Annual Groundwater Monitoring Report

Southwestern Electric Power Company
Welsh Power Plant

Bottom Ash Storage Pond CN 602843245; RN100213370 Registration No: CCR 110

1187 Country Road 4865

Titus County

Pittsburg, Texas

January 2023

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Abbreviations:

ASD - Alternate Source Demonstration

BASP - Bottom Ash Storage Pond

CCR – Coal Combustion Residual

GWPS - Groundwater protection standards

SSI - Statistically Significant Increase

SSL - Statistically Significant Level

TCEQ – Texas Commission on Environmental Quality

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 Southwestern Electric Power Company's (SWEPCO's), a wholly owned subsidiary of American Electric Power Company (AEP), Welsh Power Plant (CCR No.: 110). The Texas Commission on Environmental Quality's (TCEQ's) CCR rule requires 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 BASP was operating under the Detection Monitoring program;
- At the end of the current annual reporting period, the BASP was operating under the Detection Monitoring program;
- Groundwater samples and elevations were collected for AD-1, AD-5, AD-17, AD-3, AD-4C, and AD-16R and analyzed for Appendix III constituents, as specified in 30 TAC §352.941 and AEP's *Groundwater Sampling and Analysis Plan (2021)*.
- The background data was re-established on December 8, 2021.
- The 1st semi-annual groundwater sampling event was conducted in June 2022 with confirmation sampling conducted in August 2022:
 - o Potential Statistically Significant increases (SSIs) were identified for:
 - Sulfate in AD-4C
- Statistical evaluation of the 2nd semi-annual sampling event, held in November 2022, is underway:
- ASD for the 1st semi-annual 2022 potential Sulfate SSI is underway.

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 BASP CCR management unit(s), all groundwater monitoring wells and monitoring well identification numbers (Attached as **Appendix 1**, where applicable);
- Statistical comparison of monitoring data to determine if there have been SSI(s) or SSL(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, for example the date and circumstances for transitioning from detection monitoring to assessment monitoring, in addition to identifying the constituents detected at a SSI over background concentrations (Notices Attached as **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, field sheets, analytical reports, etc. (Attached as **Appendix 6**)

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 for the Bottom Ash Storage Pond (BASP), the monitoring well locations, and their corresponding identification numbers is provided below.

BASP Monitoring Wells								
Background Down Gradient								
AD-1	AD-3							
AD-5	AD-4C							
AD-17	AD-16R							

Note: AD-2 is used for gauging purposes



III. Monitoring Wells Installed or Decommissioned

There were no groundwater monitoring wells installed or decommissioned during this reporting period.

IV. <u>Groundwater Quality Data and Static Water Elevation Data, With Flow Rate and Direction and Discussion</u>

Groundwater samples and elevations were collected for AD-1, AD-5, AD-17, AD-3, AD-4C, and AD-16R and analyzed for Appendix III constituents, as specified in 30 TAC §352.941 and AEP's *Groundwater Sampling and Analysis Plan (2021)*.

Appendix 1 contains potentiometric maps with the static water elevation, groundwater flow direction for each monitoring event, tables showing groundwater velocity, and the groundwater quality data collected under 30 TAC 352.941.

The groundwater flow rate and direction for the confirmatory sampling events reflect that seen during the semi-annual sampling events.

V. Groundwater Quality Data Statistical Analysis

Appendix 2 contains the statistical analysis reports available for this reporting period.

• Data and statistical analysis completed for the 1st semi-annual groundwater sampling event, held June 26, 2022 with confirmatory sampling August 26, 2022, was certified November 7, 2022 and indicated:

A potential SSI was identified for:

- Sulfate in AD-4C
- Data and statistical analysis for the 2nd semi-annual groundwater sampling event held in November 2022 is underway.

VI. <u>Alternate Source Demonstrations Completed</u>

An alternate source demonstration (ASD) is being conducted for:

- 1st semi-annual 2022 groundwater sampling event (June/August 2022):
 - Sulfate in AD-4C

VII. <u>Discussion About Transition Between Monitoring Requirements or Alternate</u> <u>Monitoring Frequency</u>

Since an ASD is being completed for the potential SSI(s), no transition was made during the reporting period and the CCR Unit remained in detection monitoring.

VIII. Other Information Require

Field sheets and laboratory reports for this reporting period are in Appendix 6.

IX. <u>Description of Any Problems Encountered and Actions Taken</u>

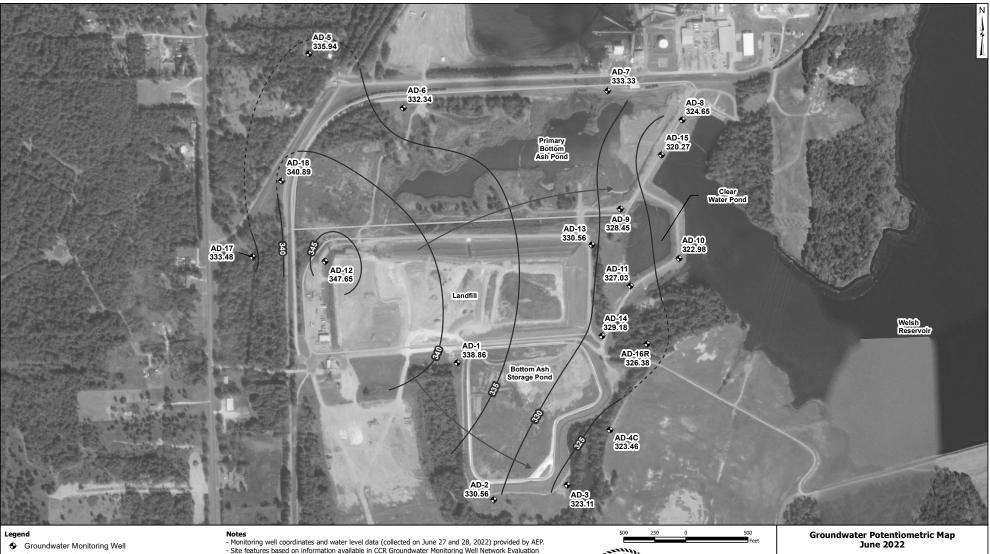
No significant problems were encountered.

X. A Projection of Key Activities for the Upcoming Year

- Detection monitoring on a semi-annual schedule for 30 TAC 352 Appendix III constituents;
- Evaluation of the detection monitoring results from a statistical analysis viewpoint, looking for SSIs;
- Conduct ASDs, if needed;
- Responding to any new data received in light of TCEQ's CCR rule requirements;
- Preparation of the next annual groundwater report;

APPENDIX 1

Potentiometric maps and Tables that follow show 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.



- Groundwater Elevation Contour
- - Groundwater Elevation Contour (Inferred)
- → Approximate Groundwater Flow Direction

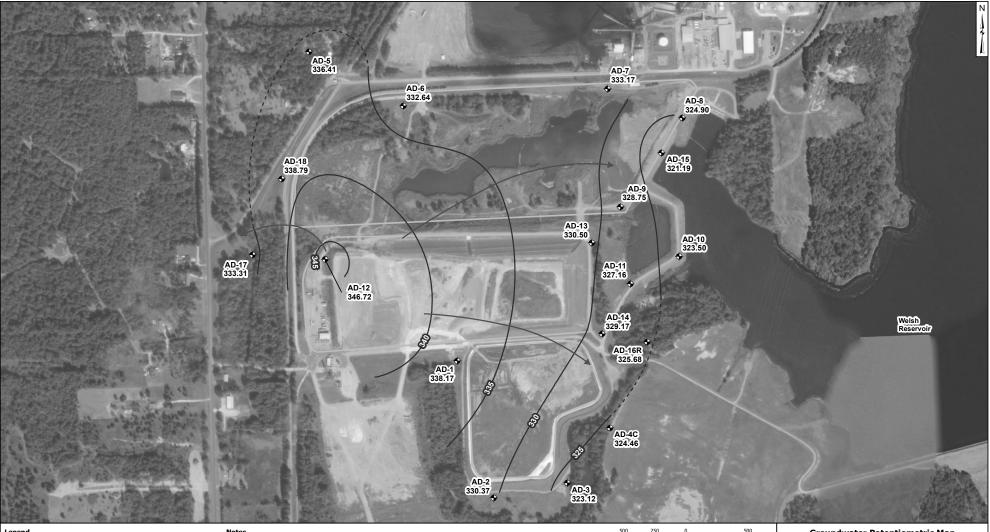
CCR Units

- (Arcadis, 2018).
 Groundwater elevation units are feet above mean sea level.



AEP Welsh Power Plant Cason, Texas

Geosy	mtec ⁵	Figure
con	1	
Columbus, Ohio	2022/10/31	1



Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- - Groundwater Elevation Contour (Inferred)
- → Approximate Groundwater Flow Direction

CCR Units

- Monitoring well coordinates and water level data (collected on November 1, 2022) provided by AEP.
 Site features based on information available in CCR Groundwater Monitoring Well Network Evaluation
- (Arcadis, 2018).
 Groundwater elevation units are feet above mean sea level.
 Satellite imagery provided by ESRI.



Groundwater Potentiometric Map November 2022

AEP Welsh Power Plant Cason, Texas

Geosy		Figure
con	_	
Columbus, Ohio	2	

Table 1: Residence Time Calculation Summary Welsh Bottom Ash Storage Pond

			2022	2-06	2022	-08 ^[3]	2022-11		
CCR Management Unit	Monitoring Well	Well Diameter (inches)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	
	AD-1 ^[1]	2.0	3.2	19.1	NC	NC	2.9	20.9	
	AD-3 ^[2]	2.0	5.6	10.9	NC	NC	5.9	10.4	
Bottom Ash	AD-4C ^[2]	2.0	3.2	19.0	3.0	20.4	2.9	20.9	
Storage Pond	AD-5 ^[1]	2.0	1.5	39.8	NC	NC	1.7	36.7	
	AD-16R ^[2]	2.0	2.2	27.8	NC	NC	2.6	23.4	
	AD-17 ^[1]	2.0	10.0	6.1	NC	NC	7.1	8.6	

Notes:

- [1] Upgradient Well
- [2] Downgradient Well
- [3] Two-of-two verification sampling
- NC Not Calculated

Table 1 - Groundwater Data Summary: AD-1 Welsh - BASP Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	рН	Sulfate	Total Dissolved Solids
7/06/0016	D 1 1	mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/26/2016	Background	0.346	36.5	5	< 0.083 U1	5.9	42	252
7/27/2016	Background	0.35	39.6	4	< 0.083 U1	5.3	36	239
9/30/2016	Background	0.332	15	5	< 0.083 U1	5.4	35	173
10/19/2016	Background	0.398	19.1	4	< 0.083 U1	5.2	42	192
12/12/2016	Background	0.394	8.74	4	< 0.083 U1	5.2	40	200
1/17/2017	Background	0.656	129	4	< 0.083 U1	7.1	68	538
2/23/2017	Background	0.7	147	9	< 0.083 U1	6.9	68	612
6/7/2017	Background	0.449	15.1	4	< 0.083 U1	5.1	42	176
10/6/2017	Detection	0.453	14.3	4	< 0.083 U1	5.3	40	160
5/24/2018	Detection	0.345	10.2	4	< 0.083 U1	5.2	43	150
8/14/2018	Detection	0.443	5.95	5	< 0.083 U1	5.2	44	160
2/20/2019	Detection	0.504	142	2.82	0.24	7.3	49.2	522
5/30/2019	*	0.689	138	1.59	0.29	6.7	43.3	588
7/24/2019	Detection	0.644	62.7	2	0.106 J1	6.0	58	180
2/17/2020	*	0.626	115	3.41	0.31	5.8	56.3	488
5/20/2020	Detection	0.801	126	1.83	0.20	7.2	51.4	508
10/14/2020	Detection	0.670	3.88	2.16	0.25	4.5	66.9	183
2/23/2021	*	0.617	113		0.31	6.6		
6/2/2021	Detection	0.786	97.1	2.26	0.30	6.2	61.4	400
10/20/2021	Detection	0.732	4.8	2.21	0.22	4.4	72.4	190
6/28/2022	Detection	0.768	6.76	2.32	0.22	4.9	74.7	180
11/1/2022	Detection	0.586	7.87	2.70	0.14	4.8	61.3	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.

^{*} Sample is not associated with a specific monitoring program.

Table 1 - Groundwater Data Summary: AD-1 Welsh - BASP Appendix IV Constituents

Collection Date	Monitoring	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
	Program	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	μg/L
5/26/2016	Background	< 0.93 U1	1.39361 J1	191	0.271453 J1	0.213294 J1	0.240267 J1	1.15339 J1	1.184	< 0.083 U1	< 0.68 U1	0.01	0.033	0.53149 J1	1.74922 J1	0.959865 J1
7/27/2016	Background	< 0.93 U1	< 1.05 U1	191	0.315631 J1	0.0940357 J1	< 0.23 U1	0.615933 J1	0.9952	< 0.083 U1	< 0.68 U1	0.019	0.00793 J1	< 0.29 U1	1.81763 J1	< 0.86 U1
9/30/2016	Background	< 0.93 U1	2.96797 J1	141	0.382874 J1	< 0.07 U1	5	0.850408 J1	1.38	< 0.083 U1	3.38434 J1	0.014	0.01773 J1	< 0.29 U1	1.02629 J1	< 0.86 U1
10/19/2016	Background	< 0.93 U1	< 1.05 U1	114	0.311247 J1	< 0.07 U1	0.412131 J1	0.649606 J1	1.141	< 0.083 U1	< 0.68 U1	0.008	0.00534 J1	1.39872 J1	2.03168 J1	1.25062 J1
12/12/2016	Background	< 0.93 U1	< 1.05 U1	72	0.34133 J1	< 0.07 U1	< 0.23 U1	0.424105 J1	0.719	< 0.083 U1	< 0.68 U1	0.008	0.01521 J1	< 0.29 U1	1.85825 J1	< 0.86 U1
1/17/2017	Background	< 0.93 U1	< 1.05 U1	410	0.0366913 J1	< 0.07 U1	< 0.23 U1	0.480125 J1	3.009	< 0.083 U1	< 0.68 U1	0.000275956 J1	< 0.005 U1	< 0.29 U1	4.04737 J1	< 0.86 U1
2/23/2017	Background	< 0.93 U1	< 1.05 U1	488	< 0.02 U1	< 0.07 U1	< 0.23 U1	0.765099 J1	4.309	< 0.083 U1	< 0.68 U1	0.001	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/7/2017	Background	< 0.93 U1	1.14 J1	93.46	0.37 J1	< 0.07 U1	0.66 J1	0.77 J1	0.676	< 0.083 U1	< 0.68 U1	0.00902	0.007 J1	< 0.29 U1	2.1 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: AD-3 Welsh - BASP Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pН	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/31/2016	Background	0.02	1.41	9	< 0.083 U1	6.6	4	106
7/27/2016	Background	0.02	0.706	8	< 0.083 U1	6.7	5	118
9/30/2016	Background	0.02	0.5	9	< 0.083 U1	4.8	6	127
10/19/2016	Background	0.06	0.794	8	< 0.083 U1	3.7	9	112
12/12/2016	Background	0.02	1.05	8	< 0.083 U1	4.7	11	138
1/19/2017	Background	0.02	0.746	9	< 0.083 U1	4.6	4	76
2/23/2017	Background	0.02	0.573	9	< 0.083 U1	4.7	5	104
6/7/2017	Background	0.03326	0.543	9	0.2625 J1	4.5	5	104
10/6/2017	Detection	0.02055	0.908	9	< 0.083 U1	5.2	7	114
5/24/2018	Detection	0.0069 J1	0.545	8	< 0.083 U1	4.4	3	98
11/13/2018	Detection	0.009 J1	0.684	8	< 0.083 U1	5.2	4.05	114
2/20/2019	Detection	0.01 J1	0.817	9.4	0.13	4.8	1.9	110
4/30/2019	Detection	0.007	-	9.34		4.1		
5/30/2019	*	< 0.02 U1	3.02	9.03	0.18	4.3	2.3	110
7/24/2019	Detection	< 0.02 U1	1.35	7	0.09 J1	4.6	6	116
11/25/2019	Detection		0.734	-				
5/20/2020	Detection	< 0.02 U1	0.724	7.99	0.11	4.6	2.7	236
7/22/2020	Detection		-	-		4.7		114
10/14/2020	Detection	< 0.02 U1	0.705	7.31	0.16	4.6	3.5	116
6/2/2021	Detection	0.036 J1	0.7	7.98	0.18	4.4	3.38	110
10/20/2021	Detection	< 0.009 U1	0.9	7.16	0.15	4.2	6.02	130
6/28/2022	Detection	0.016 J1	0.68	8.01	0.14	3.9	2.55	120
11/1/2022	Detection	< 0.009 U1	1.57	8.04	0.14	4.4	13.0	110

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.

^{*} Sample is not associated with a specific monitoring program.

Table 1 - Groundwater Data Summary: AD-3 Welsh - BASP Appendix IV Constituents

Collection Date	Monitoring	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
	Program	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	μg/L
5/31/2016	Background	< 0.93 U1	1.56793 J1	53	0.286352 J1	< 0.07 U1	0.464721 J1	1.49214 J1	1.018	< 0.083 U1	< 0.68 U1	0.01	0.85	< 0.29 U1	0.995807 J1	1.31537 J1
7/27/2016	Background	3.21106 J1	< 1.05 U1	36	0.349485 J1	< 0.07 U1	0.515023 J1	1.19046 J1	0.183	< 0.083 U1	< 0.68 U1	0.024	0.589	1.43134 J1	2.40188 J1	< 0.86 U1
9/30/2016	Background	2.70729 J1	2.61987 J1	43	0.188596 J1	0.0802799 J1	0.659763 J1	1.44845 J1	0.552	< 0.083 U1	< 0.68 U1	0.019	0.39	< 0.29 U1	1.79734 J1	< 0.86 U1
10/19/2016	Background	2.47184 J1	1.97572 J1	41	0.451723 J1	0.277085 J1	0.818782 J1	1.53187 J1	1.589	< 0.083 U1	< 0.68 U1	0.018	0.351	6	< 0.99 U1	< 0.86 U1
12/12/2016	Background	< 0.93 U1	< 1.05 U1	45	0.262387 J1	< 0.07 U1	0.627352 J1	1.34901 J1	0.546	< 0.083 U1	< 0.68 U1	0.017	0.321	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/19/2017	Background	< 0.93 U1	2.13113 J1	41	0.235263 J1	< 0.07 U1	0.647294 J1	1.6345 J1	0.35	< 0.083 U1	< 0.68 U1	0.014	0.504	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/23/2017	Background	< 0.93 U1	< 1.05 U1	37	0.209151 J1	< 0.07 U1	< 0.23 U1	1.1537 J1	0.4592	< 0.083 U1	< 0.68 U1	0.014	0.501	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/7/2017	Background	< 0.93 U1	1.91 J1	38	0.24 J1	0.08 J1	0.75 J1	1.28 J1	0.459	0.2625 J1	< 0.68 U1	0.01503	0.365	< 0.29 U1	< 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: AD-4C Welsh - BASP Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	рН	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/31/2016	Background	0.05	0.798	10	< 0.083 U1	5.4	32	204
7/27/2016	Background	0.03	0.666	12	< 0.083 U1	5.5	35	208
9/30/2016	Background	0.02	0.5	11	< 0.083 U1	5.0	45	212
10/19/2016	Background	0.04	0.578	10	< 0.083 U1	4.3	35	212
12/12/2016	Background	0.02	0.341	11	< 0.083 U1	4.6	36	252
1/19/2017	Background	0.02	0.761	10	< 0.083 U1	4.7	43	184
2/23/2017	Background	0.02	0.467	9	< 0.083 U1	5.1	40	196
6/7/2017	Background	0.03331	0.573	10	< 0.083 U1	4.9	39	228
10/6/2017	Detection	0.02565	0.654	11	< 0.083 U1	5.4	44	226
5/24/2018	Detection	0.02505	0.434	14	< 0.083 U1	5.2	42	224
8/14/2018	Detection			15		5.0		
11/13/2018	Detection	0.01 J1	0.609	7.5	< 0.083 U1	5.8	56	220
12/18/2018	Detection					4.9	58	
2/20/2019	Detection	0.01 J1	0.931	9.18	0.1 J1	5.2	60.1	242
4/30/2019	Detection	0.014				4.8	56.2	
5/30/2019	*	< 0.02 U1	0.564	14.8	0.16	4.6	52.8	208
7/24/2019	Detection	< 0.02 U1	0.586	13	< 0.083 U1	3.9	52	284
12/19/2019	Detection							226
5/20/2020	Detection	< 0.02 U1	0.679	15.1	0.11	5.1	69.0	268
7/22/2020	Detection					4.7	71.8	280
10/13/2020	Detection	< 0.02 U1	0.613	13.1	0.18	4.9	76.1	278
12/10/2020	Detection					4.9	78.2	288
6/2/2021	Detection	0.038 J1	1.1	13.3	0.16	4.6	82.4	280
7/26/2021	Detection		1.4			4.6	71.9	280
10/20/2021	Detection	0.021 J1	0.8	14.3	0.15	4.3	76.8	280
6/28/2022	Detection	0.043 J1	1.08	14.1	0.12	4.8	83.6	280
8/26/2022	Detection					3.6	160	
11/1/2022	Detection	0.068	1.42	19.1	0.1	4.9	142	370

Notes:

mg/L: milligrams per liter

SU: standard unit

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

<: 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.

^{*} Sample is not associated with a specific monitoring program.

Table 1 - Groundwater Data Summary: AD-4C Welsh - BASP Appendix IV Constituents

Collection Date	Monitoring	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
	Program	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	μg/L
5/31/2016	Background	< 0.93 U1	< 1.05 U1	88	0.407928 J1	< 0.07 U1	9	1.19093 J1	1.289	< 0.083 U1	< 0.68 U1	0.004	0.191	< 0.29 U1	1.12526 J1	< 0.86 U1
7/27/2016	Background	< 0.93 U1	< 1.05 U1	59	0.335947 J1	< 0.07 U1	4	0.852951 J1	0.571	< 0.083 U1	< 0.68 U1	0.015	0.185	1.09296 J1	2.52271 J1	< 0.86 U1
9/30/2016	Background	< 0.93 U1	1.51249 J1	74	0.274296 J1	< 0.07 U1	8	0.986752 J1	2.572	< 0.083 U1	< 0.68 U1	0.006	0.16	< 0.29 U1	1.95938 J1	< 0.86 U1
10/19/2016	Background	< 0.93 U1	1.74748 J1	69	0.347477 J1	0.0809157 J1	9	1.08565 J1	1.657	< 0.083 U1	< 0.68 U1	0.006	0.141	3.20217 J1	1.18291 J1	< 0.86 U1
12/12/2016	Background	< 0.93 U1	2.24683 J1	21	0.133622 J1	< 0.07 U1	0.944028 J1	0.305391 J1	0.685	< 0.083 U1	< 0.68 U1	0.004	0.143	< 0.29 U1	1.27423 J1	< 0.86 U1
1/19/2017	Background	< 0.93 U1	1.85604 J1	75	0.221609 J1	< 0.07 U1	4	1.02773 J1	2.045	< 0.083 U1	< 0.68 U1	0.005	0.125	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/23/2017	Background	< 0.93 U1	< 1.05 U1	30	0.102645 J1	< 0.07 U1	0.421354 J1	0.364739 J1	0.517	< 0.083 U1	< 0.68 U1	0.004	0.098	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/7/2017	Background	< 0.93 U1	1.19 J1	51.42	0.19 J1	0.08 J1	4.03	0.75 J1	0.953	< 0.083 U1	< 0.68 U1	0.00482	0.147	< 0.29 U1	< 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: AD-5 Welsh - BASP Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	рН	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
5/31/2016	Background	0.03	36.9	15	0.3469 J1	6.4	123	337
7/28/2016	Background	0.04	44.7	16	< 0.083 U1	5.4	163	360
9/30/2016	Background	0.04	46.3	15	0.2436 J1	5.3	190	416
10/20/2016	Background	0.05	50.7	14	< 0.083 U1	5.9	267	448
12/13/2016	Background	0.05	49.6	13	< 0.083 U1	6.2	233	484
1/17/2017	Background	0.04	49.8	14	< 0.083 U1	6.3	234	438
2/23/2017	Background	0.04	33	15	< 0.083 U1	5.5	127	286
6/7/2017	Background	0.05281	49.7	14	< 0.083 U1	6.0	82	300
10/6/2017	Detection	0.04322	33.1	16	< 0.083 U1	5.6	82	258
5/24/2018	Detection	0.05007	28.1	22	< 0.083 U1	6.2	60	242
8/15/2018	Detection	0.050	40.5	19	< 0.083 U1	6.2	240	428
2/21/2019	Detection	0.033	33.9	24.7	0.21	5.4	46.5	220
5/30/2019	*	0.03 J1	30.0	22.3	0.29	6.3	51.3	238
7/24/2019	Detection	0.04 J1	41.1	18	0.112 J1	6.3	90	354
2/17/2020	*	0.03 J1	39.8	19.8	0.22	5.5	43.7	248
5/20/2020	Detection	0.03 J1	40.2	22.3	0.18	6.8	55.5	264
10/14/2020	Detection	0.04 J1	36.6	18.8	0.18	6.5	148	338
2/23/2021	*	0.03 J1	30.9		0.23	6.0		
6/2/2021	Detection	0.027 J1	24.4	19.6	0.21	5.8	53.8	220
10/20/2021	Detection	0.038 J1	38.4	17.4	0.17	5.6	155	370
6/28/2022	Detection	0.048 J1	32.9	15.3	0.15	5.9	146	310
11/1/2022	Detection	0.041 J1	38.6	16.9	0.16	5.9	185	380

Notes:

mg/L: milligrams per liter

SU: standard unit

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

<: 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.

^{*} Sample is not associated with a specific monitoring program.

Table 1 - Groundwater Data Summary: AD-5 Welsh - BASP Appendix IV Constituents

Collection Date	Monitoring	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
	Program	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	μg/L
5/31/2016	Background	< 0.93 U1	< 1.05 U1	57	0.149801 J1	0.0765156 J1	0.555038 J1	14	1.634	0.3469 J1	< 0.68 U1	0.135	0.01135 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/28/2016	Background	2.05116 J1	2.90819 J1	93	0.518653 J1	0.502155 J1	0.411466 J1	15	4.75	< 0.083 U1	< 0.68 U1	0.191	0.01516 J1	< 0.29 U1	1.08901 J1	< 0.86 U1
9/30/2016	Background	< 0.93 U1	4.7609 J1	87	0.251584 J1	< 0.07 U1	0.90676 J1	14	3.33	0.2436 J1	< 0.68 U1	0.186	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
10/20/2016	Background	< 0.93 U1	< 1.05 U1	70	0.08781 J1	0.107488 J1	0.248085 J1	9	2.319	< 0.083 U1	< 0.68 U1	0.225	< 0.005 U1	1.36984 J1	< 0.99 U1	< 0.86 U1
12/13/2016	Background	< 0.93 U1	1.15381 J1	53	0.164529 J1	0.203546 J1	0.747921 J1	13	2.182	< 0.083 U1	< 0.68 U1	0.199	0.00802 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/17/2017	Background	< 0.93 U1	< 1.05 U1	47	0.0574718 J1	0.180502 J1	< 0.23 U1	12	1.023	< 0.083 U1	< 0.68 U1	0.239	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/23/2017	Background	< 0.93 U1	< 1.05 U1	42	0.0306858 J1	< 0.07 U1	< 0.23 U1	13	1.788	< 0.083 U1	< 0.68 U1	0.166	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/7/2017	Background	< 0.93 U1	3.85 J1	87.7	0.08 J1	0.39 J1	0.28 J1	11.93	2.32	< 0.083 U1	< 0.68 U1	0.124	< 0.005 U1	< 0.29 U1	< 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: AD-16R Welsh - BASP Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pН	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/6/2017	Background	0.04198	2.75	7	0.3438 J1	3.7	54	204
6/28/2017	Background	0.06398	1.24	6	0.2512 J1	3.9	55	200
7/7/2017	Background	0.02699	2.07	36	< 0.083 U1	3.4	52	184
7/14/2017	Background	0.04415	2.39	6	0.2516 J1	3.5	44	160
7/21/2017	Background	0.03237	2.5	7	0.2615 J1	3.5	54	180
7/28/2017	Background	0.02841	1.92	7	< 0.083 U1	2.8	48	162
8/2/2017	Background	0.03177	1.86	7	< 0.083 U1	3.0	49	174
8/11/2017	Background	0.06192	1.83	8	< 0.083 U1	4.1	44	164
8/18/2017	Background	0.0304	1.44	7	< 0.083 U1	3.4	46	160
8/31/2017	Background	0.02841	1.33	7	< 0.083 U1	3.9	63	152
10/6/2017	Detection	0.04672	0.896	7	< 0.083 U1	3.3	82	152
1/18/2018	Detection					4.0	58.6	
5/23/2018	Detection	0.03202	2.53	6	< 0.083 U1	3.8	67	204
8/14/2018	Detection					3.9	44	
11/13/2018	Detection	0.02 J1	0.467	6.5	< 0.083 U1	5.6	54	186
2/20/2019	Detection	0.03 J1	2	6.78	0.2	4.7	52.8	200
4/30/2019	Detection	0.015				3.9		
5/29/2019	*	< 0.02 U1	1.36	5.43	0.19	3.9	41.6	80
7/24/2019	Detection	0.03 J1	1.50	7	0.13 J1	3.6	70	250
12/19/2019	Detection							134
5/20/2020	Detection	0.02 J1	1.54	7.09	0.16	3.4	71.4	242
7/22/2020	Detection					3.2		224
10/14/2020	Detection	0.02 J1	0.550	6.50	0.14	3.3	53.1	183
6/2/2021	Detection	0.028 J1	1.0	7.02	0.28	3.7	65.4	190
10/20/2021	Detection	0.019 J1	0.4	7.12	0.11	3.6	39.0	170
6/27/2022	Detection	0.026 J1	0.34	7.21	0.10	3.2	46.5	170
11/1/2022	Detection	0.019 J1	0.32	7.96	0.10	3.4	48.1	150

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.

^{*} Sample is not associated with a specific monitoring program.

Table 1 - Groundwater Data Summary: AD-16R Welsh - BASP Appendix IV Constituents

Collection Date	Monitoring	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
	Program	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	μg/L
6/6/2017	Background	< 0.93 U1	7.07	46.4	2.21	1.03	1.76	41.74	6.66	0.3438 J1	< 0.68 U1	0.0293	< 0.005 U1	< 0.29 U1	1.98 J1	< 0.86 U1
6/28/2017	Background	< 0.93 U1	5.28	41.43	2.16	0.92 J1	0.95 J1	40.87	12.11	0.2512 J1	< 0.68 U1	0.02932	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/7/2017	Background	< 0.93 U1	4.13 J1	44.56	2.08	0.97 J1	1.44	41.75	25.16	< 0.083 U1	< 0.68 U1	0.02846	< 0.005 U1	< 0.29 U1	2.09 J1	1.2 J1
7/14/2017	Background	< 0.93 U1	6.31	54.35	2.01	1.09	0.84 J1	37.88	9.12	0.2516 J1	< 0.68 U1	0.02391	0.009 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/21/2017	Background	< 0.93 U1	3.88 J1	51.06	2.09	1.02	1.43	40.86	9.81	0.2615 J1	< 0.68 U1	0.02653	< 0.005 U1	< 0.29 U1	1 J1	< 0.86 U1
7/28/2017	Background	< 0.93 U1	3.7	48.51	2.17	1.28	1.07	45.33	8.52	< 0.083 U1	< 0.68 U1	0.02617	0.006 J1	< 0.29 U1	1.27 J1	1.43 J1
8/2/2017	Background	< 0.93 U1	4.46 J1	49.61	2.06	1.22	0.95 J1	43.11	5.45	< 0.083 U1	< 0.68 U1	0.02498	< 0.005 U1	< 0.29 U1	1.74	2.02
8/11/2017	Background	< 0.93 U1	4.93 J1	47.52	1.89	1.13	0.96 J1	40.37		< 0.083 U1	< 0.68 U1	0.02347	0.008 J1	< 0.29 U1	1.36 J1	< 0.86 U1
8/18/2017	Background	< 0.93 U1	2.35 J1	43.85	1.91	1.08	0.8 J1	40.05	5.56	< 0.083 U1	< 0.68 U1	0.02466	0.009 J1	< 0.29 U1	< 0.99 U1	0.92 J1
8/31/2017	Background	< 0.93 U1	2.12 J1	44.14	1.75	1.04	1.18	37.56	6.68	< 0.083 U1	< 0.68 U1	0.02429	0.006 J1	< 0.29 U1	< 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: AD-17 Welsh - BASP Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	рН	Sulfate	Total Dissolved Solids
5/26/2016	D11	mg/L	mg/L	mg/L 43	mg/L	SU	mg/L	mg/L
5/26/2016	Background	0.121	200		0.4023 J1	7.2	1,166	1,810
7/27/2016	Background	0.119	195	32	0.4135 J1	5.7	1,005	1,576
9/30/2016	Background	0.111	191	36	0.3055 J1	6.2	1,055	1,663
10/20/2016	Background	0.124	194	32	0.583 J1	6.1	1,163	1,612
12/13/2016	Background	0.135	196	31	0.5399 J1	6.0	1,096	1,560
1/17/2017	Background	0.101	196	33	< 0.083 U1	5.9	1,445	1,686
2/22/2017	Background	0.135	189	30	< 0.083 U1	5.7	1,055	1,628
6/6/2017	Background	0.121	188	30	< 0.083 U1	5.8	1,105	1,578
10/5/2017	Detection	0.183	183	31	< 0.083 U1	5.9	1,090	1,548
5/24/2018	Detection	0.239	193	39	< 0.083 U1	6.3	1,067	1,836
8/15/2018	Detection	0.118	187			5.6		
2/21/2019	Detection	0.151	207	43.2	0.18	6.9	1,060	1,722
5/30/2019	*	0.158	202	41.7	< 0.04 U1	6.1	1,120	1,546
7/24/2019	Detection	0.113	216	37	0.085 J1	6.0	1,127	1,864
2/17/2020	*	0.104	184	36.0	0.16	5.9	1,070	1,750
5/20/2020	Detection	0.115	250	47.7	0.15	5.7	1,190	1,890
10/14/2020	Detection	0.100	185	35.7	0.17	5.4	1,060	1,720
2/23/2021	*	0.098	168		0.17	5.6		
6/2/2021	Detection	0.124	233	44.9	0.31	5.7	1,210	1,890
10/20/2021	Detection	0.104	164	37.3	0.16	5.1	1,040	1,710
6/28/2022	Detection	0.112	167	37.0	0.09 J1	5.2	1,050	1,740
11/1/2022	Detection	0.097	165	40.3	0.09 J1	5.7	1,110	1,690

Notes:

mg/L: milligrams per liter

SU: standard unit

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

<: 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.

^{*} Sample is not associated with a specific monitoring program.

Table 1 - Groundwater Data Summary: AD-17 Welsh - BASP Appendix IV Constituents

Collection Date	Monitoring	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
	Program	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	μg/L
5/26/2016	Background	< 0.93 U1	1.37501 J1	21	0.173275 J1	2	1	63	1.525	0.4023 J1	< 0.68 U1	0.37	0.032	< 0.29 U1	< 0.99 U1	< 0.86 U1
7/27/2016	Background	1.13716 J1	< 1.05 U1	20	0.307264 J1	4	1	68	2.78	0.4135 J1	< 0.68 U1	0.374	0.02133 J1	1.04115 J1	4.56733 J1	< 0.86 U1
9/30/2016	Background	< 0.93 U1	< 1.05 U1	31	0.175474 J1	0.848199 J1	3	58	2.358	0.3055 J1	< 0.68 U1	0.354	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
10/20/2016	Background	< 0.93 U1	< 1.05 U1	34	0.200656 J1	2	4	65	2.224	0.583 J1	< 0.68 U1	0.394	< 0.005 U1	0.322249 J1	3.34422 J1	< 0.86 U1
12/13/2016	Background	< 0.93 U1	< 1.05 U1	17	0.0498325 J1	3	0.816224 J1	68	2.384	0.5399 J1	< 0.68 U1	0.323	0.01485 J1	< 0.29 U1	< 0.99 U1	< 0.86 U1
1/17/2017	Background	< 0.93 U1	< 1.05 U1	14	0.0319852 J1	3	68	68	2.436	< 0.083 U1	< 0.68 U1	0.341	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
2/22/2017	Background	< 0.93 U1	< 1.05 U1	20	0.0665729 J1	2	1	73	2.288	< 0.083 U1	< 0.68 U1	0.331	< 0.005 U1	< 0.29 U1	< 0.99 U1	< 0.86 U1
6/6/2017	Background	< 0.93 U1	< 1.05 U1	10.33	< 0.02 U1	6.06	< 0.23 U1	74.8	1.598	< 0.083 U1	< 0.68 U1	0.329	0.013 J1	< 0.29 U1	< 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.

APPENDIX 2

Where applicable, shown in this appendix the are results from statistical analyses, and a description of the statistical analysis method chosen. These statistical analyses are conducted separately for each constituent in each monitoring well.





Memorandum

Date: October 19, 2022

To: David Miller (AEP)

Copies to: Jill Parker-Witt (AEP)

From: Allison Kreinberg (Geosyntec)

Subject: Evaluation of Detection Monitoring Data at

Welsh Plant's Bottom Ash Storage Pond (BASP)

In accordance with the Texas Commission on Environmental Quality (TCEQ) regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (30 TAC 352, "CCR rule"), the first semi-annual detection monitoring event of 2022 at the Bottom Ash Storage Pond (BASP), an existing CCR unit at the Welsh Power Plant located in Pittsburg, Texas, was completed on June 27-28, 2022. Based on the results, a two-of-two verification sampling was completed on August 26, 2022.

A data quality review was completed to assess if the data collected for this semiannual detection monitoring event met the objectives outlined in TCEQ Draft Technical Guidance No. 32 related to groundwater sampling and analysis¹. The data were determined usable for supporting project objectives, as documented in the review memoranda provided in Attachment A.

Background values for the BASP were originally calculated in January 2018. After a minimum of four detection monitoring events, the results of those events were compared to the existing background and the dataset was updated as appropriate. Revised upper prediction limits (UPLs) were calculated for each Appendix III parameter to represent background values. Lower prediction limits (LPLs) were also calculated for pH. Details on the calculation of these revised background values are described in Geosyntec's *Statistical Analysis Summary* report, dated December 8, 2021.

CHA8500 20221019 Memo Welsh BASP_1st2022

¹ TCEQ. Topic: Coal Combustion Residuals (CCR) Groundwater Monitoring and Corrective Action: Draft Technical Guidance No. 32. May 2020.

Evaluation of Detection Monitoring Data – Welsh BASP October 19, 2022 Page 2

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 (or are below the LPL for pH). 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 and noted exceedances are described in the list below.

• Sulfate concentrations exceeded the intrawell UPL of 82.8 mg/L in both the initial (83.6 mg/L) and second (160 mg/L) samples collected at AD-4C. Thus, an SSI over background is concluded for sulfate at AD-4C.

In response to the exceedance noted above, the Welsh BASP CCR unit will either transition to assessment monitoring or an alternative source demonstration (ASD) for sulfate will be conducted in accordance with 30 TAC 352.941(c). If the ASD is successful, the Welsh BASP will remain in detection monitoring.

The statistical analysis was conducted in accordance with 30 TAC 352.931 and completed within 90 days of sampling and analysis. A certification of these statistics by a qualified professional engineer is provided in Attachment B.

Table 1: Detection Monitoring Data Evalation Welsh - Bottom Ash Storage Pond

Analyte	Unit	Description	AD-3	AD	AD-4C		
Analyte	Ollit	Description	6/28/2022	6/28/2022	8/26/2022	6/27/2022	
Boron	mg/L	Intrawell Background Value (UPL)	0.0444	0.0	0.0595		
DOIOII	mg/L	Analytical Result	0.016	0.043	-	0.026	
Calcium	mg/L	Intrawell Background Value (UPL)	1.31	1.	19	2.95	
Calcium	mg/L	Analytical Result	0.68	1.08	1	0.34	
Chloride	mg/L	Intrawell Background Value (UPL)	9.83	16	7.79		
Cinoride ling/L		Analytical Result	8.01	14.1	-	7.21	
Fluoride	mg/L	Intrawell Background Value (UPL)	1.00	1.	00	1.00	
Fluoride	mg/L	Analytical Result	0.14	0.12	-	0.10	
		Intrawell Background Value (UPL)	5.3	5	.7	4.8	
pН	SU	Intrawell Background Value (LPL)	3.9	4	.1	2.7	
		Analytical Result	3.9	4.8	-	3.2	
Sulfate	mg/L	Intrawell Background Value (UPL)	9.54	82.8		75.7	
Sullate	mg/L	Analytical Result	2.55	83.6	160	46.5	
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	136	30)1	251	
Total Dissolved Solids	mg/L	Analytical Result	120	280		170	

Notes:

UPL: Upper prediction limit LPL: Lower prediction limit

Bold values exceed the background value.

Background values are shaded gray.

--: Not measured

ATTACHMENT A Data Quality Review Memoranda



500 West Wilson Bridge Road, Suite 250 Worthington, Ohio 43085 PH 614.468.0415 FAX 614.468.0416 www.geosyntec.com

Memorandum

Date: October 19, 2022

To: David Miller (AEP)

Copies to: Jill Parker-Witt (AEP)

From: Allison Kreinberg (Geosyntec)

Subject: Data Quality Review – Welsh Power Plant

June 2022 Sampling Event

This memorandum summarizes the findings of a data quality review for groundwater samples collected at the Welsh Power Plant, located in Pittsburg, Texas in June 2022. The groundwater samples were collected to comply with the Texas Commission on Environmental Quality's (TCEQ's) regulations regarding the disposal of coal combustion residuals (CCRs) in landfills and surface impoundments (Title 30 Chapter 352, "CCR Rule"). 40 CFR 257 Appendix III and IV constituents were analyzed.

The following sample data groups (SDGs) were associated with the thirty-six (36) groundwater samples collected during the June 2022 sampling event and are reviewed in this memorandum:

- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222057
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222059
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222060
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222061
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222084
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222085
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222086
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222087

Data Quality Review – Welsh June 2022 Data October 19, 2022 Page 2

The data included in these SDGs were reviewed to assess if they met the objectives outlined in TCEQ Draft Technical Guideline No. 32¹ prior to submittal of this data to TCEQ.

The following data quality issues were identified:

- As reported in SDG 222084, barium, boron, chromium, cobalt, and lithium were detected in the equipment blank sample "EQ BLANK BACKGROUND" collected on 6/28/2022. The detected boron concentration in the equipment blank (0.027 mg/L) was more than 10% of the detected value in sample AD-5 (0.048 mg/L), which could result in high bias in the AD-5 boron results. Likewise, the detected chromium concentration in the equipment blank (0.84 μg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.
- As reported in SDG 222085, barium, boron, chromium, cobalt, and lithium were detected in the equipment blank sample "EQUIPMENT BLANK PBAP" collected on 6/27/2022. The detected boron concentration in the equipment blank (0.024 mg/L) was more than 10% of the detected value in sample AD-9 (0.174 mg/L), which could result in high bias in the AD-9 boron results. Likewise, the detected chromium concentration in the equipment blank (0.84 μg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.
- As reported in SDG 222086, barium, boron, chromium, cobalt, and lithium were detected in the equipment blank sample "EQUIPMENT BLANK LANDFILL" collected on 6/27/2022. The detected chromium concentration in the equipment blank (0.96 μg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.
- As reported in SDG 222087, barium, boron, chromium, and cobalt were detected in the
 equipment blank sample "EQUIPMENT BLANK BASP" collected on 6/28/2022. The
 detected boron concentration in the equipment blank (0.024 mg/L) was more than 10% of

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¹ TCEQ. Topic: Coal Combustion Residuals (CCR) Groundwater Monitoring and Corrective Action: Technical Guidance No. 32. May 2020.

Data Quality Review – Welsh June 2022 Data October 19, 2022 Page 3

the detected values for boron in all groundwater samples, which could result in high bias for all groundwater boron results. Likewise, the detected chromium concentration in the equipment blank (0.90 μ g/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.

- As reported in SDG 222085, the relative percent difference (RPD) for chromium concentrations from parent sample "AD-15" and duplicate sample "DUPLICATE PBAP" was 27%. The AD-15 chromium results should be considered estimated.
- As reported in SDG 222086, the matrix spike (MS) recovery (68.2%) and matrix spike duplicate (MSD) recovery (68%) for beryllium were below the acceptable range of 75-125%. The associated sample (AD-11) was flagged M1: the associated MS or MSD recovery was outside acceptance limits. The AD-11 beryllium results should be considered estimated.
- As reported in SDG 222060, the RPD for total dissolved solids (TDS; 17.5%) in the laboratory duplicate was above the acceptable limit of 10%. The associated sample (AD-14) was flagged P1: the precision between duplicate results was above acceptance limits. The AD-14 TDS results should be considered estimated.

Based on these findings, the majority of the data reported in these SDGs are considered accurate and complete. Although the QC failures mentioned above will result in some limitations of data use since the affected results are considered estimated or have elevated reporting limits, the data are considered usable for supporting project objectives.





Memorandum

Date: October 19, 2022

To: David Miller (AEP)

Copies to: Jill Parker-Witt (AEP)

From: Allison Kreinberg (Geosyntec)

Subject: Data Quality Review – Welsh Power Plant

August 2022 Sampling Event

This memorandum summarizes the findings of a data quality review for a groundwater sample collected at the Welsh Power Plant, located in Pittsburg, Texas in August 2022. The groundwater sample was collected to comply with the Texas Commission on Environmental Quality's (TCEQ's) regulations regarding the disposal of coal combustion residuals (CCRs) in landfills and surface impoundments (Title 30 Chapter 352, "CCR Rule"). The sample was analyzed for sulfate, a 40 CFR 257 Appendix III constituent.

The following sample data groups (SDGs) were associated with the single groundwater sample collected during the August 2022 sampling event and are reviewed in this memorandum:

• Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 222846

The data included in this SDG was reviewed to assess if they met the objectives outlined in TCEQ Draft Technical Guideline No. 32¹ prior to submittal of this data to TCEQ.

No data quality issues were identified. Based on these findings, the data reported in this SDG are considered accurate and complete and the data are considered usable for supporting project objectives.

¹ TCEQ. Topic: Coal Combustion Residuals (CCR) Groundwater Monitoring and Corrective Action: Technical Guidance No. 32. May 2020.

ATTACHMENT B Certification by a Qualified Professional Engineer

CERTIFICATION BY QUALIFIED PROFESSIONAL ENGINEER

I certify that the selected statistical method, described above and in the December 8, 2021 *Statistical Analysis Summary* report, is appropriate for evaluating the groundwater monitoring data for the Welsh BASP CCR management area and that the requirements of 30 TAC 352.931(a) have been met.

DAVID ANTA	TONY MILLER	SETATE OF TELLON
Printed Name of License	ed Professional Engineer	DAVID ANTHONY MILLIER 112498
Signature Am	thony Miller	PROPONAL ENGINEER
112498	TEXAS	11.07.22

Date

Licensing State

License Number



500 West Wilson Bridge Road, Suite 250 Worthington, Ohio 43085 PH 614.468.0415 FAX 614.468.0416 www.geosyntec.com

Memorandum

Date: January 18, 2023

To: David Miller (AEP)

Copies to: Jill Parker-Witt (AEP)

From: Allison Kreinberg (Geosyntec)

Subject: Data Quality Review – Welsh Power Plant

October-November 2022 Sampling Event

This memorandum summarizes the findings of a data quality review for groundwater samples collected at the Welsh Power Plant, located in Pittsburg, Texas in October and November 2022. The groundwater samples were collected to comply with the Texas Commission on Environmental Quality's (TCEQ's) regulations regarding the disposal of coal combustion residuals (CCRs) in landfills and surface impoundments (Title 30 Chapter 352, "CCR Rule"). 40 CFR 257 Appendix III and IV constituents were analyzed.

The following sample data groups (SDGs) were associated with the twenty-one (21) groundwater samples collected during the October and November 2022 sampling event and are reviewed in this memorandum:

- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223477
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223481
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223483
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223484
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223509
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223510
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223511
- Dolan Chemical Laboratory (Groveport, Ohio) Job ID # 223515

Data Quality Review – Welsh November 2022 Data January 18, 2023 Page 2

The data included in these SDGs were reviewed to assess if they met the objectives outlined in TCEQ Draft Technical Guideline No. 32¹ prior to submittal of this data to TCEQ.

The following data quality issues were identified:

- As reported in SDG 223509, chromium and cobalt were detected in the equipment blank sample "EQUIPMENT BLANK BASP" collected on 11/1/2022. The detected chromium concentration in the equipment blank (0.53 μg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. The detected cobalt concentration in the equipment blank (0.145 μg/L) was more than 10% of the detected value in sample AD-4C (0.757 μg/L), which could result in high bias in the AD-4C cobalt results.
- As reported in SDG 222510, barium, boron, chromium, cobalt, lithium, and molybdenum were detected in the equipment blank sample "EB Background" collected on 11/1/2022. The detected boron concentration in the equipment blank (0.01 mg/L) was more than 10% of the detected value in samples AD-5 (0.041 mg/L) and AD-17 (0.097 mg/L), which could result in high bias in the AD-5 and AD-17 boron results. Likewise, the detected chromium concentration in the equipment blank (0.52 μg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. The detected cobalt concentration in the equipment blank (0.161 μg/L) was more than 10% of the detected value in samples AD-1 (1.17 μg/L) and "Dup-Background" (1.17 μg/L), which could result in high bias in the AD-1 and duplicate cobalt results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.
- As reported in SDG 223511, chromium, cobalt, lithium, and molybdenum were detected in the equipment blank sample "EQUIPMENT BLANK PBAP" collected on 10/31/2022. The detected chromium concentration in the equipment blank (0.53 μg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. The estimated molybdenum concentration in the equipment blank (0.2 μg/L) was more than 10% of the estimated value in sample AD-8 (0.2 μg/L), which could result in high bias in the AD-8 molybdenum results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.

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¹ TCEQ. Topic: Coal Combustion Residuals (CCR) Groundwater Monitoring and Corrective Action: Technical Guidance No. 32. May 2020.

Data Quality Review – Welsh November 2022 Data January 18, 2023 Page 3

- As reported in SDG 223513, chromium, cobalt, lithium, and molybdenum were detected in the equipment blank sample "EQUIPMENT BLANK LF" collected on 10/31/2022. The detected chromium concentration in the equipment blank (0.7 μg/L) was more than 10% of the detected values for chromium in all groundwater samples, which could result in high bias for all groundwater chromium results. The estimated molybdenum concentration in the equipment blank (0.3 μg/L) was more than 10% of the estimated value in samples AD-13 (0.2 μg/L) and AD-14 (0.4 μg/L), which could result in high bias in the AD-13 and AD-14 molybdenum results. All other equipment blank detections were less than 10% of the detected values in groundwater and would not result in a high bias.
- As reported in SDG 223510, the relative percent difference (RPD) for chromium concentrations from parent sample "AD-1" and duplicate sample "Dup Background" was 41%. The AD-1 chromium results should be considered estimated.
- As reported in SDG 223510, the RPD for radium-226 (77.1%) in the laboratory duplicate was above the acceptable limit of 25%. The "AD-1" radium-226 results should be considered estimated.
- As reported in SDG 223509, the matrix spike (MS) recovery (47.8%) and matrix spike duplicate (MSD) recovery (35.3%) for lithium were below the acceptable range of 75-125%. The associated sample (AD-3) was flagged M1: the associated MS or MSD recovery was outside acceptance limits. The AD-3 lithium results should be considered estimated.

Based on these findings, the majority of the data reported in these SDGs are considered accurate and complete. Although the QC failures mentioned above will result in some limitations of data use since the affected results are considered estimated or have elevated reporting limits, the data are considered usable for supporting project objectives.

APPENDIX 3 NA

Alternate source demonstration(s) included in this appendix. Alternate sources are sources or reasons that explain that statistically significant increases over background or statistically significant levels above the groundwater protection standard are not attributable to the CCR unit.

APPENDIX 4 - NA

A summary of any transition between monitoring programs or an alternate monitoring frequency, for example the date and circumstances for transitioning from detection monitoring to assessment monitoring

APPENDIX 5- NA

Reports documenting monitoring well plugging and abandonment or well installation are included in the appendix. or other information required to be included in the annual report such as program related notification or assessment of corrective measures.

APPENDIX 6

Field reports and analytical reports.

CCR Groundwater Monitoring Well Inspection Form

your of the wall Hauf WELF HULF, VENTED CAP, Comments INSIDE LABEL Junt 7022 1. An Well Cap Vented* Present and 5 5 Sampling Period: Properly Labeled Well S 5 Signature: **Barriers and** Pad in Good Well Casing, Protective Cover, Shape Maintained Access to Well S Sampling Locked After Well AF WEISH PP S Sampling Contractor: FA61F Functioning Fastener and Lock Locked Well A4-0A P-0-48 Facility: Well No. AD-113 A0-6 A0-4 P-0-4C P. 0.4 A0-5 77.00

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^{*}Not all wells will be vented, especially flush mounted wells. If that is the case, please note "flush mount well" in the comments.

CCR Groundwater Monitoring Well Inspection Form

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CCR Groundwater Monitoring Well Inspection Form

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Facility:	Sampling Contractor: _		Well No.			AD-15	AD-10	AD-11	MD-14	AD-16A	An-7	AD 3	AD-2	AD-17	AD-15	AD-22	AD-23

Instructions: Complete form and submit to AEP Environmental Services with Field Data. Place check mark for items that are satisfactory. Unsatisfactory items should be left blank with a note in the comments section on what needs to be remedied.

CCR Groundwater Monitoring Well Inspection Form

Sampling Period: October 31 - NOV 1, 2022 Signature: _ AEP WELSH PP Sampling Contractor: ___ Facility:

Well No.	Well	Lock	Well Locked	Access to	Well Casing,	Well	Well cap	Comments	
	Locked	Functioning	After Sampling	Well Maintained	Housing, and Pad in Good	Properly Labeled	present		
					Shape				
AD-08	5	S	S	5	S	S	S		
A0-09	5	5	5	5	S	5	5		
AD-13	5	S	~	4	5	5	S	NELOS WHOGATING	
AD-05	5	5	5	5	5	5	5		
RO-04C	>	5	5	5	5	S	5		
A0-04	5	4	5	5	5	4	4		17.63
A0-01	5	5	5		•	5	5	NEWS WELDAMA	2
40-12	S	5	5	5	5	5	5		22.61
A0-06	5	5	5	5	5	5	5		13,69
Inctriction	e. Complet	to form and city	Instructions: Complete form and submit to AFD Environmental Services with Field Data	V againg letuci		Jacon Joods ovel	for itome tha	Disco chack mark for itame that are entirefactory	

Instructions: Complete form and submit to AEP Environmental Services with Field Data. Place check mark for items that are satisfactory. Unsatisfactory items should be left blank with a note in the comments section on what needs to be remedied.

31100	7 Mr Den 4L V
ility Name	nple by

06.6	28.7
Depth to water, feet (TOC)	Measured Total Depth, feet (TOC)

した。これ	22/10/11	
Sample Location ID	Depth to water date	

	T		T	T	Г	Т	<u> </u>	Ī	T	_		<u> </u>		Ī	Ī	l
	Temperature	(),	19.62	19,82	19,87	16'61										
	ORP	(mV)	272	276	187	288					28					
	D.0.	(mg/L)	12.2	1.84	2,86	18:2										
	Turbidity	(N.T.U)	15.2	2,7	3,6	3.8										
	Spec Cond	(µS/cm)	122	216	217	214										
	Hd	(S.U.)	4.83	4.76	4,75	4,75										
	Flow Rate	(mL/min)	220	022	022	022										
Purge Stabilization Data	Water Depth	(from TOC)	19,52	19,82	19,9)	20,13										
Purge Stab	Time	,	1401	9601	1051	1056										

Total volume purged	
Sample appearance	W6177
Sample time	8501
Sample date	22/10/11

DACHEROLMB DUPLICATE 1400

7-02	Temperature (°C) (°C) (°C) (°C) (°C) (°C) (°C) (°C)	
Sample Location ID Depth to water date	Turbidity D.O. ORP (N.T.U) (mg/L) (mV) & 3 of 33 \$ 2 \\ \times 25.7 \\ \times 25.	
Molsh Mat Haviling 9 95	te pH Spec Cond (I.S/cm) (I.S/	22-1-11 2003
Facility Name Sample by Depth to water, feet (TOC) Measured Total Depth, feet (TOC)	Time Water Depth Flow Rate (from TOC) (mL/min) \$200 1000	Total volume purged Sample appearance Sample time Sample date

Dy-BAS

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Facility Name	AFF WEISHAR		
sample by	15 than millower d	Sample Location ID	H0-04C

Depth to water, feet (TOC)	8.82
Aeasured Total Depth, feet (TOC)	18.81

28.8	28.81
Depth to water, feet (TOC)	Measured Total Depth, feet (TOC)

Depth to water date

												T	Т		П	T	
	Temperature	(°C)	21,51	21.93	21.97	40.22											
	ORP	(mV)	161	187	481	181											
	D.0.	(mg/L)	2,40	2,23	02'2	2,15											
	Turbidity	(N.T.U)	246	17,1	16.3	16.2											
4	Spec Cond	(mS/cm)	562	56€	368	397											
	Hd	(S.U.)	h2h	08'6	2814	186								9			
	Flow Rate	(mL/min)	220	220	220	220					9						
Purge Stabilization Data	Water Depth	(from TOC)	10'6	617	62'6	24,9											
Purge Stab	j.	ב ב	0439	phoo	6460	4560	,										

Total volume purged	
Sample appearance	CLFAN
Sample time	95/20
Sample date	22/19/11

Facility Name	F 50 VICSH PP	
Sample by	Kirry Mighaid	Sample Location ID

65.41	32,88
Depth to water, feet (TOC)	Measured Total Depth, feet (TOC)

|--|

	Ī		Т	T	T	T	T							
	Temperature	(_C)	70.17	20,23										
	ORP	(mV)	141	125										
	D.O.	(mg/L)	4.71	2,41		÷	UFC.							
	Turbidity	(N.T.U)	1/0	107			d wormile							
	Spec Cond	(mS/cm)	169	289			WON'7 1+01							
	Hd	(S.U.)	5.90	2,87										
	Flow Rate	(mL/min)	110	110										
Purge Stabilization Data	Water Depth	(from TOC)	15,71	16,48										
Purge Stabi	i L	<u> </u>	0831	0836										

Total volume purged	
Sample appearance	019414 414 175
Sample time	9580
Sample date	22/10/11

Sample by Depth to water, feet (TOC) Measured Total Depth, feet (TOC)		Welch Meth Howilto	149		Sample Location ID	on ID	A) 16A		
Purge Stabilization Data		43	51.30		Deput to water date	er date	11-1-22		
Time (from TOC) 10	Flow Rate (mL/min)	bH (S.U.)	Spec Cond (µS/cm)	Turbidity (N.T.U)	D.O. (mg/L)	ORP (mV)	Temperature (°C)		
911 28:67	150	37.46	186		1.24	363			
							· ·		
0000				4				sip regent	S .
Total volume purged			THE REPORT OF THE PROPERTY OF			Address Tributario Dictional Property Company			
Sample appearance Sample time Sample date		Close 911					*		
			05	18	12 5.4 (1 11)	#1 10			es es

	process of the same of the sam	The state of the s	v. 27000 per 27002 p. comp 2 2 45	er specificant	
40-1	Temperature (°C)				
	Temper (°C				
ID Jate	ORP (mV)				
ocation Water (
Sample Location ID Depth to water date	D.O. (mg/L)			-	
	Turbidity (N.T.U) (S. 2) S. 3	0			
	Spec Cond (µS/cm)	1			
4164					-
Welsh 1964	Hd (S.U.)			Cleid 1225	
	Flow Rate (mL/min)				
(TOC) , feet (TC	pth 200				
Facility Name Sample by Depth to water, feet (TOC) Measured Total Depth, feet (TOC) Purge Stabilization Data	(from TOC)			Total volume purged Sample appearance Sample time Sample date	
Facility Name Sample by Depth to wai Measured Tot	Time 1114			Total volume purger Sample appearance Sample time Sample date	
Sa Sa Mc	COL SIMPLE ROBERT OF THE PARTY OF THE		THE SECTION WHEN SELECT	Sar	



Water Analysis Report

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

Reissued

Job ID: 222057 Customer: Welsh Power Station Date Reported: 12/27/2022

Customer Sample ID: AD-1 Customer Description: TG-32

Lab Number: 222057-001 Preparation:

Date Collected: 06/28/2022 12:35 EDT Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	2.32 mg/L	2	0.04	0.02	CRJ	07/13/2022 00:06	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.22 mg/L	2	0.06	0.02	CRJ	07/13/2022 00:06	EPA 300.1 -1997, Rev. 1.0
Sulfate	74.7 mg/L	2	0.40	0.06	CRJ	07/13/2022 00:06	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method	
TDS, Filterable Residue	180 mg/L	1	50	20	SDW	07/01/2022 14:30	SM 2540C-2015	

Customer Sample ID: AD-5 Customer Description: TG-32

Lab Number: 222057-002 Preparation:

Date Collected: 06/28/2022 10:05 EDT Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	1 5.3 mg/L	2	0.04	0.02	CRJ	07/12/2022 23:13	EPA 300.1 -1997, Rev. 1.0
Fluoride	0. 1 5 mg/L	2	0.06	0.02	CRJ	07/12/2022 23:13	EPA 300.1 -1997, Rev. 1.0
Sulfate	146 mg/L	10	2.0	0.3	CRJ	07/12/2022 22:47	EPA 300.1 -1997, Rev. 1.0
Wet Chemistry							
Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method

SDW

07/01/2022 14:38 SM 2540C-2015

40

Customer Sample ID: AD-17 Customer Description: TG-32

Lab Number: 222057-003 Preparation:

310 mg/L

Date Collected: 06/28/2022 13:29 EDT Date Received: 06/30/2022 10:30 EDT

100

Ion Chromatography

TDS, Filterable Residue

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	37.0 mg/L	5	0.10	0.05	CRJ	07/12/2022 21:54	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.09 mg/L	5	0.15	0.05 J1	CRJ	07/12/2022 21:54	EPA 300.1 -1997, Rev. 1.0
Sulfate	1050 mg/L	50	10	2	CRJ	07/12/2022 21:28	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

wet onemiatry							
Parameter	Result Units [Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
TDS. Filterable Residue	1740 mg/L	2	100	40	SDW	07/01/2022 14:48	SM 2540C-2015



Water Analysis Report

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

Reissued

Customer: Welsh Power Station Date Reported: 12/27/2022 Job ID: 222057

Customer Sample ID: DUPLICATE - BACKGROUND

Customer Description: TG-32

Lab Number: 222057-004

Preparation:

Date Collected: 06/28/2022 15:30 EDT

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

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	2.25 mg/L	2	0.04	0.02	CRJ	07/12/2022 21:01	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.22 mg/L	2	0.06	0.02	CRJ	07/12/2022 21:01	EPA 300.1 -1997, Rev. 1.0
Sulfate	73.0 mg/L	2	0.40	0.06	CRJ	07/12/2022 21:01	EPA 300.1 -1997, Rev. 1.0
Wet Chemistry							
Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	180 mg/L	1	50	20	SDW	07/01/2022 14:50	SM 2540C-2015

222057

Job Comments:

Original report issued 8/9/2022. Report reissued with amended matrix spike precision calculations.

Report Verification

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

Michael Ohlinger, Chemist

Email: msohlinger@aep.com 614-836-4184 Phone: 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.



Job ID: 222057

Water Analysis Report

Reissued

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

Customer: Welsh Power Station Date Reported: 12/27/2022

Data Qualifer Legend

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

Chain of Custody Record

Dolan Chemical Laboratory (DCL)

from from mounts and				•			200		3				
4001 Bixby Road Groveport, Ohio 43125				Prog	Program: C	Coal Combustion Residuals (CCR)	ustion R	esiduals	(CCR)				
Contacts: Michael Ohlinger (614-836-4184)						Site Contact:				Date:		For Lab Use Only: COC/Order#:	
Project Name: Welsh Background Contact Name: Jill Parker-Witt	Analysis T	umaround Routine	Analysis Turnaround Time (in Calendar Days) Routine (26 days)	lendar Da	(\$.	250 mL bottle, pH<2,		a . 2	1 L bottle, Cool,	Three (six every 10th")	0 mL Glass visi r 125 mL PTFE ned bottle, CL**, pH<2	22257	<u> </u>
Contact Prone: (318) 973-3816 Sampler(s): Matt Hamilton Kenny McDonald						e sa ea	+	5	+	228 47.7 47.7 14.7 14.7 14.7 14.7 14.7 14.7	19		
Sample Identification	Sample Date	Sample	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sæmpler(s) Inli B, Ca, Li, Sb, Be, Cd, Cr, C	JT ,e2 ,oM	Fevlossib	,ID ,F ,CI,	Ra-226, Ra	6H	Sample Specific Notes:	
AD-1	6/28/2022	1135	ຶ່	Ŋ O	-				×			TG-32 needed	
AD-5	6/28/2022	905	9	QW.	-				×				
AD-17	6/28/2022	1229	9	GW	1				×				
DUPLICATE - BACKGROUND	6/28/2022	1430	9	GW	-				×				
													_
				<u> </u>									
											_		
										20 m 100 0			
Preservation Used: 1ª Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	HNO3; 5≃Na(JH; 6= Oth	ner	; F= filter in		field 4		F4	1	4			
Six 1L Bottles must be collected for Radium for every 10th sample.	r every 10th	sample.											

Special Instructions/QC Requirements & Comments:

_					
Relinquished Di.		Company.	Date/Time: 1600	600 Received by:	Date/Time:
Relinquished by:		Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:		Company:	Date/Time:	Received in Laboration by My	Date/Time 6/30/2 6 10,304m
Form COC-04, AEP Chain of Cus	stody (COC) Reco	orm COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) Sampling - Shreveport, Rev. 1, 1/10/17	al (CCR) Sampling - Sh	reveport, Rev. 1, 1/10/17	

WATER & WASTE SAMPLE RECEIPT FORM (IR#1)

, i	Packag	ge Type				Delivery Ty	<u>/pe</u>		
Cooled	Box	Bag	Envelo	pe	PONY	UPS	FedEX	USPS	
				1	Other_				
Plant/Cu	ıstomer	WE	rish		Number of l	Plastic Co	ntainers:	4	
Opened	ву^	nisgn	ra/r	ni chae	∠ Number of	Glass Cor	ntainers: _	<u></u>	
F		•			Number of			-	1
	6.00			_	or N/A Initial:				
1.				_	- If No, specify				1
ì				_	Comments				}
			_	T	Comments			200	
					if RUSH, who				
pH (15	min)		(pres) (24 hr)	NO ₂ or I	NO₃ (48 hr)	onno-PC)₄ (48 hr)	Hg-aiss	(pres) (48 hr)
Was Co	OC filled	out prop	perly?	Ø1N	Comments		+70	-	
Were s	amples la	abeled p	properly?	GIN	Comments	·			
			s used?		Comments				
Was pl	-I checke	d & Col	or Coding	done?	N or N/A	initial &	Date:	UK O	6/30/22
рН рар	er (circle	опе):	MQuant (pH Cat 1. 4495	09535.0001	(OR)	Lab rat pl	I Cat # LF RWDG21	RS -4801
-Was	Add'l Pre	eservati	ve needed	13 A M	If Yes: By whon	n & when:		(S	ee Prep Book)
ls sam	ple filtrati	ion requ	ested?	Y 1 10	Comments _			(5	See Prep Book)
Was th	ne custon	ner con	tacted?	if Yes:	Person Cont	acted:			. 9
Lab II	# <u>1</u> 2	205	7	Initial 8 —	& Date & Time :		Ξ-		
Logg	ed by	MSO		Comm	ents:	32			
	ewed by_	011)						

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.

AEP- Dolan Chemical Laboratory

Sample Receipt Form SOP-7102

Page I of i

4, 4,

Municipal Solid Waste Laboratory Review Checklist

This da	ata pack	cage cor	nsists of:		
×	(which	include	e page, and the laboratory review che es the reportable data identified on the ption Reports.		
X	R1	Field c	hain-of-custody documentation		
×	R2	Sample	e identification cross-reference		
X	R3	(a) Ite N1 (b) Di (c) Pr (d) Cl	eports (analytical data sheets) for each ems specified in NELAC Chapter 5 fo ELAC Standard ilution factors reparation methods leanup methods required for the project, tentatively in	r reporting results, e.g., Section	
x	R4	(a) Ca	gate recovery data including: alculated recovery (%R) ne laboratory's surrogate QC limits		
×	R5	Test re	ports/summary forms for blank sam	ples	
×	R6	(a) L(c) (b) Ca	eports/summary forms for laboratory CS spiking amounts alculated %R for each analyte he laboratory's LCS QC limits	control samples (LCSs) inclu	ıding:
×	R7	(a) Sa (b) M (c) Ca (d) Ca	eports for project matrix spike/matrix amples associated with the MS/MSD IS/MSD spiking amounts oncentration of each MS/MSD analytal alculated %Rs and relative percent di he laboratory's MS/MSD QC limits	clearly identified te measured in the parent and	-
X	R8	(a) Ti (b) Ti	atory analytical duplicate (if applicab he amount of analyte measured in the he calculated RPD he laboratory's QC limits for analytica	e duplicate	
X	R9	List of	method quantitation limits (MQLs)	for each analyte for each metl	hod and matrix
X	R10	Other	problems or anomalies		
×	The Ex	cception	a Report for every item for which the	result is "No" or "NR" (Not R	eviewed)
packag require reports by the labora	ge as beements s. By m labora tory in	een revieus of the raise signs to signs to the table table to the table	t: I am responsible for the release of ewed by the laboratory and is completed by the laboratory and is completed by ature below, I affirm to the best of my having the potential to affect the qual oratory Review Checklist, and no info quality of the data.	ete and technically compliant the laboratory in the attached knowledge, all problems/and lity of the data, have been ide	with the d exception omalies, observed ntified by the
respon used is statem	iding to respor ent is t	rule. The rule of the rule.	le: This laboratory is an in-house he official signing the cover page of the releasing this data package and is he	he rule-required report in whi by signature affirming the abo	ich these data are ve release
		E. Arno		Chemist Principle	7/13/2022
Name	(printe	a)	Signature	Official Title	Date

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory
Project Name: Wesh Background
Reviewer Name: Timothy E. Arnold
LRC Date: 7/13/2022
Laboratory Job Number: 222057
Prep Batch Number(s): QC2207091

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
R1	0, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	0, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?	YES	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	YES	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	:
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		ļ
	I	Were surrogates added prior to extraction?	Yes	
	ĭ	Were surrogate percent recoveries in all samples within the laboratory QC limits?	YES	
R5	0, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	YES	
R6	0, 1	Laboratory control samples (LCS):	,	
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes)
	I	Were LCS (and LCSD, If applicable) %Rs within the laboratory QC limits?	YES	
_	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	YES	
R7	0, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	1	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	YES	
	I	Were MS/MSD RPDs within laboratory QC limits?	YES	
R8	0, 1	Analytical duplicate data		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	YES	
R9	O, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	1	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory
Project Name: Wesh Background
Reviewer Name: Timothy E. Arnold

LRC Date: 7/13/2022

Laboratory Job Number: 222057

Prep Batch Number(s): QC2207091

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
S1	O, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	1	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes_	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S 5	0, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	1	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S6	0	Dual column confirmation		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	0	Tentatively identified compounds (TICs):		
	1	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	Interference Check Sample (ICS) results:		
	1	Were percent recoveries within method QC limits?	NA	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	0, 1	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to- date and on file?	Yes	
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory
Project Name: Wesh Background
Reviewer Name: Timothy E. Arnold
LRC Date: 7/13/2022
Laboratory Job Number: 222057
Prep Batch Number(s): QC2207091

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB <mql.< th=""></mql.<>

Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

³ NA - Not applicable; NR - Not reviewed.

⁴ Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

TDS Laboratory Review Checklist

Municipal Solid Waste Laboratory Review Checklist

This data package consists of: \mathbf{x} This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports. \mathbf{x} R_1 Field chain-of-custody documentation X R₂ Sample identification cross-reference \mathbf{x} R₃ Test reports (analytical data sheets) for each environmental sample that includes: (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard (b) Dilution factors (c) Preparation methods (d) Cleanup methods (e) If required for the project, tentatively identified compounds (TICs) M Surrogate recovery data including: **R**4 (a) Calculated recovery (%R) (b) The laboratory's surrogate OC limits X Test reports/summary forms for blank samples **R**5 \mathbf{x} **R6** Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts (b) Calculated %R for each analyte (c) The laboratory's LCS QC limits \square **R**7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) Samples associated with the MS/MSD clearly identified (b) MS/MSD spiking amounts (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples (d) Calculated %Rs and relative percent differences (RPDs) (e) The laboratory's MS/MSD QC limits X R8 Laboratory analytical duplicate (if applicable) recovery and precision: (a) The amount of analyte measured in the duplicate (b) The calculated RPD (c) The laboratory's QC limits for analytical duplicates × R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix X R10 Other problems or anomalies The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed) **Release Statement:** I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data. Check, if applicable: () This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true. Michael Ohlinger **Chemist** Official Title Name (printed)

TDS Laboratory Review Checklist

Table 1. Reportable Data.

 Laboratory Name:
 American Electric Power Dolan Chemical Laboratory

 Project Name:
 Welsh Background

 Reviewer Name:
 Michael Ohlinger

LRC Date: 8/9/22

Laboratory Job Number: 222057

Prep Batch Number(s): QC2207067

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
R1	0, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	NA	
R2	0, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	0, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	0, 1	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

TDS Laboratory Review Checklist

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	Laboratory control samples (LCS):		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	Analytical duplicate data		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	No	ER1
R9	O, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Background

Reviewer Name: Michael Ohlinger

LRC Date: 4/5/22

Laboratory Job Number: 222057

Prep Batch Number(s): QC2207067

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S1	0, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S 3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S6	0	Dual column confirmation		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	0	Tentatively identified compounds (TICs):		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	Interference Check Sample (ICS) results:		
	I	Were percent recoveries within method QC limits?	NA	
S9 	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Nan	American Electric Power Dolan Chemical Laboratory
Project Name:	Welsh Background
Reviewer Name	Michael Ohlinger
LRC Date: 8/9/2	22
Laboratory Job	Number: 222057
=	nber(s): QC2207067

Exception Report No.	Description
ER1	The precision between the duplicate results was above acceptance limits.
<u> </u>	
<u> </u>	

¹ Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

² O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

³ NA - Not applicable; NR - Not reviewed.

⁴ Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."



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

Job ID: 222084 Customer: Welsh Power Station Date Reported: 12/29/2022

Customer Sample ID: AD-1 Customer Description: TG-32

Lab Number: 222084-001 Preparation:

Date Collected: 06/28/2022 12:35 EDT Date Received: 07/01/2022 11:00 EDT

Metals

Parameter	Result Units	Dilution	RL	MDL Data Qualifier	rs Analyst	Analysis Date	Method
Antimony	0.03 µg/L	1	0.10	0.02 J1	GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Arsenic	0.26 μg/L	1	0.10	0.03	GES	07/22/2022 08:56	EPA 200.8-1994, Rev. 5.4
Barium	85.4 μg/L	1	0.20	0.05	GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Beryllium	0.995 μg/L	1	0.050	0.007	GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Boron	0.768 mg/L	1	0.050	0.009	GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Cadmium	0.030 μg/L	1	0.020	0.004	GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Calcium	6.76 mg/L	1	0.05	0.02	GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Chromium	0.37 μg/L	1	0.20	0.04	GES	07/22/2022 08:56	EPA 200.8-1994, Rev. 5.4
Cobalt	2.34 μg/L	1	0.020	0.003	GES	07/22/2022 08:56	EPA 200.8-1994, Rev. 5.4
Lead	0.33 μg/L	1	0.20	0.05	GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Lithium	0.00855 mg/L	1	0.00020	0.00005	GES	07/22/2022 08:56	EPA 200.8-1994, Rev. 5.4
Mercury	2 ng/L	1	5	2 J1	JAB	07/19/2022 15:04	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4
Selenium	8.35 µg/L	1	0.50	0.09	GES	07/22/2022 08:56	EPA 200.8-1994, Rev. 5.4
Thallium	0.05 µg/L	1	0.20	0.04 J1	GES	07/14/2022 15:13	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result Units	UNC*(+/-)	MDA* Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	3.03 pCi/L	0.47	0.44	ST	07/07/2022 14:01	SW-846 9315-1986, Rev. 0
Carrier Recovery	91.8 %					
Radium-228	0.66 pCi/L	0.16	0.51	TTP	07/12/2022 16:41	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	79.7 %					

^{*} The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.



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Reissued

Job ID: 222084 Customer: Welsh Power Station Date Reported: 12/29/2022

Customer Sample ID: AD-5 Customer Description: TG-32

Lab Number: 222084-002 Preparation:

Date Collected: 06/28/2022 10:05 EDT Date Received: 07/01/2022 11:00 EDT

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	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Arsenic	3.01	µg/L	1	0.10	0.03	GES	07/22/2022 09:01	EPA 200.8-1994, Rev. 5.4
Barium	51.8	µg/L	1	0.20	0.05	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Beryllium	0.032	µg/L	1	0.050	0.007 J1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Boron	0.048	mg/L	1	0.050	0.009 J1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004	µg/L	1	0.020	0.004 U1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Calcium	32.9	mg/L	1	0.05	0.02	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Chromium	0.22	µg/L	1	0.20	0.04	GES	07/22/2022 09:01	EPA 200.8-1994, Rev. 5.4
Cobalt	12.8	µg/L	1	0.020	0.003	GES	07/22/2022 09:01	EPA 200.8-1994, Rev. 5.4
Lead	<0.05	µg/L	1	0.20	0.05 U1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Lithium	0.161	mg/L	1	0.00020	0.00005	GES	07/22/2022 09:01	EPA 200.8-1994, Rev. 5.4
Mercury	<2	ng/L	1	5	2 U1	JAB	07/19/2022 15:07	EPA 245.7-2005, Rev. 2.0
Molybdenum	0.1	μg/L	1	0.5	0.1 J1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09	μg/L	1	0.50	0.09 U1	GES	07/22/2022 09:01	EPA 200.8-1994, Rev. 5.4
Thallium	0.05	μg/L	1	0.20	0.04 J1	GES	07/14/2022 15:28	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result Units	UNC*(+/-)	MDA* Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	2.06 pCi/L	0.38	0.47	ST	07/07/2022 14:01	SW-846 9315-1986, Rev. 0
Carrier Recovery	94.0 %					
Radium-228	-0.10 pCi/L	0.33	1.12	TTP	07/12/2022 16:41	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	85.1 %					

^{*} The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.



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Reissued

Job ID: 222084 Customer: Welsh Power Station Date Reported: 12/29/2022

Customer Sample ID: AD-17 Customer Description: TG-32

Lab Number: 222084-003 Preparation:

Date Collected: 06/28/2022 13:29 EDT Date Received: 07/01/2022 11:00 EDT

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	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Arsenic	0.53 μg/L	1	0.10	0.03	GES	07/22/2022 09:11	EPA 200.8-1994, Rev. 5.4
Barium	12.6 µg/L	1	0.20	0.05	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Beryllium	0.040 µg/L	1	0.050	0.007 J1	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Boron	0.112 mg/L	1	0.050	0.009	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Cadmium	0.011 µg/L	1	0.020	0.004 J1	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Calcium	167 mg/L	1	0.05	0.02	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Chromium	0.40 µg/L	1	0.20	0.04	GES	07/22/2022 09:11	EPA 200.8-1994, Rev. 5.4
Cobalt	41.3 µg/L	1	0.020	0.003	GES	07/22/2022 09:11	EPA 200.8-1994, Rev. 5.4
Lead	0.12 µg/L	1	0.20	0.05 J1	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Lithium	0.267 mg/L	1	0.00020	0.00005	GES	07/22/2022 09:11	EPA 200.8-1994, Rev. 5.4
Mercury	3 ng/L	1	5	2 J1	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	0.1 µg/L	1	0.5	0.1 J1	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09 µg/L	1	0.50	0.09 U1	GES	07/22/2022 09:11	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	07/14/2022 15:33	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result Units	UNC*(+/-)	MDA* Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	5.26 pCi/L	0.59	0.39	ST	07/07/2022 14:01	SW-846 9315-1986, Rev. 0
Carrier Recovery	98.4 %					
Radium-228	1.28 pCi/L	0.15	0.45	TTP	07/12/2022 16:41	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	92.1 %					

^{*} The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.



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

Reissued

Job ID: 222084 Customer: Welsh Power Station Date Reported: 12/29/2022

Customer Sample ID: DUPLICATE - BACKGROUND Customer Description: TG-32

Lab Number: 222084-004 Preparation:

Date Collected: 06/28/2022 15:30 EDT Date Received: 07/01/2022 11:00 EDT

Metals

Motals							
Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.03 µg/L	1	0.10	0.02 J1	GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Arsenic	0.26 µg/L	1	0.10	0.03	GES	07/22/2022 09:21	EPA 200.8-1994, Rev. 5.4
Barium	82.3 µg/L	1	0.20	0.05	GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Beryllium	0.852 µg/L	1	0.050	0.007	GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Boron	0.779 mg/L	1	0.050	0.009	GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Cadmium	0.032 µg/L	1	0.020	0.004	GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Calcium	6.56 mg/L	1	0.05	0.02	GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Chromium	0.32 µg/L	1	0.20	0.04	GES	07/22/2022 09:21	EPA 200.8-1994, Rev. 5.4
Cobalt	2.35 µg/L	1	0.020	0.003	GES	07/22/2022 09:21	EPA 200.8-1994, Rev. 5.4
Lead	0.38 µg/L	1	0.20	0.05	GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Lithium	0.00837 mg/L	1	0.00020	0.00005	GES	07/22/2022 09:21	EPA 200.8-1994, Rev. 5.4
Mercury	2 ng/L	1	5	2 J1	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4
Selenium	7.92 µg/L	1	0.50	0.09	GES	07/22/2022 09:21	EPA 200.8-1994, Rev. 5.4
Thallium	0.04 µg/L	1	0.20	0.04 J1	GES	07/14/2022 15:43	EPA 200.8-1994, Rev. 5.4



Reissued

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

Job ID: 222084 Customer: Welsh Power Station Date Reported: 12/29/2022

Customer Sample ID: EQ BLANK - BACKGROUND Customer Description: TG-32

Lab Number: 222084-005 Preparation:

Date Collected: 06/28/2022 12:09 EDT Date Received: 07/01/2022 11:00 EDT

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	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03 µg/L	1	0.10	0.03 U1	GES	07/22/2022 09:26	EPA 200.8-1994, Rev. 5.4
Barium	0.06 µg/L	1	0.20	0.05 J1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007 µg/L	1	0.050	0.007 U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Boron	0.027 mg/L	1	0.050	0.009 J1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004 µg/L	1	0.020	0.004 U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02 mg/L	1	0.05	0.02 U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Chromium	0.84 µg/L	1	0.20	0.04	GES	07/22/2022 09:26	EPA 200.8-1994, Rev. 5.4
Cobalt	0.009 µg/L	1	0.020	0.003 J1	GES	07/22/2022 09:26	EPA 200.8-1994, Rev. 5.4
Lead	<0.05 µg/L	1	0.20	0.05 U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Lithium	0.00008 mg/L	1	0.00020	0.00005 J1	GES	07/22/2022 09:26	EPA 200.8-1994, Rev. 5.4
Mercury	<2 ng/L	1	5	2 U1	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09 µg/L	1	0.50	0.09 U1	GES	07/22/2022 09:26	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	07/14/2022 15:48	EPA 200.8-1994, Rev. 5.4

222084 Job Comments:

Original report issued 8/10/2022. Report reissued with amended matrix spike precision calculations.



Job ID: 222084

Water Analysis Report

Reissued

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

Customer: Welsh Power Station Date Reported: 12/29/2022

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

Muhael S. Ollinger

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 Qualifer 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).

Chain of Custody Record

Dolan Chemical Laboratory (DCL)

ĺ

				,		5		all of Sustanty Necola	3			
4001 Bixby Road Groveport, Ohio 43125				Prog	am:	Coal Com	bustion	Program: Coal Combustion Residuals (CCR)	s (CCR)			
Contacts: Michael Ohlinger (614-836-4184)					S	Site Contact:				Date:		For Lab Use Only: COC/Order #:
Project Name: Welsh Background			:	,		25		Field-filter 500 mL	1	Three (six every	250 mL Glass	
Contact Name: Jill Parker-Witt	Analysis	Furmaround Routin	Analysis Turnaround Time (in Calendar Days) Routine (28 days)	endar Da	<u> </u>	ă 73	DOTTIE,	bottle,		10th")	bottle,	722004
Contact Phone: (318) 673-3816						Ξ	\neg	HNO	0-6°C	pH<2, HNO ₃	pH<2,	7-00-17
Sampler(s): Matt Hamilton Kenny McDonald							_'qa 'o:	nM bas e	'os	1-228		
Sample Identification	Sample Date	Sample	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) Ini	8, 5a, Li, sp. 8e, Cd, Cr, 9 Mo, se, TL	dissolved Fo	, F, CI,	Ra-226, Ra	∫Вн	Sample Specific Notes:
AD-1	6/28/2022	1135	၅	GW	80		×			×	×	Routine (28 days)
AD-5	6/28/2022	905	၁	GW	2		×			×	×	TG-32 needed
AD-17	6/28/2022	1229	O	GW	9		×			×	×	
DUPLICATE - BACKGROUND	6/28/2022	1430	9	οw	2		×				×	
EQUIPMENT BLANK - BACKGROUND	6/28/2022	1109	9	GW	2		×				×	
				T		-						
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	HNO3; 5=Na	OH; 6= Ot	44	; F= filter	ter in field	etd	4	F4	-	4	2	
* Six 1L Bottles must be collected for Radium for every 10th sample.	r every 10th	sample.										
Special Instructions/QC Requirements & Comments:	nts:											
ļ												
Relinquished by Amy Complete	Company:	2)66		Date/Time: 6/2/{2		160- Rec	Received by:					Date/Time:
	Company:	7		Date/Time:	idi i	Rec	Received by:					Date/Time:

Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) Sampling - Shreveport, Rev. 1, 1/10/17

10:301

11/20

Date/Time:

Received in Laboratory

Date/Time:

Date/Time: 6/21/2 C

Company:

Relinquished by:

Relinquished by:

Company:

Received by:

Date/Time:

WATER & WASTE SAMPLE RECEIPT FORM (IK#T)

- Package Type	Delivery Type
Cooler Box Bag Envelope	PONY UPS (edEX USPS
	Other
Plant/Customer No. ISh	Number of Plastic Containers:
Opened By MSO	Number of Glass Containers: 5
Date/Time 7/1/22 10:30AM	Number of Mercury Containers:
Were all temperatures within 0-6°C? Y/N	or N/A Initial:on ice no ice
(IR Gun Ser# 210441568, Expir.5/27/2023)	- If No, specify each deviation:
Was container in good condition? (Ŷ) / N	Comments
Was Chain of Custody received? (Y) / N	Comments
Requested turnaround: 28 2 245	If RUSH, who was notified?
1	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? YN	Comments
Was pH checked & Color Coding done? Y	/ N or N/A Initial & Date:
pH paper (circle one): MQuant pH Cat 1. lot HC904495	09535.0001 {OR} Lab rat pH Cat # LRS -4801 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# 222084 Initial 8	& Date & Time :
Lawred by MSO	ents:
Reviewed by MG1c	

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.

AEP- Dolan Chemical Laboratory

Sample Receipt Form SOP-7102

Page l of l

Municipal Solid Waste Laboratory Review Checklist

This da	ata pack	kage consists of:				
X	(which	gnature page, and the laboratory review checklist consisting of Table 1, Reportable Data includes the reportable data identified on this page), Table 2, Supporting Data, and 3, Exception Reports.				
x	R1	Field chain-of-custody documentation				
x	R2	Sample identification cross-reference				
×	R3	 Test reports (analytical data sheets) for each environmental sample that includes: (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard (b) Dilution factors (c) Preparation methods (d) Cleanup methods (e) If required for the project, tentatively identified compounds (TICs) 				
NA	R4	Surrogate recovery data including: (a) Calculated recovery (%R) (b) The laboratory's surrogate QC limits				
х	R ₅	Test reports/summary forms for blank samples				
×	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts (b) Calculated %R for each analyte (c) The laboratory's LCS QC limits				
x	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) Samples associated with the MS/MSD clearly identified (b) MS/MSD spiking amounts (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples (d) Calculated %Rs and relative percent differences (RPDs) (e) The laboratory's MS/MSD QC limits				
x	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) The amount of analyte measured in the duplicate (b) The calculated RPD (c) The laboratory's QC limits for analytical duplicates				
×	R9	List of method quantitation limits (MQLs) for each analyte for each method and matrix				
×	R10 Other problems or anomalies					
x	The Ex	sception Report for every item for which the result is "No" or "NR" (Not Reviewed)				
packag require reports by the labora	ge as beements s. By m laborat tory in	tement: I am responsible for the release of this laboratory data package. This data seen reviewed by the laboratory and is complete and technically compliant with the of the methods used, except where noted by the laboratory in the attached exception by signature below, I affirm to the best of my knowledge, all problems/anomalies, observed tory as having the potential to affect the quality of the data, have been identified by the the Laboratory Review Checklist, and no information or data have been knowingly withheld fect the quality of the data.				
respon used is statem	iding to respon ent is t					
		Mann S. Sulzmann Chemist 7-21-22				

Name (printed)

Signature

Date

Official Title

Table 1. Reportable Data.

-	
Laboratory Name:	American Electric Power Dolan Chemical Laboratory
Project Name:	Wolsh Power
Reviewer Name: _	Susann Sulzmann
LRC Date:	7-21-22
Laboratory Job Nu	ımber:
Prep Batch Numbe	er(s): 1822070806

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
R1	O, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?	yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
·	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	ve (
R6	0, I	Laboratory control samples (LCS):		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
•	I	Was the LCSD RPD within QC limits?	Ves	
R7	0, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	11es	
R8	O, I	Analytical duplicate data		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	yes	
R9	O, I	Method quantitation limits (MQLs):	1	
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

- 1	American Electric Pow	ver Dolan Chemical Laboratory
Laboratory Name:		
	Nelsh Pour	
Reviewer Name: _		Sultmann
LRC Date:	7-21-27	r
Laboratory Job Nu	mber: <u>2220</u>	84
Prep Batch Number	mber: <u>2720</u> r(s): PB2070	806

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
51	0, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S 3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
S6	0	Dual column confirmation		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	0	Tentatively identified compounds (TICs):		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	Interference Check Sample (ICS) results:		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		(5)
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name:	American Electric Power Dolan Chemical Laboratory
Project Name:	Welsh Power
Reviewer Name: _	Susann Sulzmann
LRC Date:	7-21-22
Laboratory Job Nu	ımber: <u>222084</u>
Prep Batch Numbe	er(s): 1622070806

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB <mql.< td=""></mql.<>

¹ Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
NA - Not applicable; NR - Not reviewed.

⁴ Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

X	(which		eportable data		klist consisting of Tal is page), Table 2, Sup	ole 1, Reportable Data porting Data, and
X	R1	Field chain-of	f-custody docu	mentation		
X	R2	Sample identi	ification cross-	reference		
x	R3	(a) Items specified NELAC S(b) Dilution (c) Preparation (d) Cleanup (d)	ecified in NELA standard factors ion methods methods	AC Chapter 5 for	environmental samp reporting results, e.g	., Section 5.5.10 in 2003
NA	R4	(a) Calculate	overy data incl ed recovery (%) ratory's surrog	R)		
X	R5	Test reports/s	summary form	s for blank sam _l	oles	
X	R6	(a) LCS spik(b) Calculate		analyte	control samples (LCS	s) including:
X	R7	(a) Samples(b) MS/MSI(c) Concentr(d) Calculate	associated witl Spiking amou ation of each M	n the MS/MSD onts MS/MSD analyto ative percent dif	spike duplicates (MS clearly identified e measured in the par ferences (RPDs)	/MSDs) including: ent and spiked samples
X	R8	(a) The amore (b) The calcu	unt of analyte i llated RPD	ate (if applicable neasured in the its for analytica	-	ion:
X	R9	List of method	d quantitation	limits (MQLs) f	or each analyte for ea	ch method and matrix
Х	R10	Other probler	ns or anomalie	es		
X	The Ex	ception Repor	t for every iten	n for which the i	esult is "No" or "NR"	(Not Reviewed)
packag require reports by the laborat	e as be ements s. By m laborat tory in t	en reviewed by of the methods y signature be ory as having	y the laborator s used, except v low, I affirm to the potential to Review Check	y and is complet where noted by to the best of my affect the quali	ty of the data, have be	apliant with the attached exception ms/anomalies, observed
respon used is	ding to	rule. The offic sible for releas	ial signing the	cover page of th	laboratory controlled e rule-required repor signature affirming	t in which these data are
Jonat	than B	arnhill	Sonathan	Bornhill	Lab Supervisor	8-2-2022
Name ((printed	d)	Signature		Official Title	Date

Table 1. Reportable Data.

Laboratory Name:	
Project Name:	
Reviewer Name:	
LRC Date:	
Laboratory Job Number:	
Prep Batch Number(s):	

I tem ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
R1	O, I	Chain-of-custody (COC)		
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		
		Were all departures from standard conditions described in an exception report?		
R2	O, I	Sample and quality control (QC) identification		
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		
R3	O, I	Test reports		
		Were all samples prepared and analyzed within holding times?		
		Other than those results < MQL, were all other raw values bracketed by calibration standards?		
		Were calculations checked by a peer or supervisor?		
		Were all analyte identifications checked by a peer or supervisor?		
		Were sample quantitation limits reported for all analytes not detected?		
		Were all results for soil and sediment samples reported on a dry weight basis?		
		Was % moisture (or solids) reported for all soil and sediment samples?		
		If required for the project, TICs reported?		
R4	0	Surrogate recovery data		
		Were surrogates added prior to extraction?		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		
R5	Ο, Ι	Test reports/summary forms for blank samples		
		Were appropriate type(s) of blanks analyzed?		
		Were blanks analyzed at the appropriate frequency?		

I tem ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
		Were method blanks taken through the entire analytical process, including preparation and, if applicable,		
		cleanup procedures?		
		Were blank concentrations < MQL?		
R6	O, I	Laboratory control samples (LCS):		
		Were all COCs included in the LCS?		
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		
		Were LCSs analyzed at the required frequency?		
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?		
		Was the LCSD RPD within QC limits?		
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
		Were the project/method specified analytes included in the MS and MSD?		
		Were MS/MSD analyzed at the appropriate frequency?		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		
		Were MS/MSD RPDs within laboratory QC limits?		
R8	O, I	Analytical duplicate data		
		Were appropriate analytical duplicates analyzed for each matrix?		
		Were analytical duplicates analyzed at the appropriate frequency?		
		Were RPDs or relative standard deviations within the laboratory QC limits?		
R9	O, I	Method quantitation limits (MQLs):		
		Are the MQLs for each method analyte included in the laboratory data package?		
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?		
		Are unadjusted MQLs included in the laboratory data package?		
R10	O, I	Other problems/anomalies		
-	,	Are all known problems/anomalies/special conditions noted in this LRC and ER?		
		Were all necessary corrective actions performed for the reported data?		
		Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?		

Table 2. Supporting Data.

Laboratory Name:	
Project Name:	
Reviewer Name:	
LRC Date:	
Laboratory Job Number: _	
Prep Batch Number(s):	

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S1	O, I	Initial calibration (ICAL)		
		Were response factors and/or relative response factors for each analyte within QC limits?		
		Were percent RSDs or correlation coefficient criteria met?		
		Was the number of standards recommended in the method used for all analytes?		
		Were all points generated between the lowest and highest standard used to calculate the curve?		
		Are ICAL data available for all instruments used?		
		Has the initial calibration curve been verified using an appropriate second source standard?		
S2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
		Was the CCV analyzed at the method-required frequency?		
		Were percent differences for each analyte within the method-required QC limits?		
		Was the ICAL curve verified for each analyte?		
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		
S3	0	Mass spectral tuning:		
		Was the appropriate compound for the method used for tuning?		
		Were ion abundance data within the method-required QC limits?		
S4	0	Internal standards (IS):		
		Were IS area counts and retention times within the method-required QC limits?		
S5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		
		Were data associated with manual integrations flagged on the raw data?		

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S6	0	Dual column confirmation		
		Did dual column confirmation results meet the method-required QC?		
S7	0	Tentatively identified compounds (TICs):		
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?		
S8	I	Interference Check Sample (ICS) results:		
		Were percent recoveries within method QC limits?		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?		
S10	O, I	Method detection limit (MDL) studies		
		Was a MDL study performed for each reported analyte?		
		Is the MDL either adjusted or supported by the analysis of DCSs?		
S11	O, I	Proficiency test reports:		
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		
S12	O, I	Standards documentation		
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?		
S13	O, I	Compound/analyte identification procedures		
		Are the procedures for compound/analyte identification documented?		
S14	O, I	Demonstration of analyst competency (DOC)		
		Was DOC conducted consistent with NELAC Chapter 5C?		
		Is documentation of the analyst's competency up-to- date and on file?		
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
		Are all the methods used to generate the data documented, verified, and validated, where applicable?		
S16	O, I	Laboratory standard operating procedures (SOPs):		
		Are laboratory SOPs current and on file for each method performed?		

Table 3. Exception Reports.

Laboratory Name:	
Project Name:	
Reviewer Name:	
LRC Date:	
Prep Batch Number(s):	

Exception Report No.	Description

¹ Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

² O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

³ NA - Not applicable; NR - Not reviewed.

⁴ Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."



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

Reissued

Job ID: 222061 Customer: Welsh Power Station Date Reported: 12/29/2022

Customer Sample ID: AD-3 Customer Description: TG-32

Lab Number: 222061-001 Preparation:

Date Collected: 06/28/2022 11:55 EDT Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	8.01 mg/L	2	0.04	0.02	CRJ	07/14/2022 07:04	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.14 mg/L	2	0.06	0.02	CRJ	07/14/2022 07:04	EPA 300.1 -1997, Rev. 1.0
Sulfate	2.55 mg/L	2	0.40	0.06	CRJ	07/14/2022 07:04	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result Units Di	ilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	120 mg/L	1	50	20	SDW	07/01/2022 16:12	SM 2540C-2015

Customer Sample ID: AD-4c Customer Description: TG-32

Lab Number: 222061-002 Preparation:

Date Collected: 06/28/2022 11:21 EDT Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	14.1 mg/L	2	0.04	0.02	CRJ	07/14/2022 07:30	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.12 mg/L	2	0.06	0.02	CRJ	07/14/2022 07:30	EPA 300.1 -1997, Rev. 1.0
Sulfate	83.6 mg/L	2	0.40	0.06	CRJ	07/14/2022 07:30	EPA 300.1 -1997, Rev. 1.0
Wet Chemistry							

Parameter Result Units Dilution RL MDL Data Qualifiers Analyst Analysis Date Method

TDS, Filterable Residue 280 mg/L 1 50 20 SDW 07/01/2022 16:21 SM 2540C-2015

Customer Sample ID: AD-16R Customer Description: TG-32

Lab Number: 222061-003 Preparation:

Date Collected: 06/27/2022 13:45 EDT Date Received: 06/30/2022 10:30 EDT

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	7.21 mg/L	2	0.04	0.02	CRJ	07/14/2022 08:50	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.10 mg/L	2	0.06	0.02	CRJ	07/14/2022 08:50	EPA 300.1 -1997, Rev. 1.0
Sulfate	46.5 mg/L	2	0.40	0.06	CRJ	07/14/2022 08:50	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result Units Dilu	ition F	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	170 mg/L	1	50	20	SDW	07/01/2022 16:24	SM 2540C-2015



Dolan Chemical Laboratory 4001 Bixby Road Groveport, OH 43125

Phone: 614-836-4221 Audinet: 210-4221

Reissued

Customer: Welsh Power Station Date Reported: 12/29/2022 Job ID: 222061

Customer Sample ID: DUPLICATE - BASP

Customer Description: TG-32

Lab Number: 222061-004

Preparation:

Date Collected: 06/28/2022 15:00 EDT

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

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	14.1 mg/L	2	0.04	0.02	CRJ	07/14/2022 07:57	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.12 mg/L	2	0.06	0.02	CRJ	07/14/2022 07:57	EPA 300.1 -1997, Rev. 1.0
Sulfate	83.8 mg/L	2	0.40	0.06	CRJ	07/14/2022 07:57	EPA 300.1 -1997, Rev. 1.0
Wet Chemistry							
Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	280 mg/L	1	50	20	SDW	07/01/2022 16:30	SM 2540C-2015

222061

Job Comments:

Original report issued 8/2/2022. Report reissued with amended matrix spike precision calculations.

Report Verification

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

Michael Ohlinger, Chemist

Email: msohlinger@aep.com 614-836-4184 Phone: 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.

Chain of Custody Record

Dolan Chemical Laboratory (DCL) 4001 Bixby Road

	For Lab Use Only:			972061	902-0				Sample Specific Notes:		TG-32 needed								
			mler 300 ml. bottle.	then	Ž Č	nM	pue	9 4	bevlossib		+	_							
			CF++' sq 20 mF	nil∃ H,ei	IBI ITC IJOC IJOC ILC				бн										
R)	Date:	-	Three		1 L bottles, pH<2 HND.	.1	322-	-8 2	79-226, I										4
ials (CCI			7	bottle,	, Coo		'os	'IS	rps, F, C	,	×	×	×	×					+
Program: Coal Combustion Residuals (CCR)			500 mL	Dottie,	HAO'S	.86	l ,eA d9 ,c	CC	9, Ca, Li, S 3e, Cd, Cr; No, Se, TL										4
Combus	tact:		250 mL	bottle,	HNO				8 ට ,6								7.		4
: Coal	Site Contact:						siel	tint	(s)ubjen(s)										field
ogram				Days)					\$ 5 #		-	1	-	1					; F= filter in field
Ğ				alendar					1		<u>₹</u>	ß	δW	δW					
				Analysis Turnaround Time (In Calendar Days) Double (28 days)	(a (a) a (a)				Sample Type (C=Comp,		<u>ن</u>	9	9	ပ					ther
				Turnaroun Pouti					Sample Time		1055	1021	1245	1400					OH; 6= 0
				Analysis		_			Sample		6/28/2022	6/28/2022	6/27/2022	6/28/2022					INO3; 5=Na
Groveport, Ohio 43125	Contacts: Michael Oblinger (614-836-4184)	Control of the contro	Project Name: Welsh BASP	Contact Name: Jill Parker-Witt	1 5		Sampler(s): Matt Hamilton Kenny McDonald		Sample Identification		AD-3	AD-4c	AD-16R	DUPLICATE - BASP				N/2	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: And	Company:	Date/Time: (66)	ime: {\& Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Сотрапу	Date/Time:	Received in Latherstony by.	Date Time: 65.30/47
Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) 8	rd for Coal Combustion Residua	I (CCR) Sampling - Shr	Sampling - Shreveport, Rev. 1, 1/10/17	

WATER & WASTE SAMPLE RECEIPT FORM (IR#1)

Package Type	Delivery Type
Cooler Box Bag Envelope	PONY UPS FedEX USPS
	Other
Plant/Customer Welsh	Number of Plastic Containers:
1	∠ Number of Glass Containers:
•	Number of Mercury Containers:
Were all temperatures within 0-6°C?((y)/ N	or N/A Initial: MCC on ice/ no ice
(IR Gun Ser# 210441568, Expir.5/27/2023)	
	Comments
1 A - 1	Comments
•	If RUSH, who was notified?
pH (15 min) Cr ⁴⁶ (pres) NO ₂ or (24 hr)	NO ₃ (48 hr) ortho-PO ₄ (48 hr) Hg-diss (pres) (48 hr)
Was COC filled out properly? Ø/N	Comments
Were samples labeled properly? O/ N	Comments
Were correct containers used? Ø/N	Comments
	0/ N or N/A Initial & Date: 106/30/22
pH paper (circle one): MQuant pH Cat 1 lot HC904495	.09535.0001 [OR] Lab rat pH Cat # LRS -4801 Lot X000RWDG21
- Was Add'l Preservative needed? Y /(N)	If Yes: By whom & when: (See Prep Book)
Is sample filtration requested? Y / 1/10	Comments (See Prep Book)
Was the customer contacted? If Yes	: Person Contacted:
Lab ID# 27206 Initial	& Date & Time :
Comn	nents:
(\ 1 \ 1 \ 1	

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.

AEP- Dolan Chemical Laboratory

Sample Receipt Form SOP-7102

Page I of I

Municipal Solid Waste Laboratory Review Checklist

This data package consists of: \square This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports. Field chain-of-custody documentation M Rı \square R₂ Sample identification cross-reference $|\mathbf{x}|$ R3 Test reports (analytical data sheets) for each environmental sample that includes: (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 **NELAC Standard** (b) Dilution factors (c) Preparation methods (d) Cleanup methods (e) If required for the project, tentatively identified compounds (TICs) \square Surrogate recovery data including: **R**4 (a) Calculated recovery (%R) (b) The laboratory's surrogate QC limits Test reports/summary forms for blank samples $|\mathbf{x}|$ **R**5 \mathbf{x} **R6** Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts (b) Calculated %R for each analyte (c) The laboratory's LCS OC limits \square Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: **R**7 (a) Samples associated with the MS/MSD clearly identified (b) MS/MSD spiking amounts (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples (d) Calculated %Rs and relative percent differences (RPDs) (e) The laboratory's MS/MSD QC limits \mathbf{x} Laboratory analytical duplicate (if applicable) recovery and precision: **R**8 (a) The amount of analyte measured in the duplicate (b) The calculated RPD (c) The laboratory's QC limits for analytical duplicates List of method quantitation limits (MOLs) for each analyte for each method and matrix ⋉ R9 \square R10 Other problems or anomalies The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed) Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data. Check, if applicable: () This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Timothy E. Arnold

Name (printed)

07/15/2022

Date

Chemist Principle

Official Title

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh PBAP

Reviewer Name: Timothy E. Arnold

LRC Date: 07/15/2022

Laboratory Job Number: 222061

Prep Batch Number(s): QC2207113

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
R1	0, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
"	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	Yes	
R5	0, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	0, I	Laboratory control samples (LCS):		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data	11	
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	Analytical duplicate data		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	10
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	0, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	P.
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	0, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh PBAP

Reviewer Name: Timothy E. Arnold

LRC Date: 07/15/2022

Laboratory Job Number: 222061

Prep Batch Number(s): QC2207113

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S1	0, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
v	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S 2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
•	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
\$ 3	0	Mass spectral tuning:		
	1	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S 5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S6	0	Dual column confirmation		
	1	Did dual column confirmation results meet the method-required QC?	NA	
S7	0	Tentatively identified compounds (TICs):		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	Interference Check Sample (ICS) results:		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:	<u> </u>	
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	О, І	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh PBAP

Reviewer Name: Timothy E. Arnold

LRC Date: 07/15/2022

Laboratory Job Number: 222061

Prep Batch Number(s): QC2207113

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB <mql.< th=""></mql.<>
	<u> </u>

¹ Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

² O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

³ NA - Not applicable; NR - Not reviewed.

⁴ Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of: х This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports. X Rı Field chain-of-custody documentation X R_2 Sample identification cross-reference Test reports (analytical data sheets) for each environmental sample that includes: х R₃ (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 **NELAC Standard** (b) Dilution factors (c) Preparation methods (d) Cleanup methods (e) If required for the project, tentatively identified compounds (TICs) NA Surrogate recovery data including: **R4** (a) Calculated recovery (%R) (b) The laboratory's surrogate QC limits х Test reports/summary forms for blank samples **R**5 х R6 Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts (b) Calculated %R for each analyte (c) The laboratory's LCS QC limits x Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: **R**7 (a) Samples associated with the MS/MSD clearly identified (b) MS/MSD spiking amounts (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples (d) Calculated %Rs and relative percent differences (RPDs) (e) The laboratory's MS/MSD OC limits Laboratory analytical duplicate (if applicable) recovery and precision: X R8 (a) The amount of analyte measured in the duplicate (b) The calculated RPD (c) The laboratory's QC limits for analytical duplicates × List of method quantitation limits (MQLs) for each analyte for each method and matrix R9 Other problems or anomalies $|\mathbf{x}|$ **R10** × The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed) Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data. Check, if applicable: () This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true. Chemist Michael Ohlinger

Official Title

Name (printed)

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 8/2/2022

Laboratory Job Number: 222061

Prep Batch Number(s): QC2207068

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
R1	O, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	NA	
R2	0, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	0, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	Laboratory control samples (LCS):		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	ļ
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	Analytical duplicate data		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9_	O, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

TDS Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 4/5/22

Laboratory Job Number: 222061

Prep Batch Number(s): QC2207068

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S1	0, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
-	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
52	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	NA	:
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S 5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

TDS Laboratory Review Checklist

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S6	0	Dual column confirmation		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	0	Tentatively identified compounds (TICs):		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	Interference Check Sample (ICS) results:		
	I	Were percent recoveries within method QC limits?	NA	
S 9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
\$11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
\$13	O, I	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S 15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

TDS Laboratory Review Checklist

Table 3. Exception Reports.

Laboratory Name:	American Electric Power Dolan Chemical Laboratory
Project Name: <u>We</u>	lsh BASP
Reviewer Name:	1ichael Ohlinger
LRC Date: 8/2/202	
Laboratory Job Nu	000004
Prep Batch Numbe	

Exception Report No.	Description

¹ Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

² O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

³ NA - Not applicable; NR - Not reviewed.

⁴ Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."



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

Reissued

Job ID: 222087 Customer: Welsh Power Station Date Reported: 12/30/2022

Customer Sample ID: AD-3 Customer Description: TG-32

Lab Number: 222087-001 Preparation:

Date Collected: 06/28/2022 11:55 EDT Date Received: 07/01/2022 10:30 EDT

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	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Arsenic	0.53 μg/L	1	0.10	0.03	GES	07/22/2022 11:29	EPA 200.8-1994, Rev. 5.4
Barium	33.9 μg/L	1	0.20	0.05	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Beryllium	0. 1 77 μg/L	1	0.050	0.007	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Boron	0.016 mg/L	1	0.050	0.009 J1	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Cadmium	0.036 µg/L	1	0.020	0.004	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Calcium	0.68 mg/L	1	0.05	0.02	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Chromium	0.51 μg/L	1	0.20	0.04	GES	07/22/2022 11:29	EPA 200.8-1994, Rev. 5.4
Cobalt	1.14 µg/L	1	0.020	0.003	GES	07/22/2022 11:29	EPA 200.8-1994, Rev. 5.4
Lead	0. 1 7 μg/L	1	0.20	0.05 J1	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Lithium	0.0113 mg/L	1	0.00020	0.00005	GES	07/22/2022 11:29	EPA 200.8-1994, Rev. 5.4
Mercury	<200 ng/L	100	500	200 U1	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4
Selenium	0.21 μg/L	1	0.50	0.09 J1	GES	07/22/2022 11:29	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	07/14/2022 17:57	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result Units	UNC*(+/-)	MDA* Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	0.72 pCi/L	0.22	0.37	ST	07/07/2022 14:01	SW-846 9315-1986, Rev. 0
Carrier Recovery	97.1 %					
Radium-228	0.09 pCi/L	0.13	0.43	TTP	07/20/2022 15:35	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	92.0 %					

^{*} The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.



Reissued

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

Job ID: 222087 Customer: Welsh Power Station Date Reported: 12/30/2022

Customer Sample ID: AD-4c Customer Description: TG-32

Lab Number: 222087-002 Preparation:

Date Collected: 06/28/2022 11:21 EDT Date Received: 07/01/2022 10:30 EDT

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	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Arsenic	0.44 µg/L	1	0.10	0.03	GES	07/22/2022 11:44	EPA 200.8-1994, Rev. 5.4
Barium	52.9 μg/L	1	0.20	0.05	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Beryllium	0.125 μg/L	1	0.050	0.007	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Boron	0.043 mg/L	1	0.050	0.009 J1	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Cadmium	0.080 µg/L	1	0.020	0.004	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Calcium	1.08 mg/L	1	0.05	0.02	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Chromium	0.82 µg/L	1	0.20	0.04	GES	07/22/2022 11:44	EPA 200.8-1994, Rev. 5.4
Cobalt	0.556 μg/L	1	0.020	0.003	GES	07/22/2022 11:44	EPA 200.8-1994, Rev. 5.4
Lead	0.16 µg/L	1	0.20	0.05 J1	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Lithium	0.00506 mg/L	1	0.00020	0.00005	GES	07/22/2022 11:44	EPA 200.8-1994, Rev. 5.4
Mercury	<200 ng/L	100	500	200 U1	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4
Selenium	0.39 µg/L	1	0.50	0.09 J1	GES	07/22/2022 11:44	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	07/14/2022 18:02	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result Units	UNC*(+/-)	MDA* Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.30 pCi/L	0.28	0.39	ST	07/07/2022 14:01	SW-846 9315-1986, Rev. 0
Carrier Recovery	103 %					
Radium-228	0.32 pCi/L	0.13	0.41	TTP	07/20/2022 15:35	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	85.8 %					

^{*} The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.



Reissued

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

Job ID: 222087 Customer: Welsh Power Station Date Reported: 12/30/2022

Customer Sample ID: AD-16R Customer Description: TG-32

Lab Number: 222087-003 Preparation:

Date Collected: 06/27/2022 13:45 EDT Date Received: 07/01/2022 10:30 EDT

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	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Arsenic	0.47 μg/L	1	0.10	0.03	GES	07/22/2022 11:50	EPA 200.8-1994, Rev. 5.4
Barium	42.4 μg/L	1	0.20	0.05	GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Beryllium	0.911 μg/L	1	0.050	0.007	GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Boron	0.026 mg/L	1	0.050	0.009 J1	GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Cadmium	0.723 μg/L	1	0.020	0.004	GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Calcium	0.34 mg/L	1	0.05	0.02	GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Chromium	0.74 μg/L	1	0.20	0.04	GES	07/22/2022 11:50	EPA 200.8-1994, Rev. 5.4
Cobalt	29.4 μg/L	1	0.020	0.003	GES	07/22/2022 11:50	EPA 200.8-1994, Rev. 5.4
Lead	0. 1 7 μg/L	1	0.20	0.05 J1	GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Lithium	0.0187 mg/L	1	0.00020	0.00005	GES	07/22/2022 11:50	EPA 200.8-1994, Rev. 5.4
Mercury	33 ng/L	1	5	2	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4
Selenium	0.83 µg/L	1	0.50	0.09	GES	07/22/2022 11:50	EPA 200.8-1994, Rev. 5.4
Thallium	0.50 µg/L	1	0.20	0.04	GES	07/14/2022 18:07	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result Units	UNC*(+/-)	MDA* Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	12.50 pCi/L	0.92	0.44	ST	07/07/2022 14:01	SW-846 9315-1986, Rev. 0
Carrier Recovery	94.2 %					
Radium-228	2.27 pCi/L	0.19	0.45	TTP	07/20/2022 15:35	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	91.9 %					

^{*} The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.



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

Reissued

Job ID: 222087 Customer: Welsh Power Station Date Reported: 12/30/2022

Customer Sample ID: DUPLICATE - BASP Customer Description: TG-32

Lab Number: 222087-004 Preparation:

Date Collected: 06/28/2022 15:00 EDT Date Received: 07/01/2022 10:30 EDT

Metals

Motals							
Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02 µg/L	1	0.10	0.02 U1	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Arsenic	0.42 μg/L	1	0.10	0.03	GES	07/22/2022 11:55	EPA 200.8-1994, Rev. 5.4
Barium	53.5 μg/L	1	0.20	0.05	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Beryllium	0. 12 7 μg/L	1	0.050	0.007	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Boron	0.041 mg/L	1	0.050	0.009 J1	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Cadmium	0.082 μg/L	1	0.020	0.004	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Calcium	1.06 mg/L	1	0.05	0.02	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Chromium	0.75 μg/L	1	0.20	0.04	GES	07/22/2022 11:55	EPA 200.8-1994, Rev. 5.4
Cobalt	0.552 μg/L	1	0.020	0.003	GES	07/22/2022 11:55	EPA 200.8-1994, Rev. 5.4
Lead	0.14 µg/L	1	0.20	0.05 J1	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Lithium	0.00494 mg/L	1	0.00020	0.00005	GES	07/22/2022 11:55	EPA 200.8-1994, Rev. 5.4
Mercury	65 ng/L	1	5	2	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4
Selenium	0.41 µg/L	1	0.50	0.09 J1	GES	07/22/2022 11:55	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	07/14/2022 18:12	EPA 200.8-1994, Rev. 5.4



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

Reissued

Job ID: 222087 Customer: Welsh Power Station Date Reported: 12/30/2022

Customer Sample ID: EQUIPMENT BLANK - BASP Customer Description: TG-32

Lab Number: 222087-005 Preparation:

Date Collected: 06/27/2022 13:25 EDT Date Received: 07/01/2022 10:30 EDT

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	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03 µg/L	1	0.10	0.03 U1	GES	07/22/2022 12:00	EPA 200.8-1994, Rev. 5.4
Barium	0.06 µg/L	1	0.20	0.05 J1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007 µg/L	1	0.050	0.007 U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Boron	0.024 mg/L	1	0.050	0.009 J1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004 µg/L	1	0.020	0.004 U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02 mg/L	1	0.05	0.02 U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Chromium	0.90 µg/L	1	0.20	0.04	GES	07/22/2022 12:00	EPA 200.8-1994, Rev. 5.4
Cobalt	0.011 µg/L	1	0.020	0.003 J1	GES	07/22/2022 12:00	EPA 200.8-1994, Rev. 5.4
Lead	<0.05 µg/L	1	0.20	0.05 U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Lithium	<0.00005 mg/L	1	0.00020	0.00005 U1	GES	07/22/2022 12:00	EPA 200.8-1994, Rev. 5.4
Mercury	<2 ng/L	1	5	2 U1	JAB	07/19/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09 µg/L	1	0.50	0.09 U1	GES	07/22/2022 12:00	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	07/14/2022 18:17	EPA 200.8-1994, Rev. 5.4

222087 Job Comments:

Original report issued 8/3/2022. Report reissued with amended matrix spike precision calculations.



Reissued

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

Job ID: 222087 Customer: Welsh Power Station Date Reported: 12/30/2022

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

Muhael S. Ollinger

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 Qualifer Legend

U1 - Not detected at or above method detection limit (MDL).

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

Chain of Custody Record

Dolan Chemical Laboratory (DCL)

4001 Bixby Road

Sample Specific Notes: For Lab Use Only: 18522 FG-32 needed COC/Order #: mL bottle, then pH<2, HNO, dissolved Fe and Mn 250 mL Glass bottle, HCL**, ßН N × × × Date: Three (six every 10th*)
1 L bottles, pH<2, HNO₃ Ra-226, Ra-228 ¥ Program: Coal Combustion Residuals (CCR) 1 L bottle, Cool, 0-6°C TDS, F, CI, SQ, B, Ca, Li, Sp, As, Ba, Be, Ca, Cr, Co, Pb, Mo, Se, TL bottle, 250 mL pH<2, HNO × 4 × × 250 mL bottle, pH<2, HNO₃ B), Ca 4 Site Contact: Sampler(s) Initials ; F= filter in field Conf. Analysis Turnaround Time (in Calendar Days) Routine (28 days) N N Matrix GW GW Š δ¥ ₹ Sample
Type
(C=Comp,
G=Grab) ø Ø O O O Preservation Used: 1= Ice, 2= HCI; 3= H2SO4; 4=HN03; 5=NaOH; 6= Other Sample Time 1245 1225 1055 1400 1021 Six 1L Bottles must be collected for Radium for every 10th sample. 6/28/2022 6/27/2022 6/27/2022 6/28/2022 Sample Date 6/28/2022 Michael Ohlinger (614-836-4184) Sampler(s): Matt Hamilton Kenny McDonald **EQUIPMENT BLANK - BASP** Groveport, Ohio 43125 Sample Identification **DUPLICATE - BASP** Jill Parker-Witt Contact Phone: (318) 673-3816 AD-16R AD-4c AD-3 Project Name: Welsh BASP Contact Name:

Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) Sampling - Shreveport, Rev. 1, 1/10/11

(0,329PM

Date/Time: 122

Received in Laboratory by

Date/Time:

Company

Relinquished by:

Relinquished by:

Relinquished by

600 Received by:

Received by:

Company

Company

Special Instructions/QC Requirements & Comments

Date/Time:

Date/Time:

WATER & WASTE SAMPLE RECEIPT FORM (IR#1)

. Package Type	Delivery Type
Coolar Box Bag Envelope	PONY UPS (edE) USPS
Cools Bay Eliverspe	
\bigcup	Other
Plant/Customer No.15h	Number of Plastic Containers:
Opened By MSO	Number of Glass Containers: 5
Date/Time 7/1/22 10:30Av	Number of Mercury Containers:
`.	or N/A Initial:on ice \(\text{no ice} \)
,	- If No, specify each deviation:
Was container in good condition? (Y) / N	Comments
	Comments
1 ·	If RUSH, who was notified?
pH (15 min) Cr ⁺⁶ (pres) NO ₂ or (24 hr)	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 pH Cat 1. lot HC904495	.09535.0001 [OR] Lab rat pH Cat # LRS -4801 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# 222087 Initial 8	& Date & Time :
	nents:
Reviewed by MUC	

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.

AEP- Dolan Chemical Laboratory

Sample Receipt Form SOP-7102

Page I of I

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

	F		•			
X	(which	This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.				
Х	R1	Field chain-of	-custody documentation			
Х	R2	Sample identi	tification cross-reference			
x	R3	(a) Items spender(b) Dilution for the control of the control of	cified in NELAC Chapter g tandard actors on methods nethods	each environmental sample 5 for reporting results, e.g., ly identified compounds (T	Section 5.5.10 in 2003	
NA	R4	(a) Calculate	overy data including: d recovery (%R) atory's surrogate QC limit:	S		
X	R5	Test reports/s	ummary forms for blank s	amples		
X	R6	(a) LCS spiki(b) Calculate		ory control samples (LCSs)	including:	
X	R7	(a) Samples a(b) MS/MSD(c) Concentra(d) Calculate	associated with the MS/MS spiking amounts	alyte measured in the parer t differences (RPDs)	_	
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) The amount of analyte measured in the duplicate (b) The calculated RPD (c) The laboratory's QC limits for analytical duplicates 		on:		
Х	R9	List of method	l quantitation limits (MQL	s) for each analyte for each	method and matrix	
Х	R10	Other problen	ns or anomalies			
Х	The Ex	ception Report	t for every item for which t	he result is "No" or "NR" (1	Not Reviewed)	
packag require reports by the laborat	e as be ements of s. By my laborat cory in t	en reviewed by of the methods y signature bel ory as having t	the laboratory and is comused, except where noted low, I affirm to the best of he potential to affect the qReview Checklist, and no	of this laboratory data pac- plete and technically comp by the laboratory in the att my knowledge, all problem uality of the data, have bee nformation or data have be	liant with the cached exception s/anomalies, observed n identified by the	
respon used is	ding to	rule. The offici sible for releas	al signing the cover page o	use laboratory controlled by of the rule-required report i is by signature affirming th	n which these data are	
Jonat	than B	arnhill	Zonathan Boundil	Lab Supervisor	8-2-2022	
Name	(printed	l)	Signature	Official Title	Date	

Table 1. Reportable Data.

Laboratory Name:	American Electric Power Dolan Chemical Laboratory
Project Name:	
Reviewer Name: J	onathan Barnhill
LRC Date: 8-2-202	2
Laboratory Job Nu	mber: 222087
Drop Ratch Number	PB22070706 PB22070706 QC2207151 QC2207182

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
R1	O, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	No	ER1
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	Laboratory control samples (LCS):		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	Analytical duplicate data		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Project Name:
Reviewer Name: Jonathan Barnhill
LRC Date: 8-2-2022
Laboratory Job Number: 222087

Prep Batch Number(s): PB22070706 PB22070706 QC2207151 QC2207182

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S1	O, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER2
S3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	Yes	
	I	Were ion abundance data within the method-required QC limits?	Yes	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	Yes	
S5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S6	0	Dual column confirmation		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	0	Tentatively identified compounds (TICs):		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	Interference Check Sample (ICS) results:		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name:	American Electric Power Dolan Chemical Laboratory
Project Name:	
Reviewer Name: J	onathan Barnhill
LRC Date: 8-2-202	2
Laboratory Job Nu	
	r(s): PB22070706 PB22070706 QC2207151 QC2207182

Exception Report No.	Description
ER1	Linear Dynamic Range (LDR) study used to determine upper limit of analyte calibration.
ER2	CCB acceptance criteria is CCB<2.2*MDL.

¹ Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

² O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

³ NA - Not applicable; NR - Not reviewed.

⁴ Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This da	ıta pack	ge consists of:
×	(which	nature page, and the laboratory review checklist consisting of Table 1, Reportable Data includes the reportable data identified on this page), Table 2, Supporting Data, and Exception Reports.
х	R1	Field chain-of-custody documentation
x	R2	Sample identification cross-reference
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard (b) Dilution factors (c) Preparation methods (d) Cleanup methods (e) If required for the project, tentatively identified compounds (TICs)
NA	R4	Surrogate recovery data including: (a) Calculated recovery (%R) (b) The laboratory's surrogate QC limits
x	R ₅	Test reports/summary forms for blank samples
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts (b) Calculated %R for each analyte (c) The laboratory's LCS QC limits
×	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) Samples associated with the MS/MSD clearly identified (b) MS/MSD spiking amounts (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples (d) Calculated %Rs and relative percent differences (RPDs) (e) The laboratory's MS/MSD QC limits
×	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) The amount of analyte measured in the duplicate (b) The calculated RPD (c) The laboratory's QC limits for analytical duplicates
x	R9	List of method quantitation limits (MQLs) for each analyte for each method and matrix
X	R10	Other problems or anomalies
X	The Ex	ception Report for every item for which the result is "No" or "NR" (Not Reviewed)
packag require reports by the labora that we	ge as be ements s. By m laborat tory in t ould aff	ement: I am responsible for the release of this laboratory data package. This data on reviewed by the laboratory and is complete and technically compliant with the of the methods used, except where noted by the laboratory in the attached exception is signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by as having the potential to affect the quality of the data, have been identified by the ne Laboratory Review Checklist, and no information or data have been knowingly withheld oct the quality of the data. licable: This laboratory is an in-house laboratory controlled by the person
respon used is statem	ding to respon ent <u>is</u> t	rule. The official signing the cover page of the rule-required report in which these data are sible for releasing this data package and is by signature affirming the above release see.
Sani	n Ju	2 Signature Official Title Date
Name	(printed) Signature Official Title Date

Table 1. Reportable Data.

Laboratory Name:	American Electric Power Dolan Chemical Laboratory
	Wolsh Power
Reviewer Name:	Susann Julquann
LRC Date:	7-21-22
Laboratory Job Num	ber: 727087
Prep Batch Number(100 0207007

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
R1	O, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?	yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Ves	
	I	Were calculations checked by a peer or supervisor?	Ýes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	yes	
R6	O, I	Laboratory control samples (LCS):		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?		
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	ves.	
R8	0, I	Analytical duplicate data	,	
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	yes	
R9	O, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name:	American Electric Power Dolan Chemical Laboratory
Project Name:	Welsh Hower
Reviewer Name: _	Susann Sul7mann
LRC Date:	7-21-22
Laboratory Job Nu	mber: <u>222087</u>
Prep Batch Number	$OA \sim \sim$

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
S1	O, I	Initial calibration (ICAL)		
-	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S 2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
\$ 6	0	Dual column confirmation		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	0	Tentatively identified compounds (TICs):		
•	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	Interference Check Sample (ICS) results:		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S 10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S 16	O, I	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	1 × 2 × 1 × 40 × 0 × 0



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

Reissued

Job ID: 222846 Customer: Welsh Power Station Date Reported: 12/30/2022

Customer Sample ID: AD-4c Customer Description: TG-32

Lab Number: 222846-001 Preparation:

Date Collected: 08/26/2022 11:10 EDT Date Received: 09/01/2022 10:30 EDT

Ion Chromatography

Parameter	Result Units Dilu	ution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Sulfate	160 mg/L	5	1.0	0.2	CRJ	09/01/2022 16:54	EPA 300.1 -1997, Rev. 1.0

222846

Job Comments:

Original report issued 9/7/2022. Report reissued with amended matrix spike precision calculations.

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

Muhael S. Ollinger

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.

Chain of Custody Record

Dolan Chemical Laboratory (DCL)

4001 Bixby Road					5				3					
Groveport, Ohio 43125				Pr	ogram:	Coal	Combusti	Program: Coal Combustion Residuals (CCR)	rals (CC		0.0			
Contacts: Michael Ohlinger (614-836-4184)						Site Contact:	act:			Date:		3	For Lab Use Only: COC/Order #:	THE SHEET
Project Name: Welsh BASP	Analysis	Tuescal	Anaksis Tirnaround Time (in Calendar Days)	alendar	Javal		250 mL bottle,	500 mL bottle,	S00 mL	Three (six every	нсг.,	filter 500 mL bottle,		
Contact Name: Jill Parker-Witt		Routin	Routine (28 days)				pH<2,	pH<2,	Cool	1 L bottles	10 lal 34T4	PH 4	227846	of China
Condect Priorie: (318) 975-3010							S. C.	S 4	200	prost, mag	d A	Ž u	200	_
Sampler(s): Matt Hamilton						alaiji		s A s, Bs 30, Pb,		82Z-8		M bns e		
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) In	B), Ca	B, Ca, LI, Sb Mo, Se, TL	Sulfate	Ra-226, R.	вн	3 bevlossib	Sample Specific Notes:	
AD-4C	8/26/2022	1010	g		-				×			1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	TG-32 needed	, ,
														_
			_ ,											_
												, J		_
						1								_
								- 58						_
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						\dagger	\dagger							_
			1											
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	HNO3; 5=Na	OH; 6= Ot	her		; F= filter in f	field	4	4	1	4				_
* Six 1L Bottles must be collected for Radium for every 10th sample.	every 10th	sample.												_

Relinquished by:

Company:

Date Time:

Date/Time:

Received by:

Date/Time:
\$\2\/2\/2\\
Date/Time:

Company

Relinquished by

Relinquished by:

Special instructions/QC Requirements & Comments:

Received by:

Date/Time:

WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

Package Type	Delivery Type
Cooler Box Bag Envelope	PONY UPS FECTEX USPS
	Other
Plant/Customer Welsh	Number of Plastic Containers:
Opened By MGK	Number of Glass Containers:
Date/Time 9/1/22 10:30 Am	Number of Mercury Containers:
Were all temperatures within 0-6°C/N/N	or N/A Initial: MCW on ice / no
ice (IR Gun Ser# 221368900, Expir. 3/22/20	024) - If No, specify each deviation:
Was container in good condition? (N	Comments
Was Chain of Custody received? 🕥/ N	Comments
Requested turnaround:	If RUSH, who was notified?
pH (15 min) Cr^{+6} (pres) NO_2 or N (24 hr)	O ₃ (48 hr) ortho-PO ₄ (48 hr) Hg-diss (pres) (48 hr)
Was COC filled out properly?	Comments
Were samples labeled properly? N	Comments
	Comments
Was pH checked & Color Coding done?	N or N/A Initial & Date: MGK 1/1/22
pH paper (circle one): MQuant PN1.09535.0001,E0	T# HC904495 [OR] Lab Rat,PN4801,LOT# X000RWDG21
Was Add'l Preservative needed? Y Milf Ye	es: By whom & when: (See Prep Book)
Is sample filtration requested? Y / 🐿	Comments (See Prep Book
Was the customer contacted? If Yes:	Person Contacted:
Lab ID# 222846 Initial & I	Date & Time :
Lab ID# 222846 Initial & I Logged by Commer Reviewed by	nts:
Reviewed by M/GL	

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.

Municipal Solid Waste Laboratory Review Checklist

This da	ıta pack	age c	onsists of:		
×	(which	inclu	re page, and the laboratory review che des the reportable data identified on the eption Reports.		
×	R1	Field	chain-of-custody documentation		
x	R2	Samj	ple identification cross-reference		
x	R3	(a) [(b) [(c) [(d) (reports (analytical data sheets) for eac Items specified in NELAC Chapter 5 fo NELAC Standard Dilution factors Preparation methods Cleanup methods If required for the project, tentatively i	r reporting results, e.g., Sect	ion 5.5.10 in 2003
X	R4	(a)	ogate recovery data including: Calculated recovery (%R) The laboratory's surrogate QC limits		
x	R ₅	Test	reports/summary forms for blank sam	ples	
x	R6	(a) (b)	reports/summary forms for laboratory LCS spiking amounts Calculated %R for each analyte The laboratory's LCS QC limits	control samples (LCSs) incl	uding:
×	R7	(a) (b) (c) (d)	reports for project matrix spike/matrix Samples associated with the MS/MSD MS/MSD spiking amounts Concentration of each MS/MSD analy Calculated %Rs and relative percent di The laboratory's MS/MSD QC limits	clearly identified te measured in the parent an	•
x	R8	(a) (b) '	oratory analytical duplicate (if applicab The amount of analyte measured in the The calculated RPD The laboratory's QC limits for analytica	e duplicate	
x.	R9	List	of method quantitation limits (MQLs)	for each analyte for each me	thod and matrix
x	R10	Othe	er problems or anomalies		
x	The Ex	cepti	on Report for every item for which the	result is "No" or "NR" (Not I	Reviewed)
packag require reports by the laborat	e as be ements s. By m laborat tory in t	en revolution of the y sign tory at the La	nt: I am responsible for the release of viewed by the laboratory and is complete methods used, except where noted by nature below, I affirm to the best of mys having the potential to affect the qualiboratory Review Checklist, and no information of the data.	ete and technically compliant the laboratory in the attache knowledge, all problems/ar lity of the data, have been ide	t with the ed exception nomalies, observed entified by the
respon used is statem	ding to responent is to	rule. sible rue.	ble: This laboratory is an in-house The official signing the cover page of the for releasing this data package and is b	he rule-required report in whoy signature affirming the ab	nich these data are ove release
	thy E		Own Ju	Chemist Prin.	09/06/2022
Name	(printed	1)	Signature	Official Title	Date

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Timothy E Arnold

LRC Date: 09/06/2022

Laboratory Job Number: 222846

Prep Batch Number(s): QC2209015

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
R1	0, I	Chain-of-custody (COC)		
 -	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	0, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	Yes	
R5	0, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	0, I	Laboratory control samples (LCS):		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	Analytical duplicate data		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Timothy E Arnold

LRC Date: 09/06/2022

Laboratory Job Number: 222846

Prep Batch Number(s): QC2209015

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S1	O, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S 2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S6	0	Dual column confirmation		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	0	Tentatively identified compounds (TICs):		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	Interference Check Sample (ICS) results:		
-	I	Were percent recoveries within method QC limits?	NA	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
l	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14 _	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

APPENDIX 6

2H 2022 analytical reports.



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

Reissued

Job ID: 223481 Customer: Welsh Power Station Date Reported: 12/30/2022

Customer Sample ID: AD-1 Customer Description: TG-32

Lab Number: 223481-001 Preparation:

Date Collected: 11/01/2022 11:58 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	2.70 mg/L	2	0.04	0.02	CRJ	11/15/2022 20:47	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.14 mg/L	2	0.06	0.02	CRJ	11/15/2022 20:47	EPA 300.1 -1997, Rev. 1.0
Sulfate	61.3 mg/L	2	0.40	0.06	CRJ	11/15/2022 20:47	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method	
TDS, Filterable Residue	170 mg/L	1	50	20	SDW	11/04/2022 12:35	SM 2540C-2015	

Customer Sample ID: AD-5 Customer Description: TG-32

Lab Number: 223481-002 Preparation:

Date Collected: 11/01/2022 09:56 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	16.9 mg/L	2	0.04	0.02	CRJ	11/16/2022 01:43	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.16 mg/L	2	0.06	0.02	CRJ	11/16/2022 01:43	EPA 300.1 -1997, Rev. 1.0
Sulfate	185 mg/L	10	2.0	0.3	CRJ	11/15/2022 21:53	EPA 300.1 -1997, Rev. 1.0
14/1-Ob							
Wet Chemistry							

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	380 mg/L	1	50	20	SDW	11/04/2022 12:35	SM 2540C-2015

Customer Sample ID: AD-17 Customer Description: TG-32

Lab Number: 223481-003 Preparation:

Date Collected: 11/01/2022 13:25 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	40.3 mg/L	5	0.10	0.05	CRJ	11/16/2022 02:16	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.09 mg/L	5	0.15	0.05 J1	CRJ	11/16/2022 02:16	EPA 300.1 -1997, Rev. 1.0
Sulfate	1110 mg/L	50	10	2	CRJ	11/15/2022 22:26	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Wot Onormony							
Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
TDS. Filterable Residue	1690 mg/L	1	50	20	SDW	11/04/2022 12:40	SM 2540C-2015



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

Reissued

Job ID: 223481 Customer: Welsh Power Station Date Reported: 12/30/2022

Customer Sample ID: DUPLICATE - BAP

Customer Description: TG-32

Lab Number: 223481-004 Preparation:

Date Collected: 11/01/2022 15:00 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	2.91 mg/L	2	0.04	0.02	CRJ	11/15/2022 12:33	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.14 mg/L	2	0.06	0.02	CRJ	11/15/2022 12:33	EPA 300.1 -1997, Rev. 1.0
Sulfate	60.7 mg/L	2	0.40	0.06	CRJ	11/15/2022 12:33	EPA 300.1 -1997, Rev. 1.0
Wet Chemistry							
Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	170 mg/L	1	50	20	SDW	11/04/2022 12:40	SM 2540C-2015

223481

Job Comments:

Original report issued 11/18/2022. Report reissued with amended matrix spike precision calculations.

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.



Job ID: 223481

Water Analysis Report

Reissued

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

Customer: Welsh Power Station Date Reported: 12/30/2022

Data Qualifer Legend

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

Chain of Custody Record

Dolan Chemical Laboratory (DCL)

				,				1					
4001 Bixby Road				Č		•	1		(0,0)				
Groveport, Unio 43125				200	Tam: C	oal com	nonsna	Program: Coal Combustion Residuals (CCK)	(LCL)			For Jah Jee Only	9
Contacts: Michael Ohlinger (614-836-4184)					n	Site Contact:						COC/Order #:	
Project Name: Welsh Background Contact Name: Jill Parker-Witt	Analysis	Analysis Turnaround Time (in Catendar Days) Routine (26 days)	around Time (in Ca Routine (26 days)	lendar Da	178)	25C boy PH PH	250 mL the pottle, the pH<2, the HNO.	Field-filter 500 mL. bottle, then pH<2,	1 L bottle, Cool,	Three (six every 10th*)	10 mL Glass visi or 125 mL PTFE ined bottle, fCL**, pH<2	223481	
Sampler(s): Matt Hamilton Kenny McDonald	, ,						<u> </u>		1	82Z-¥	 		
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sampler(s) inl	Be, Cd, Cr, C Mo, Se, TL	F bevlossib	, F, CI,	Ra-226, Ra	вн	Sample Specific Notes:	·
AD-1	11/1/2022	1058		ωS	-			5	×			TG-32 needed	
AD-5	11/1/2022	856	9	GW	-				×				
AD-17	11/1/2022	1225	9	GW	-				×				\neg
DUPLICATE - BACKGROUND	11/1/2022	1400	9	ΟW	-				×				Т
													Т
													\neg
													1
Preservation Used: 1= ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other	HNO3; 5=Na	OH; 6= Ot	her	; F= filter	ilter in field		4	F4	-	4			
* Six 1L Bottles must be collected for Radium for every 10th sample.	ır every 10th	sample.											

Special Instructions/QC Requirements & Comments:

Date/Time:	Date/Time:	Date(1)/3/22 10, 30/fm
Received by:	Received by:	Regerved in Aborajory by.
Date/Time: 16- Received by:	Date/Time	Date/Time
Company	Company:	Company
Relinquished by The Am Chan	Relinquished by:	Relinquished by:

Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) Sampling - Shreveport, Rev. 1, 1/10/17

WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

. Package Type	Delivery Type					
Copier Box Bag Envelope	PONY UPS FedEX USPS					
	Other					
Plant/Customer WELSH BASP	Number of Plastic Containers:					
Opened By Mi ChaeL	Number of Glass Containers:					
	Number of Mercury Containers:					
Were all temperatures within 0-6°C? 6/N	or N/A Initial: Mult on ice / no					
ice (IR Gun Ser# 221368900, Expir. 3/22/						
Was container in good condition? Y/N	Comments					
	Comments					
7	If RUSH, who was notified?					
pH (15 min) Cr ⁺⁶ (pres) NO ₂ or (24 hr)	NO ₃ (48 hr) ortho-PO ₄ (48 hr) Hg-diss (pres) (48 hr)					
Was COC filled out properly?	Comments					
Were samples labeled properly? $(\sqrt[3]{I})$ N	Comments					
Were correct containers used? V/N Comments						
Was pH checked & Color Coding done? (Y) N or N/A Initial & Date: M/J/c 11/03/22						
pH paper (circle one): MQuant,PN1.09535.0001	LOT# HC904495 [OR] Lab Rat, PN4801, LOT# X000RWDG24					
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# 223481 Initial	& Date & Time :					
Logged by MSO	nents:					
Reviewed by A3						

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.

Municipal Solid Waste Laboratory Review Checklist

This data package consists of: X This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports. R₁ Field chain-of-custody documentation ΙXΠ X. R₂ Sample identification cross-reference $|\mathbf{x}|$ **R**3 Test reports (analytical data sheets) for each environmental sample that includes: (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 **NELAC Standard** (b) Dilution factors (c) Preparation methods (d) Cleanup methods (e) If required for the project, tentatively identified compounds (TICs) X Surrogate recovery data including: **R**4 (a) Calculated recovery (%R) (b) The laboratory's surrogate QC limits \square Test reports/summary forms for blank samples **R**5 \mathbf{x} **R6** Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts (b) Calculated %R for each analyte (c) The laboratory's LCS QC limits $|\mathbf{x}|$ **R**7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) Samples associated with the MS/MSD clearly identified (b) MS/MSD spiking amounts (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples (d) Calculated %Rs and relative percent differences (RPDs) (e) The laboratory's MS/MSD QC limits $|\mathbf{x}|$ R8 Laboratory analytical duplicate (if applicable) recovery and precision: (a) The amount of analyte measured in the duplicate (b) The calculated RPD (c) The laboratory's QC limits for analytical duplicates List of method quantitation limits (MQLs) for each analyte for each method and matrix $|\mathbf{x}|$ R9 X R10 Other problems or anomalies X The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed) Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data. **Check, if applicable:** () This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Chemist Prin

Official Title

Timothy E Arnold

Name (printed)

11/17/2022

Date

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Background

Reviewer Name: Timothy E Arnold

LRC Date: 11/17/2022

Laboratory Job Number: 223481

Prep Batch Number(s): QC2211157

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
R1	O, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
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	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	Yes	
R5	O, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
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	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
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	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
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	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10 -	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Background

Reviewer Name: Timothy E Arnold

LRC Date: 11/17/2022

Laboratory Job Number: 223481

Prep Batch Number(s): QC2211157

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	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S 2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	NA	
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S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
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	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
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Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴	
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S7	0	Tentatively identified compounds (TICs):			
-	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA		
S8	I	Interference Check Sample (ICS) results:			
	I	Were percent recoveries within method QC limits?	NA		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions			
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA		
S10	O, I	Method detection limit (MDL) studies			
	I	Was a MDL study performed for each reported analyte?	Yes		
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes		
S11	O, I	Proficiency test reports:			
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes		
S12	O, I	Standards documentation			
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes		
S13	O, I	Compound/analyte identification procedures			
	I	Are the procedures for compound/analyte identification documented?	Yes		
\$14	O, I	Demonstration of analyst competency (DOC)			
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes		
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes		
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		0	
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes		
S16	O, I	Laboratory standard operating procedures (SOPs):		-	
	I	Are laboratory SOPs current and on file for each method performed?	Yes		

Municipal Solid Waste Laboratory Review Checklist

This da	ata pacl	kage consists of:							
x	(which	ignature page, and the laboratory review checklist consisting of Table 1, Repon includes the reportable data identified on this page), Table 2, Supporting Dag, Exception Reports.							
x	R1	Field chain-of-custody documentation							
×	R2	Sample identification cross-reference							
×	R3	 Test reports (analytical data sheets) for each environmental sample that inc. (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 9 NELAC Standard (b) Dilution factors (c) Preparation methods (d) Cleanup methods (e) If required for the project, tentatively identified compounds (TICs) 							
NA	R4	Surrogate recovery data including: (a) Calculated recovery (%R) (b) The laboratory's surrogate QC limits							
х	R5	Test reports/summary forms for blank samples							
×	R6	Test reports/summary forms for laboratory control samples (LCSs) including (a) LCS spiking amounts (b) Calculated %R for each analyte (c) The laboratory's LCS QC limits	ng:						
×	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) in (a) Samples associated with the MS/MSD clearly identified (b) MS/MSD spiking amounts (c) Concentration of each MS/MSD analyte measured in the parent and sp (d) Calculated %Rs and relative percent differences (RPDs) (e) The laboratory's MS/MSD QC limits							
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) The amount of analyte measured in the duplicate (b) The calculated RPD (c) The laboratory's QC limits for analytical duplicates							
x	R9	List of method quantitation limits (MQLs) for each analyte for each method	l and matrix						
x	R10	Other problems or anomalies							
X	The E	xception Report for every item for which the result is "No" or "NR" (Not Revi	ewed)						
packag requir report by the labora	ge as be ements s. By n labora tory in	tement: I am responsible for the release of this laboratory data package. The een reviewed by the laboratory and is complete and technically compliant with sof the methods used, except where noted by the laboratory in the attached except signature below, I affirm to the best of my knowledge, all problems/anomatory as having the potential to affect the quality of the data, have been identified the Laboratory Review Checklist, and no information or data have been knowledge, the quality of the data.	h the keeption alies, observed fied by the						
respon used in staten	nding to s respon nent is t	hlinger // Chemist /1/	these data are						
Name	(printe	ed) Signature Official Title	ate						
Munici	pal Solid	d Waste Laboratory Review Checklist (rev. 08/19/11)	Page 1 of (

Page 1 of 6

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 11/18/22

Laboratory Job Number: 223481

Prep Batch Number(s): QC2211076

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
R1	0, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	NA	
R2	O, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
-	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	NA	
-	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
4	I	Were blank concentrations < MQL?	Yes	
R6	O, I	Laboratory control samples (LCS):		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
·	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	O, I	Analytical duplicate data		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 4/5/22

Laboratory Job Number: 223481

Prep Batch Number(s): QC2211076

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
S1	O, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I	Were ion abundance data within the method-required QC limits?	NA	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
S6	0	Dual column confirmation		
	I	Did dual column confirmation results meet the method-required QC?	. NA	
S7	0	Tentatively identified compounds (TICs):		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	- NA	
S8	I	Interference Check Sample (ICS) results:		
	I_	Were percent recoveries within method QC limits?	NA	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to- date and on file?	Yes	,
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	Laboratory standard operating procedures (SOPs):		
	r	Are laboratory SOPs current and on file for each method performed?	Yes	



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

Job ID: 223510 Customer: Welsh Power Station Date Reported: 12/20/2022

Customer Sample ID: AD-1 Customer Description: TG-32

Lab Number: 223510-001 Preparation:

Date Collected: 11/01/2022 11:58 EDT Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result Unit	Dilution	RL	MDL Data Qualifiers	s Analyst	Analysis Date	Method
Antimony	0.03 µg/L	1	0.10	0.02 J1	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Arsenic	0. 1 9 μg/L	1	0.10	0.03	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Barium	78.9 μg/L	1	0.20	0.05	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Beryllium	0.620 μg/L	1	0.050	0.007	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Boron	0.586 mg/	. 1	0.050	0.009	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Cadmium	0.024 μg/L	1	0.020	0.004	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Calcium	7.87 mg/	. 1	0.05	0.02	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Chromium	0.35 μg/L	1	0.20	0.04	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Cobalt	1.17 µg/L	1	0.020	0.003	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Lead	0. 1 3 μg/L	1	0.20	0.05 J1	GES	12/01/2022 15:24	EPA 200.8-1994, Rev. 5.4
Lithium	0.00818 mg/	. 1	0.00020	0.00005	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Mercury	2 ng/L	1	5	2 J1	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Selenium	5.51 µg/L	1	0.50	0.09	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	11/21/2022 22:32	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result Units	UNC*(+/-)	MDA* Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.06 pCi/L	0.29	0.50 P1	ST	11/15/2022 14:39	SW-846 9315-1986, Rev. 0
Carrier Recovery	87.5 %					
Radium-228	0.95 pCi/L	0.14	0.42	TTP	11/17/2022 15:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	87.7 %					

^{*} The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.



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

Job ID: 223510 Customer: Welsh Power Station Date Reported: 12/20/2022

Customer Sample ID: AD-5 Customer Description: TG-32

Lab Number: 223510-002 Preparation:

Date Collected: 11/01/2022 09:56 EDT Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result Unit	s Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02 µg/l	1	0.10	0.02 U1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Arsenic	2.77 µg/l	1	0.10	0.03	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Barium	63.2 µg/L	1	0.20	0.05	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Beryllium	0.046 µg/L	1	0.050	0.007 J1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Boron	0.041 mg/	. 1	0.050	0.009 J1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004 µg/L	1	0.020	0.004 U1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Calcium	38.6 mg/	. 1	0.05	0.02	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Chromium	0.43 µg/L	1	0.20	0.04	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Cobalt	15.1 µg/l	1	0.020	0.003	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Lead	<0.05 µg/L	1	0.20	0.05 U1	GES	12/01/2022 15:39	EPA 200.8-1994, Rev. 5.4
Lithium	0.174 mg/	. 1	0.00020	0.00005	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Mercury	<2 ng/L	1	5	2 U1	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/l	1	0.5	0.1 U1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09 µg/L	1	0.50	0.09 U1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	11/21/2022 22:37	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result Units	UNC*(+/-)	MDA* Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.90 pCi/L	0.38	0.55	ST	11/15/2022 14:39	SW-846 9315-1986, Rev. 0
Carrier Recovery	93.6 %					
Radium-228	1.98 pCi/L	0.18	0.52	TTP	11/17/2022 15:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	81.7 %					

^{*} The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.



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

Job ID: 223510 Customer: Welsh Power Station Date Reported: 12/20/2022

Customer Sample ID: AD-17 Customer Description: TG-32

Lab Number: 223510-003 Preparation:

Date Collected: 11/01/2022 13:25 EDT Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result Unit	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.02 μg/L	1	0.10	0.02 J1	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Arsenic	0.62 μg/L	1	0.10	0.03	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Barium	12.7 µg/L	1	0.20	0.05	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Beryllium	0.073 μg/L	1	0.050	0.007	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Boron	0.097 mg/	. 1	0.050	0.009	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Cadmium	0.019 μg/L	1	0.020	0.004 J1	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Calcium	165 mg/	. 1	0.05	0.02	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Chromium	0.96 μg/L	1	0.20	0.04	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Cobalt	41.9 µg/L	1	0.020	0.003	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Lead	0.27 μg/L	1	0.20	0.05	GES	12/01/2022 15:44	EPA 200.8-1994, Rev. 5.4
Lithium	0.278 mg/	. 1	0.00020	0.00005	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Mercury	4 ng/L	1	5	2 J1	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09 µg/L	1	0.50	0.09 U1	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	11/21/2022 22:43	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result Units	UNC*(+/-)	MDA* Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	2.42 pCi/L	0.41	0.52	ST	11/15/2022 14:39	SW-846 9315-1986, Rev. 0
Carrier Recovery	97.8 %					
Radium-228	1.39 pCi/L	0.14	0.42	TTP	11/17/2022 15:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	92.4 %					

^{*} The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.



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

Job ID: 223510 Customer: Welsh Power Station Date Reported: 12/20/2022

Customer Sample ID: Dup Background Customer Description: TG-32

Lab Number: 223510-004 Preparation:

Date Collected: 11/01/2022 15:00 EDT Date Received: 11/04/2022 13:30 EDT

Metals

Motals							
Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.03 μg/L	1	0.10	0.02 J1	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Arsenic	0.19 µg/L	1	0.10	0.03	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Barium	77.1 µg/L	1	0.20	0.05	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Beryllium	0.593 μg/L	1	0.050	0.007	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Boron	0.568 mg/L	1	0.050	0.009	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Cadmium	0.026 µg/L	1	0.020	0.004	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Calcium	7.61 mg/L	1	0.05	0.02	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Chromium	0.53 μg/L	1	0.20	0.04	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Cobalt	1.17 µg/L	1	0.020	0.003	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Lead	0.13 µg/L	1	0.20	0.05 J1	GES	12/01/2022 16:41	EPA 200.8-1994, Rev. 5.4
Lithium	0.00781 mg/L	1	0.00020	0.00005	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Mercury	2 ng/L	1	5	2 J1	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Selenium	5.31 μg/L	1	0.50	0.09	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	11/21/2022 22:48	EPA 200.8-1994, Rev. 5.4



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

Job ID: 223510 Customer: Welsh Power Station Date Reported: 12/20/2022

Customer Sample ID: EB- Background Customer Description: TG-32

Lab Number: 223510-005 Preparation:

Date Collected: 11/01/2022 11:37 EDT Date Received: 11/04/2022 13:30 EDT

Metals

Motals							
Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02 µg/L	1	0.10	0.02 U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03 µg/L	1	0.10	0.03 U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Barium	0.06 μg/L	1	0.20	0.05 J1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007 µg/L	1	0.050	0.007 U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Boron	0.010 mg/L	1	0.050	0.009 J1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004 µg/L	1	0.020	0.004 U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02 mg/L	1	0.05	0.02 U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Chromium	0.52 μg/L	1	0.20	0.04	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Cobalt	0.161 μg/L	1	0.020	0.003	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Lead	<0.05 µg/L	1	0.20	0.05 U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Lithium	0.00006 mg/L	1	0.00020	0.00005 J1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Mercury	<2 ng/L	1	5	2 U1	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	0.8 µg/L	1	0.5	0.1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09 µg/L	1	0.50	0.09 U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	11/22/2022 11:09	EPA 200.8-1994, Rev. 5.4



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

Job ID: 223510 Customer: Welsh Power Station Date Reported: 12/20/2022

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

Muhael S. Ollinger

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 Qualifer 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).
- P1 The precision between duplicate results was above acceptance limits.

Chain of Custody Record

Dolan Chemical Laboratory (DCL.)

4001 Bixby Road

Sample Specific Notes: For Lab Use Only: Routine (28 days) TG-32 needed COC/Order #: 250 mL Glass bottle, HCL", 6H N × × × Date: Three (six every 10th*)
1 L' bottles, pH<2, HNO₃ Ra-226, Ra-228 × 4 Program: Coal Combustion Residuals (CCR) Dottle Cool т<mark>р</mark>з, ғ, сі, sо<mark>,</mark> then pH<2, HNO₃ Field-filter 500 mL bottle, 7 oM bas 97 bevlossib Mo, Se, Tl. Sb, As, Be, B, Cd, Cr, Co, Pb, Mo, Se, Tl 250 mL bottle, pH<2 HNO 4 × × Site Contact: Sampler(s) initials F= filter in field Analysis Turnaround Time (in Calendar Days) Routine (28 days) Matrix GW δW 8 ςĶ G₩ Sampte
Type
(C=Comp,
G=Grab) ග Ø O O ပ Preservation Used: 1* Ice, 2* HCI; 3* H2SO4; 4*HNO3; 5*NaOH; 6* Other Sample Six 11. Bottles must be collected for Radium for every 10th sample. 1225 1037 Time 1058 1400 856 11/1/2022 Sample Date 11/1/2022 11/1/2022 11/1/2022 11/1/2022 Michael Ohlinger (614-836-4184) Sampler(s): Matt Hamilton Kenny McDonald **EQUIPMENT BLANK - BACKGROUND DUPLICATE - BACKGROUND** Groveport, Ohio 43125 Sample Identification Project Name: Welsh Background Contact Name: Jill Parker-Witt Contact Phone: (318) 673-3816 AD-5 AD-17 AD-1

Special instructions/QC Requirements & Comments:

 Date/Time	Date/Time:	Date/Time 1 1/4/22 1,300M
Received by:	Received by:	Received in Landardow by:
Date/Time: 160 Received by:		Date/Time
Company:	Company	Сотрапу
Relinquished by My Many	Relinquished by:	Relinquished by:

Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) Sampling - Shreveport, Rev. 1, 1/10/17



7,-

WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

Package Type	Delivery Type
Cooler Box Bag Envelope	PONY UPS FedEX USPS
	Other
Plant/Customer Will	Number of Plastic Containers:
Opened By MGK	Number of Glass Containers:
1	Number of Mercury Containers:
1	or N/A Initial:on ice / no
	024) - If No, specify each deviation: Comments
	Comments
Requested turnaround: Rouline	If RUSH, who was notified?
1	O ₃ (48 hr) ortho-PO ₄ (48 hr) Hg-diss (pres) (48 hr)
Was COC filled out properly? YN	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: 9AB M6K 11 4 22
pH paper (circle one): MQuant,PN1.09535.0001,LC	0T# HC904495 [OR] Lab Rat,PN4801,LOT# X000RWDG21
Was Add'l Preservative needed? Y / N Y	es: 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# 2235 10 Initial & I	Date & Time :
Logged by MST	nts:
Reviewed by	

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.

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

	F	0						
X	(which	Γhis signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Γable 3, Exception Reports.						
X	R1	Field	chain-of-cu	ıstody docum	entation			
Х	R2	Samp	ole identific	ation cross-re	ference			
x	R3	(a) II (b) II (c) II (d) C	tems specif NELAC Star Dilution fact Preparation Cleanup me	ied in NELAC ndard tors methods thods	Chapter 5 for	environmental sareporting results	, e.g., Sectio	includes: on 5.5.10 in 2003
NA	R4	(a) (Calculated r	ery data includ recovery (%R) ory's surrogate				
X	R5	Test r	reports/sun	nmary forms f	or blank samp	oles		
X	R6	(a) I (b) C	LCS spiking Calculated 9		alyte	control samples (LCSs) inclu	ding:
X	R7	(a) S (b) M (c) G (d) G	Samples ass MS/MSD sp Concentrati Calculated 9	sociated with to oiking amount on of each MS	he MS/MSD os s s/MSD analyte ve percent dif	spike duplicates (clearly identified e measured in the ferences (RPDs)	·	-
X	R8	(a) T (b) T	Γhe amount Γhe calculat	t of analyte me	easured in the	_	recision:	
X	R9	List o	of method q	uantitation lin	nits (MQLs) fo	or each analyte for	r each meth	nod and matrix
X	R10	Other	r problems	or anomalies				
X	The Ex	ceptio	on Report fo	or every item f	or which the r	esult is "No" or "I	NR" (Not Re	eviewed)
packag require reports by the laborat	ge as be ements of s. By my laborat tory in t	en revof the sign tory as the Lal	riewed by the methods us lature below Is having the	ne laboratory a sed, except wh v, I affirm to the potential to a eview Checklis	and is complet ere noted by the best of my ffect the quali	ty of the data, hav	compliant y the attached oblems/and ve been ider	with the l exception omalies, observed
respon used is	ding to	rule. T sible f	Γhe official	signing the co	ver page of th	aboratory control e rule-required re signature affirm	port in whi	ch these data are
Jonat	than B	arnhi	ill 🤇	Sonathan	Bounhill	Lab Supervise	or	12/13/2022
Name	(printed	d)	S	ignature		Official Title		Date

Table 1. Reportable Data.

Laboratory Nam	American Electric Power Dolan Chemical Laboratory
Project Name: _	
Reviewer Name:	Jonathan Barnhill
LRC Date: 12/13	3/2022
Laboratory Job	Number: 223510
Pren Ratch Num	her(s): PB22111712 PB22112101 PB22112902 QC2211221 QC2211222 QC2212034

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
R1	O, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?		
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	No	ER1
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	Laboratory control samples (LCS):		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	Analytical duplicate data		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name:	American Electric Power Dolan Chemical Laboratory
Project Name:	
Reviewer Name: Jo	onathan Barnhill
LRC Date: 12/13/20	022
Laboratory Job Nu	
Prep Batch Number	PP00444740 PP00440404 PP00440000 CC0044004 CC0044000 CC0040004

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S1	O, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER2
S3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	Yes	
	I	Were ion abundance data within the method-required QC limits?	Yes	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	Yes	
S5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S6	0	Dual column confirmation		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	0	Tentatively identified compounds (TICs):		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	Interference Check Sample (ICS) results:		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory
Project Name:
Reviewer Name: Jonathan Barnhill
LRC Date: 12/13/2022
Laboratory Job Number: 223510
Prep Batch Number(s): PB22111712 PB22112101 PB22112902 QC2211221 QC2211222 QC2212034

Exception Report No.	Description
ER1	Linear Dynamic Range (LDR) study used to determine upper limit of analyte calibration.
ER2	CCB acceptance criteria is CCB<2.2*MDL.

¹ Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

² O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable). ³ NA - Not applicable; NR - Not reviewed.

⁴ Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."



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

Reissued

Job ID: 223477 Customer: Welsh Power Station Date Reported: 12/30/2022

Customer Sample ID: AD-3 Customer Description: TG-32

Lab Number: 223477-001 Preparation:

Date Collected: 11/01/2022 11:23 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	8.04 mg/L	2	0.04	0.02	CRJ	11/15/2022 18:02	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.14 mg/L	2	0.06	0.02	CRJ	11/15/2022 18:02	EPA 300.1 -1997, Rev. 1.0
Sulfate	13.0 mg/L	2	0.40	0.06	CRJ	11/15/2022 18:02	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result Units I	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method	
TDS, Filterable Residue	110 mg/L	1	50	20	SDW	11/04/2022 12:22	SM 2540C-2015	

Customer Sample ID: AD-4c Customer Description: TG-32

Lab Number: 223477-002 Preparation:

Date Collected: 11/01/2022 10:56 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Analyst	Analysis Date	Method
CRJ	11/15/2022 18:35	EPA 300.1 -1997, Rev. 1.0
CRJ	11/15/2022 18:35	EPA 300.1 -1997, Rev. 1.0
CRJ	11/16/2022 08:20	EPA 300.1 -1997, Rev. 1.0
		, ,

Parameter	Result Units I	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method	
TDS, Filterable Residue	370 mg/L	1	50	20	SDW	11/04/2022 12:22	SM 2540C-2015	

Customer Sample ID: AD-16R Customer Description: TG-32

Lab Number: 223477-003 Preparation:

Date Collected: 11/01/2022 10:19 EDT Date Received: 11/03/2022 10:30 EDT

Ion Chromatography

Parameter	Result Units D	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	7.96 mg/L	2	0.04	0.02	CRJ	11/15/2022 19:41	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.10 mg/L	2	0.06	0.02	CRJ	11/15/2022 19:41	EPA 300.1 -1997, Rev. 1.0
Sulfate	48.1 mg/L	2	0.40	0.06	CRJ	11/15/2022 19:41	EPA 300.1 -1997, Rev. 1.0

Wet Chemistry

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
TDS, Filterable Residue	150 mg/L	1	50	20	SDW	11/04/2022 12:28	SM 2540C-2015



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

Reissued

Job ID: 223477 Customer: Welsh Power Station Date Reported: 12/30/2022

Customer Sample ID: DUPLICATE - BASP Customer Description: TG-32

Lab Number: 223477-004 Preparation:

Date Collected: 11/01/2022 11:45 EDT Date Received: 11/03/2022 10:30 EDT

50

Ion Chromatography

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Chloride	8.01 mg/L	2	0.04	0.02	CRJ	11/15/2022 20:14	EPA 300.1 -1997, Rev. 1.0
Fluoride	0.14 mg/L	2	0.06	0.02	CRJ	11/15/2022 20:14	EPA 300.1 -1997, Rev. 1.0
Sulfate	12.8 mg/L	2	0.40	0.06	CRJ	11/15/2022 20:14	EPA 300.1 -1997, Rev. 1.0
Wat Chamiatry							
Wet Chemistry							
Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method

SDW

11/04/2022 12:28 SM 2540C-2015

20

223477

Job Comments:

TDS, Filterable Residue

Original report issued 11/18/2022. Report reissued with amended matrix spike precision calculations.

120 mg/L

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.

Chain of Custody Record

Dolan Chemical Laboratory (DCL)

Anna District Depart													
Groveport, Ohio 43125				P	gram:	CoalC	Combustic	on Residu	aals (CC	8			
Contacts: Michael Ohlinger (614-836-4184)						Site Cont	act:	Site Contact:	,	Date:	ω.		For Lab Use Only: COC/Order#:
Project Name: Welsh BASP Contact Name: Jill Parker-Witt Contact Phone: (318) 673-3816	Analysis	Tumaround Routin	Analysis Turnaround Time (in Calendar Days) Routine (28 days)	ilendar C	ays)		250 mL bottle, pH<2, HNO.	500 mL bottle, pH<2, HNO.	1 L bottle, Cool,	Thrae (six every 10th*) 1 L bottles, pH<2. HNO.	to mt. class vial or 250 mL PTFE lined bottle, HCL**, pH<2	filter 500 mL bottle, then pH<2,	17122
Sampler(s): Matt Hamilton Kenny McDonald						alaiti -		, As, Ba, ,dq ,o;	'os	-228			A A
Sample Identification	Sample Date	Sample	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	ini (a)helqma2	B, Ca	B, Ca, Ll, Sb, Mo, Se, TL	, F, CI,	Ra-226, Ra	6н	dissolved Fe	Sample Specific Notes:
AD-3	11/1/2022	1023	ဖ	МS	-				×				TG-32 needed
AD-4c	11/1/2022	956	၅	GW	-				×				
AD-16R	11/1/2022	919	၅	GW	-		,		×				
DUPLICATE - BASP	11/1/2022	1045	9	GW	-		-		×				
						-							
													20
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other		OH; 6= Of	her	; F=1	.; F= filter in fi	field	4	4	1	4			
Six 1L Bottles must be collected for Radium for every 10th sample.	every 10th	sample.											

Special Instructions/QC Requirements & Comments:

Relinquished by: And	Company: Esq b	Date/Time: 1600	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Jaborator by	Date Tipe /26 10130AM
Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residual (CCR) Sa	rd for Coal Combustion Residual	(CCR) Sampling - Shi	ampling - Shreveport, Rev. 1, 1/10/17	1 ,

AEP

WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

Package Type	Delivery Type
Cooler Box Bag Envelope	PONY UPS FedEX USPS
	Other
Plant/Customer Welsh BASP	Number of Plastic Containers:
Opened By Mi Chael	Number of Glass Containers:
Date/Time 11/03/22 10:30	Number of Mercury Containers:
Were all temperatures within 0-6°C?	or N/A Initial: /11 6/1 on ice / no
ice (IR Gun Ser# 221368900, Expir. 3/22/20	024) - If No, specify each deviation:
_	Comments
Was Chain of Custody received? (Y/N	Comments
	If RUSH, who was notified?
pH (15 min) Cr ⁺⁶ (pres) NO₂ or N (24 hr)	IO ₃ (48 hr) ortho-PO ₄ (48 hr) Hg-diss (pres) (48 hr)
Was COC filled out properly? (ŷ/N	Comments
Were samples labeled properly? (\mathcal{Y}/N)	Comments
Were correct containers used? 4/N	Comments
Was pH checked & Color Coding done?	N or N/A Initial & Date: M/J/C 18/03/22
pH paper (circle one): MQuant,PN1.09535.0001,LC	OT# HC904495 [OR] Lab Rat, PN4801, LOT# X000RWDG21
Was Add'l Preservative needed? Y / V If Y	es: By whom & when: (See Prep Book)
Is sample filtration requested? Y / (V)	Comments (See Prep Book)
Was the customer contacted? If Yes:	Person Contacted:
Lab ID# 223477 Initial & I	Date & Time :
Logged by MSO Commer	nts:
Reviewed by	я — — — — — — — — — — — — — — — — — — —

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.

Municipal Solid Waste Laboratory Review Checklist

This da	ata pack	age consists of:					
х	(which	gnature page, and the laboratory review checklist consisting of Table 1, Reportable Data includes the reportable data identified on this page), Table 2, Supporting Data, and 3, Exception Reports.					
x	Rı	Field chain-of-custody documentation					
x	R2	Sample identification cross-reference					
X	R3 Test reports (analytical data sheets) for each environmental sample that includes: (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard (b) Dilution factors (c) Preparation methods (d) Cleanup methods (e) If required for the project, tentatively identified compounds (TICs)						
NA	R4	Surrogate recovery data including: (a) Calculated recovery (%R) (b) The laboratory's surrogate QC limits					
х	R5	Test reports/summary forms for blank samples					
×	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts (b) Calculated %R for each analyte (c) The laboratory's LCS QC limits					
×	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) Samples associated with the MS/MSD clearly identified (b) MS/MSD spiking amounts (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples (d) Calculated %Rs and relative percent differences (RPDs) (e) The laboratory's MS/MSD QC limits					
×	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) The amount of analyte measured in the duplicate (b) The calculated RPD (c) The laboratory's QC limits for analytical duplicates					
x	R9	List of method quantitation limits (MQLs) for each analyte for each method and matrix					
х	R 10	Other problems or anomalies					
x	The Ex	cception Report for every item for which the result is "No" or "NR" (Not Reviewed)					
require reports by the labora	ge as be ements s. By m laborat tory in t	tement: I am responsible for the release of this laboratory data package. This data sen reviewed by the laboratory and is complete and technically compliant with the of the methods used, except where noted by the laboratory in the attached exception y signature below, I affirm to the best of my knowledge, all problems/anomalies, observed tory as having the potential to affect the quality of the data, have been identified by the the Laboratory Review Checklist, and no information or data have been knowingly withheld fect the quality of the data.					
respon used is statem	iding to	ollinger Muku Ohly Chemist 11/18/22					
Name	(printe						

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 11/18/22

Laboratory Job Number: 223477

Prep Batch Number(s): QC2211076

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
R1	O, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	NA	
R2	O, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
_	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	0, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	NA	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
·	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

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Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	Laboratory control samples (LCS):		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	0, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	NA	
	I	Were MS/MSD analyzed at the appropriate frequency?	NA	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	NA	
	I	Were MS/MSD RPDs within laboratory QC limits?	NA	
R8	0, I	Analytical duplicate data		
	· I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	1	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
94:	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Michael Ohlinger

LRC Date: 4/5/22

Laboratory Job Number: 223477

Prep Batch Number(s): QC2211076

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S1	0, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	NA	
	I	Was the number of standards recommended in the method used for all analytes?	NA	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	NA	
	I	Are ICAL data available for all instruments used?	NA	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	NA	
S2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	NA	
	I	Were percent differences for each analyte within the method-required QC limits?	NA	
	I	Was the ICAL curve verified for each analyte?	NA	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	NA	
S 3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	NA	}
	I -	Were ion abundance data within the method-required QC limits?	NA	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S 5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
S6	0	Dual column confirmation		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	0	Tentatively identified compounds (TICs):		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	Interference Check Sample (ICS) results:		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	Compound/analyte identification procedures	_	
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to- date and on file?	Yes	
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Municipal Solid Waste Laboratory Review Checklist

This data package consists of: $|\mathbf{x}|$ This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports. Field chain-of-custody documentation [x]R₁ N R2 Sample identification cross-reference $|\mathbf{x}|$ R_3 Test reports (analytical data sheets) for each environmental sample that includes: (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 **NELAC Standard** (b) Dilution factors (c) Preparation methods (d) Cleanup methods (e) If required for the project, tentatively identified compounds (TICs) X Surrogate recovery data including: R4 (a) Calculated recovery (%R) (b) The laboratory's surrogate QC limits X **R**5 Test reports/summary forms for blank samples X **R6** Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts (b) Calculated %R for each analyte (c) The laboratory's LCS QC limits X Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: **R**7 (a) Samples associated with the MS/MSD clearly identified (b) MS/MSD spiking amounts (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples (d) Calculated %Rs and relative percent differences (RPDs) (e) The laboratory's MS/MSD QC limits Х Laboratory analytical duplicate (if applicable) recovery and precision: R8 (a) The amount of analyte measured in the duplicate (b) The calculated RPD (c) The laboratory's QC limits for analytical duplicates X List of method quantitation limits (MQLs) for each analyte for each method and matrix R9 $|\mathbf{x}|$ R10 Other problems or anomalies \mathbf{x} The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed) Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data. Check, if applicable: () This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true. Timothy E Arnold **Chemist Prin** 11/17/2022

Official Title

Name (printed)

Date

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Timothy E Arnold

LRC Date: 11/17/2022

Laboratory Job Number: 223477

Prep Batch Number(s): QC2211157

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
R1	0, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?	Yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	Yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	Yes	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	Yes	
R5	0, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
4	I	Were blank concentrations < MQL?	Yes	
R6	O, I	Laboratory control samples (LCS):		
	I .	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	Yes	
_	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	Analytical duplicate data		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
,	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Ion Chromatography Laboratory Review Checklist

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh BASP

Reviewer Name: Timothy E Arnold

LRC Date: 11/17/2022

Laboratory Job Number: 223477

Prep Batch Number(s): QC2211157

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S1	O, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
,	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	NA	
	I = =	Were ion abundance data within the method-required QC limits?	NA	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Ion Chromatography Laboratory Review Checklist

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
S6	0	Dual column confirmation		-
	I	Did dual column confirmation results meet the method-required QC?	NA	
S 7	0	Tentatively identified compounds (TICs):		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	Interference Check Sample (ICS) results:		
	I	Were percent recoveries within method QC limits?	NA	-
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	



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

Job ID: 223509 Customer: Welsh Power Station Date Reported: 12/20/2022

Customer Sample ID: AD-3 Customer Description: TG-32

Lab Number: 223509-001 Preparation:

Date Collected: 11/01/2022 11:23 EDT Date Received: 11/04/2022 13:30 EDT

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	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Arsenic	0.20 μg/L	1	0.10	0.03	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Barium	45.8 μg/L	1	0.20	0.05	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Beryllium	0.244 μg/L	1	0.050	0.007	GES	12/01/2022 14:48	EPA 200.8-1994, Rev. 5.4
Boron	<0.009 mg/L	1	0.050	0.009 U1	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Cadmium	0.038 μg/L	1	0.020	0.004	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Calcium	1.57 mg/L	1	0.05	0.02	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Chromium	0.48 μg/L	1	0.20	0.04	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Cobalt	1.40 µg/L	1	0.020	0.003	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Lead	0.23 μg/L	1	0.20	0.05	GES	12/01/2022 14:48	EPA 200.8-1994, Rev. 5.4
Lithium	0.0173 mg/L	1	0.00020	0.00005 M1	GES	12/01/2022 14:48	EPA 200.8-1994, Rev. 5.4
Mercury	100 ng/L	10	50	20	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Selenium	0. 1 6 μg/L	1	0.50	0.09 J1	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	11/21/2022 21:55	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result Units	UNC*(+/-)	MDA* Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.18 pCi/L	0.28	0.41	ST	11/15/2022 14:39	SW-846 9315-1986, Rev. 0
Carrier Recovery	97.4 %					
Radium-228	0.62 pCi/L	0.13	0.42	TTP	11/17/2022 15:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	95.2 %					

^{*} The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.



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

Job ID: 223509 Customer: Welsh Power Station Date Reported: 12/20/2022

Customer Sample ID: AD-4c Customer Description: TG-32

Lab Number: 223509-002 Preparation:

Date Collected: 11/01/2022 10:56 EDT Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.02 μg/L	1	0.10	0.02 J1	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Arsenic	0.95 μg/L	1	0.10	0.03	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Barium	66.5 μg/L	1	0.20	0.05	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Beryllium	0.27 μg/L	5	0.25	0.04	GES	12/05/2022 08:52	EPA 200.8-1994, Rev. 5.4
Boron	0.068 mg/L	1	0.050	0.009	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Cadmium	0.204 µg/L	1	0.020	0.004	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Calcium	1.42 mg/L	1	0.05	0.02	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Chromium	1.03 µg/L	1	0.20	0.04	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Cobalt	0.757 μg/L	1	0.020	0.003	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Lead	0.25 µg/L	1	0.20	0.05	GES	12/01/2022 14:53	EPA 200.8-1994, Rev. 5.4
Lithium	0.0085 mg/L	5	0.0010	0.0003	GES	12/05/2022 08:52	EPA 200.8-1994, Rev. 5.4
Mercury	120 ng/L	10	50	20	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Selenium	0.37 µg/L	1	0.50	0.09 J1	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4
Thallium	0.06 µg/L	1	0.20	0.04 J1	GES	11/21/2022 22:12	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result Units	UNC*(+/-)	MDA* Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	1.60 pCi/L	0.35	0.61	ST	11/15/2022 14:39	SW-846 9315-1986, Rev. 0
Carrier Recovery	98.0 %					
Radium-228	0.51 pCi/L	0.15	0.48	TTP	11/17/2022 15:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	79.3 %					

^{*} The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.



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

Job ID: 223509 Customer: Welsh Power Station Date Reported: 12/20/2022

Customer Sample ID: AD-16R Customer Description: TG-32

Lab Number: 223509-003 Preparation:

Date Collected: 11/01/2022 10:19 EDT Date Received: 11/04/2022 13:30 EDT

Metals

Parameter	Result Un	ts Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Antimony	0.04 µg/	L 1	0.10	0.02 J1	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Arsenic	0.67 µg/	L 1	0.10	0.03	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Barium	48.8 μg/	L 1	0.20	0.05	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Beryllium	1.03 µg/	L 5	0.25	0.04	GES	12/05/2022 09:08	EPA 200.8-1994, Rev. 5.4
Boron	0.019 mg	L 1	0.050	0.009 J1	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Cadmium	0.737 μg/	L 1	0.020	0.004	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Calcium	0.32 mg	L 1	0.05	0.02	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Chromium	0.92 μg/	L 1	0.20	0.04	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Cobalt	27.2 μg/	L 1	0.020	0.003	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Lead	0.34 µg/	L 1	0.20	0.05	GES	12/01/2022 15:08	EPA 200.8-1994, Rev. 5.4
Lithium	0.0179 mg	L 5	0.0010	0.0003	GES	12/05/2022 09:08	EPA 200.8-1994, Rev. 5.4
Mercury	58 ng/	L 1	5	2	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/	L 1	0.5	0.1 U1	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Selenium	0.74 μg/	L 1	0.50	0.09	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4
Thallium	0.53 μg/	L 1	0.20	0.04	GES	11/21/2022 22:17	EPA 200.8-1994, Rev. 5.4

Radiochemistry

Parameter	Result Units	UNC*(+/-)	MDA* Data Qualifiers	Analyst	Analysis Date	Method
Radium-226	4.65 pCi/L	0.58	0.52	ST	11/15/2022 14:39	SW-846 9315-1986, Rev. 0
Carrier Recovery	90.4 %					
Radium-228	2.92 pCi/L	0.15	0.38	TTP	11/17/2022 15:56	SW-846 9320-2014, Rev. 1.0
Carrier Recovery	91.1 %					

^{*} The Required Detection Limit (RDL) is equivalent to the RL and for Radium-226 and Radium-228, the RDL is calculated to be 1.0 pCi/L. The Minimal Detectable Activity (MDA) listed with these results is sample specific and empirical. The combined standard uncertainty (UNC) is a counting uncertainty representing "one-sigma" which has the same units of measurement as the result.



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

Job ID: 223509 Customer: Welsh Power Station Date Reported: 12/20/2022

Customer Sample ID: DUPLICATE - BASP Customer Description: TG-32

Lab Number: 223509-004 Preparation:

Date Collected: 11/01/2022 11:45 EDT Date Received: 11/04/2022 13:30 EDT

Metals

Motais							
Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02 µg/L	1	0.10	0.02 U1	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Arsenic	0.23 µg/L	1	0.10	0.03	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Barium	48.9 μg/L	1	0.20	0.05	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Beryllium	0.27 µg/L	5	0.25	0.04	GES	12/05/2022 09:13	EPA 200.8-1994, Rev. 5.4
Boron	0.01 mg/L	1	0.050	0.009 J1	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Cadmium	0.042 µg/L	1	0.020	0.004	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Calcium	1.70 mg/L	1	0.05	0.02	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Chromium	0.55 µg/L	1	0.20	0.04	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Cobalt	1.51 µg/L	1	0.020	0.003	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Lead	0.20 µg/L	1	0.20	0.05	GES	12/01/2022 15:13	EPA 200.8-1994, Rev. 5.4
Lithium	0.0196 mg/L	5	0.0010	0.0003	GES	12/05/2022 09:13	EPA 200.8-1994, Rev. 5.4
Mercury	101 ng/L	1	5	2	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	<0.1 µg/L	1	0.5	0.1 U1	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Selenium	0.18 µg/L	1	0.50	0.09 J1	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	11/21/2022 22:22	EPA 200.8-1994, Rev. 5.4



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

Job ID: 223509 Customer: Welsh Power Station Date Reported: 12/20/2022

Customer Sample ID: EQUIPMENT BLANK - BASP Customer Description: TG-32

Lab Number: 223509-005 Preparation:

Date Collected: 11/01/2022 10:49 EDT Date Received: 11/04/2022 13:30 EDT

Metals

Motals							
Parameter	Result Units	Dilution	RL	MDL Data Qualifiers	Analyst	Analysis Date	Method
Antimony	<0.02 µg/L	1	0.10	0.02 U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Arsenic	<0.03 µg/L	1	0.10	0.03 U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Barium	<0.05 µg/L	1	0.20	0.05 U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Beryllium	<0.007 µg/L	1	0.050	0.007 U1	GES	12/01/2022 15:19	EPA 200.8-1994, Rev. 5.4
Boron	<0.009 mg/L	1	0.050	0.009 U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Cadmium	<0.004 µg/L	1	0.020	0.004 U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Calcium	<0.02 mg/L	1	0.05	0.02 U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Chromium	0.53 μg/L	1	0.20	0.04	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Cobalt	0. 14 5 μg/L	1	0.020	0.003	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Lead	<0.05 µg/L	1	0.20	0.05 U1	GES	12/01/2022 15:19	EPA 200.8-1994, Rev. 5.4
Lithium	<0.00005 mg/L	1	0.00020	0.00005 U1	GES	12/01/2022 15:19	EPA 200.8-1994, Rev. 5.4
Mercury	<2 ng/L	1	5	2 U1	JAB	11/15/2022 00:00	EPA 245.7-2005, Rev. 2.0
Molybdenum	0.2 µg/L	1	0.5	0.1 J1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Selenium	<0.09 µg/L	1	0.50	0.09 U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4
Thallium	<0.04 µg/L	1	0.20	0.04 U1	GES	11/21/2022 22:27	EPA 200.8-1994, Rev. 5.4



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

Job ID: 223509 Customer: Welsh Power Station Date Reported: 12/20/2022

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

Muhael S. Ollinger

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 Qualifer Legend

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

Chain of Custody Record

Dolan Chemical Laboratory (DCL)

4001 Bixby Road					5	5	Seno.	piopal in charge version	5	;			
Groveport, Ohio 43125				ď	ogram	Coal	Combust	Program: Coal Combustion Residuals (CCR)	ials (CC				
Confacts: Michael Ohlinger (614-836-4184)						Site Contact:	tact:			Date:			For Lab Use Only: COC/Order #:
Project Name: Welsh BASP Contact Name: Jill Parker-Witt	Analysis	Tumaround	Analysis Turneround Time (in Celendar Days) Routine (28 days)	ilendar E)ays)		250 mL bottle	250 mL bottle,	1 L boeffe,	Three (six every 10th")	250 mL Glass bottle,	filter 500 mt. bottle, then	
Contact Phone: (318) 673-3816							HNO,	HNO,	0-etc	pH<2, HNO,	pH<2	HNO,	6-5507
Sampler(s): Matt Hamilton Kenny McDonald						elaiji		,88 ,8A , ,dq ,o;	'os	822-1		uM bas e	
Sample identification	Sample Date	Sample	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	ial (s)reigma2	B, Ca	Mo' 20' 1.T B' Cq' Ck' C B' C' Tl' 2P	,ю,я,еот	Fa-226, Ra	6н	dissolved Fe	Sample Specific Notes.
AD-3	11/1/2022	1023	ဗ	GW	80			×		×	×		TG-32 needed
AD-4c	11/1/2022	926	ŋ	GW	υ C			×		×	×		
AD-16R	11/1/2022	919	ອ	GW	5			×		×	×		
DUPLICATE - BASP	11/1/2022	1045	ပ	GW	2			×			×		
EQUIPMENT BLANK - BASP	11/1/2022	949	ပ	GW	2			×			×		
To some many management of the sound to the													
											85		
				į									
Preservation Used: 1= ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other_	HNO3; S=Na	OH; 6= OU	18r	. FE	F= filter in field	held	4	4	-	4	2		
* Six 1L Bottles must be collected for Radium for every 10th sample.	r every 10th	sample.											

Special Instructions/QC Requirements & Comments:

_	Relinquished by:	Company	Date/Time: 16-	Received by:		Date/Time:	
	Relinquished by.	Company	Date/Time	Received by:		Date/Time:	
	Relinquished by:	Сотрату	Date/Time:	Received in Laboratory by:		Date/Time: 11/4/22 1;30fm	1:30pm
_	Form COC-04, AEP Chain of Custody (COC) Record for Coal Combustion Residus	ord for Coal Combustion Residua	il (CCR) Sampling - Shr	al (CCR) Sampling - Shreveport, Rev. 1, 1/10/17	1		



WATER & WASTE SAMPLE RECEIPT FORM (Temp Gun 1)

Package Type	Delivery Type
Cooler Box Bag Envelope	PONY UPS FedEX USPS
	Other
Plant/Customer Wolsh	Other
nn a	Number of Glass Containers:
	Number of Mercury Containers:
	or (N/A) Initial:on ice / no 024) - If No, specify each deviation:
	Comments
Was Chain of Custody received? (Y) N	Comments
Requested turnaround: Kouline	If RUSH, who was notified?
pH (15 min) Cr ⁺⁶ (pres) NO₂ or N (24 hr)	O ₃ (48 hr) ortho-PO ₄ (48 hr) Hg-diss (pres) (48 hr)
Was COC filled out properly? YN	Comments
	Comments
Were correct containers used? (Y) N	Comments
Was pH checked & Color Coding done?	N or N/A Initial & Date: MGK SAB 1114/22
pH paper (circle one): MQuant,PN1.09535.0001,LC	T# HC904495 TORI Lab Rat, PN4801, LOT# X000RWDG21
Was Add'l Preservative needed? Y / N If Yo	es: By whom & when: (See Prep Book)
Is sample filtration requested? Y /	Comments (See Prep Book)
Was the customer contacted? If Yes:	Person Contacted:
Lab ID# 2235D9 Initial & I	Date & Time :
lagrander. (A KIV - Carrier	nts:
<u>///</u>	
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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.

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

х	(which	This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.					
x.	Rı	Field chain-of-	custody documentation				
x	R2	Sample identif	ication cross-reference				
X	R3	 Test reports (analytical data sheets) for each environmental sample that includes: (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard (b) Dilution factors (c) Preparation methods (d) Cleanup methods (e) If required for the project, tentatively identified compounds (TICs) 					
NA	R4	(a) Calculated	very data including: I recovery (%R) atory's surrogate QC limits				
x	R5	Test reports/st	ımmary forms for blank saı	mples			
x	R6	(a) LCS spikin (b) Calculated		ry control samples (LCSs) inclu	ding:		
X	R7	(a) Samples a(b) MS/MSD(c) Concentra(d) Calculated	ssociated with the MS/MSI spiking amounts	yte measured in the parent and	-		
x	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) The amount of analyte measured in the duplicate (b) The calculated RPD (c) The laboratory's QC limits for analytical duplicates					
x	R9	List of method	quantitation limits (MQLs)) for each analyte for each metl	od and matrix		
x	R10	Other problem	s or anomalies				
x	The Ex	ception Report	for every item for which the	e result is "No" or "NR" (Not R	eviewed)		
packag require reports by the labora	ge as be ements s. By m laborat tory in t	en reviewed by of the methods y signature bel ory as having t	the laboratory and is compused, except where noted bow, I affirm to the best of more potential to affect the quality and no in	of this laboratory data package. lete and technically compliant y the laboratory in the attached y knowledge, all problems/and ality of the data, have been ident formation or data have been known	with the l exception omalies, observed ntified by the		
respon used is	ding to	rule. The offici sible for releasi	al signing the cover page of	se laboratory controlled by the the rule-required report in whi by signature affirming the abo	ich these data are		
Susa	nn Su	izmann	SSult many Signature	Senior Chemist	11-16-2022		
Name	Name (printed)		Signature	Official Title	Date		

Table 1. Reportable Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Power Station

Reviewer Name: Susann Sulzmann

LRC Date: 11-16-2022

Laboratory Job Number: 223509

Prep Batch Number(s): PB22110704

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
R1	O, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?	yes	
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	yes	
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	,
	I ·	Were blank concentrations < MQL?	yes	
R6	0, I	Laboratory control samples (LCS):		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	yes	
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	yes	
	1	Were MS/MSD RPDs within laboratory QC limits?	yes	
R8	O, I	Analytical duplicate data		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	yes	
R9	O, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name: American Electric Power Dolan Chemical Laboratory

Project Name: Welsh Power Station

Reviewer Name: Susann Sulzmann

LRC Date: 11-16-2022

Laboratory Job Number: 223509

Prep Batch Number(s): PB22110704

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
S1	O, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER1
S3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	NA	
-	I	Were ion abundance data within the method-required QC limits?	NA	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	NA	
S5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
S 6	0	Dual column confirmation		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S 7	0	Tentatively identified compounds (TICs):		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	⁻NA	
S8	I	Interference Check Sample (ICS) results:		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to- date and on file?	Yes	
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

Laboratory Name: American Electric Power Dolan Chemical Laboratory
Project Name: Welsh Power Station
Reviewer Name: Susann Sulzmann
LRC Date: 11-16-2022
Laboratory Job Number: 223509
Prep Batch Number(s): PB22110704

Exception Report No.	Description
ER1	CCB acceptance criteria is CCB <mql.< th=""></mql.<>
-	

Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

² O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

³ NA - Not applicable; NR - Not reviewed.

⁴ Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

X	This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.						
х	R1	Field chain-of-custody documentation					
X	R2	Sample ident	ification cross-re	eference			
x	R3	(a) Items sp NELAC S(b) Dilution(c) Preparat(d) Cleanup	ecified in NELAC Standard factors ion methods methods	C Chapter 5 for	environmental sa reporting results, entified compound	e.g., Section	
NA	R4	(a) Calculate	covery data included recovery (%R) ratory's surrogat)			
Х	R5	Test reports/	summary forms	for blank samp	oles		
x	R6	(a) LCS spik(b) Calculate		nalyte	control samples (L	.CSs) inclu	ding:
X	R7	(a) Samples(b) MS/MSI(c) Concent(d) Calculate	associated with D spiking amoun	the MS/MSD o ts S/MSD analyte ive percent dif	e measured in the p	·	-
X	R8	(a) The amo(b) The calculate	unt of analyte m	easured in the	•	ecision:	
Х	R9	List of metho	d quantitation li	mits (MQLs) fo	or each analyte for	each meth	od and matrix
X	R10	Other problem	ms or anomalies				
X	The Ex	ception Repo	rt for every item	for which the r	esult is "No" or "N	R" (Not Re	eviewed)
packag require reports by the laborat	e as be ements of s. By my laborat cory in t	en reviewed b of the method y signature be ory as having	y the laboratory s used, except whelow, I affirm to the the potential to a r Review Checklish	and is complet nere noted by t the best of my l affect the quali	his laboratory data e and technically o he laboratory in the knowledge, all prob ty of the data, have mation or data ha	compliant vone attached blems/ano been iden	vith the exception malies, observed itified by the
respon used is	ding to	rule. The offic sible for relea	rial signing the co	over page of the ckage and is by	aboratory controll e rule-required rep r signature affirmin	ort in whic	ch these data are
Jonat	than B	arnhill	Sonathan	Bountill	Lab Superviso	r	12/13/2022
Name ((printed	l)	Signature		Official Title		Date

Table 1. Reportable Data.

Laboratory Name:	American Electric Power Dolan Chemical Laboratory
Project Name:	
Reviewer Name: J	onathan Barnhill
LRC Date: 12/13/20	022
Laboratory Job Nu	mber: 223509
Dron Ratch Number	PB22111712, PB22112902, QC2211221, QC2212034, QC2212036

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
R1	O, I	Chain-of-custody (COC)		
	I	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	Yes	
	I	Were all departures from standard conditions described in an exception report?	Yes	
R2	O, I	Sample and quality control (QC) identification		
	I	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	Yes	
	I	Are all laboratory ID numbers cross-referenced to the corresponding QC data?	Yes	
R3	O, I	Test reports		
	I	Were all samples prepared and analyzed within holding times?		
	I	Other than those results < MQL, were all other raw values bracketed by calibration standards?	No	ER1
	I	Were calculations checked by a peer or supervisor?	Yes	
	I	Were all analyte identifications checked by a peer or supervisor?	Yes	
	I	Were sample quantitation limits reported for all analytes not detected?	Yes	
	I	Were all results for soil and sediment samples reported on a dry weight basis?	NA	
	I	Was % moisture (or solids) reported for all soil and sediment samples?	NA	
	I	If required for the project, TICs reported?	NA	
R4	0	Surrogate recovery data		
	I	Were surrogates added prior to extraction?	NA	
	I	Were surrogate percent recoveries in all samples within the laboratory QC limits?	NA	
R5	O, I	Test reports/summary forms for blank samples		
	I	Were appropriate type(s) of blanks analyzed?	Yes	
	I	Were blanks analyzed at the appropriate frequency?	Yes	

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
	I	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	Yes	
	I	Were blank concentrations < MQL?	Yes	
R6	O, I	Laboratory control samples (LCS):		
	I	Were all COCs included in the LCS?	Yes	
	I	Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	Yes	
	I	Were LCSs analyzed at the required frequency?	Yes	
	I	Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	Yes	
	I	Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	Yes	
	I	Was the LCSD RPD within QC limits?	Yes	
R7	O, I	Matrix spike (MS) and matrix spike duplicate (MSD) data		
	I	Were the project/method specified analytes included in the MS and MSD?	Yes	
	I	Were MS/MSD analyzed at the appropriate frequency?	Yes	
	I	Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	No	ER3
	I	Were MS/MSD RPDs within laboratory QC limits?	Yes	
R8	O, I	Analytical duplicate data		
	I	Were appropriate analytical duplicates analyzed for each matrix?	Yes	
	I	Were analytical duplicates analyzed at the appropriate frequency?	Yes	
	I	Were RPDs or relative standard deviations within the laboratory QC limits?	Yes	
R9	O, I	Method quantitation limits (MQLs):		
	I	Are the MQLs for each method analyte included in the laboratory data package?	Yes	
	I	Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	Yes	
	I	Are unadjusted MQLs included in the laboratory data package?	Yes	
R10	O, I	Other problems/anomalies		
	I	Are all known problems/anomalies/special conditions noted in this LRC and ER?	Yes	
	I	Were all necessary corrective actions performed for the reported data?	Yes	
	I	Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	Yes	

Table 2. Supporting Data.

Laboratory Name:	American Electric Power Dolan Chemical Laboratory
Project Name:	
Reviewer Name: Jo	onathan Barnhill
LRC Date: 12/13/20	022
Laboratory Job Nu	
Prep Batch Number	DD00444740 DD00440000 OC0044004 OC0040004 OC0040006

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No. ⁴
S1	O, I	Initial calibration (ICAL)		
	I	Were response factors and/or relative response factors for each analyte within QC limits?	NA	
	I	Were percent RSDs or correlation coefficient criteria met?	Yes	
	I	Was the number of standards recommended in the method used for all analytes?	Yes	
	I	Were all points generated between the lowest and highest standard used to calculate the curve?	Yes	
	I	Are ICAL data available for all instruments used?	Yes	
	I	Has the initial calibration curve been verified using an appropriate second source standard?	Yes	
S2	O, I	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):		
	I	Was the CCV analyzed at the method-required frequency?	Yes	
	I	Were percent differences for each analyte within the method-required QC limits?	Yes	
	I	Was the ICAL curve verified for each analyte?	Yes	
	I	Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	No	ER2
S3	0	Mass spectral tuning:		
	I	Was the appropriate compound for the method used for tuning?	Yes	
	I	Were ion abundance data within the method-required QC limits?	Yes	
S4	0	Internal standards (IS):		
	I	Were IS area counts and retention times within the method-required QC limits?	Yes	
S5	O, I	Raw data (NELAC section 1 appendix A glossary, and section 5.)		
	I	Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	Yes	
	I	Were data associated with manual integrations flagged on the raw data?	NA	

Item ¹	Analytes ²	Description	Result (Yes, No, NA, NR) ³	Exception Report No.4
S6	0	Dual column confirmation		
	I	Did dual column confirmation results meet the method-required QC?	NA	
S7	0	Tentatively identified compounds (TICs):		
	I	If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?	NA	
S8	I	Interference Check Sample (ICS) results:		
	I	Were percent recoveries within method QC limits?	NA	
S9	I	Serial dilutions, post digestion spikes, and method of standard additions		
	I	Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	NA	
S10	O, I	Method detection limit (MDL) studies		
	I	Was a MDL study performed for each reported analyte?	Yes	
	I	Is the MDL either adjusted or supported by the analysis of DCSs?	Yes	
S11	O, I	Proficiency test reports:		
	I	Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	Yes	
S12	O, I	Standards documentation		
	I	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	Yes	
S13	O, I	Compound/analyte identification procedures		
	I	Are the procedures for compound/analyte identification documented?	Yes	
S14	O, I	Demonstration of analyst competency (DOC)		
	I	Was DOC conducted consistent with NELAC Chapter 5C?	Yes	
	I	Is documentation of the analyst's competency up-to-date and on file?	Yes	
S15	O, I	Verification/validation documentation for methods (NELAC Chap 5n 5)		
	I	Are all the methods used to generate the data documented, verified, and validated, where applicable?	Yes	
S16	O, I	Laboratory standard operating procedures (SOPs):		
	I	Are laboratory SOPs current and on file for each method performed?	Yes	

Table 3. Exception Reports.

aboratory Name: American Electric Power Dolan Chemical Laboratory
roject Name:
eviewer Name: Jonathan Barnhill
RC Date: 12/13/2022
aboratory Job Number: 223509
rep Batch Number(s): PB22111712, PB22112902, QC2211221, QC2212034, QC2212036

Exception Report No.	Description
ER1	Linear Dynamic Range (LDR) study used to determine upper limit of analyte calibration.
ER2	CCB acceptance criteria is CCB<2.2*MDL.
ER3	Matrix Spike failure for Li on sample 223509-001

¹ Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

² O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).

³ NA - Not applicable; NR - Not reviewed.

⁴ Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."