)	6.3	6.7	6.6	6.3	6.8		7.2	6.7
		Analytical Result	7.2	7.1	7.4	7.3	7.3	-	8.1	8.7
Sulfate	mg/L	Intrawell Background Value (UPL)	243	485	178	581	1,010		683	690
		Analytical Result	177	283	150	451	775	--	511	643
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	815	1,050	682	1,170	1,550		1,150	1,160
		Analytical Result	630	850	620	1,090	1,560	1,250	940	1,080

Notes:

UPL: Upper prediction limit

LPL: Lower prediction limit

Bold values exceed the background value.

Background values are shaded gray.

--: Not measured

ATTACHMENT A

Certification by a Qualified Professional Engineer

CERTIFICATION BY QUALIFIED PROFESSIONAL ENGINEER

I certify that the selected statistical method, described above and in the December 28, 2021 *Statistical Analysis Summary – Background Update Calculations* report, is appropriate for evaluating the groundwater monitoring data for the Northeastern LF CCR management area and that the requirements of OAC 252:517-9-4(g) have been met.

DAVID ANTHONY MILLER

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature



26057

License Number

OKLAHOMA

Licensing State

09.15.22

Date

APPENDIX 5

Well Installation/Decommissioning Logs

Well Completion Record

Well ID _____	Site Location _____
Project Name _____	Field Personnel _____
Project Number _____	Recorded By _____

Permit Number _____

Installation Date(s) _____

Drilling Method _____

Borehole Diameter _____

Drilling Contractor _____

Driller _____

Drilling Fluid _____

Fluid Loss During Drilling _____

Materials Used

Riser Pipe: Diameter _____

Construction

PVC schedule _____

Stainless Steel

Other _____

Slotted Area: Length _____

Diameter _____

Slot Size _____

Construction

PVC schedule _____

Stainless Steel

Other _____

Silt Trap Used Yes No

Bottom End Cap: Male Female Slip

PVC

Stainless Steel (flat bottom)

Other _____

Top Cap: Male Female Slip J Plug

PVC

Stainless Steel

Other _____

Protective Casing: Length _____ ft

Diameter _____

Construction Cast Aluminum

Cast Steel

Other _____

Casing Installation: Length _____ feet

Diameter _____ inches

Material _____

Sandpack:

Coarse Sand: ___ bags of ___ lb per bag Size _____

Fine Sand: ___ bags of ___ lb per bag Size _____

Seal:

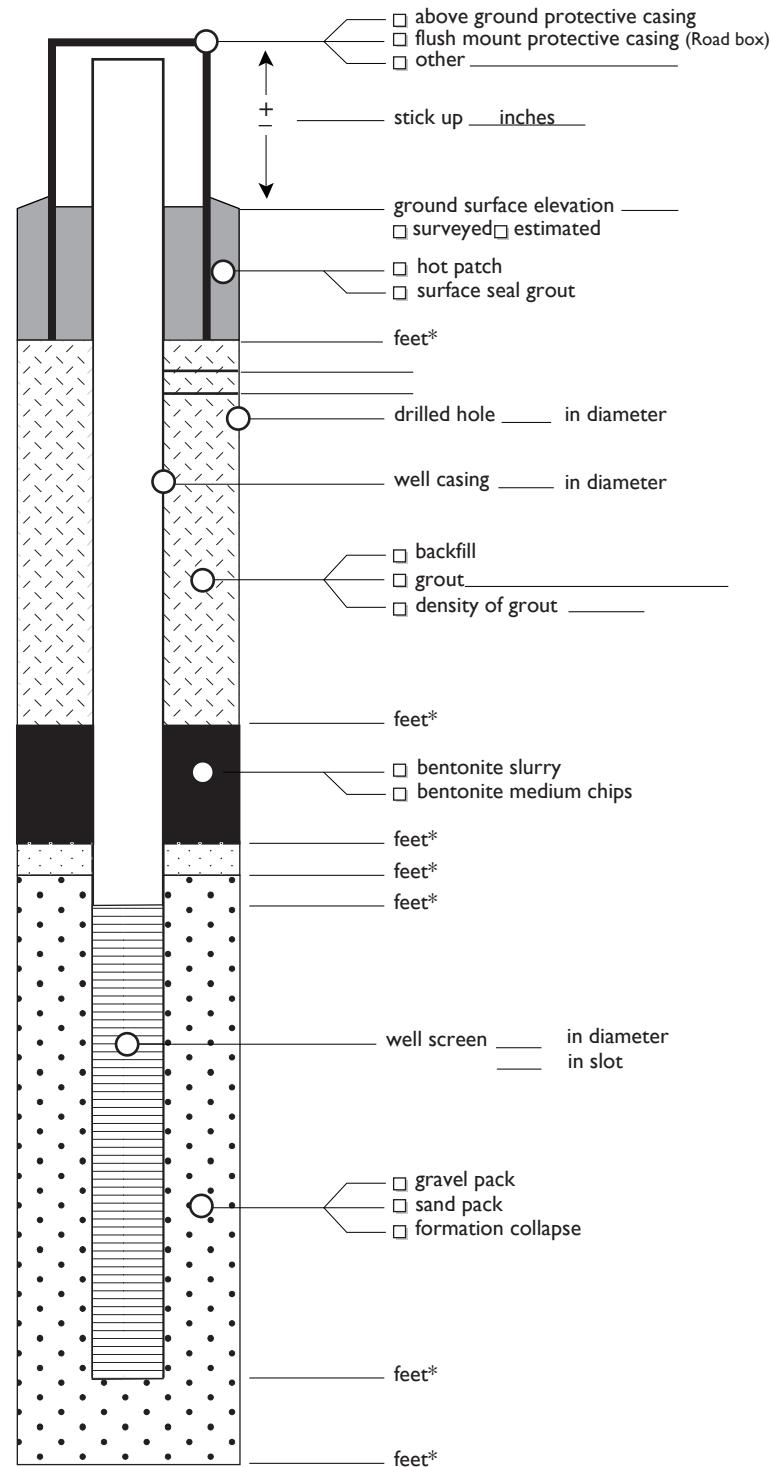
Bentonite Pellets: ___ bags of ___ lb per bag Type _____

Bentonite Slurry: ___ bags of ___ lb per bag Type _____

Grout:

Cement: ___ bags of ___ lb per bag Type _____

Bentonite: ___ bags of ___ lb per bag Type _____



Measuring Point is Top of Well Casing
Unless Otherwise Noted

* Depth Below Ground Surface

Well Completion Record

Well ID MW-2022/19 Site Location Oologah, OK
 Project Name AEP Northeastern Field Personnel Guadalupe Arreola, Zach Racer (AEP)
 Project Number CHW8290C Recorded By Guadalupe Arreola

Permit Number _____
 Installation Date(s) 8/2/2022
 Drilling Method Air Hammer
 Borehole Diameter 8"
 Drilling Contractor AEP
 Driller Zach Racer
 Drilling Fluid Water
 Fluid Loss During Drilling _____

Materials Used

Riser Pipe: Diameter 2"
 Construction
 PVC schedule 40
 Stainless Steel
 Other _____

Slotted Area: Length 9.6'
 Diameter 2"
 Slot Size 0.010"
 Construction
 PVC schedule 40
 Stainless Steel
 Other _____

Silt Trap Used Yes No

Bottom End Cap: Male Female Slip
 PVC
 Stainless Steel (flat bottom)
 Other _____

Top Cap: Male Female Slip J Plug
 PVC
 Stainless Steel
 Other _____

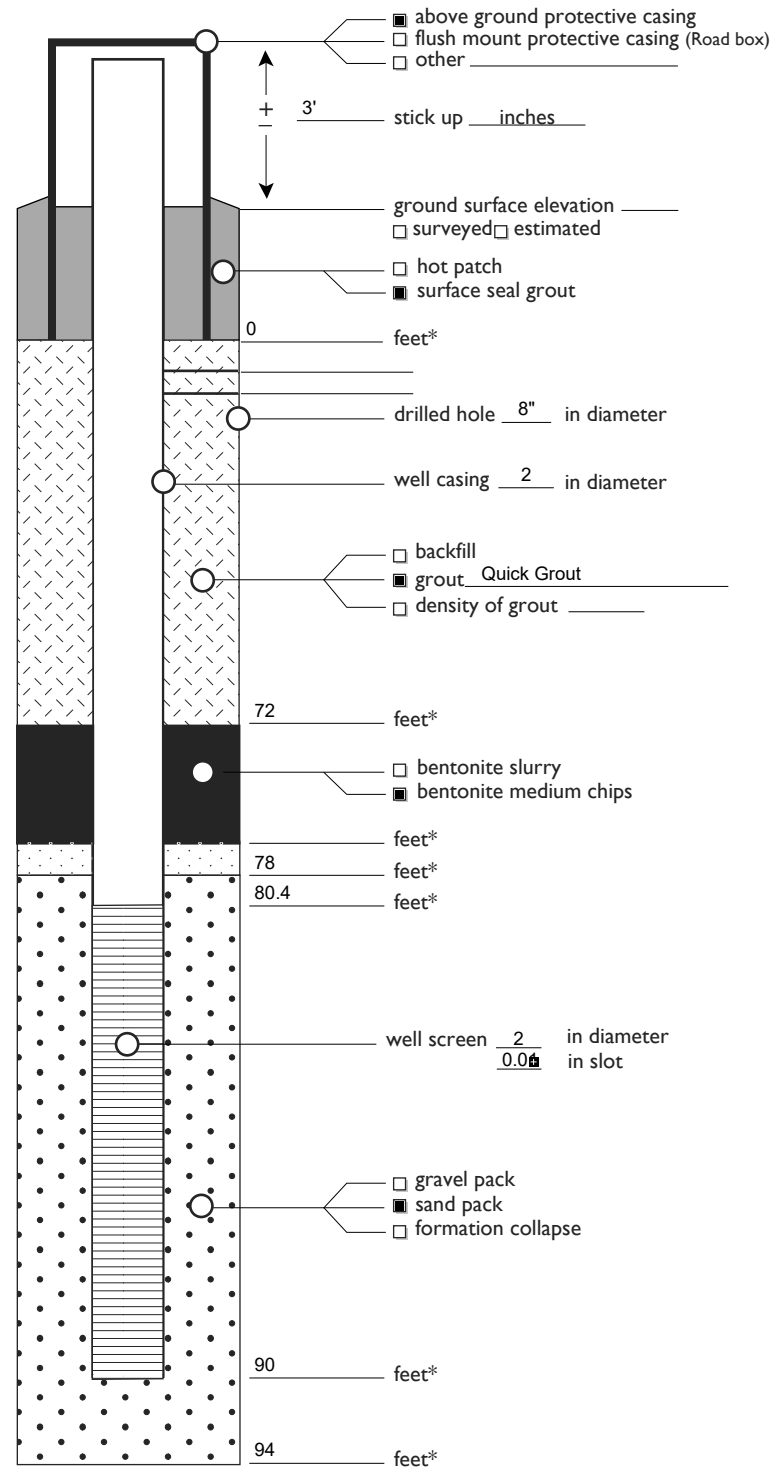
Protective Casing: Length 3 ft
 Diameter 6"
 Construction Cast Aluminum
 Cast Steel
 Other _____

Casing Installation: Length _____ feet
 Diameter _____ inches
 Material _____

Sandpack:
 Coarse Sand: 9 bags of 50 lb per bag Size _____ K&E
 Fine Sand: _____ bags of _____ lb per bag Size _____

Seal:
 Bentonite Pellets: 3 bags of 50 lb per bag Type 3/8
 Bentonite Slurry: _____ bags of _____ lb per bag Type _____

Grout:
 Cement: _____ bags of _____ lb per bag Type 120 gal
 Bentonite: _____ bags of _____ lb per bag Type Quick Grout



Measuring Point is Top of Well Casing
 Unless Otherwise Noted

* Depth Below Ground Surface

AMERICAN ELECTRIC POWER SERVICE CORPORATION
AEP CIVIL ENGINEERING LABORATORY
 LOG OF BORING



JOB NUMBER _____
 COMPANY _____
 PROJECT **NORTHEASTERN 3 & 4 PLANT**
 COORDINATES **N 526,191.8 E 2,645,739.5**
 GROUND ELEVATION **652.9** SYSTEM State Plane using NAD 83

BORING NO **B-2201/18** DATE **10/4/22** SHEET **1** OF **2**
 DATE BORING START **8/3/22** BORING FINISH **8/3/22**
 PIEZOMETER TYPE _____ WELL TYPE **OW**
 HGT. RISER ABOVE GROUND **3.0** DIA **4.5**
 DEPTH TO TOP OF WELL SCREEN **80.4** BOTTOM **90.0**
 WELL DEVELOPMENT **YES** BACKFILL _____
 FIELD PARTY **ZLR** RIG **D-120**

WATER LEVEL	∇	∇	∇
TIME			
DATE			

SAMPLE NUMBER	SAMPLE	SAMPLE DEPTH IN FEET		STANDARD PENETRATION RESISTANCE BLOWS / 6"	TOTAL LENGTH RECOVERY	RQD %	DEPTH IN FEET	GRAPHIC LOG	USCS	SOIL / ROCK IDENTIFICATION	WELL	DRILLER'S NOTES
		FROM	TO									
1	CORE	0.0	8.0		0	0				Blind drilled to surface of bedrock.		Begin drilling with 4 inch outer casing.
2	RC	8.0	9.9		0	15	5			LIMESTONE; strong, light gray (N7), fossiliferous (algal, crinoid), massive (indistinct), slightly decomposed, moderately disintegrated, intensely fractured, strong HCl reaction, little healing, cohesive sediment filled staining/oxidation, (12') Color changes to medium gray N5 Slightly fractured (mechanical), many healed fractures.		Begin coring with NQ2.
3	RC	9.9	15.0		1.9	58	10					
4	RC	14.0	24.0		10	79	15					
5	RC	24.0	34.0		10	95	25			Microcrystalline, slightly fractured (mechanical), many healed fractures.		
6	RC	34.0	44.0		10	41	35			(37'-44') Chert fossil infill, intensely fractured (mechanical and natural)		Natural fractures were vertical.
7	RC	44.0	54.0		10	100	45			Slightly fractured, little healing, no chert infill.		Mechanical breaking at shaly bedding.
										(47.5'-48') Interval of shaly dark bedding (48.5'-49') Interval of shaly dark bedding		

TYPE OF CASING USED	
X	NQ-2 ROCK CORE
	6" x 3.25 HSA
	9" x 6.25 HSA
	HW CASING ADVANCER 4"
	NW CASING 3"
	SW CASING 6"
	AIR HAMMER 8"

Continued Next Page

PIEZOMETER TYPE: PT = OPEN TUBE POROUS TIP, SS = OPEN TUBE SLOTTED SCREEN, G = GEONOR, P = PNEUMATIC
 WELL TYPE: OW = OPEN TUBE SLOTTED SCREEN, GM = GEOMON
 RECORDER _____

AEP_NE 3 & 4.GPJ AEP.GDT 10/4/22

AMERICAN ELECTRIC POWER SERVICE CORPORATION
AEP CIVIL ENGINEERING LABORATORY
 LOG OF BORING



JOB NUMBER _____

COMPANY _____

BORING NO **B-2201/18** DATE **10/4/22** SHEET **2** OF **2**

PROJECT **NORTHEASTERN 3 & 4 PLANT**

BORING START **8/3/22** BORING FINISH **8/3/22**

SAMPLE NUMBER	SAMPLE	SAMPLE DEPTH IN FEET		STANDARD PENETRATION RESISTANCE BLOWS / 6"	TOTAL LENGTH RECOVERY	RQD %	DEPTH IN FEET	GRAPHIC LOG	USCS	SOIL / ROCK IDENTIFICATION	WELL	DRILLER'S NOTES
		FROM	TO									
8	RC	54.0	64.0		10	98	55			(52'-54') Interval of shaly dark bedding		
							60			Moderately fractured (mechanical), (54'-60') shaly dark bedding intervals every 0.5'-0.1', (60'-61') shaly dark bedding.		
9	RC	64.0	74.0		10	95	65			Moderately fractured (mechanical), (65'-67') shaly dark bedding, (91'-94') shaly dark bedding intervals.		
							70					
10	RC	74.0	84.0		10	100	75			Slightly fractured (mechanical), (74'-80') intervals of shale interbeds <0.1'-0.3'		
							80					
11	RC	84.0	94.0		10	100	85			Slightly fractured (mechanical), thin shale bed intervals every 1'-1.5'. Color change to darker grey (N3) at (90'-94').		
							90					

AMERICAN ELECTRIC POWER SERVICE CORPORATION
AEP CIVIL ENGINEERING LABORATORY
 LOG OF BORING



JOB NUMBER _____
 COMPANY _____
 PROJECT **NORTHEASTERN 3 & 4 PLANT**
 COORDINATES **N 526,195.9 E 2,645,818.8**
 GROUND ELEVATION **652.9** SYSTEM State Plane using NAD 83

BORING NO **B-2202/19** DATE **10/4/22** SHEET **1** OF **2**
 DATE BORING START **8/2/22** BORING FINISH **8/2/22**
 PIEZOMETER TYPE _____ WELL TYPE **OW**
 HGT. RISER ABOVE GROUND **3.0** DIA **4.5**
 DEPTH TO TOP OF WELL SCREEN **80.4** BOTTOM **90.0**
 WELL DEVELOPMENT **YES** BACKFILL _____
 FIELD PARTY **ZLR** RIG **D-120**

WATER LEVEL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TIME			
DATE			

SAMPLE NUMBER	SAMPLE	SAMPLE DEPTH IN FEET		STANDARD PENETRATION RESISTANCE BLOWS / 6"	TOTAL LENGTH RECOVERY	RQD %	DEPTH IN FEET	GRAPHIC LOG	USCS	SOIL / ROCK IDENTIFICATION	WELL	DRILLER'S NOTES
		FROM	TO									
1	CORE	0.0	7.0		0	0				Blind drilled to surface of bedrock.		Begin drilling with 4 inch outer casing.
2	RC	7.0	14.0		9	72	5					Begin coring with NQ2.
3	RC	14.0	24.0		10	95	10			LIMESTONE; very strong, light gray (N7), fossiliferous (algal, crinoid), thickly bedded, moderately decomposed, slightly disintegrated, intensely fractured, strong HCl reaction, little healing, cohesive sediment filled staining/oxidation.		
							15			Microcrystalline, slightly fractured (mechanical), many healed fractures.		
4	RC	24.0	34.0		10	89	20			Moderately fractured (mechanical), many healed fractures, (30'-34') abundant cohesive sediment filled staining/oxidation.		
							25					
5	RC	34.0	44.0		10	100	30			Moderately fractured (mechanical and natural).		Natural fractures were vertical.
							35					
6	RC	44.0	54.0		10	95	40			Moderately fractured (mechanical and natural), shale imbeds at 32", 35", 38", and 44" (>0.5').		Mechanical breaking at shaly bedding, natural fractures were vertical.
							45					

TYPE OF CASING USED	
<input checked="" type="checkbox"/>	NQ-2 ROCK CORE
	6" x 3.25 HSA
	9" x 6.25 HSA
	HW CASING ADVANCER 4"
	NW CASING 3"
	SW CASING 6"
	AIR HAMMER 8"

Continued Next Page

PIEZOMETER TYPE: PT = OPEN TUBE POROUS TIP, SS = OPEN TUBE SLOTTED SCREEN, G = GEONOR, P = PNEUMATIC

WELL TYPE: OW = OPEN TUBE SLOTTED SCREEN, GM = GEOMON

RECORDER _____

AEP_NE 3 & 4.GPJ AEP.GDT 10/4/22

AMERICAN ELECTRIC POWER SERVICE CORPORATION
AEP CIVIL ENGINEERING LABORATORY
 LOG OF BORING



JOB NUMBER _____

COMPANY _____

BORING NO B-2202/19 DATE 10/4/22 SHEET 2 OF 2

PROJECT NORTHEASTERN 3 & 4 PLANT

BORING START 8/2/22 BORING FINISH 8/2/22

SAMPLE NUMBER	SAMPLE	SAMPLE DEPTH IN FEET		STANDARD PENETRATION RESISTANCE BLOWS / 6"	TOTAL LENGTH RECOVERY	RQD	DEPTH IN FEET	GRAPHIC LOG	USCS	SOIL / ROCK IDENTIFICATION	WELL	DRILLER'S NOTES
		FROM	TO			%						
7	RC	54.0	64.0		10	100	55			Moderately fractured (mechanical), shale imbeds at 6", 9", 12", 14", 17", 22", 36", and 42".		
8	RC	64.0	74.0		10	95	65			Moderately fractured (mechanical), (64'-67') shaly dark bedding intervals (>0.5') (70'-71') shaly bedding.		
9	RC	74.0	84.0		10	95	75			Moderately fractured (mechanical), thin shale bed intervals every 1'-1.5'.		
10	RC	84.0	94.0		10	100	85			Moderately fractured (mechanical), thin shale bed intervals every 1'-1.5'.		
							90					







AMERICAN ELECTRIC POWER SERVICE CORPORATION
AEP CIVIL ENGINEERING LABORATORY
 MONITORING WELL CONSTRUCTION

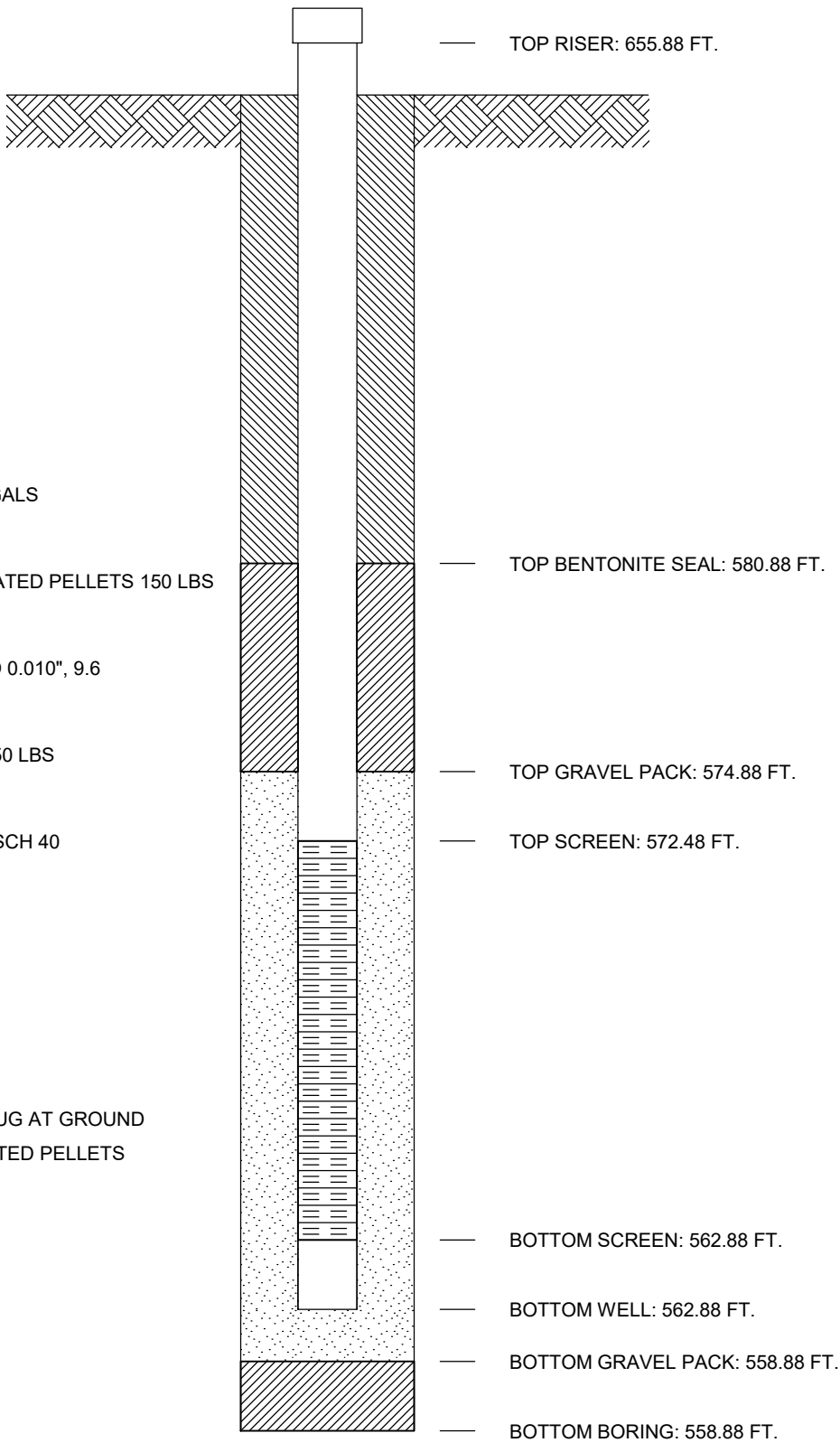


JOB NUMBER _____
 COMPANY _____
 PROJECT **NORTHEASTERN 3 & 4 PLANT**
 COORDINATES **N 526,191.8 E 2,645,739.5**
 SYSTEM **State Plane using NAD 83**

WELL No. **MW-2201/18** BORING No. **B-2201** INSTALLED **8/3/22**

GROUND ELEVATION 652.88 FT.

-  GROUT SEAL: QUICK 125 GALS
-  BENTONITE SEAL: 3/8" COATED PELLETS 150 LBS
-  SCREEN: 2.0 dia., SLOTTED 0.010", 9.6
-  GRAVEL PACK: #5 SAND 450 LBS
-  RISER PIPE: 2.0, dia., PVC SCH 40
-  SPACERS, DEPTH:



OK SUBMITTAL 8/30/22
 USED 200 LBS OF HOLEPLUG AT GROUND
 SURFACE SEAL
 94.0-91.0 - 10 LBS 3/8" COATED PELLETS

GEOMCNST NE 3 & 4.GPJ AEP.GDT 10/4/22

AMERICAN ELECTRIC POWER SERVICE CORPORATION
 AEP CIVIL ENGINEERING LABORATORY
 MONITORING WELL CONSTRUCTION



JOB NUMBER _____

COMPANY _____







WELL No. **MW-2202/19** BORING No. **B-2202** INSTALLED **8/2/22**

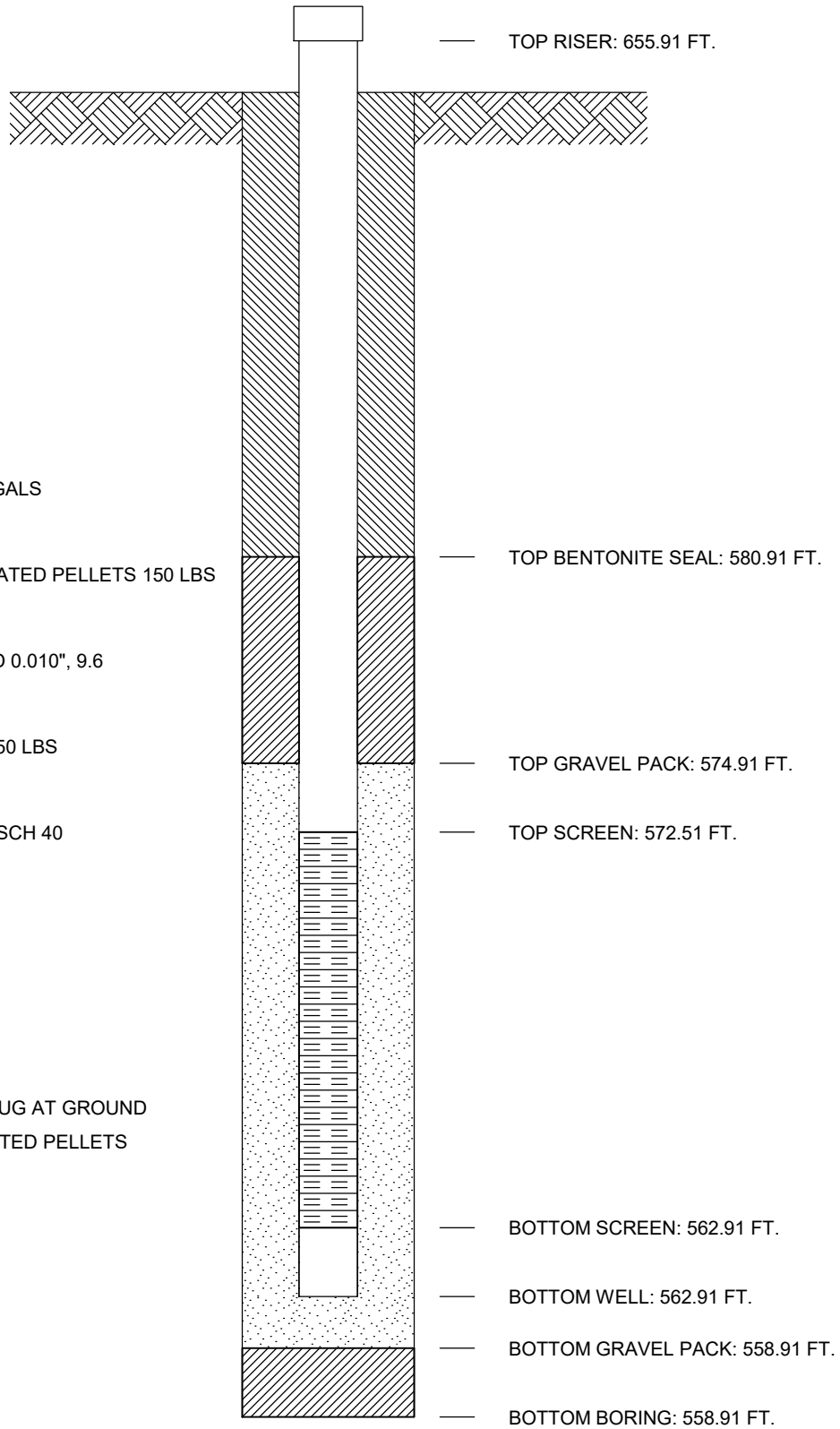
PROJECT **NORTHEASTERN 3 & 4 PLANT**

COORDINATES **N 526,195.9 E 2,645,818.8**

SYSTEM **State Plane using NAD 83**

GROUND ELEVATION 652.91 FT.

-  GROUT SEAL: QUICK 125 GALS
-  BENTONITE SEAL: 3/8" COATED PELLETS 150 LBS
-  SCREEN: 2.0 dia., SLOTTED 0.010", 9.6
-  GRAVEL PACK: #5 SAND 450 LBS
-  RISER PIPE: 2.0, dia., PVC SCH 40
-  SPACERS, DEPTH:



OK SUBMITTAL 8/30/22
 USED 200 LBS OF HOLEPLUG AT GROUND
 SURFACE SEAL
 94.0-91.0 - 10 LBS 3/8" COATED PELLETS

Monitoring Well Piezometer	Well Number	Latitude	Longitude	Ground Surface Elevation, ft msl	Top of Casing Elevation	Borehole Depth ft. bgs	Date installed	Screen Material	Well Diameter inches	Top of Screen Depth ft-bgs	Top of Screen Elevation, ft msl	Bottom of Screen depth ft. bgs	Bottom of Screen Elevation, ft. msl
1	MW-1S	36° 24' 59.74183"	95° 42' 01.32404"	635.75	638.89	35	2/19/2008	PVC	2	24.7	611.05	35.00	600.75
2	MW-1D	36° 24' 59.77052"	95° 42' 01.47166"	635.23	638.07	55	10/23/2008	PVC	2	44.00	591.23	54.30	580.93
4	MW-2D	36° 24' 24.47.66667"	95° 41' 56.78442"	634.82	638.19	59	3/4/2008	PVC	2	48.70	586.12	59.00	575.82
5	MW-3S	36° 25' 00.05023"	95° 41' 44.12205"	627.09	630.19	29	10/13/2008	PVC	2	13.68	613.41	23.98	603.11
6	MW-3D	36° 25' 00.14299"	95° 41' 44.01366"	627.66	630.65	60	2/21/2008	PVC	2	49.70	577.96	60.00	567.66
7	MW-4S	36° 25' 08.42752"	95° 41' 33.93232"	621.44	624.54	30	10/13/2008	PVC	2	19.87	601.57	30.17	591.27
8	MW-4D	36° 25' 08.28346"	95° 41' 33.94072"	621.93	625.00	50	2/22/2008	PVC	2	39.70	582.23	50.00	571.93
9	MW-5S	36° 24' 52.86618"	95° 42' 01.48534"	633.62	636.72	30	10/21/2008	PVC	2	19.56	614.06	29.86	603.76
10	MW-5D	36° 24' 52.71851"	95° 42' 01.46047"	633.83	636.84	55	10/23/2008	PVC	2	44.72	589.11	55.02	578.81
11	MW-6S	36° 24' 54.53477"	95° 41' 50.84490"	633.66	636.80	25	10/6/2008	PVC	2	14.75	618.91	25.05	608.61
12	MW-6D	36° 24' 54.41869"	95° 41' 51.01306"	633.72	636.66	55	10/23/2008	PVC	2	44.92	588.80	55.22	578.50
13	MW-7S	36° 25' 06.32357"	95° 41' 46.87228"	623.58	626.45	30	10/22/2008	PVC	2	20.32	603.26	30.62	592.96
14	MW-7D	36° 25' 06.30327"	95° 41' 47.03123"	623.74	626.46	55	10/22/2008	PVC	2	45.25	578.49	55.55	568.19
15	MW-8S	36° 25' 04.37557"	95° 42' 10.30002"	625.68	628.71	40	10/21/2008	PVC	2	29.87	595.81	40.17	585.51
16	MW-8D	36° 25' 04.35228"	95° 42' 10.11303"	626.04	629.32	60	10/22/2008	PVC	2	49.95	576.09	60.25	565.79
17	MW-9S	36° 24' 50.98598"	95° 41' 54.14718"	633.98	636.94	33.5	4/7/2010	PVC	2	23.20	610.78	33.50	600.48
18	MW-9D	36° 24' 50.88110"	95° 41' 54.22530"	633.90	637.04	60	4/6/2010	PVC	2	49.70	584.20	60.00	573.90
19	MW-10S	36° 24' 59.25759"	95° 42' 08.25782"	636.36	639.58	33	4/13/2010	PVC	2	22.70	613.66	33.00	603.36
20	MW-10D	36° 24' 59.15060"	95° 42' 08.24123"	636.14	639.32	68	4/12/2010	PVC	2	57.70	578.44	68.00	568.14
21	MW-11S	36° 24' 52.55359"	95° 42' 06.12010"	625.91	628.75	28	4/15/2010	PVC	2	17.70	608.21	28.00	597.91
22	MW-11D	36° 24' 52.64970"	95° 42' 06.15274"	625.97	628.27	48	4/14/2010	PVC	2	37.70	588.27	48.00	577.97
23	MW-12S	36° 24' 49.01592"	95° 42' 04.35952"	620.65	623.50	20	4/19/2010	PVC	2	9.70	610.95	20.00	600.65
24	MW-12D	36° 24' 49.10233"	95° 42' 04.28302"	620.91	623.67	42	4/19/2010	PVC	2	31.70	589.21	42.00	578.91
25	MW-13S	36° 24' 45.84020"	95° 42' 01.15009"	616.19	619.15	15	4/21/2010	PVC	2	4.70	611.49	15.00	601.19
26	MW-13D	36° 24' 45.83379"	95° 42' 01.03384"	616.11	619.06	45	4/20/2010	PVC	2	34.70	581.41	45.00	571.11
27	MW-14	36° 25' 02.6262"	95° 42' 02.0302"	637.61	640.89	76	3/1/2016	PVC	2	65.50	572.11	75.90	561.71
28	MW-15	36° 24' 48.0816"	95° 41' 56.4658"	634.34	637.71	71	2/23/2016	PVC	2	61.05	573.29	71.45	562.89
29	MW-16	36° 24' 51.3998"	95° 41' 53.8320"	634.06	637.26	61	2/25/2016	PVC	2	50.80	583.26	61.20	572.86
30	MW-17	36° 24' 54.9351"	95° 41' 50.3775"	633.25	636.52	56	2/29/2016	PVC	2	45.50	587.75	61.20	572.05
31	MW-18	36° 25' 24.1"	95° 41' 52.2"	652.88	656.15	94	8/3/2022	PVC	2	80.40	572.48	90.00	562.88
32	MW-19	36° 25' 24.4"	95° 41' 50.5"	652.91	656.17	94	8/3/2022	PVC	2	80.40	572.51	90.00	562.91
33	LP-2	36° 24' 59.19078"	95° 41' 56.77149"	638.10	641.15	30	10/15/2008	PVC	2	19.59	618.51	29.89	608.21
34	LP-3	36° 24' 57.22396"	95° 41' 54.31981"	646.40	649.39	40	10/17/2008	PVC	2	30.1	616.30	40.40	606.00

msl = mean sea level
bgs - below ground surface

Northeastern Wells				
N McCarty			9/15/2022	
Control	Horizontal Datum		NAD83 OK N	
	Vertical Datum		NGV029	
30202	525941.574	2646207.201	654.72	Control Point
30204 CK	524501.297	2645756.024	636.644	Check Shot
30204	524501.287	2645756.163	636.66	Control Point
Wells				
MW2201/18	526191.784	2645739.482	656.549	TOP OF CASING
			656.147	TOP OF PIPE
			653.439	TOP OF CONCRETE
			652.879	TOP OF GROUND
MW2202/19	526195.941	2645818.805	656.59	TOP OF CASING
			656.168	TOP OF PIPE
			653.585	TOP OF CONCRETE
			652.911	TOP OF GROUND

APPENDIX 6

Groundwater monitoring Field Sheets and Laboratory Reports

NORTHEASTERN POWER PLANT GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . DATE: 06/14/22 .

Well Identification Number	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-3S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Appendix III	NA	Appendix III	WQ & Metals	Appendix III	WQ & Metals
Depth to Water (ft)	51.68	17.89	47.23	30.15	38.20	22.28
Water Level Elevation (ft. NGVD)						
Measured Depth Total Depth of Well (ft.)	58.25	37.76	61.80	36.75	62.95	27.21
Height of Water Column (ft.)	6.57	19.87	14.57	6.60	24.75	4.93
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	1.07	3.24	2.37	1.08	4.03	0.80
Water Removed From Well (gallons)	-----	-----	4.50	1.75	13.00	1.75
Method of Removal	-----	-----	Pump	Pump	Pump	Pump
Was Well Purged Dry?	-----	-----	Yes	Yes	No	Yes
pH (standard units)	-----	-----	10.13	9.06	7.15	7.17
Temperature (°C)	-----	-----	21.71	23.22	21.86	22.84
Conductivity (µmhos/cc)	-----	-----	1860	2630	966	3350
Turbidity (NTU)	-----	-----	34.6	118	10.5	74.8
Appearance	-----	-----	Clear	Slightly Turbid	Clear	Turbid
Odor	-----	-----	None	None	None	None
Containers	250 mL HNO3 1 L Cool 0-6C	-----	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C
Sample Time	-----	-----	1339	1332	1226	1237
Sample Date	-----	-----	6/14/2022	6/14/2022	6/14/2022	6/14/2022

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . DATE: 06/14/22 .

Well Identification Number	MW-4D	MW-4S	MW-5D	MW-5S	MW-6D	MW-6S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Appendix III	NA	Appendix III	NA	Appendix III	WQ & Metals
Depth to Water (ft)	43.76	Dry	22.51	16.45	34.86	Dry
Water Level Elevation (ft. NGVD)						
Measured Depth Total Depth of Well (ft.)	53.86	32.94	58.42	33.15	58.51	28.20
Height of Water Column (ft.)	10.10	----	35.91	16.70	23.65	----
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	1.65	----	5.85	2.72	3.85	----
Water Removed From Well (gallons)	7.00	---	16.00	---	8.25	---
Method of Removal	Pump	---	Pump	---	Pump	---
Was Well Purged Dry?	No	----	Yes	----	Yes	----
pH (standard units)	7.13	---	7.44	---	7.33	---
Temperature (°C)	22.99	----	21.76	----	22.44	----
Conductivity (µmhos/cc)	1140	----	969	----	1490	----
Turbidity (NTU)	25.1	---	69.9	---	121	---
Appearance	Clear	----	Clear	----	Slightly Turbid	----
Odor	None	----	None	----	None	----
Containers	250 mL HNO3 1 L Cool 0-6C	----	250 mL HNO3 1 L Cool 0-6C	----	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C
Sample Time	1203	----	1351	----	1254	----
Sample Date	6/14/2022	----	6/14/2022	----	6/14/2022	----

Landfill Dup 1500

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . DATE: 06/14/22 .

Well Identification Number	MW-7D	MW-7S	MW-8D	MW-8S	MW-9D	MW-9S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	NA	NA	NA	NA	Appendix III	WQ & Metals
Depth to Water (ft)	8.19	8.77	25.76	7.41	55.95	24.01
Water Level Elevation (ft. NGVD)						
Measured Depth Total Depth of Well (ft.)	58.70	33.54	64.50	43.30	63.10	36.71
Height of Water Column (ft.)	50.51	24.77	38.74	35.89	7.15	12.70
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	8.23	4.04	6.31	5.85	1.17	2.07
Water Removed From Well (gallons)	---	---	---	---	2.00	4.50
Method of Removal	---	---	---	---	Pump	Pump
Was Well Purged Dry?	---	---	---	---	Yes	Yes
pH (standard units)	---	---	---	---	7.34	11.98
Temperature (°C)	---	---	---	---	21.49	21.27
Conductivity (µmhos/cc)	---	---	---	---	1610	3510
Turbidity (NTU)	---	---	---	---	86.3	24.2
Appearance	---	---	---	---	Slightly Turbid	Brown
Odor	---	---	---	---	None	None
Containers	-----	-----	-----	-----	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C
Sample Time	---	---	---	---	1306	1312
Sample Date	---	---	---	---	6/14/2022	6/14/2022

Slurry Dup 1600

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . DATE: 06/14/22 .

Well Identification Number	MW-10D	MW-10S	MW-11D	MW-11S	MW-12D	MW-12S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Appendix III	NA	Appendix III	NA	Appendix III	WQ & Metals
Depth to Water (ft)	68.31	16.37	47.25	11.21	12.72	10.77
Water Level Elevation (ft. NGVD)						
Measured Depth Total Depth of Well (ft.)	71.33	36.22	50.34	31.02	44.92	22.94
Height of Water Column (ft.)	3.02	19.85	3.09	19.81	32.20	12.17
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	0.49	3.24	0.50	3.23	5.25	1.98
Water Removed From Well (gallons)	---	---	---	---	16.00	5.25
Method of Removal	---	---	---	---	Pump	Pump
Was Well Purged Dry?	---	---	---	---	No	Yes
pH (standard units)	---	---	---	---	8.12	6.60
Temperature (°C)	---	---	---	---	19.6	20.94
Conductivity (µmhos/cc)	---	---	---	---	1270	1020
Turbidity (NTU)	---	---	---	---	59.2	14.7
Appearance	---	---	---	---	Clear	Slightly Blackish
Odor	---	---	---	---	None	None
Containers	250 mL HNO3 1 L Cool 0-6C	-----	250 mL HNO3 1 L Cool 0-6C	-----	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C
Sample Time	---	---	---	---	1044	1038
Sample Date	---	---	---	---	6/14/2022	6/14/2022

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . DATE: 06/14/22 .

Well Identification Number	MW-13D	MW-13S	MW-14	MW-15	MW-16	MW-17
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Appendix III	WQ & Metals	Appendix III	Appendix III	Appendix III	Appendix III
Depth to Water (ft)	31.86	13.77	68.73	47.27	63.81	41.53
Water Level Elevation (ft. NGVD)						
Measured Depth Total Depth of Well (ft.)	47.56	18.12	78.96	74.21	64.15	58.41
Height of Water Column (ft.)	15.70	4.35	10.23	26.94	0.34	16.88
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	2.56	0.71	1.67	4.39	0.06	2.75
Water Removed From Well (gallons)	9.00	1.50	2.75	9.75	---	2.00
Method of Removal	Pump	Pump	Pump	Pump	---	Pump
Was Well Purged Dry?	No	Yes	Yes	Yes	---	Yes
pH (standard units)	7.26	6.79	---	8.72	---	---
Temperature (°C)	22.05	22.62	---	22.19	---	---
Conductivity (µmhos/cc)	1360	1070	---	1460	---	---
Turbidity (NTU)	7.4	47.3	---	22.1	---	---
Appearance	Clear	Clear	---	Clear	---	---
Odor	None	Slight Sulphur	---	None	---	---
Containers	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C
Sample Time	1010	1018	---	1324	---	---
Sample Date	6/14/2022	6/14/2022	---	6/14/2022	---	---

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Matt Hamilton . DATE: 08/15/22 .

Well Identification Number	MW-9D					
Activities	Gauge					
Samples	TDS					
Depth to Water (ft)	54.82					
Water Level Elevation (ft. NGVD)						
Measured Depth Total Depth of Well (ft.)	63.10					
Height of Water Column (ft.)	8.28					
Well Size (I.D.) (inches)	2					
Volume of Water in Well (gallons)	1.35					
Water Removed From Well (gallons)	2					
Method of Removal	Pump					
Was Well Purged Dry?	Yes					
pH (standard units)	7.21					
Temperature (°C)	21.14					
Conductivity (µmhos/cc)	1720					
Turbidity (NTU)	60.1					
Appearance	Clear					
Odor	None					
Containers	1 L Cool 0-6C					
Sample Time	1623					
Sample Date	8/15/2022					

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . DATE: 11/07/08/22

Well Identification Number	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-3S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Appendix III	NA	Appendix III	WQ & Metals	Appendix III	WQ & Metals
Depth to Water (ft)	51.21	26.20	60.79	33.91	37.91	25.82
Measured Depth Total Depth of Well (ft.)	58.25	37.76	61.80	36.75	62.95	27.21
Height of Water Column (ft.)	7.04	11.56	1.01	2.84	25.04	1.39
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	1.15	1.88	0.16	0.46	4.08	0.23
Water Removed From Well (gallons)	1.00	----	0.10	0.50	13.00	0.50
Method of Removal	Pump	----	Pump	Pump	Pump	Pump
Was Well Purged Dry?	Yes	----	Yes	Yes	No	Yes
pH (standard units)	7.40	----	-----	8.05	7.20	-----
Temperature (°C)	18.68	----	-----	19.67	19.75	-----
Conductivity (µmhos/cc)	3,760	----	-----	2,610	988	-----
Turbidity (NTU)	322	----	-----	522	4	-----
Appearance	Slightly Turbid	----	-----	Turbid	Clear	-----
Odor	None	----	-----	None	None	-----
Containers	250 mL HNO3 1 L Cool 0-6C	----	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C
Sample Time	1722	----	-----	1649	1542	-----
Sample Date	11/7/2022	----	-----	11/7/2022	11/7/2022	-----

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . DATE: 11/07-08/22 .

Well Identification Number	MW-4D	MW-4S	MW-5D	MW-5S	MW-6D	MW-6S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Appendix III	NA	Appendix III	NA	Appendix III	WQ & Metals
Depth to Water (ft)	44.07	Dry	26.92	24.55	34.84	Dry
Measured Depth Total Depth of Well (ft.)	53.86	32.94	58.42	33.15	58.51	28.20
Height of Water Column (ft.)	9.79	----	31.50	8.60	23.67	----
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	1.60	----	5.13	1.40	3.86	----
Water Removed From Well (gallons)	10.00	----	14.25	----	7.75	----
Method of Removal	Pump	----	Pump	----	Pump	----
Was Well Purged Dry?	No	----	Yes	----	Yes	----
pH (standard units)	7.22	----	7.11	----	7.10	----
Temperature (°C)	19.27	----	18.63	----	19.47	----
Conductivity (µmhos/cc)	1,160	----	976	----	1,460	----
Turbidity (NTU)	10.4	----	2.5	----	82.7	----
Appearance	Clear	----	Clear	----	Slightly Turbid	----
Odor	None	----	None	----	None	----
Containers	250 mL HNO3 1 L Cool 0-6C	----	250 mL HNO3 1 L Cool 0-6C	----	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C
Sample Time	1523	----	1708	----	1610	----
Sample Date	11/7/2022	----	11/7/2022	----	11/7/2022	----

Landfill Dup 1430

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . DATE: 11/07-08/22 .

Well Identification Number	MW-7D	MW-7S	MW-8D	MW-8S	MW-9D	MW-9S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	NA	NA	NA	NA	Appendix III	WQ & Metals
Depth to Water (ft)	12.90	12.44	32.25	10.71	55.53	28.44
Measured Depth Total Depth of Well (ft.)	58.70	33.54	64.50	43.30	63.10	36.71
Height of Water Column (ft.)	45.80	21.10	32.25	32.59	7.57	8.27
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	7.47	3.44	5.26	5.31	1.23	1.35
Water Removed From Well (gallons)	---	---	---	---	2.00	2.00
Method of Removal	---	---	---	---	Pump	Pump
Was Well Purged Dry?	---	---	---	---	Yes	Yes
pH (standard units)	---	---	---	---	8.54	11.96
Temperature (°C)	---	---	---	---	19.25	19.42
Conductivity (µmhos/cc)	---	---	---	---	1,550	3,640
Turbidity (NTU)	---	---	---	---	28.7	39.7
Appearance	---	---	---	---	Slightly Turbid	Yellowish Color
Odor	---	---	---	---	None	Odor
Containers	---	---	---	---	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C
Sample Time	---	---	---	---	1628	1619
Sample Date	---	---	---	---	11/7/2022	11/7/2022

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . DATE: 11/07-08/22 .

Well Identification Number	MW-10D	MW-10S	MW-11D	MW-11S	MW-12D	MW-12S
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Appendix III	NA	Appendix III	NA	Appendix III	WQ & Metals
Depth to Water (ft)	67.86	26.45	47.22	16.70	19.54	19.22
Measured Depth Total Depth of Well (ft.)	71.33	36.22	50.34	31.02	44.92	22.94
Height of Water Column (ft.)	3.47	9.77	3.12	14.32	25.38	3.72
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	0.57	1.59	0.51	2.33	4.14	0.61
Water Removed From Well (gallons)	0.25	---	0.25	---	13.00	1.25
Method of Removal	Pump	---	Pump	---	Pump	Pump
Was Well Purged Dry?	Yes	---	Yes	---	No	Yes
pH (standard units)	---	---	---	---	8.47	6.79
Temperature (°C)	---	---	---	---	17.67	19.3
Conductivity (µmhos/cc)	---	---	---	---	1,280	1,280
Turbidity (NTU)	---	---	---	---	83.9	37.2
Appearance	---	---	---	---	Slightly Turbid	Clear
Odor	---	---	---	---	None	None
Containers	250 mL HNO3 1 L Cool 0-6C	-----	250 mL HNO3 1 L Cool 0-6C	-----	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C
Sample Time	---	---	---	---	1127	1113
Sample Date	---	---	---	---	11/8/2022	11/8/2022

Slurry Dup 1400

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . DATE: 11/07-08/22 .

Well Identification Number	MW-13D	MW-13S	MW-14	MW-15	MW-16	MW-17
Activities	Gauge	Gauge	Gauge	Gauge	Gauge	Gauge
Samples	Appendix III	WQ & Metals	Appendix III	Appendix III	Appendix III	Appendix III
Depth to Water (ft)	39.03	Dry	65.47	61.74	63.87	41.17
Measured Depth Total Depth of Well (ft.)	47.56	18.12	78.96	74.21	64.15	58.41
Height of Water Column (ft.)	8.53	----	13.49	12.47	0.28	17.24
Well Size (I.D.) (inches)	2	2	2	2	2	2
Volume of Water in Well (gallons)	1.39	----	2.20	2.03	0.05	2.81
Water Removed From Well (gallons)	5.00	----	3.75	4.5	----	2.75
Method of Removal	Pump	----	Pump	Pump	----	Pump
Was Well Purged Dry?	No	----	Yes	Yes	----	Yes
pH (standard units)	7.01	----	7.17	7.91	----	7.01
Temperature (°C)	17.84	----	19.74	18.94	----	19.57
Conductivity (µmhos/cc)	1,470	----	7,410	1,410	----	1,320
Turbidity (NTU)	82.1	----	124	18.3	----	525
Appearance	Clear	----	Slightly Turbid	Clear	----	Turbid
Odor	None	----	None	None	----	None
Containers	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C	250 mL HNO3 1 L Cool 0-6C
Sample Time	1142	----	914	1639	----	1558
Sample Date	11/8/2022	----	11/8/2022	11/7/2022	----	11/7/2022

For 2" well multiply by	0.163
For 4" well multiply by	0.653

NORTHEASTERN POWER PLANT GROUNDWATER SAMPLING DATA FORM

SAMPLED BY: Kenny McDonald/Matt Hamilton . DATE: 11/07-08/22 .

Well Identification Number	MW-18	MW-19				
Activities	Gauge	Gauge				
Samples	Appendix III & IV	Appendix III & IV				
Depth to Water (ft)	90.77	23.70				
Measured Depth Total Depth of Well (ft.)	93.78	93.80				
Height of Water Column (ft.)	3.01	70.10				
Well Size (I.D.) (inches)	2	2				
Volume of Water in Well (gallons)	0.49	11.43				
Water Removed From Well (gallons)	2.50	17.75				
Method of Removal	Pump	Pump				
Was Well Purged Dry?	Yes	Yes				
pH (standard units)	6.98	7.07				
Temperature (°C)	21.04	19.49				
Conductivity (µmhos/cc)	24,100	39,000				
Turbidity (NTU)	364	0				
Appearance	Turbid	Clear				
Odor	None	Sulphur				
Containers	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C	250 mL HNO3 125 mL HCL 3 x 1L HNO3 1 L Cool 0-6C				
Sample Time	1433	1458				
Sample Date	11/7/2022	11/7/2022				

For 2" well multiply by	0.163
For 4" well multiply by	0.653



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 216569

Customer: Northeastern 3&4 Power Station

Date Reported: 01/18/2022

Customer Sample ID: MW-3D

Customer Description:

Lab Number: 216569-001

Preparation:

Date Collected: 12/28/2021 09:57

Date Received: 12/29/2021 13:20

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.24	mg/L	2	0.10	0.02		CRJ	01/04/2022 18:43	EPA 300.1 -1997, Rev. 1.0
Chloride	12.3	mg/L	2	0.04	0.02		CRJ	01/04/2022 18:43	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.82	mg/L	2	0.06	0.02		CRJ	01/04/2022 18:43	EPA 300.1 -1997, Rev. 1.0
Sulfate	175	mg/L	10	2.0	0.3		CRJ	01/04/2022 11:56	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	391	mg/L	1	20	5		MGK	01/03/2022 10:46	SM 2320B-2011
TDS, Filterable Residue	620	mg/L	2	100	40		SDW	12/29/2021 14:08	SM 2540C-2011

Customer Sample ID: MW-4D

Customer Description:

Lab Number: 216569-002

Preparation:

Date Collected: 12/28/2021 08:02

Date Received: 12/29/2021 13:20

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.81	mg/L	2	0.10	0.02		CRJ	01/04/2022 19:09	EPA 300.1 -1997, Rev. 1.0
Chloride	29.4	mg/L	2	0.04	0.02		CRJ	01/04/2022 19:09	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.26	mg/L	2	0.06	0.02		CRJ	01/04/2022 19:09	EPA 300.1 -1997, Rev. 1.0
Sulfate	281	mg/L	25	5.0	0.8		CRJ	01/04/2022 12:22	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	407	mg/L	1	20	5		MGK	01/03/2022 10:46	SM 2320B-2011
TDS, Filterable Residue	810	mg/L	2	100	40		SDW	12/29/2021 14:15	SM 2540C-2011



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 216569

Customer: Northeastern 3&4 Power Station

Date Reported: 01/18/2022

Customer Sample ID: MW-5D

Customer Description:

Lab Number: 216569-003

Preparation:

Date Collected: 12/28/2021 11:18

Date Received: 12/29/2021 13:20

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.13	mg/L	2	0.10	0.02		CRJ	01/04/2022 20:00	EPA 300.1 -1997, Rev. 1.0
Chloride	26.9	mg/L	2	0.04	0.02		CRJ	01/04/2022 20:00	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.60	mg/L	2	0.06	0.02		CRJ	01/04/2022 20:00	EPA 300.1 -1997, Rev. 1.0
Sulfate	157	mg/L	10	2.0	0.3		CRJ	01/04/2022 12:47	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	388	mg/L	1	20	5		MGK	01/03/2022 10:46	SM 2320B-2011
TDS, Filterable Residue	590	mg/L	2	100	40		SDW	12/29/2021 14:15	SM 2540C-2011

Customer Sample ID: MW-6D

Customer Description:

Lab Number: 216569-004

Preparation:

Date Collected: 12/28/2021 10:22

Date Received: 12/29/2021 13:20

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.34	mg/L	2	0.10	0.02		CRJ	01/04/2022 20:25	EPA 300.1 -1997, Rev. 1.0
Chloride	27.0	mg/L	2	0.04	0.02		CRJ	01/04/2022 20:25	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.93	mg/L	2	0.06	0.02		CRJ	01/04/2022 20:25	EPA 300.1 -1997, Rev. 1.0
Sulfate	469	mg/L	25	5.0	0.8		CRJ	01/04/2022 13:38	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	357	mg/L	1	20	5		MGK	01/03/2022 10:46	SM 2320B-2011
TDS, Filterable Residue	1040	mg/L	2	100	40		SDW	12/29/2021 14:23	SM 2540C-2011



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 216569

Customer: Northeastern 3&4 Power Station

Date Reported: 01/18/2022

Customer Sample ID: MW-12D

Customer Description:

Lab Number: 216569-005

Preparation:

Date Collected: 12/27/2021 13:54

Date Received: 12/29/2021 13:20

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.31	mg/L	2	0.10	0.02		CRJ	01/04/2022 21:16	EPA 300.1 -1997, Rev. 1.0
Chloride	12.1	mg/L	2	0.04	0.02		CRJ	01/04/2022 21:16	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.90	mg/L	2	0.06	0.02		CRJ	01/04/2022 21:16	EPA 300.1 -1997, Rev. 1.0
Sulfate	498	mg/L	25	5.0	0.8		CRJ	01/04/2022 14:04	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	152	mg/L	1	20	5		MGK	01/03/2022 10:46	SM 2320B-2011
TDS, Filterable Residue	920	mg/L	2	100	40		SDW	12/29/2021 14:23	SM 2540C-2011

Customer Sample ID: MW-13D

Customer Description:

Lab Number: 216569-006

Preparation:

Date Collected: 12/27/2021 13:16

Date Received: 12/29/2021 13:20

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.05	mg/L	2	0.10	0.02	J1	CRJ	01/04/2022 21:41	EPA 300.1 -1997, Rev. 1.0
Chloride	4.82	mg/L	2	0.04	0.02		CRJ	01/04/2022 21:41	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.38	mg/L	2	0.06	0.02		CRJ	01/04/2022 21:41	EPA 300.1 -1997, Rev. 1.0
Sulfate	435	mg/L	25	5.0	0.8		CRJ	01/04/2022 14:29	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	543	mg/L	1	20	5		MGK	01/03/2022 10:46	SM 2320B-2011
TDS, Filterable Residue	1120	mg/L	2	100	40		SDW	12/29/2021 14:28	SM 2540C-2011



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 216569

Customer: Northeastern 3&4 Power Station

Date Reported: 01/18/2022

Customer Sample ID: MW-14

Customer Description:

Lab Number: 216569-007

Preparation:

Date Collected: 12/28/2021 11:42

Date Received: 12/29/2021 13:20

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	9.9	mg/L	25	1.3	0.3		CRJ	01/04/2022 22:57	EPA 300.1 -1997, Rev. 1.0
Chloride	2920	mg/L	250	5	3		CRJ	01/04/2022 14:54	EPA 300.1 -1997, Rev. 1.0
Fluoride	4.5	mg/L	25	0.8	0.3		CRJ	01/04/2022 22:57	EPA 300.1 -1997, Rev. 1.0
Sulfate	278	mg/L	25	5.0	0.8		CRJ	01/04/2022 22:57	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	839	mg/L	1	20	5		MGK	01/03/2022 10:46	SM 2320B-2011
TDS, Filterable Residue	5890	mg/L	2	100	40		SDW	12/29/2021 14:28	SM 2540C-2011

Customer Sample ID: MW-15

Customer Description:

Lab Number: 216569-008

Preparation:

Date Collected: 12/28/2021 10:57

Date Received: 12/29/2021 13:20

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.28	mg/L	2	0.10	0.02		CRJ	01/04/2022 22:32	EPA 300.1 -1997, Rev. 1.0
Chloride	15.9	mg/L	2	0.04	0.02		CRJ	01/04/2022 22:32	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.49	mg/L	2	0.06	0.02		CRJ	01/04/2022 22:32	EPA 300.1 -1997, Rev. 1.0
Sulfate	631	mg/L	25	5.0	0.8		CRJ	01/04/2022 15:45	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	156	mg/L	1	20	5		MGK	01/03/2022 10:46	SM 2320B-2011
TDS, Filterable Residue	1090	mg/L	2	100	40		SDW	12/29/2021 14:34	SM 2540C-2011



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 216569

Customer: Northeastern 3&4 Power Station

Date Reported: 01/18/2022

Customer Sample ID: Landfill Duplicate

Customer Description:

Lab Number: 216569-009

Preparation:

Date Collected: 12/28/2021 14:00

Date Received: 12/29/2021 13:20

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.24	mg/L	2	0.10	0.02		CRJ	01/04/2022 17:02	EPA 300.1 -1997, Rev. 1.0
Chloride	12.3	mg/L	2	0.04	0.02		CRJ	01/04/2022 17:02	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.82	mg/L	2	0.06	0.02		CRJ	01/04/2022 17:02	EPA 300.1 -1997, Rev. 1.0
Sulfate	174	mg/L	25	5.0	0.8		CRJ	01/04/2022 11:31	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	387	mg/L	1	20	5		MGK	01/03/2022 10:46	SM 2320B-2011
TDS, Filterable Residue	640	mg/L	2	100	40		SDW	12/29/2021 14:34	SM 2540C-2011

216569

Job Comments:

Report reissued with corrected collection date on 216569-002. Original report issued 1/13/22.

Report Verification

This report and the above data have been confirmed by the following analyst.

Michael Ohlinger, Chemist

Email: msohlinger@aep.com

Phone: 614-836-4184

Audinet: 8-210-4184

THIS TEST REPORT RELATES ONLY TO THE ITEMS TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF THE LABORATORY. ALL TEST RESULTS MEET ALL OF THE REQUIREMENTS OF THE ACCREDITING AUTHORITY, UNLESS OTHERWISE NOTED.



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 216569

Customer: Northeastern 3&4 Power Station

Date Reported: 01/18/2022

Data Qualifier Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

Dolan Chemical Laboratory (DCL)
 4001 Sixby Road
 Groveport, Ohio 43125
 Jonathan Barnhill (318-673-3803)
 Contacts: Michael Ohlinger (614-836-4184)

Chain of Custody Record

Program: Coal Combustion Residuals (CCR) Site Contact: Date: For Lab Use Only: COC/Order #: 216569

Project Name: NE PS LF Semi-Annual CCR sampling
 Contact Name: Jill Parker-Witt
 Contact Phone: 318 673 3816
 Sampler(s): Kerry McDonald

Analysis Turnaround Time (in Calendar Days)
 Routine (28 days for Monitoring Wells)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp G=Grab)	Matrix	# of Cont.	Sample Specific Notes					
						250 mL bottle, pH<2, HNO ₃	Field-filter 500 mL bottle, then pH<2, HNO ₃	1 L bottle, Cool, 0-5°C	Three (six every 10hr) 1 L bottles, pH<2, HNO ₃		
MW-3D	12/28/2021	957		GW	1	B, Ca, Na, K, Mg, Li	disolved Fe and Mn	TDS, F, Cl, SO ₄ and Br, Alkalinity	Ra-226, Ra-228	HG	
MW-4D	12/28/2021	802		GW	1						
MW-5D	12/28/2021	1118		GW	1						
MW-6D	12/28/2021	1022		GW	1						
MW-12D	12/27/2021	1354		GW	1						
MW-13D	12/27/2021	1316		GW	1						
MW-14	12/28/2021	1142		GW	1						
MW-15	12/28/2021	1057		GW	1						
LANDFILL DUPLICATE	12/28/2021	1400		GW	1						

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other
 * Six 1L Bottles must be collected for Radium for every 10th sample.

Special Instructions/QC Requirements & Comments:

Retinquired by: <i>Katana</i>	Company: <i>EA664</i>	Date/Time: <i>12/28/21 1500</i>	Received by:	Date/Time:
Retinquired by:	Company:	Date/Time:	Received by:	Date/Time:
Retinquired by:	Company:	Date/Time:	Received by: <i>J. J. J. J.</i>	Date/Time: <i>12/29/21 12:50 PM</i>



WATER & WASTE SAMPLE RECEIPT FORM

<u>Package Type</u> <input checked="" type="radio"/> Cooler <input type="radio"/> Box <input type="radio"/> Bag <input type="radio"/> Envelope		<u>Delivery Type</u> PONY UPS <input checked="" type="radio"/> FedEX USPS Other _____	
Plant/Customer <u>Northeastern</u>	Number of Plastic Containers: <u>9</u>		
Opened By <u>JABeach</u>	Number of Glass Containers: <u>—</u>		
Date/Time <u>12/29/21 1250pm</u>	Number of Mercury Containers: <u>—</u>		
Were all temperatures within 0-6°C? <input checked="" type="radio"/> Y / <input type="radio"/> N or N/A Initial: <u>JAB</u> <input checked="" type="radio"/> on ice / <input type="radio"/> no ice			
1(IR Gun Ser# <u>200700311</u> , Expir. <u>06-11-22</u>) - If No, specify each deviation: _____			
Was container in good condition? <input checked="" type="radio"/> Y / <input type="radio"/> N Comments _____			
Was Chain of Custody received? <input checked="" type="radio"/> Y / <input type="radio"/> N Comments _____			
Requested turnaround: <u>Routine</u> If RUSH, who was notified? _____			
pH (15 min)	Cr ⁶ (pres) (24 hr)	NO ₂ or NO ₃ (48 hr)	ortho-PO ₄ (48 hr) Hg-diss (pres) (48 hr)

Was COC filled out properly? Y / N Comments _____

Were samples labeled property? Y / N Comments _____

Were correct containers used? Y / N Comments _____

Was pH checked & Color Coding done? Y / N or N/A Initial & Date: JAB 12/29/21

pH paper (circle one): MQuant,PN1.09535.0001,LOT# HC904495 [OR] Lab Rat,PN4801,LOT# X000RWDG21

- Was Add'l Preservative needed? Y / N If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / N Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 216569 Initial & Date & Time : _____

Logged by MSO Comments: _____

Reviewed by JAB _____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 221870

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-2D

Customer Description:

Lab Number: 221870-001

Preparation:

Date Collected: 06/14/2022 14:39 EDT

Date Received: 06/16/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.56	mg/L	2	0.10	0.02		CRJ	07/01/2022 23:08	EPA 300.1 -1997, Rev. 1.0
Chloride	15.5	mg/L	2	0.04	0.02		CRJ	07/01/2022 23:08	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.22	mg/L	2	0.06	0.02		CRJ	07/01/2022 23:08	EPA 300.1 -1997, Rev. 1.0
Sulfate	617	mg/L	25	5.0	0.8		CRJ	07/01/2022 15:23	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	8.46	mg/L	1	0.050	0.009		JDB	06/20/2022 23:24	EPA 200.8-1994, Rev. 5.4
Calcium	18.5	mg/L	1	0.05	0.02		JDB	06/20/2022 23:24	EPA 200.8-1994, Rev. 5.4
Magnesium	2.24	mg/L	1	0.10	0.02		JDB	06/20/2022 23:24	EPA 200.8-1994, Rev. 5.4
Potassium	4.36	mg/L	1	0.10	0.02		JDB	06/20/2022 23:24	EPA 200.8-1994, Rev. 5.4
Sodium	376	mg/L	20	4	1		JDB	06/28/2022 19:54	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	190	mg/L	1	20	5		MGK	06/21/2022 12:16	SM 2320B-2011
TDS, Filterable Residue	1180	mg/L	1	50	20	L1	SDW	06/17/2022 10:26	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 221870

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-3D

Customer Description:

Lab Number: 221870-002

Preparation:

Date Collected: 06/14/2022 13:26 EDT

Date Received: 06/16/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.30	mg/L	2	0.10	0.02		CRJ	07/01/2022 22:42	EPA 300.1 -1997, Rev. 1.0
Chloride	12.5	mg/L	2	0.04	0.02		CRJ	07/01/2022 22:42	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.84	mg/L	2	0.06	0.02		CRJ	07/01/2022 22:42	EPA 300.1 -1997, Rev. 1.0
Sulfate	177	mg/L	10	2.0	0.3		CRJ	07/01/2022 15:48	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.882	mg/L	1	0.050	0.009		JDB	06/20/2022 23:29	EPA 200.8-1994, Rev. 5.4
Calcium	124	mg/L	1	0.05	0.02		JDB	06/20/2022 23:29	EPA 200.8-1994, Rev. 5.4
Magnesium	40.3	mg/L	1	0.10	0.02		JDB	06/20/2022 23:29	EPA 200.8-1994, Rev. 5.4
Potassium	1.68	mg/L	1	0.10	0.02		JDB	06/20/2022 23:29	EPA 200.8-1994, Rev. 5.4
Sodium	59.6	mg/L	1	0.20	0.05		JDB	06/20/2022 23:29	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	376	mg/L	1	20	5		MGK	06/21/2022 12:16	SM 2320B-2011
TDS, Filterable Residue	630	mg/L	1	50	20	L1	SDW	06/17/2022 10:34	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 221870

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-4D

Customer Description:

Lab Number: 221870-003

Preparation:

Date Collected: 06/14/2022 13:03 EDT

Date Received: 06/16/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.79	mg/L	2	0.10	0.02		CRJ	07/01/2022 23:59	EPA 300.1 -1997, Rev. 1.0
Chloride	36.3	mg/L	25	0.5	0.3		CRJ	07/01/2022 16:14	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.32	mg/L	2	0.06	0.02		CRJ	07/01/2022 23:59	EPA 300.1 -1997, Rev. 1.0
Sulfate	283	mg/L	25	5.0	0.8		CRJ	07/01/2022 16:14	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.865	mg/L	1	0.050	0.009		JDB	06/20/2022 23:34	EPA 200.8-1994, Rev. 5.4
Calcium	161	mg/L	1	0.05	0.02		JDB	06/20/2022 23:34	EPA 200.8-1994, Rev. 5.4
Magnesium	19.5	mg/L	1	0.10	0.02		JDB	06/20/2022 23:34	EPA 200.8-1994, Rev. 5.4
Potassium	1.31	mg/L	1	0.10	0.02		JDB	06/20/2022 23:34	EPA 200.8-1994, Rev. 5.4
Sodium	77.5	mg/L	1	0.20	0.05		JDB	06/20/2022 23:34	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	342	mg/L	1	20	5		MGK	06/21/2022 12:16	SM 2320B-2011
TDS, Filterable Residue	850	mg/L	1	50	20	L1	SDW	06/17/2022 10:34	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 221870

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-5D

Customer Description:

Lab Number: 221870-004

Preparation:

Date Collected: 06/14/2022 14:51 EDT

Date Received: 06/16/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.15	mg/L	2	0.10	0.02		CRJ	07/02/2022 00:25	EPA 300.1 -1997, Rev. 1.0
Chloride	26.5	mg/L	2	0.04	0.02		CRJ	07/02/2022 00:25	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.61	mg/L	2	0.06	0.02		CRJ	07/02/2022 00:25	EPA 300.1 -1997, Rev. 1.0
Sulfate	150	mg/L	10	2.0	0.3		CRJ	07/01/2022 16:40	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.479	mg/L	1	0.050	0.009		JDB	06/20/2022 23:39	EPA 200.8-1994, Rev. 5.4
Calcium	131	mg/L	1	0.05	0.02		JDB	06/20/2022 23:39	EPA 200.8-1994, Rev. 5.4
Magnesium	43.5	mg/L	1	0.10	0.02		JDB	06/20/2022 23:39	EPA 200.8-1994, Rev. 5.4
Potassium	0.91	mg/L	1	0.10	0.02		JDB	06/20/2022 23:39	EPA 200.8-1994, Rev. 5.4
Sodium	34.9	mg/L	1	0.20	0.05		JDB	06/20/2022 23:39	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	377	mg/L	1	20	5		MGK	06/21/2022 12:16	SM 2320B-2011
TDS, Filterable Residue	620	mg/L	1	50	20	L1	SDW	06/17/2022 10:40	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 221870

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-6D

Customer Description:

Lab Number: 221870-005

Preparation:

Date Collected: 06/14/2022 13:54 EDT

Date Received: 06/16/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.43	mg/L	2	0.10	0.02		CRJ	07/02/2022 01:17	EPA 300.1 -1997, Rev. 1.0
Chloride	28.7	mg/L	2	0.04	0.02		CRJ	07/02/2022 01:17	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.01	mg/L	2	0.06	0.02		CRJ	07/02/2022 01:17	EPA 300.1 -1997, Rev. 1.0
Sulfate	451	mg/L	25	5.0	0.8		CRJ	07/01/2022 17:32	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	3.04	mg/L	1	0.050	0.009		JDB	06/20/2022 23:45	EPA 200.8-1994, Rev. 5.4
Calcium	203	mg/L	20	1.0	0.4		JDB	06/28/2022 19:59	EPA 200.8-1994, Rev. 5.4
Magnesium	33.4	mg/L	1	0.10	0.02		JDB	06/20/2022 23:45	EPA 200.8-1994, Rev. 5.4
Potassium	2.97	mg/L	1	0.10	0.02		JDB	06/20/2022 23:45	EPA 200.8-1994, Rev. 5.4
Sodium	145	mg/L	1	0.20	0.05		JDB	06/20/2022 23:45	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	377	mg/L	1	20	5		MGK	06/21/2022 12:16	SM 2320B-2011
TDS, Filterable Residue	1090	mg/L	1	50	20	L1	SDW	06/17/2022 10:40	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 221870

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-9D

Customer Description:

Lab Number: 221870-006

Preparation:

Date Collected: 06/14/2022 14:06 EDT

Date Received: 06/16/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.31	mg/L	2	0.10	0.02		CRJ	07/02/2022 01:43	EPA 300.1 -1997, Rev. 1.0
Chloride	25.9	mg/L	2	0.04	0.02		CRJ	07/02/2022 01:43	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.93	mg/L	2	0.06	0.02		CRJ	07/02/2022 01:43	EPA 300.1 -1997, Rev. 1.0
Sulfate	775	mg/L	25	5.0	0.8		CRJ	07/01/2022 17:57	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	6.19	mg/L	1	0.050	0.009		JDB	06/20/2022 23:50	EPA 200.8-1994, Rev. 5.4
Calcium	196	mg/L	20	1.0	0.4		JDB	06/28/2022 20:05	EPA 200.8-1994, Rev. 5.4
Magnesium	76.6	mg/L	1	0.10	0.02		JDB	06/20/2022 23:50	EPA 200.8-1994, Rev. 5.4
Potassium	4.12	mg/L	1	0.10	0.02		JDB	06/20/2022 23:50	EPA 200.8-1994, Rev. 5.4
Sodium	155	mg/L	1	0.20	0.05		JDB	06/20/2022 23:50	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	347	mg/L	1	20	5		MGK	06/21/2022 12:16	SM 2320B-2011
TDS, Filterable Residue	1560	mg/L	1	50	20	L1	SDW	06/17/2022 10:47	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 221870

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-12D

Customer Description:

Lab Number: 221870-007

Preparation:

Date Collected: 06/14/2022 11:44 EDT

Date Received: 06/16/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.39	mg/L	2	0.10	0.02		CRJ	07/02/2022 02:35	EPA 300.1 -1997, Rev. 1.0
Chloride	13.4	mg/L	2	0.04	0.02		CRJ	07/02/2022 02:35	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.88	mg/L	2	0.06	0.02		CRJ	07/02/2022 02:35	EPA 300.1 -1997, Rev. 1.0
Sulfate	511	mg/L	25	5.0	0.8		CRJ	07/01/2022 18:23	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	6.89	mg/L	1	0.050	0.009		JDB	06/20/2022 23:55	EPA 200.8-1994, Rev. 5.4
Calcium	68.3	mg/L	1	0.05	0.02		JDB	06/20/2022 23:55	EPA 200.8-1994, Rev. 5.4
Magnesium	7.66	mg/L	1	0.10	0.02		JDB	06/20/2022 23:55	EPA 200.8-1994, Rev. 5.4
Potassium	1.66	mg/L	1	0.10	0.02		JDB	06/20/2022 23:55	EPA 200.8-1994, Rev. 5.4
Sodium	232	mg/L	20	4	1		JDB	06/28/2022 20:10	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	126	mg/L	1	20	5		MGK	06/21/2022 12:16	SM 2320B-2011
TDS, Filterable Residue	940	mg/L	1	50	20	L1	SDW	06/17/2022 10:47	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 221870

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-13D

Customer Description:

Lab Number: 221870-008

Preparation:

Date Collected: 06/14/2022 11:10 EDT

Date Received: 06/16/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.05	mg/L	2	0.10	0.02	J1	CRJ	07/02/2022 03:00	EPA 300.1 -1997, Rev. 1.0
Chloride	4.36	mg/L	2	0.04	0.02		CRJ	07/02/2022 03:00	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.37	mg/L	2	0.06	0.02		CRJ	07/02/2022 03:00	EPA 300.1 -1997, Rev. 1.0
Sulfate	341	mg/L	25	5.0	0.8		CRJ	07/01/2022 18:49	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.742	mg/L	1	0.050	0.009		JDB	06/21/2022 00:00	EPA 200.8-1994, Rev. 5.4
Calcium	167	mg/L	1	0.05	0.02		JDB	06/21/2022 00:00	EPA 200.8-1994, Rev. 5.4
Magnesium	69.9	mg/L	1	0.10	0.02		JDB	06/21/2022 00:00	EPA 200.8-1994, Rev. 5.4
Potassium	1.41	mg/L	1	0.10	0.02		JDB	06/21/2022 00:00	EPA 200.8-1994, Rev. 5.4
Sodium	80.6	mg/L	1	0.20	0.05		JDB	06/21/2022 00:00	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	541	mg/L	1	20	5		MGK	06/21/2022 12:16	SM 2320B-2011
TDS, Filterable Residue	990	mg/L	1	50	20	L1	SDW	06/17/2022 10:54	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 221870

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-15

Customer Description:

Lab Number: 221870-009

Preparation:

Date Collected: 06/14/2022 14:24 EDT

Date Received: 06/16/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.34	mg/L	2	0.10	0.02		CRJ	07/02/2022 03:52	EPA 300.1 -1997, Rev. 1.0
Chloride	15.3	mg/L	2	0.04	0.02		CRJ	07/02/2022 03:52	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.71	mg/L	2	0.06	0.02		CRJ	07/02/2022 03:52	EPA 300.1 -1997, Rev. 1.0
Sulfate	643	mg/L	25	5.0	0.8		CRJ	07/01/2022 19:41	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	8.71	mg/L	1	0.050	0.009		GES	07/11/2022 21:48	EPA 200.8-1994, Rev. 5.4
Calcium	85.5	mg/L	1	0.05	0.02		GES	07/11/2022 21:48	EPA 200.8-1994, Rev. 5.4
Magnesium	23.7	mg/L	1	0.10	0.02		GES	07/11/2022 21:48	EPA 200.8-1994, Rev. 5.4
Potassium	1.79	mg/L	1	0.10	0.02		GES	07/11/2022 21:48	EPA 200.8-1994, Rev. 5.4
Sodium	215	mg/L	5	1.0	0.3		GES	07/12/2022 09:43	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	107	mg/L	1	20	5		MGK	06/21/2022 12:16	SM 2320B-2011
TDS, Filterable Residue	1080	mg/L	1	50	20	L1, S7	SDW	06/17/2022 10:54	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 221870

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: LANDFILL DUPLICATE

Customer Description:

Lab Number: 221870-010

Preparation:

Date Collected: 06/14/2022 16:00 EDT

Date Received: 06/16/2022 10:30 EDT

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.78	mg/L	2	0.10	0.02		CRJ	07/02/2022 04:18	EPA 300.1 -1997, Rev. 1.0
Chloride	39.5	mg/L	25	0.5	0.3		CRJ	07/01/2022 20:07	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.32	mg/L	2	0.06	0.02		CRJ	07/02/2022 04:18	EPA 300.1 -1997, Rev. 1.0
Sulfate	275	mg/L	25	5.0	0.8		CRJ	07/01/2022 20:07	EPA 300.1 -1997, Rev. 1.0

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	0.96	mg/L	5	0.25	0.05		GES	07/12/2022 09:48	EPA 200.8-1994, Rev. 5.4
Calcium	167	mg/L	5	0.3	0.1		GES	07/12/2022 09:48	EPA 200.8-1994, Rev. 5.4
Magnesium	21.6	mg/L	5	0.5	0.1		GES	07/12/2022 09:48	EPA 200.8-1994, Rev. 5.4
Potassium	1.4	mg/L	5	0.5	0.1		GES	07/12/2022 09:48	EPA 200.8-1994, Rev. 5.4
Sodium	83.5	mg/L	5	1.0	0.3		GES	07/12/2022 09:48	EPA 200.8-1994, Rev. 5.4

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	344	mg/L	1	20	5		MGK	06/21/2022 12:16	SM 2320B-2011
TDS, Filterable Residue	800	mg/L	1	50	20	L1	SDW	06/17/2022 11:00	SM 2540C-2015

Customer Sample ID: LANDFILL EQUIPMENT BLANK

Customer Description:

Lab Number: 221870-011

Preparation:

Date Collected: 06/14/2022 11:51 EDT

Date Received: 06/16/2022 10:30 EDT

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Boron	<0.009	mg/L	1	0.050	0.009	U1	GES	07/06/2022 15:15	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02	mg/L	1	0.05	0.02	U1	GES	07/06/2022 15:15	EPA 200.8-1994, Rev. 5.4
Magnesium	<0.02	mg/L	1	0.10	0.02	U1	GES	07/06/2022 15:15	EPA 200.8-1994, Rev. 5.4
Potassium	<0.02	mg/L	1	0.10	0.02	U1	GES	07/06/2022 15:15	EPA 200.8-1994, Rev. 5.4
Sodium	<0.05	mg/L	1	0.20	0.05	U1	GES	07/06/2022 15:15	EPA 200.8-1994, Rev. 5.4

221870

Job Comments:

Original report issued 7/16/2022. Report reissued with amended matrix spike precision calculations.



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 221870

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Report Verification

This report and the above data have been confirmed by the following analyst.

Michael Ohlinger, Chemist

Email: msohlinger@aep.com

Phone: 614-836-4184

Audinet: 8-210-4184

THIS TEST REPORT RELATES ONLY TO THE ITEMS TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF THE LABORATORY. ALL TEST RESULTS MEET ALL OF THE REQUIREMENTS OF THE ACCREDITING AUTHORITY, UNLESS OTHERWISE NOTED. ALL TIMES LISTED ARE IN THE EASTERN TIME ZONE.

Data Qualifier Legend

- L1 - The associated laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) recovery was outside acceptance limits.
- J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
- S7 - Sample did not achieve constant weight.
- U1 - Not detected at or above method detection limit (MDL).

221870

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Dolan Chemical Laboratory (DCL)
 4001 Bixby Road
 Groveport, Ohio 43125
 Jonathan Barnhill (318-673-3803)
 Contacts: Michael Ohlinger (614-836-4184)

Project Name: NE PS LF Semi-Annual CCR sampling
 Contact Name: Jill Parker-Witt
 Contact Phone: 318.673.3816

Sampler(s): Kenny McDonald

Analysis Turnaround Time (in Calendar Days)
 Routine (28 days for Monitoring Wells)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Site Contact:					Date:	COC/Order #:	For Lab Use Only:
						250 mL bottle, pH<2, HNO ₃	Field-filter 500 mL bottle, then pH<2, HNO ₃	1 L bottle, Cool, 0-6°C	Three (six every 10th) 1 L bottles, pH<2, HNO ₃	250 mL Glass or lined bottle, HCL			
MW-2D	6/14/2022	1339		GW	2	X		X					
MW-3D	6/14/2022	1226		GW	2	X		X					
MW-4D	6/14/2022	1203		GW	2	X		X					
MW-5D	6/14/2022	1351		GW	2	X		X					
MW-6D	6/14/2022	1254		GW	2	X		X					
MW-9D	6/14/2022	1306		GW	2	X		X					
MW-12D	6/14/2022	1044		GW	2	X		X					
MW-13D	6/14/2022	1010		GW	2	X		X					
MW-15	6/14/2022	1324		GW	2	X		X					
LANDFILL DUPLICATE	6/14/2022	1500		GW	2	X		X					
LANDFILL EQUIPMENT BLANK	6/14/2022	1051		W	1	X							
						4	F4	1	4				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other
 * Six 1L Bottles must be collected for Radium for every 10th sample.

Special Instructions/QC Requirements & Comments:

Relinquished by: <i>[Signature]</i>	Company: AGIL	Date/Time: 06/15/22 1400	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: <i>[Signature]</i>	Date/Time: 06/16/22 6:30



WATER & WASTE SAMPLE RECEIPT FORM (IR#1)

<u>Package Type</u>			<u>Delivery Type</u>				
<input checked="" type="radio"/> Cooler	<input type="radio"/> Box	<input type="radio"/> Bag	<input type="radio"/> Envelope	<input type="radio"/> PONY	<input type="radio"/> UPS	<input type="radio"/> FedEX	<input type="radio"/> USPS
				Other _____			
Plant/Customer <u>NEPSLF</u>			Number of Plastic Containers: <u>21</u>				
Opened By <u>MISGMA</u>			Number of Glass Containers: _____				
Date/Time <u>06/16/22 1030</u>			Number of Mercury Containers: _____				
Were all temperatures within 0-6°C? <input checked="" type="radio"/> Y / <input type="radio"/> N or N/A Initial: <u>mgk</u> <input checked="" type="radio"/> on ice / <input type="radio"/> no ice (IR Gun Ser# 210441568, Expir. 5/27/2023) - If No, specify each deviation: _____							
Was container in good condition? <input checked="" type="radio"/> Y / <input type="radio"/> N Comments _____							
Was Chain of Custody received? <input checked="" type="radio"/> Y / <input type="radio"/> N Comments _____							
Requested turnaround: <u>28 days</u> If RUSH, who was notified? _____							
pH (15 min)	Cr ⁶ (pres) (24 hr)	NO ₂ or NO ₃ (48 hr)	ortho-PO ₄ (48 hr)	Hg-diss (pres) (48 hr)			

Was COC filled out properly? Y / N Comments _____

Were samples labeled properly? Y / N Comments _____

Were correct containers used? Y / N Comments _____

Was pH checked & Color Coding done? Y / N or N/A Initial & Date: mgk 06/16/22

pH paper (circle one): MQuant pH Cat 1.09535.0001 _____ (OR) Lab rat pH Cat # LRS -4801
lot HC904495 Lot X000RWDG21

- Was Add'l Preservative needed? Y / N If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / N Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 221870 Initial & Date & Time : _____

Logged by MSO Comments: _____

Reviewed by mgk _____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Job ID: 222676

Customer: Northeastern 3&4 Power Station

Date Reported: 08/25/2022

Customer Sample ID: MW-9D

Customer Description:

Lab Number: 222676-001

Preparation:

Date Collected: 08/15/2022 18:23

Date Received: 08/18/2022 10:00

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	1250	mg/L	1	50	20		SDW	08/19/2022 08:30	SM 2540C-2015

Report Verification

This report and the above data have been confirmed by the following analyst.

Michael Ohlinger, Chemist

Email: msohlinger@aep.com

Phone: 614-836-4184

Audinet: 8-210-4184

THIS TEST REPORT RELATES ONLY TO THE ITEMS TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF THE LABORATORY. ALL TEST RESULTS MEET ALL OF THE REQUIREMENTS OF THE ACCREDITING AUTHORITY, UNLESS OTHERWISE NOTED.

AEP WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

<u>Package Type</u>			<u>Delivery Type</u>				
<input checked="" type="radio"/> Cooler	<input type="radio"/> Box	<input type="radio"/> Bag	<input type="radio"/> Envelope	<input type="radio"/> PONY	<input type="radio"/> UPS	<input checked="" type="radio"/> FedEx	<input type="radio"/> USPS
				Other _____			
Plant/Customer <u>Northeastern Penn</u>			Number of Plastic Containers: <u>1</u>				
Opened By <u>MSO</u>			Number of Glass Containers: <u>-</u>				
Date/Time <u>8/18/22 11:00AM</u>			Number of Mercury Containers: <u>-</u>				
Were all temperatures within 0-6°C? <input checked="" type="radio"/> Y / <input type="radio"/> N or N/A Initial: <u>MSO</u> <input checked="" type="radio"/> on ice / <input type="radio"/> no							
ice (IR Gun Ser# 221368900, Expir. 3/22/2024) - If No, specify each deviation: _____							
Was container in good condition? <input checked="" type="radio"/> Y / <input type="radio"/> N Comments _____							
Was Chain of Custody received? <input checked="" type="radio"/> Y / <input type="radio"/> N Comments _____							
Requested turnaround: <u>Routine</u> If RUSH, who was notified? _____							
pH (15 min)		Cr ⁶⁺ (pres) (24 hr)		NO ₂ or NO ₃ (48 hr)		ortho-PO ₄ (48 hr)	Hg-diss (pres) (48 hr)

Was COC filled out properly? Y / N Comments _____

Were samples labeled properly? Y / N Comments _____

Were correct containers used? Y / N Comments _____

Was pH checked & Color Coding done? Y / N or N/A Initial & Date: _____

pH paper (circle one): MQuant,PN1.09535.0001,LOT# HC904495 [OR] Lab Rat,PN4801,LOT# X000RWDG21

Was Add'l Preservative needed? Y / N If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / N Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 222676 Initial & Date & Time : _____

Comments: _____

Logged by MSO _____

Reviewed by GAB _____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223560

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-1D

Customer Description:

Lab Number: 223560-001

Preparation:

Date Collected: 11/07/2022 18:22 EST

Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	1.00	mg/L	5	0.25	0.05		CRJ	11/23/2022 07:28	EPA 300.1 -1997, Rev. 1.0
Chloride	237	mg/L	50	1.0	0.5		CRJ	11/22/2022 22:08	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.41	mg/L	5	0.15	0.05		CRJ	11/23/2022 07:28	EPA 300.1 -1997, Rev. 1.0
Sulfate	1330	mg/L	50	10	2		CRJ	11/22/2022 22:08	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	438	mg/L	1	20	5		MGK	11/15/2022 15:29	SM 2320B-2011
TDS, Filterable Residue	2740	mg/L	2	100	40		SDW	11/14/2022 08:48	SM 2540C-2015

Customer Sample ID: MW-3D

Customer Description:

Lab Number: 223560-002

Preparation:

Date Collected: 11/07/2022 16:42 EST

Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.33	mg/L	2	0.10	0.02		CRJ	11/23/2022 08:01	EPA 300.1 -1997, Rev. 1.0
Chloride	12.9	mg/L	2	0.04	0.02		CRJ	11/23/2022 08:01	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.81	mg/L	2	0.06	0.02		CRJ	11/23/2022 08:01	EPA 300.1 -1997, Rev. 1.0
Sulfate	181	mg/L	10	2.0	0.3		CRJ	11/22/2022 22:41	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	364	mg/L	1	20	5		MGK	11/15/2022 15:29	SM 2320B-2011
TDS, Filterable Residue	650	mg/L	1	50	20		SDW	11/14/2022 08:48	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223560

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-4D

Customer Description:

Lab Number: 223560-003

Preparation:

Date Collected: 11/07/2022 16:23 EST

Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.68	mg/L	2	0.10	0.02		CRJ	11/23/2022 09:15	EPA 300.1 -1997, Rev. 1.0
Chloride	36.9	mg/L	25	0.5	0.3		CRJ	11/22/2022 23:14	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.26	mg/L	2	0.06	0.02		CRJ	11/23/2022 09:15	EPA 300.1 -1997, Rev. 1.0
Sulfate	258	mg/L	25	5.0	0.8		CRJ	11/22/2022 23:14	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	370	mg/L	1	20	5		MGK	11/15/2022 15:29	SM 2320B-2011
TDS, Filterable Residue	810	mg/L	1	50	20		SDW	11/14/2022 08:55	SM 2540C-2015

Customer Sample ID: MW-5D

Customer Description:

Lab Number: 223560-004

Preparation:

Date Collected: 11/07/2022 18:08 EST

Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.17	mg/L	2	0.10	0.02		CRJ	11/23/2022 09:47	EPA 300.1 -1997, Rev. 1.0
Chloride	26.3	mg/L	2	0.04	0.02		CRJ	11/23/2022 09:47	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.58	mg/L	2	0.06	0.02		CRJ	11/23/2022 09:47	EPA 300.1 -1997, Rev. 1.0
Sulfate	148	mg/L	10	2.0	0.3		CRJ	11/22/2022 23:47	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	377	mg/L	1	20	5		MGK	11/15/2022 15:29	SM 2320B-2011
TDS, Filterable Residue	610	mg/L	1	50	20		SDW	11/14/2022 08:55	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223560

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-6D

Customer Description:

Lab Number: 223560-005

Preparation:

Date Collected: 11/07/2022 17:10 EST

Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.46	mg/L	2	0.10	0.02		CRJ	11/23/2022 14:11	EPA 300.1 -1997, Rev. 1.0
Chloride	30.2	mg/L	2	0.04	0.02		CRJ	11/23/2022 14:11	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.92	mg/L	2	0.06	0.02		CRJ	11/23/2022 14:11	EPA 300.1 -1997, Rev. 1.0
Sulfate	455	mg/L	25	5.0	0.8		CRJ	11/23/2022 00:53	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	373	mg/L	1	20	5		MGK	11/15/2022 15:29	SM 2320B-2011
TDS, Filterable Residue	1050	mg/L	1	50	20		SDW	11/14/2022 09:02	SM 2540C-2015

Customer Sample ID: MW-9D

Customer Description:

Lab Number: 223560-006

Preparation:

Date Collected: 11/07/2022 17:28 EST

Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.35	mg/L	2	0.10	0.02		CRJ	11/23/2022 14:44	EPA 300.1 -1997, Rev. 1.0
Chloride	26.2	mg/L	2	0.04	0.02		CRJ	11/23/2022 14:44	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.92	mg/L	2	0.06	0.02		CRJ	11/23/2022 14:44	EPA 300.1 -1997, Rev. 1.0
Sulfate	624	mg/L	25	5.0	0.8		CRJ	11/23/2022 01:26	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	352	mg/L	1	20	5		MGK	11/15/2022 15:29	SM 2320B-2011
TDS, Filterable Residue	1270	mg/L	1	50	20		SDW	11/14/2022 09:02	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223560

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-12D

Customer Description:

Lab Number: 223560-007

Preparation:

Date Collected: 11/08/2022 12:27 EST

Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.41	mg/L	2	0.10	0.02		CRJ	11/23/2022 20:14	EPA 300.1 -1997, Rev. 1.0
Chloride	13.1	mg/L	2	0.04	0.02		CRJ	11/23/2022 20:14	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.93	mg/L	2	0.06	0.02		CRJ	11/23/2022 20:14	EPA 300.1 -1997, Rev. 1.0
Sulfate	507	mg/L	25	5.0	0.8		CRJ	11/23/2022 01:58	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	130	mg/L	1	20	5		MGK	11/15/2022 15:29	SM 2320B-2011
TDS, Filterable Residue	920	mg/L	1	50	20		SDW	11/14/2022 09:09	SM 2540C-2015

Customer Sample ID: MW-13D

Customer Description:

Lab Number: 223560-008

Preparation:

Date Collected: 11/08/2022 12:42 EST

Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.07	mg/L	2	0.10	0.02	J1	CRJ	11/23/2022 19:41	EPA 300.1 -1997, Rev. 1.0
Chloride	4.41	mg/L	2	0.04	0.02		CRJ	11/23/2022 19:41	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.34	mg/L	2	0.06	0.02		CRJ	11/23/2022 19:41	EPA 300.1 -1997, Rev. 1.0
Sulfate	397	mg/L	25	5.0	0.8		CRJ	11/23/2022 02:31	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	523	mg/L	1	20	5		MGK	11/15/2022 15:29	SM 2320B-2011
TDS, Filterable Residue	1060	mg/L	2	100	40		SDW	11/14/2022 09:09	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223560

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-14

Customer Description:

Lab Number: 223560-009

Preparation:

Date Collected: 11/08/2022 10:14 EST

Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	11.0	mg/L	50	2.5	0.5		CRJ	11/23/2022 21:20	EPA 300.1 -1997, Rev. 1.0
Chloride	2870	mg/L	500	10	5		CRJ	11/23/2022 03:37	EPA 300.1 -1997, Rev. 1.0
Fluoride	4.9	mg/L	50	1.5	0.5		CRJ	11/23/2022 21:20	EPA 300.1 -1997, Rev. 1.0
Sulfate	214	mg/L	50	10	2		CRJ	11/23/2022 21:20	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	809	mg/L	1	20	5		MGK	11/15/2022 15:29	SM 2320B-2011
TDS, Filterable Residue	5600	mg/L	10	500	200		SDW	11/14/2022 09:15	SM 2540C-2015

Customer Sample ID: MW-15

Customer Description:

Lab Number: 223560-010

Preparation:

Date Collected: 11/07/2022 17:39 EST

Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.37	mg/L	2	0.10	0.02		CRJ	11/23/2022 21:53	EPA 300.1 -1997, Rev. 1.0
Chloride	17.0	mg/L	2	0.04	0.02		CRJ	11/23/2022 21:53	EPA 300.1 -1997, Rev. 1.0
Fluoride	1.32	mg/L	2	0.06	0.02		CRJ	11/23/2022 21:53	EPA 300.1 -1997, Rev. 1.0
Sulfate	628	mg/L	25	5.0	0.8		CRJ	11/23/2022 04:10	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	154	mg/L	1	20	5		MGK	11/15/2022 15:29	SM 2320B-2011
TDS, Filterable Residue	1090	mg/L	1	50	20		SDW	11/14/2022 10:25	SM 2540C-2015



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223560

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Customer Sample ID: MW-17

Customer Description:

Lab Number: 223560-011

Preparation:

Date Collected: 11/07/2022 16:58 EST

Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.12	mg/L	2	0.10	0.02		CRJ	11/24/2022 04:28	EPA 300.1 -1997, Rev. 1.0
Chloride	11.3	mg/L	2	0.04	0.02		CRJ	11/24/2022 04:28	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.89	mg/L	2	0.06	0.02		CRJ	11/24/2022 04:28	EPA 300.1 -1997, Rev. 1.0
Sulfate	440	mg/L	25	5.0	0.8		CRJ	11/24/2022 00:37	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	1010	mg/L	1	20	5		MGK	11/15/2022 15:29	SM 2320B-2011
TDS, Filterable Residue	1010	mg/L	4	200	80		SDW	11/14/2022 10:25	SM 2540C-2015

Customer Sample ID: Landfill DUPLICATE

Customer Description:

Lab Number: 223560-012

Preparation:

Date Collected: 11/07/2022 15:30 EST

Date Received: 11/10/2022 10:30 EST

Ion Chromatography

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Bromide	0.61	mg/L	2	0.10	0.02		CRJ	11/24/2022 05:01	EPA 300.1 -1997, Rev. 1.0
Chloride	39.1	mg/L	25	0.5	0.3		CRJ	11/24/2022 01:10	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.28	mg/L	2	0.06	0.02		CRJ	11/24/2022 05:01	EPA 300.1 -1997, Rev. 1.0
Sulfate	271	mg/L	25	5.0	0.8		CRJ	11/24/2022 01:10	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Alkalinity, as CaCO3	350	mg/L	1	20	5		MGK	11/15/2022 15:29	SM 2320B-2011
TDS, Filterable Residue	810	mg/L	2	100	40		SDW	11/14/2022 10:30	SM 2540C-2015

223560

Job Comments:

Original report issued 11/29/2022. Report reissued with amended matrix spike precision calculations.



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223560

Customer: Northeastern 3&4 Power Station

Date Reported: 01/03/2023

Report Verification

This report and the above data have been confirmed by the following analyst.

Michael Ohlinger, Chemist

Email: msohlinger@aep.com

Phone: 614-836-4184

Audinet: 8-210-4184

THIS TEST REPORT RELATES ONLY TO THE ITEMS TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF THE LABORATORY. ALL TEST RESULTS MEET ALL OF THE REQUIREMENTS OF THE ACCREDITING AUTHORITY, UNLESS OTHERWISE NOTED. ALL TIMES LISTED ARE IN THE EASTERN TIME ZONE.

Data Qualifier Legend

J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

Doan Chemical Laboratory (DCL)
 4001 Bixby Road
 Groveport, Ohio 43126
 Jonathan Bernhill (318-673-3803)
 Contacts: Michael Ohlinger (614-836-4184)

Project Name: NE PS LF Semi-Annual CCR Sampling
 Contact Name: Jill Parker-Witt
 Contact Phone: 318-673-3816

Sampler(s): Kenny McDonald/Matt Hamilton

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Site Contact: _____ Date: _____
 For Lab Use Only:
 COC/Order #: 223560

Analysis Turnaround Time (in Calendar Days)
 Routine (28 days for Monitoring Wells)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Inlets				Sample Specific Notes	
						250 mL bottle, pH<2, HNO ₃	Field-filter 500 mL bottle, then pH<2, HNO ₃	1 L bottle, Cool, 0-6°C	Three (six every 1000) L bottles, pH<2, HNO ₃		250 mL Glass Bottle, HCL, PH<2
MW-1D	11/7/2022	1722	G	GW	1			X			
MW-3D	11/7/2022	1542	G	GW	1			X			
MW-4D	11/7/2022	1523	G	GW	1			X			
MW-5D	11/7/2022	1708	G	GW	1			X			
MW-6D	11/7/2022	1810	G	GW	1			X			
MW-9D	11/7/2022	1828	G	GW	1			X			
MW-12D	11/8/2022	1127	G	GW	1			X			
MW-13D	11/8/2022	1142	G	GW	1			X			
MW-14	11/8/2022	914	G	GW	1			X			
MW-15	11/7/2022	1839	G	GW	1			X			
MW-17	11/7/2022	1558	G	GW	1			X			
Landfill DUPLICATE	11/7/2022	1430	G	GW	1			X			
						4	F4	1	4		

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other
 * Six 1L Bottles must be collected for Radium for every 10th sample.

Special Instructions/QC Requirements & Comments:

Relinquished by: <i>KAM</i>	Company: <i>EAGLE</i>	Date/Time: 11/09/22 1400	Received by:
Relinquished by:	Company:	Date/Time:	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: <i>Michael Ohlinger</i>
			Date/Time: 11/10/22 10:30AM



WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

<u>Package Type</u>			<u>Delivery Type</u>				
<input checked="" type="radio"/> Cooler	Box	Bag	Envelope	PONY	UPS	<input checked="" type="radio"/> FedEx	USPS
				Other _____			
Plant/Customer <u>NorHewston</u>			Number of Plastic Containers: <u>12</u>				
Opened By <u>MSD</u>			Number of Glass Containers: <u>-</u>				
Date/Time <u>11/10/22 10:30 AM</u>			Number of Mercury Containers: <u>-</u>				
Were all temperatures within 0-6°C? <input checked="" type="radio"/> Y / <input type="radio"/> N or N/A Initial: <u>MSD</u> <input checked="" type="radio"/> on ice / <input type="radio"/> no ice (IR Gun Ser# 221368900, Expir. 3/22/2024) - If No, specify each deviation: _____							
Was container in good condition? <input checked="" type="radio"/> Y / <input type="radio"/> N Comments _____							
Was Chain of Custody received? <input checked="" type="radio"/> Y / <input type="radio"/> N Comments _____							
Requested turnaround: <u>Standard</u> If RUSH, who was notified? _____							
pH (15 min)	Cr ⁺⁶ (pres) (24 hr)	NO ₂ or NO ₃ (48 hr)	ortho-PO ₄ (48 hr)	Hg-diss (pres) (48 hr)			

Was COC filled out properly? Y / N Comments _____

Were samples labeled properly? Y / N Comments _____

Were correct containers used? Y / N Comments _____

Was pH checked & Color Coding done? Y / N or N/A Initial & Date: MSD 11/10/22 MGL

pH paper (circle one): MQuant, PN1.09535.0001, LOT# HC904495 (OR) Lab Rat, PN4801, LOT# X000RWDG21

Was Add'l Preservative needed? Y / N If Yes: By whom & when: MGL/MSD 11/10/22 (See Prep Book)
MSD 11/10/22

Is sample filtration requested? Y / N Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 223560 Initial & Date & Time : _____

Logged by MSD Comments: _____

Reviewed by EDL _____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: MW-1D

Customer Description:

Lab Number: 223588-001

Preparation:

Date Collected: 11/07/2022 18:22 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.40	µg/L	1	0.10	0.02		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Arsenic	1.74	µg/L	1	0.10	0.03		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Barium	62.9	µg/L	1	0.20	0.05		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Beryllium	0.26	µg/L	10	0.50	0.07	J1	GES	11/29/2022 09:44	EPA 200.8-1994, Rev. 5.4
Boron	1.20	mg/L	1	0.050	0.009		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Cadmium	0.325	µg/L	1	0.020	0.004		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Calcium	163	mg/L	1	0.05	0.02		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Chromium	5.38	µg/L	1	0.20	0.04		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Cobalt	3.39	µg/L	1	0.020	0.003		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Lead	4.67	µg/L	1	0.20	0.05		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Lithium	0.114	mg/L	10	0.0020	0.0005		GES	11/29/2022 09:44	EPA 200.8-1994, Rev. 5.4
Magnesium	79.6	mg/L	1	0.10	0.02		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Molybdenum	14.2	µg/L	1	0.5	0.1		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Potassium	8.32	mg/L	1	0.10	0.02		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Selenium	1.03	µg/L	1	0.50	0.09		GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4
Sodium	672	mg/L	10	2.0	0.5		GES	11/29/2022 09:44	EPA 200.8-1994, Rev. 5.4
Thallium	0.12	µg/L	1	0.20	0.04	J1	GES	11/28/2022 21:28	EPA 200.8-1994, Rev. 5.4



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: MW-3D

Customer Description:

Lab Number: 223588-002

Preparation:

Date Collected: 11/07/2022 16:42 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.07	µg/L	1	0.10	0.02	J1	GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Arsenic	1.32	µg/L	1	0.10	0.03		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Barium	107	µg/L	1	0.20	0.05		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Beryllium	0.047	µg/L	1	0.050	0.007	J1	GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Boron	0.864	mg/L	1	0.050	0.009		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Cadmium	0.054	µg/L	1	0.020	0.004		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Calcium	121	mg/L	1	0.05	0.02		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Chromium	0.75	µg/L	1	0.20	0.04		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Cobalt	0.336	µg/L	1	0.020	0.003		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Lead	0.60	µg/L	1	0.20	0.05		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Lithium	0.0135	mg/L	1	0.00020	0.00005		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Magnesium	41.4	mg/L	1	0.10	0.02		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Molybdenum	2.7	µg/L	1	0.5	0.1		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Potassium	1.68	mg/L	1	0.10	0.02		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Selenium	0.14	µg/L	1	0.50	0.09	J1	GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Sodium	61.0	mg/L	1	0.20	0.05		GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/28/2022 21:33	EPA 200.8-1994, Rev. 5.4



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: MW-4D

Customer Description:

Lab Number: 223588-003

Preparation:

Date Collected: 11/07/2022 16:23 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.19	µg/L	1	0.10	0.02		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Arsenic	4.28	µg/L	1	0.10	0.03		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Barium	149	µg/L	1	0.20	0.05		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Beryllium	0.15	µg/L	5	0.25	0.04	J1	GES	11/29/2022 09:49	EPA 200.8-1994, Rev. 5.4
Boron	0.762	mg/L	1	0.050	0.009		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Cadmium	0.938	µg/L	1	0.020	0.004		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Calcium	181	mg/L	1	0.05	0.02		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Chromium	3.31	µg/L	1	0.20	0.04		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Cobalt	5.41	µg/L	1	0.020	0.003		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Lead	2.86	µg/L	1	0.20	0.05		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Lithium	0.0047	mg/L	5	0.0010	0.0003		GES	11/29/2022 09:49	EPA 200.8-1994, Rev. 5.4
Magnesium	23.5	mg/L	1	0.10	0.02		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Molybdenum	3.8	µg/L	1	0.5	0.1		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Potassium	1.96	mg/L	1	0.10	0.02		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Selenium	1.03	µg/L	1	0.50	0.09		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Sodium	75.8	mg/L	1	0.20	0.05		GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4
Thallium	0.16	µg/L	1	0.20	0.04	J1	GES	11/28/2022 21:38	EPA 200.8-1994, Rev. 5.4



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: MW-5D

Customer Description:

Lab Number: 223588-004

Preparation:

Date Collected: 11/07/2022 18:08 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.1	µg/L	1	0.10	0.02		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Arsenic	0.55	µg/L	1	0.10	0.03		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Barium	101	µg/L	1	0.20	0.05		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Beryllium	0.037	µg/L	1	0.050	0.007	J1	GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Boron	0.445	mg/L	1	0.050	0.009		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Cadmium	0.030	µg/L	1	0.020	0.004		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Calcium	123	mg/L	1	0.05	0.02		GES	11/28/2022 09:43	EPA 200.8-1994, Rev. 5.4
Chromium	0.63	µg/L	1	0.20	0.04		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Cobalt	0.170	µg/L	1	0.020	0.003		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Lead	0.26	µg/L	1	0.20	0.05		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Lithium	0.0103	mg/L	1	0.00020	0.00005		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Magnesium	42.0	mg/L	1	0.10	0.02		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Molybdenum	1.5	µg/L	1	0.5	0.1		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Potassium	0.95	mg/L	1	0.10	0.02		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Selenium	0.26	µg/L	1	0.50	0.09	J1	GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Sodium	35.1	mg/L	1	0.20	0.05		GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/28/2022 21:43	EPA 200.8-1994, Rev. 5.4



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: MW-6D

Customer Description:

Lab Number: 223588-005

Preparation:

Date Collected: 11/07/2022 17:10 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.13	µg/L	1	0.10	0.02		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Arsenic	1.84	µg/L	1	0.10	0.03		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Barium	64.4	µg/L	1	0.20	0.05		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Beryllium	0.09	µg/L	5	0.25	0.04	J1	GES	11/29/2022 09:54	EPA 200.8-1994, Rev. 5.4
Boron	3.00	mg/L	1	0.050	0.009		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Cadmium	0.173	µg/L	1	0.020	0.004		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Calcium	171	mg/L	1	0.05	0.02		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Chromium	2.49	µg/L	1	0.20	0.04		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Cobalt	0.948	µg/L	1	0.020	0.003		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Lead	1.90	µg/L	1	0.20	0.05		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Lithium	0.0200	mg/L	5	0.0010	0.0003		GES	11/29/2022 09:54	EPA 200.8-1994, Rev. 5.4
Magnesium	33.8	mg/L	1	0.10	0.02		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Molybdenum	97.0	µg/L	1	0.5	0.1		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Potassium	2.95	mg/L	1	0.10	0.02		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Selenium	0.47	µg/L	1	0.50	0.09	J1	GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Sodium	142	mg/L	1	0.20	0.05		GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/28/2022 21:48	EPA 200.8-1994, Rev. 5.4



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: MW-9D

Customer Description:

Lab Number: 223588-006

Preparation:

Date Collected: 11/07/2022 17:28 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.28	µg/L	1	0.10	0.02		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Arsenic	0.61	µg/L	1	0.10	0.03		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Barium	50.8	µg/L	1	0.20	0.05		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.04	µg/L	5	0.25	0.04	U1	GES	11/29/2022 09:59	EPA 200.8-1994, Rev. 5.4
Boron	6.11	mg/L	1	0.050	0.009		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Cadmium	0.080	µg/L	1	0.020	0.004		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Calcium	160	mg/L	1	0.05	0.02		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Chromium	1.12	µg/L	1	0.20	0.04		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Cobalt	0.836	µg/L	1	0.020	0.003		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Lead	0.92	µg/L	1	0.20	0.05		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Lithium	0.0169	mg/L	5	0.0010	0.0003		GES	11/29/2022 09:59	EPA 200.8-1994, Rev. 5.4
Magnesium	62.4	mg/L	1	0.10	0.02		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Molybdenum	220	µg/L	1	0.5	0.1		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Potassium	3.64	mg/L	1	0.10	0.02		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Selenium	5.67	µg/L	1	0.50	0.09		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Sodium	153	mg/L	1	0.20	0.05		GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	1	0.20	0.04	J1	GES	11/28/2022 21:53	EPA 200.8-1994, Rev. 5.4



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: MW-12D

Customer Description:

Lab Number: 223588-007

Preparation:

Date Collected: 11/08/2022 12:27 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.07	µg/L	1	0.10	0.02	J1	GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Arsenic	1.56	µg/L	1	0.10	0.03		GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Barium	32.9	µg/L	1	0.20	0.05		GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.04	µg/L	5	0.25	0.04	U1	GES	11/29/2022 10:05	EPA 200.8-1994, Rev. 5.4
Boron	7.11	mg/L	1	0.050	0.009		GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Cadmium	0.065	µg/L	1	0.020	0.004		GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Calcium	61.2	mg/L	1	0.05	0.02		GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Chromium	0.78	µg/L	1	0.20	0.04		GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Cobalt	0.396	µg/L	1	0.020	0.003		GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Lead	1.65	µg/L	1	0.20	0.05		GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Lithium	0.0036	mg/L	5	0.0010	0.0003		GES	11/29/2022 10:05	EPA 200.8-1994, Rev. 5.4
Magnesium	6.14	mg/L	1	0.10	0.02		GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Molybdenum	563	µg/L	1	0.5	0.1		GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Potassium	1.71	mg/L	1	0.10	0.02		GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Selenium	0.85	µg/L	1	0.50	0.09		GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4
Sodium	231	mg/L	5	1.0	0.3		GES	11/29/2022 10:05	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/28/2022 21:58	EPA 200.8-1994, Rev. 5.4



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: MW-13D

Customer Description:

Lab Number: 223588-008

Preparation:

Date Collected: 11/08/2022 12:42 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.35	µg/L	1	0.10	0.02		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Arsenic	1.21	µg/L	1	0.10	0.03		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Barium	57.6	µg/L	1	0.20	0.05		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Beryllium	0.12	µg/L	5	0.25	0.04	J1	GES	11/29/2022 10:10	EPA 200.8-1994, Rev. 5.4
Boron	0.752	mg/L	1	0.050	0.009		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Cadmium	0.088	µg/L	1	0.020	0.004		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Calcium	181	mg/L	5	0.3	0.1		GES	11/29/2022 10:10	EPA 200.8-1994, Rev. 5.4
Chromium	1.43	µg/L	1	0.20	0.04		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Cobalt	2.15	µg/L	1	0.020	0.003		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Lead	0.83	µg/L	1	0.20	0.05		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Lithium	0.0276	mg/L	5	0.0010	0.0003		GES	11/29/2022 10:10	EPA 200.8-1994, Rev. 5.4
Magnesium	79.3	mg/L	1	0.10	0.02		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Molybdenum	8.9	µg/L	1	0.5	0.1		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Potassium	1.75	mg/L	1	0.10	0.02		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Selenium	8.69	µg/L	1	0.50	0.09		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Sodium	75.5	mg/L	1	0.20	0.05		GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	µg/L	1	0.20	0.04	J1	GES	11/28/2022 22:04	EPA 200.8-1994, Rev. 5.4



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: MW-14

Customer Description:

Lab Number: 223588-009

Preparation:

Date Collected: 11/08/2022 10:14 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.81	µg/L	1	0.10	0.02		GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Arsenic	0.95	µg/L	1	0.10	0.03		GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Barium	353	µg/L	1	0.20	0.05	M1	GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Beryllium	0.053	µg/L	1	0.050	0.007		GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Boron	1.29	mg/L	1	0.050	0.009		GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Cadmium	0.165	µg/L	1	0.020	0.004		GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Calcium	100	mg/L	1	0.05	0.02	M1	GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Chromium	4.61	µg/L	1	0.20	0.04		GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Cobalt	2.08	µg/L	1	0.020	0.003		GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Lead	1.12	µg/L	1	0.20	0.05		GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Lithium	0.322	mg/L	1	0.00020	0.00005		GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Magnesium	57.2	mg/L	1	0.10	0.02	M1	GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Molybdenum	12.9	µg/L	1	0.5	0.1		GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Potassium	8.28	mg/L	1	0.10	0.02		GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Selenium	0.72	µg/L	1	0.50	0.09		GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4
Sodium	2090	mg/L	20	4	1	M1	GES	11/28/2022 23:52	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/28/2022 23:46	EPA 200.8-1994, Rev. 5.4



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: MW-15

Customer Description:

Lab Number: 223588-010

Preparation:

Date Collected: 11/07/2022 17:39 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.14	µg/L	1	0.10	0.02		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Arsenic	1.61	µg/L	1	0.10	0.03		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Barium	104	µg/L	1	0.20	0.05		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Beryllium	0.041	µg/L	1	0.050	0.007	J1	GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Boron	7.08	mg/L	1	0.050	0.009		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Cadmium	0.125	µg/L	1	0.020	0.004		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Calcium	122	mg/L	1	0.05	0.02		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Chromium	1.23	µg/L	1	0.20	0.04		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Cobalt	0.516	µg/L	1	0.020	0.003		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Lead	1.09	µg/L	1	0.20	0.05		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Lithium	0.00859	mg/L	1	0.00020	0.00005		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Magnesium	37.5	mg/L	1	0.10	0.02		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Molybdenum	448	µg/L	1	0.5	0.1		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Potassium	1.90	mg/L	1	0.10	0.02		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Selenium	0.83	µg/L	1	0.50	0.09		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Sodium	162	mg/L	1	0.20	0.05		GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/29/2022 00:17	EPA 200.8-1994, Rev. 5.4



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: MW-17

Customer Description:

Lab Number: 223588-011

Preparation:

Date Collected: 11/07/2022 16:58 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.6	µg/L	20	2.0	0.4	J1	GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Arsenic	3.9	µg/L	20	2.0	0.6		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Barium	170	µg/L	20	4	1		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Beryllium	0.5	µg/L	20	1.0	0.1	J1	GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Boron	1	mg/L	20	1.0	0.2		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Cadmium	3.14	µg/L	20	0.40	0.08		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Calcium	231	mg/L	20	1.0	0.4		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Chromium	15.9	µg/L	20	4.0	0.8		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Cobalt	20.0	µg/L	20	0.40	0.06		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Lead	11	µg/L	20	4	1		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Lithium	0.020	mg/L	20	0.004	0.001		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Magnesium	79.7	mg/L	20	2.0	0.4		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Molybdenum	23	µg/L	20	10	2		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Potassium	3.4	mg/L	20	2.0	0.4		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Selenium	3	µg/L	20	10	2	J1	GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Sodium	42	mg/L	20	4	1		GES	11/29/2022 00:27	EPA 200.8-1994, Rev. 5.4
Thallium	0.16	µg/L	1	0.20	0.04	J1	GES	01/09/2023 10:14	EPA 200.8-1994, Rev. 5.4



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: Landfill Duplicate

Customer Description:

Lab Number: 223588-012

Preparation:

Date Collected: 11/07/2022 15:30 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.18	µg/L	1	0.10	0.02		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Arsenic	3.97	µg/L	1	0.10	0.03		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Barium	138	µg/L	1	0.20	0.05		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Beryllium	0.104	µg/L	1	0.050	0.007		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Boron	0.714	mg/L	1	0.050	0.009		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Cadmium	0.930	µg/L	1	0.020	0.004		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Calcium	173	mg/L	1	0.05	0.02		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Chromium	2.62	µg/L	1	0.20	0.04		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Cobalt	5.21	µg/L	1	0.020	0.003		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Lead	2.33	µg/L	1	0.20	0.05		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Lithium	0.00374	mg/L	1	0.00020	0.00005		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Magnesium	21.7	mg/L	1	0.10	0.02		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Molybdenum	3.9	µg/L	1	0.5	0.1		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Potassium	1.77	mg/L	1	0.10	0.02		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Selenium	0.90	µg/L	1	0.50	0.09		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Sodium	71.0	mg/L	1	0.20	0.05		GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4
Thallium	0.15	µg/L	1	0.20	0.04	J1	GES	11/29/2022 00:33	EPA 200.8-1994, Rev. 5.4



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Customer Sample ID: Landfill Equipment Blank

Customer Description:

Lab Number: 223588-013

Preparation:

Date Collected: 11/07/2022 17:00 EST

Date Received: 11/11/2022 13:00 EST

Metals

Parameter	Result	Units	Dilution	RL	MDL	Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02	µg/L	1	0.10	0.02	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03	µg/L	1	0.10	0.03	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Barium	<0.05	µg/L	1	0.20	0.05	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007	µg/L	1	0.050	0.007	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Boron	<0.009	mg/L	1	0.050	0.009	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02	mg/L	1	0.05	0.02	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Chromium	0.44	µg/L	1	0.20	0.04		GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Cobalt	0.154	µg/L	1	0.020	0.003		GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Lead	0.07	µg/L	1	0.20	0.05	J1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Lithium	<0.00005	mg/L	1	0.00020	0.00005	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Magnesium	<0.02	mg/L	1	0.10	0.02	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Molybdenum	0.3	µg/L	1	0.5	0.1	J1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Potassium	<0.02	mg/L	1	0.10	0.02	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09	µg/L	1	0.50	0.09	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Sodium	<0.05	mg/L	1	0.20	0.05	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04	µg/L	1	0.20	0.04	U1	GES	11/29/2022 00:43	EPA 200.8-1994, Rev. 5.4

223588

Job Comments:

Original report issued 11/30/2022. Report reissued 12/30/22 with amended matrix spike precision calculations. Report reissued 1/10/23 with new dilution for TI on O11.



Water Analysis Report

Dolan Chemical Laboratory
4001 Bixby Road
Groveport, OH 43125
Phone: 614-836-4221
Audinet: 210-4221

Reissued

Job ID: 223588

Customer: Northeastern 3&4 Power Station

Date Reported: 01/10/2023

Report Verification

This report and the above data have been confirmed by the following analyst.

Michael Ohlinger, Chemist

Email: msohlinger@aep.com

Phone: 614-836-4184

Audinet: 8-210-4184

THIS TEST REPORT RELATES ONLY TO THE ITEMS TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF THE LABORATORY. ALL TEST RESULTS MEET ALL OF THE REQUIREMENTS OF THE ACCREDITING AUTHORITY, UNLESS OTHERWISE NOTED. ALL TIMES LISTED ARE IN THE EASTERN TIME ZONE.

Data Qualifier Legend

- J1 - Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.
- U1 - Not detected at or above method detection limit (MDL).
- M1 - The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.

Chain of Custody Record

Program: Coal Combustion Residuals (CCR)

Site Contact:

Date:

For Lab Use Only:

Dolan Chemical Laboratory (DCL)
 4001 Bixby Road
 Groveport, Ohio 43125
 Jonathan Bernhill (318-673-3803)
 Contacts: Michael Ohlinger (614-838-4184)

Project Name: NE PS LF Semi-Annual CCR Sampling
 Contact Name: Jill Parker-Witt
 Contact Phone: 318-673-3816

Sampler(s): Kenny McDonald/Matt Hamilton

COC/Order #:

223588

Analysis Turnaround Time (in Calendar Days)
 Routine(28 days for Monitoring Wells)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample(s) Initials				Field-filter 500 mL bottle, then pH<2, HNO ₃	1 L bottle, Cool, 0-5°C	Three (six every 100ft) 1 L bottles, pH<2, HNO ₃	250 mL Glass Bottle, HCL ⁺ , pH<2	Date	COC/Order #	Sample Specific Notes		
						B, Ca, Na, K, Mg	TDS, F, Cl, SO ₄	Ra-226, Ra-228	HG									
MW-1D	11/7/2022	1722	G	GW	1				X									
MW-3D	11/7/2022	1542	G	GW	1				X									
MW-4D	11/7/2022	1523	G	GW	1				X									
MW-5D	11/7/2022	1708	G	GW	1				X									
MW-6D	11/7/2022	1610	G	GW	1				X									
MW-9D	11/7/2022	1628	G	GW	1				X									
MW-12D	11/8/2022	1127	G	GW	1				X									
MW-13D	11/8/2022	1142	G	GW	1				X									
MW-14	11/8/2022	914	G	GW	1				X									
MW-15	11/7/2022	1639	G	GW	1				X									
MW-17	11/7/2022	1558	G	GW	1				X									
Landfill DUPLICATE	11/7/2022	1430	G	GW	1				X									
Landfill EQUIPMENT BLANK	11/7/2022	1600	G	GW	1				X									
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other															4	F4	1	4

* Six 1L Bottles must be collected for Radium for every 10th sample.

Special Instructions/QC Requirements & Comments:

Relinquished by: <i>Kenny McDonald</i>	Company: <i>F7011</i>	Date/Time: <i>11/8/22 1400</i>	Received by: <i>J. Bernhill</i>	Date/Time: <i>11/11/22 1:00pm</i>
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:



WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

<u>Package Type</u> <input checked="" type="radio"/> Cooler <input type="radio"/> Box <input type="radio"/> Bag <input type="radio"/> Envelope			<u>Delivery Type</u> <input type="radio"/> PONY <input type="radio"/> UPS <input type="radio"/> FedEx <input type="radio"/> USPS Other _____			
Plant/Customer <u>Northeastern</u>		Number of Plastic Containers: <u>13</u>				
Opened By <u>MSO</u>		Number of Glass Containers: _____				
Date/Time <u>11/11/22 1:00pm</u>		Number of Mercury Containers: _____				
Were all temperatures within 0-6°C? Y / N or <input checked="" type="radio"/> N/A Initial: _____ on ice / no ice (IR Gun Ser# 221368900, Expir. 3/22/2024) - If No, specify each deviation: _____						
Was container in good condition? <input checked="" type="radio"/> Y / <input type="radio"/> N Comments _____						
Was Chain of Custody received? <input checked="" type="radio"/> Y / <input type="radio"/> N Comments _____						
Requested turnaround: <u>Routine</u> If RUSH, who was notified? _____						
pH (15 min)	Cr ⁺⁶ (pres) (24 hr)	NO ₂ or NO ₃ (48 hr)	ortho-PO ₄ (48 hr)	Hg-diss (pres) (48 hr)		

Was COC filled out properly? Y / N Comments _____

Were samples labeled properly? Y / N Comments _____

Were correct containers used? Y / N Comments _____

Was pH checked & Color Coding done? Y / N or N/A Initial & Date: EDL 11/11/22

pH paper (circle one): MQuant,PN1.09535.0001,LOT# HC904495 [OR] Lab Rat,PN4801,LOT# X000RWDG21

Was Add'l Preservative needed? Y / N If Yes: By whom & when: _____ (See Prep Book)

Is sample filtration requested? Y / N Comments _____ (See Prep Book)

Was the customer contacted? If Yes: Person Contacted: _____

Lab ID# 223588 Initial & Date & Time : _____

Logged by JAB Comments: _____

Reviewed by MSO _____

REMINDER: Document the pertinent sample integrity information and deviations in sample receipt (as noted above) in the "Notes" field in the LIMS to be included on the report to the customer.