



ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG and Associates, Inc.

**FEDERAL CCR COMPLIANCE
ANNUAL GROUNDWATER MONITORING and
CORRECTIVE ACTION REPORT - 2024**

**Midwest Generation, LLC
Joliet #29 Generating Station
1800 Channahon Road
Joliet, Illinois**

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January 31, 2025

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OVERVIEW

Groundwater monitoring requirements in accordance with the Federal Register, Environmental Protection Agency, 40 CFR Parts 257.94, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule dated April 17, 2015 (CCR Rule) and subsequent amendments, have been completed for the ash pond monitoring wells located at the Midwest Generation, LLC (Midwest Generation) Joliet #29 Generating Station. The wells sampled were selected to meet the monitoring requirements of the CCR Rule for Ash Pond 2. The monitoring well network around this pond consists of four monitoring wells (MW-3, MW-4, MW-5 and MW-10 [upgradient]) as shown on Figure 1.

This overview of the 2024 groundwater monitoring period is provided in accordance with requirements under Section 257.90(e)(6). Each required item is discussed separately below.

- Section 257.90(e)(6)(i) – At the start of the current monitoring period, the subject CCR unit was operating under the detection monitoring program outlined in Section 257.94.
- Section 257.90(e)(6)(ii) – At the end of the current monitoring period, the subject CCR unit continues to operate under the detection monitoring program outlined in Section 257.94.
- Section 257.90(e)(6)(iii) – The following verified potential statistically significant increases (SSIs) above established background for Appendix III detection monitoring constituents were noted during this reporting period:
 - o MW-10 – Sulfate (1st, 3rd and 4th quarters); total dissolved solids (TDS; 1st and 4th quarters); pH (3rd quarter)
 - o MW-03 – TDS (1st, 2nd and 4th quarters); sulfate (1st and 2nd quarters)
 - o MW-04 – Sulfate (1st quarter); TDS (1st and 4th quarters)
 - o MW-05 – TDS (1st and 2nd quarter); sulfate (all events); boron (2nd quarter)

Well MW-10 is the upgradient monitoring point.

The second quarter elevated boron detection at well MW-05 was not replicated during subsequent sampling events and was only detected above the prediction limit one other time historically since start of detection monitoring in 2017 which again was not replicated with subsequent sampling. The potential SSIs for chloride, TDS and sulfate have been addressed under a completed and previously submitted Alternate Source Demonstrations

(ASD) in 2021 with determination being made that the SSIs are not associated with a release from the regulated unit.

- Section 257.90(e)(6)(iv) – The subject site is not in assessment monitoring.
- Section 257.90(e)(6)(v) – The subject unit is not under corrective action.
- Section 257.90(e)(6)(vi) – The subject unit is not under corrective action.

1.0 INTRODUCTION

The Detection Monitoring requirements in accordance with the Federal Register, Environmental Protection Agency, 40 CFR Parts 257.94, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule dated April 17, 2015 (CCR Rule) and subsequent amendments have been completed for the ash pond monitoring wells located at the Midwest Generation, LLC (Midwest Generation) Joliet #29 Generating Station. The wells sampled were selected to meet the monitoring requirements of the CCR Rule for Ash Pond 2 which no longer contains any ash, however, the warning layer and liner are still in place. The monitoring well network around this pond consists of four monitoring wells (MW-3, MW-4, MW-5 and MW-10 [upgradient]) as shown on Figure 1.

This annual report covers the work performed relative to CCR groundwater monitoring for the 2024 calendar year. It does not duplicate information or activities reported in previous years. It is prepared in accordance with Section 257.90(e)(1-6) and summarizes the sampling procedures used, provides an evaluation of groundwater flow conditions, summarizes the analytical data generated and provides a discussion of the statistical evaluations completed as a basis for determining the appropriate next phase of compliance activities.

2.0 FIELD PROCEDURES AND GROUNDWATER FLOW EVALUATION

2.1 Field Procedures

As previously noted, the CCR groundwater monitoring network for Ash Pond 2 consists of four wells (MW-3, MW-4, MW-5 and MW-10) as shown on Figure 1. As part of sampling procedures, the integrity of all monitoring wells was inspected and water levels were obtained using an electronic water level meter (see summary of water level discussion below). During all sampling events, the wells were found in good condition with locked protector casings, and the concrete surface seals were intact.

All groundwater samples were collected using the low-flow sampling technique from dedicated pumps. The samples were not filtered prior to analysis to provide for total metals concentrations as opposed to dissolved metals concentrations. One duplicate sample was collected from a randomly selected monitoring well per sampling event for quality assurance purposes.

2.2 Groundwater Flow Evaluation

Water level data measurements were obtained from each well during each round of groundwater monitoring. A complete round of water levels was collected prior to initiating sampling, and the water level data are summarized in Table 1. The water levels were used to generate a groundwater flow map for each sampling event. These maps are provided as Attachment 1. A review of the maps indicates a consistent generally southerly groundwater flow direction toward the intake channel and a shallow horizontal hydraulic gradient. This is consistent with historical trends. In accordance with general groundwater sampling requirements under Section 257.93(c), Table 2 provides a summary of the flow direction and an estimated rate of groundwater flow for each sampling event. The flow rate was calculated using the following equation:

$$V_s = \frac{Kdh}{n_e dl}, \text{ where}$$

V_s is seepage velocity (distance/time)

K is hydraulic conductivity (distance/time)

dh/dl is hydraulic gradient (unitless)

n_e is effective porosity (unitless)

The hydraulic conductivity used in Table 2 was based on a re-evaluation of slug test data performed by Patrick Engineering as part of a hydrogeologic assessment dated February 2011. The estimated effective porosity of the aquifer materials (0.35) was obtained from literature (Applied Hydrogeology, Fetter, 1980).

3.0 ANALYTICAL DATA AND STATUS OF EVALUATIONS

3.1 Sampling Summary

The groundwater sampling summary from 2024 is provided in Table 3, in accordance with 257.90 (e)(3). Analytical data packages are included in Attachment 2.

3.2 Data Summary

The analytical data from the detection monitoring groundwater samples for Appendix III parameters are provided in Table 4. Quarterly groundwater sampling was completed for Appendix III in 2024 which exceeds the minimum detection monitoring requirements under Section 257.94. The table includes the sample dates and whether the specific well is considered upgradient or downgradient relative to groundwater flow and the regulated unit. For each monitoring event a duplicate sample was collected. Confirmatory resampling in accordance with CCR Compliance Statistical Approach for Groundwater Data Evaluation for Joliet #29 Station dated October 10, 2017 were limited to any potential statistically significant increases (SSI) for specific parameters at specific wells for which previous ASDs were not completed.

Relative to the other potential SSIs for TDS, sulfate, and chloride noted for 2022 sampling, an ASD was completed on October 11, 2021, and was included in the Annual Groundwater Monitoring and Corrective Action Report – 2021 dated January 31, 2022. The results of the ASD concluded that the noted SSIs for TDS, sulfate, and chloride were not associated with a potential release from Ash Pond 2 but rather an alternate transient source of impacts, potentially from upgradient and offsite. The detections of these parameters during the 2024 sampling were within the same range or less than in previous sampling events.

3.3. Current Status

Joliet Generating Station #29 – Pond 2 is currently, and continues to be, in detection monitoring. There has been no transition between monitoring programs in 2024.

4.0 SUMMARY/CONCLUSIONS AND RECOMMENDATIONS

The detection monitoring requirements in accordance with the Federal CCR Rule have successfully been met. At this time it is recommended to continue with detection monitoring in accordance with Section 257.94 of the Federal CCR Rule.

5.0 REFERENCES

- Federal Register, Environmental Protection Agency, 40 CFR Parts 257 and 261, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule. Vol. 80, No. 74, Friday April 17, 2015.
- Fetter, C.W. Jr., Applied Hydrogeology. Charles E. Merrill Publishing Co., 1980.
- KPRG and Associates, Inc., CCR Compliance Monitoring, Sampling and Analysis Plan, Midwest Generation, LLC Joliet #29 Generating Station. October 10, 2017.
- KPRG and Associates, Inc., CCR Compliance Statistical Approach for Groundwater Data Evaluation, Midwest Generation, LLC Joliet #29 Generating Station. October 10, 2017.
- KPRG and Associates, Inc., CCR Groundwater Monitoring Statistical Evaluation Summary - 2017, Midwest Generation, LLC Joliet #29 Generating Station. January 12, 2018.
- KPRG and Associates, Inc., CCR Annual Groundwater Monitoring and Corrective Action Report - 2017, Midwest Generation, LLC Joliet #29 Generating Station. January 31, 2018.
- KPRG and Associates, Inc., CCR Annual Groundwater Monitoring and Corrective Action Report - 2018, Midwest Generation, LLC Joliet #29 Generating Station. January 31, 2019.
- KPRG and Associates, Inc., CCR Annual Groundwater Monitoring and Corrective Action Report - 2019, Midwest Generation, LLC Joliet #29 Generating Station. January 31, 2020.
- KPRG and Associates, Inc., CCR Annual Groundwater Monitoring and Corrective Action Report - 2020, Midwest Generation, LLC Joliet #29 Generating Station. January 31, 2021.
- KPRG and Associates, Inc., Alternate Source Demonstration – CCR Groundwater Monitoring Joliet #29 Generating Station, October 11, 2021.
- KPRG and Associates, Inc., CCR Annual Groundwater Monitoring and Corrective Action Report - 2021, Midwest Generation, LLC Joliet #29 Generating Station. January 31, 2022.
- KPRG and Associates, Inc., CCR Annual Groundwater Monitoring and Corrective Action Report - 2022, Midwest Generation, LLC Joliet #29 Generating Station. January 31, 2023.
- KPRG and Associates, Inc., CCR Annual Groundwater Monitoring and Corrective Action Report - 2023, Midwest Generation, LLC Joliet #29 Generating Station. January 31, 2024.
- KPRG and Associates, Inc., Alternate Source Demonstration – CCR Groundwater Monitoring Joliet #29 Generating Station, April 11, 2023.

- Patrick Engineering, Inc., Hydrogeologic Assessment Report – Joliet Generating Station No. 29, Joliet, IL. February 2011.

FIGURE

NOTE:
BACKGROUND MAP RETRIEVED FROM GOOGLE MAPS 2013

MW-10

ASH POND 2

MW-3

MW-4

MW-5

LEGEND

MW-1

EXISTING CCR MONITORING
WELL

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CCR MONITORING WELLS SITE MAP

JOLIET #29 GENERATING STATION
JOLIET, ILLINOIS

Scale: 1" = 100' Date: December 27, 2017

KPRG Project No. 12313.0 FIGURE 1

0 100'
APPROXIMATE SCALE



TABLES

Table 1. Groundwater Elevations - Midwest Generation, LLC, Joliet Station #29, Joliet, IL.

Well ID	Date	Top of Casing Elevation (ft above MSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft above MSL)
MW-03	10/27/15	538.78	33.87	504.91
	02/09/16	538.79	33.17	505.62
	05/10/16	538.79	32.82	505.97
	08/30/16	538.79	31.88	506.91
	11/01/16	538.79	32.88	505.91
	02/06/17	538.79	33.25	505.54
	04/25/17	538.79	33.06	505.73
	06/14/17	538.79	33.74	505.05
	08/01/17	538.79	32.36	506.43
	10/18/17	538.79	30.03	508.76
	04/24/18	538.79	32.83	505.96
	10/16/18	538.79	32.58	506.21
	05/06/19	538.79	29.59	509.20
	11/06/19	538.79	33.38	505.41
	05/20/20	538.79	27.13	511.66
	10/21/20	538.79	33.52	505.27
	05/17/21	538.79	33.05	505.74
	06/11/21	538.79	33.64	505.15
	07/19/21	538.79	33.28	505.51
	08/09/21	538.79	33.85	504.94
	11/15/21	538.79	33.19	505.60
	01/19/22	538.79	33.38	505.41
	02/16/22	538.79	33.17	505.62
	03/03/22	538.79	32.92	505.87
	04/05/22	538.79	31.76	507.03
	05/23/22	538.79	33.03	505.76
	06/30/22	538.79	33.47	505.32
	07/19/22	538.79	33.62	505.17
	08/30/22	538.79	33.58	505.21
	09/20/22	538.79	33.56	505.23
	10/13/22	538.79	33.40	505.39
	11/08/22	538.79	33.37	505.42
	12/20/22	538.79	33.05	505.74
	01/26/23	538.79	33.15	505.64
	02/21/23	538.79	32.45	506.34
	03/15/23	538.79	32.78	506.01
	04/20/23	538.79	33.28	505.51
	05/02/23	538.79	33.19	505.60
	06/08/23	538.79	33.45	505.34
	07/19/23	538.79	33.35	505.44
	08/29/23	538.79	33.66	505.13
	09/21/23	538.79	32.61	506.18
	10/25/23	538.79	33.12	505.67
	11/14/23	538.79	33.29	505.50
	12/07/23	538.79	32.96	505.83
	01/23/24	538.79	32.85	505.94
	02/20/24	538.79	33.11	505.68
	03/13/24	538.79	32.65	506.14
	04/19/24	538.79	32.99	505.80
	05/21/24	538.79	32.49	506.30
	06/19/24	538.79	33.20	505.59
	07/29/24	538.79	33.09	505.70
	08/22/24	538.79	33.44	505.35
	09/23/24	538.79	33.44	505.35
	10/28/24	538.79	33.41	505.38
	11/07/24	538.79	33.17	505.62
	12/17/24	538.79	33.37	505.42
MW-04	10/27/15	539.03	34.05	504.98
	02/09/16	539.01	33.42	505.59
	05/10/16	539.01	33.07	505.94
	08/30/16	539.01	32.08	506.93
	11/01/16	539.01	33.16	505.85
	02/06/17	539.01	33.51	505.50
	04/25/17	539.01	33.29	505.72
	06/14/17	539.01	33.99	505.02
	08/01/17	539.01	32.09	506.92
	10/18/17	539.01	30.28	508.73
	04/24/18	539.01	33.10	505.91
	10/16/18	539.01	32.85	506.16
	05/06/19	539.01	29.83	509.18
	11/06/19	539.01	31.65	507.36
	05/20/20	539.01	27.40	511.61
	10/21/20	539.01	33.48	505.53
	05/17/21	539.01	33.32	505.69
	06/11/21	539.01	33.91	505.10
	07/19/21	539.01	33.55	505.46
	08/09/21	539.01	34.14	504.87
	11/15/21	539.01	33.44	505.57
	01/19/22	539.01	33.66	505.35
	02/16/22	539.01	33.44	505.57
	03/03/22	539.01	33.17	505.84
	04/05/22	539.01	32.05	506.96
	05/23/22	539.01	33.28	505.73
	06/30/22	539.01	33.72	505.29
	07/19/22	539.01	33.87	505.14
	08/30/22	539.01	33.83	505.18
	09/20/22	539.01	33.82	505.19
	10/13/22	539.01	33.67	505.34
	11/08/22	539.01	33.64	505.37
	12/20/22	539.01	33.34	505.67
	01/26/23	539.01	33.38	505.63
	02/21/23	539.01	32.70	506.31
	03/15/23	539.01	33.07	505.94
	04/20/23	539.01	33.55	505.46
	05/02/23	539.01	33.44	505.57
	6/08/2023	539.01	33.71	505.30
	07/19/23	539.01	33.66	505.35
	08/29/23	539.01	33.92	505.09
	09/21/23	539.01	32.89	506.12
	10/25/23	539.01	33.39	505.62
	11/14/23	539.01	33.58	505.43
	12/07/23	539.01	33.24	505.77
	01/23/24	539.01	33.14	505.87
	02/20/24	539.01	33.38	505.63
	03/13/24	539.01	32.94	506.07
	04/19/24	539.01	33.24	505.77
	05/21/24	539.01	32.76	506.25
	06/19/24	539.01	33.46	505.55
	07/29/24	539.01	33.34	505.67
	08/22/24	539.01	33.72	505.29
	09/23/24	539.01	33.71	505.30
	10/28/24	539.01	33.67	505.34
	11/07/24	539.01	33.44	505.57
	12/17/24	539.01	33.65	505.36

Well ID	Date	Top of Casing Elevation (ft above MSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft above MSL)
MW-05	10/27/15	539.69	34.91	504.78
	02/09/16	539.64	34.18	505.46
	05/10/16	539.64	33.81	505.83
	08/30/16	539.64	32.82	506.82
	11/01/16	539.64	33.90	505.74
	02/06/17	539.64	34.23	505.41
	04/25/17	539.64	34.04	505.60
	06/14/17	539.64	34.74	504.90
	08/01/17	539.64	33.12	506.52
	10/18/17	539.64	31.03	508.61
	04/24/18	539.64	33.79	505.85
	10/16/18	539.64	33.61	506.03
	05/06/19	539.64	30.55	509.09
	11/06/19	539.64	32.40	507.24
	05/20/20	539.64	28.16	511.48
	10/21/20	539.64	34.52	505.12
	05/17/21	539.64	34.05	505.59
	06/11/21	539.64	34.66	504.98
	07/19/21	539.64	34.27	505.37
	08/09/21	539.64	34.78	504.86
	11/15/21	539.64	34.18	505.46
	01/19/22	539.64	34.37	505.27
	02/16/22	539.64	34.15	505.49
	03/03/22	539.64	33.93	505.71
	04/05/22	539.64	32.82	506.82
	05/23/22	539.64	34.00	505.64
	06/30/22	539.64	34.45	505.19
	07/19/22	539.64	34.64	505.00
	08/30/22	539.26	34.58	504.68
	09/20/22	539.26	34.58	504.68
	10/13/22	539.26	34.39	504.87
	11/08/22	539.26	34.38	504.88
	12/20/22	539.26	34.05	505.21
	01/26/23	539.26	34.08	505.18
	02/21/23	539.26	33.40	505.86
	03/15/23	539.26	33.79	505.47
	04/20/23	539.26	34.28	504.98
	05/02/23	539.26	34.17	505.09
	06/08/23	539.26	34.45	504.81
	07/19/23	539.26	34.38	504.88
	08/29/23	539.26	34.62	504.64
	09/21/23	539.26	33.60	505.66
	10/25/23	539.26	34.10	505.16
	11/14/23	539.26	34.28	504.98
	12/07/23	539.26	33.93	505.33
	01/23/24	539.26	33.79	505.47
	02/20/24	539.26	34.08	505.18
	03/13/24	539.26	33.63	505.63
	04/19/24	539.26	33.95	505.31
	05/21/24	539.26	33.45	505.81
	06/19/24	539.26	34.17	505.09
	07/29/24	539.26	34.05	505.21
	08/22/24	539.26	34.43	504.83
	09/23/24	539.26	34.42	504.84
	10/28/24	539.26	34.39	504.87
	11/07/24	539.26	34.16	505.10
	12/17/24	539.26	34.36	504.90
MW-10	10/27/15	540.03	35.10	504.93
	02/09/16	540.02	34.32	505.70
	05/10/16	540.02	34.02	506.00
	08/30/16	540.02	32.97	507.05
	11/01/16	540.02	34.04	505.98
	02/06/17	540.02	34.42	505.60
	04/25/17	540.02	34.22	505.80
	06/14/17	540.02	34.91	505.11
	08/01/17	540.02	33.18	506.84
	10/18/17	540.02	31.13	508.89
	04/24/18	540.02	33.97	506.05
	10/16/18	540.02	33.73	506.29
	05/06/19	540.02	30.58	509.44
	11/06/19	540.02	32.42	507.60
	05/20/20	540.02	28.09	511.93
	10/21/20	540.02	34.72	505.30
	05/17/21	540.02	34.23	505.79
	06/11/21	540.02	34.81	505.21
	07/19/21	540.02	34.45	505.57
	08/09/21	540.02	35.05	504.97
	11/15/21	540.02	34.38	505.64
	01/19/22	540.02	34.59	505.43
	02/16/22	540.02	34.38	505.64
	03/03/22	540.02	34.10	505.92
	04/05/22	540.02	32.89	507.13
	05/23/22	540.02	34.20	505.82
	06/30/22	540.02	34.68	505.34
	07/19/22	540.02	34.80	505.22
	08/30/22	540.02	34.76	505.26
	09/20/22	540.02	34.74	505.28
	10/13/22	540.02	34.61	505.41
	11/08/22	540.02	34.56	505.46
	12/20/22	540.02	34.22	505.80
	01/26/23	540.02	34.32	505.70
	02/21/23	540.02	33.61	506.41
	03/15/23	540.02	33.96	506.06
	04/20/23	540.02	34.45	505.57
	05/02/23	540.02	34.36	505.66
	06/08/23	540.02	34.64	505.38
	07/19/23	540.02	34.53	505.49
	08/29/23	540.02	34.85	505.17
	09/21/23	540.02	33.79	506.23
	10/25/23	540.02	34.30	505.72
	11/14/23	540.02	34.49	505.53
	12/07/23	540.02	34.14	505.88
	01/23/24	540.02	34.02	506.00
	02/20/24	540.02	34.29	505.73
	03/13/24	540.02	33.79	506.23
	04/19/24	540.02	34.14	505.88
	05/21/24	540.02	33.60	506.42
	06/19/24	540.02	34.39	505.63
	07/29/24	540.02	34.25	505.77
	08/22/24	540.02	34.63	505.39
	09/23/24	540.02	34.64	505.38
	10/28/24	540.02	34.60	505.42
	11/07/24	540.02	34.38	505.64
	12/17/24	540.02	34.57	505.45

MSL - Mean Sea Level
TOC - Top of Casing

Table 2. Groundwater Flow Direction and Estimated Seepage Velocity/Flow Rate - Joliet #29 Generation Station.

DATE	Groundwater Flow Direction	Kavg (ft/sec)*	Average Hydraulic Gradient (ft/ft)	Porosity (unitless)**	Estimated Seepage Velocity (ft/day)
1/23/2024	Southerly (SSW-SSE)	1.968E-03	0.0005	0.35	0.22
5/21/2024	Southerly (SSW-SSE)	1.968E-03	0.0005	0.35	0.25
7/29/2024	Southerly (SSW-SSE)	1.968E-03	0.0006	0.35	0.31
10/28/2024	Southerly (SSW-SSE)	1.968E-03	0.0005	0.35	0.23

* Kavg - K values from re-evaluation of slug test data as part of groundwater modeling in support of Application for Construction Permit per Illinois State CCR Rule.

** - Porosity estimate from Applied Hydrogeology, Fetter, 1980.

SSW - South-southwest

SSE - South-southeast

Table 3. CCR Groundwater Sample Collection Summary for 2024 - Joliet #29 Generating Station

Well ID	Number of Groundwater Sampling Events	Dates Groundwater Sampling Events	Detection Monitoring (D) versus Assessment Monitoring (A)
MW-10 (Upgradient)	4	1/23/2024	D
		5/22/2024	D
		7/30/2024	D
		10/29/2024	D
MW-03 (Downgradient)	4	1/23/2024	D
		5/22/2024	D
		7/30/2024	D
		10/29/2024	D
MW-04 (Downgradient)	4	1/23/2024	D
		5/22/2024	D
		7/30/2024	D
		10/29/2024	D
MW-05 (Downgradient)	4	1/23/2024	D
		5/22/2024	D
		7/30/2024	D
		10/29/2024	D

Table 4. Appendix III Groundwater Analytical Results through October 2024 - Midwest Generation, LLC, Joliet Station #29, Joliet, IL.

Well	Date	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids	
MW-10 up- gradient	10/28/2015	0.47	100	200	0.41	7.04	84	790	
	2/10/2016	0.41	210	100	0.44	7.17	120	820	
	5/12/2016	0.29	100	300	0.42	7.02	110	920	
	8/31/2016	0.36	89	170	0.46	6.95	100	760	
	11/2/2016	0.48	100	130	0.45	6.99	95	720	
	2/6/2017	0.44	120	190	0.36	6.99	88	820	
	4/26/2017	0.35	120	200	0.35	7.27	87	760	
	6/14/2017	0.29	91	160	0.43	7.47	75	690	
	Pred. Limit*	0.57	131	316	0.51	7.56-6.67	95	131	
	8/22/2017	0.45	97	170	0.38	7.23	110	750	
	10/18/2017	0.61	120	140	0.41	7.11	130	820	
	4/24/2018	0.4	110	260	0.39	7.28	120	910	
	10/17/2018	0.63	120	180	0.42	7.30	110	810	
	11/24/2018 R	0.44	NA	NA	NA	NA	NA	NA	
	5/7/2019	0.56	130	410	0.39	7.17	95	1,000	
	7/8/2019 R	NA	NA	230	NA	NA	NA	830	
	11/7/2019	0.35	90	130	0.36	7.40	59	650	
	5/20/2020	0.85	120	250	0.41	6.90	100	960	
	6/11/2020 R	0.26	NA	NA	NA	NA	NA	770	
	10/22/2020	0.34	110	230	0.41	7.11	93	850	
	5/18/2021	0.33	140	350	0.39	7.16	210	1,200	
	6/29/2021 R	NA	160	420	NA	7.32	190	1,300	
	8/30/2021	0.28	120	330	0.37	7.56	170	990	
	11/16/2021	0.39	120	260	0.38	7.01	150	1,000	
	1/3/2022	0.47	120	280	0.41	7.05	190	1,000	
	5/26/2022	0.39	120	280	0.41	6.90	160	1,000	
	8/31/2022	0.33	110	240	0.41	6.58	160	970	
	11/9/2022	0.32	110	240	0.42	7.00	150	890	
	12/20/2022 (R)	NS	NS	NS	NS	NS	NS	NS	
	2/28/2023	0.36	130	330	0.38	7.06	170	1,200	
	5/3/2023	0.37	130	110	0.39	6.99	190	1,100	
	7/20/2023	0.33	110	250	0.39	6.95	160	960	
	10/26/2023	0.40	120	300	0.41	6.96	160	1,100	
	1/23/2024	0.49	110	260	0.37	6.96	160	970	
	5/22/2024	0.38	110	180	0.41	7.17	120	840	
	7/30/2024	0.44	120	170	0.38	7.40	150	900	
	10/29/2024	0.46	130	220	0.38	7.30	160	1,000	
	MW-03 down- gradient	10/28/2015	0.34	110	230	0.41	7.11	110	960
		2/10/2016	0.49	100	240	0.44	7.31	130	790
		5/10/2016	0.48	85	240	0.44	7.07	130	800
8/31/2016		0.49	100	250	0.45	7.18	120	920	
11/2/2016		0.34	87	190	0.44	7.45	94	720	
4/26/2017		0.40	97	140	0.39	7.25	77	720	
6/14/2017		0.54	100	210	0.36	7.03	120	820	
8/22/2017		0.45	88	190	0.44	7.48	75	760	
Pred. Limit		0.57	131	316	0.51	7.56-6.67	130	956	
10/18/2017		0.41	99	160	0.40	7.34	110	850	
4/24/2018		0.52	100	220	0.42	7.2	150	930	
7/31/2018 R		NA	NA	NA	NA	NA	110	NA	
10/17/2018		0.25	100	250	0.4	7.04	110	870	
5/7/2019		0.43	120	280	0.4	7.27	140	880	
7/8/2019 R		NA	NA	NA	NA	NA	65	NA	
11/7/2019		0.34	100	150	0.4	7.32	65	660	
5/20/2020		0.38	100	230	0.42	7.56	78	960	
6/11/2020 R		NA	NA	NA	NA	NA	NA	930	
10/22/2020		0.30	110	180	0.43	7.23	96	770	
5/18/2021		0.28	130	300	0.4	7.13	190	1,200	
6/29/2021 R		NA	NA	NA	NA	7.34	210	1,300	
11/16/2021		0.3	130	280	0.37	7.11	150	1,000	
1/3/2022		0.3	130	270	0.4	7.05	180	1,000	
5/26/2022		0.39	120	280	0.41	6.90	160	1,100	
8/31/2022		0.23	110	270	0.39	6.25	130	1,200	
11/9/2022		0.25	120	300	0.44	7.03	140	1,100	
2/28/2023		0.3	120	280	0.37	7.06	160	1,000	
5/3/2023		0.36	130	250	0.37	6.97	200	980	
7/20/2023		0.32	130	250	0.36	6.86	190	1,000	
10/26/2023		0.31	130	300	0.40	6.93	170	1,100	
1/23/2024		0.34	96	240	0.42	7.01	160	990	
5/22/2024		0.49	110	220	0.43	7.07	170	990	
7/30/2024		0.44	100	170	0.41	7.56	130	820	
10/29/2024		0.40	110	180	0.39	7.38	170	1,000	
MW-04 down- gradient		10/28/2015	0.34	94	F1	200	0.45	7.07	83
		2/10/2016	0.32	97	210	0.47	7.22	140	810
		5/10/2016	0.47	100	260	0.46	6.71	150	900
		8/31/2016	0.42	100	210	0.45	7.07	120	890
		11/2/2016	0.32	98	160	0.43	7.25	83	750
		2/6/2017	0.40	110	200	0.37	7.19	98	790
	4/26/2017	0.33	100	37	0.46	7.46	89	770	
	6/14/2017	0.37	92	190	0.47	7.43	80	770	
	Pred. Limit	0.57	131	316	0.51	7.56-6.67	130	956	
	8/22/2017	0.35	83	180	0.43	7.41	100	770	
	10/18/2017	0.54	97	140	0.45	7.2	120	790	
	4/24/2018	0.4	110	240	0.43	7.21	160	940	
	7/31/2018 R	NA	NA	NA	NA	NA	120	NA	
	10/17/2018	0.28	100	0.45	7.2	7.2	130	840	
	5/7/2019	0.76	120	340	0.42	7.27	120	1,000	
	7/8/2019 R	0.23	NA	250	NA	NA	NA	870	
	11/16/2021	0.3	77	140	0.41	7.33	53	670	
	5/20/2020	0.70	110	220	0.45	7.3	110	1,100	
	6/11/2020 R	0.28	NA	NA	NA	NA	NA	850	
	10/22/2020	0.33	100	190	0.48	7.15	83	770	
	5/18/2021	0.22	120	280	0.42	7.3	190	1,100	
	6/29/2021 R	NA	NA	NA	NA	7.36	190	1,200	
	11/16/2021	0.3	130	290	0.42	7.11	140	1,000	
	1/3/2022	0.31	120	220	0.42	7.11	170	1,100	
	5/26/2022	0.26	110	290	0.44	6.94	150	1,100	
	8/31/2022	0.32	120	240	0.45	6.38	150	870	
	11/9/2022	0.34	120	240	0.61	7.08	150	940	
	2/28/2023	0.34	120	280	0.4	7.16	150	1,100	
	5/3/2023	0.28	110	290	0.40	6.97	160	1,100	
	7/20/2023	0.37	120	240	0.41	7.02	180	970	
	10/26/2023	0.31	120	320	0.43	6.95	140	1,100	
	12/17/2023 R	NS	NS	NS	NS	NS	NS	NS	
	1/23/2024	0.42	99	200	0.38	6.93	150	970	
	5/22/2024	0.39	110	200	0.41	7.12	120	910	
	7/30/2024	0.34	110	170	0.42	7.45	120	890	
	10/29/2024	0.38	120	190	0.43	7.32	120	980	
	MW-05 down- gradient	10/28/2015	0.64	100	160	0.39	7.12	120	790
		2/10/2016	0.46	110	220	0.39	7.25	120	790
		5/10/2016	0.8	150	220	0.46	6.88	250	850
		8/31/2016	1.0	140	99	0.56	6.81	260	820
11/2/2016		0.41	98	130	0.37	7.26	100	700	
2/6/2017		0.48	150	180	0.30	7.22	120	790	
4/26/2017		0.67	110	F1	190	0.37	7.28	770	
6/14/2017		0.44	75	150	0.46	7.45	110	670	
Pred. Limit		0.57	131	316	0.51	7.56-6.67	130	956	
8/22/2017		0.38	83	170	0.35	7.20	99	770	
10/18/2017		0.42	110	110	0.38	7.16	95	720	
4/24/2018		0.31	110	300	0.34	7.33	130	1,000	
7/31/2018 R		NA	NA	NA	NA	NA	NA	940	
10/17/2018		0.31	110	210	0.36	7.29	93	810	
5/6/2019		0.38	130	300	0.31	7.11	84	1,300	
7/8/2019 R		NA	NA	150	NA	NA	NA	890	
11/7/2019		0.31	180	130	0.3	7.44	64	590	
12/4/2019 R		NA	89	NA	NA	NA	NA	NA	
5/20/2020		0.32	100	270	0.37	7.03	67	890	
10/22/2020		0.52	92	180	0.38	7.16	85	720	
5/18/2021		0.37	130	410	0.3	7.09	140	1,100	
6/29/2021 R		NA	NA	430	NA	7.33	150	1,300	
11/16/2021		0.44	120	260	0.3	7.08	140	970	
1/3/2022		0.43	110	230	0.3	7.04	140	900	
5/26/2022		0.55	120	330	0.31	6.86	140	1,100	
8/31/2022		0.43	110	240	0.32	6.50	130	1,100	
11/9/2022		0.39	120	230	0.42	7.00	120	910	
2/28/2023		0.60	160	130	0.35	7.15	260	900	
3/23/2023 R		NA	130	NA	NA	NA	170	NA	
5/3/2023		0.50	110	270	0.30	6.96	120	910	
7/20/2023		0.45	110	240	0.30	6.94	120	900	
10/26/2023		0.42	120	220	0.32	6.96	120	950	
1/23/2024		0.49	110	210	0.29	6.93	210	1,000	
5/22/2024		0.58	110	260	0.34	7.07	180	1,100	
7/30/2024		0.52	100	150	0.31	7.45	140	790	
10/29/2024		0.48	120	190	0.32	7.30	160	1,000	

ATTACHMENT 1
Groundwater Flow Contour Maps

NOTES:
BACKGROUND MAP RETRIEVED FROM GOOGLE MAPS 2013

- LEGEND:**
- 505 GROUNDWATER CONTOUR LINE
 - GROUNDWATER FLOW LINE
 - MW-05 CCR MONITORING WELL
 - MW-08 NON-CCR MONITORING WELL

MW-10
506.00

POND 2

MW-03
505.94

MW-04
505.87

MW-05
505.47

MW-06

SH POND 1

MW-07

MW-09

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414 Plaza Drive, Suite 106 Westmont, Illinois 60559 Telephone 630-325-1300 Facsimile 630-325-1593

CCR GROUNDWATER CONTOUR MAP 1Q2024

JOLIET #29 GENERATING STATION
JOLIET, ILLINOIS

Scale: 1" = 125' Date: January 3, 2025

KPRG Project No. 12313.0 ATTACHMENT 1

0 125'
APPROXIMATE SCALE



NOTES:
BACKGROUND MAP RETRIEVED FROM GOOGLE MAPS 2013

LEGEND:
—505 GROUNDWATER CONTOUR LINE
→ GROUNDWATER FLOW LINE
MW-05 CCR MONITORING WELL
MW-06 NON-CCR MONITORING WELL

MW-10
506.42

506.40

506.35

506.30

506.25

MW-03
506.30

MW-04
506.25

MW-05
505.81

MW-06

MW-11

MW-09

POND 2

POND 1

0 125'
APPROXIMATE SCALE



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CCR GROUNDWATER CONTOUR MAP 2Q2024

JOLIET #29 GENERATING STATION
JOLIET, ILLINOIS

Scale: 1" = 125' Date: January 3, 2025

KPRG Project No. 12313.0 ATTACHMENT 1

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NOTES:
BACKGROUND MAP RETRIEVED FROM GOOGLE MAPS 2013

LEGEND:
505 GROUNDWATER CONTOUR LINE
GROUNDWATER FLOW LINE
MW-05 CCR MONITORING WELL
MW-06 NON-CCR MONITORING WELL

MW-10
505.77

POND 2

MW-03
505.70

MW-04
505.67

MW-05
505.21

MW-06

SH POND 1

MW-09

MW-07

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CCR GROUNDWATER CONTOUR MAP 3Q2024

JOLIET #29 GENERATING STATION
JOLIET, ILLINOIS

Scale: 1" = 125' Date: January 3, 2025

KPRG Project No. 12313.0 ATTACHMENT 1

0 125'
APPROXIMATE SCALE



NOTES:
BACKGROUND MAP RETRIEVED FROM GOOGLE MAPS 2013

LEGEND:
505 GROUNDWATER CONTOUR LINE
GROUNDWATER FLOW LINE
MW-05 CCR MONITORING WELL
MW-06 NON-CCR MONITORING WELL

MW-10
505.42

POND 2

MW-03
505.38

MW-04
505.34

MW-05
504.87

MW-06

SH POND 1

MW-09

MW-07

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0 125'
APPROXIMATE SCALE



ENVIRONMENTAL CONSULTATION & REMEDIATION

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CCR GROUNDWATER CONTOUR MAP 4Q2024

JOLIET #29 GENERATING STATION
JOLIET, ILLINOIS

Scale: 1" = 125' Date: January 3, 2025

KPRG Project No. 12313.0 ATTACHMENT 1

ATTACHMENT 2
Analytical Data Packages

ANALYTICAL REPORT

PREPARED FOR

Attn: James Thorne
Midwest Generation EME LLC
1800 Channahon Road
Joliet, Illinois 60436

Generated 2/12/2024 12:06:27 PM

JOB DESCRIPTION

Joliet #29 CCR

JOB NUMBER

500-245243-1

Eurofins Chicago

Job Notes

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Authorization



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2/12/2024 12:06:27 PM

Authorized for release by
Diana Mockler, Project Manager I
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Case Narrative

Client: Midwest Generation EME LLC
Project: Joliet #29 CCR

Job ID: 500-245243-1

Job ID: 500-245243-1

Eurofins Chicago

Job Narrative 500-245243-1

Receipt

The samples were received on 1/23/2024 4:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.1° C and 2.4° C.

Metals

Method 6020B: The initial low level calibration verification (ICVL) result for batch 751409 was above the upper control limit. The affected analytes are: Be and Sb. Sample results were below the lower limit, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Eurofins Chicago

Method Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CHI
SM 4500 Cl- E	Chloride, Total	SM	EET CHI
SM 4500 F C	Fluoride	SM	EET CHI
SM 4500 SO4 E	Sulfate, Total	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-245243-1	MW-03	Water	01/23/24 12:14	01/23/24 16:20
500-245243-2	MW-04	Water	01/23/24 10:57	01/23/24 16:20
500-245243-3	MW-05	Water	01/23/24 13:14	01/23/24 16:20
500-245243-4	MW-10	Water	01/23/24 14:35	01/23/24 16:20
500-245243-5	Duplicate	Water	01/23/24 00:00	01/23/24 16:20

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Client Sample ID: MW-03

Lab Sample ID: 500-245243-1

Date Collected: 01/23/24 12:14

Matrix: Water

Date Received: 01/23/24 16:20

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0023		0.0010		mg/L		01/24/24 07:54	01/24/24 21:16	1
Boron	0.34		0.050		mg/L		01/24/24 07:54	01/29/24 13:01	1
Barium	0.13		0.0025		mg/L		01/24/24 07:54	01/24/24 21:16	1
Beryllium	<0.0010	^1+	0.0010		mg/L		01/24/24 07:54	01/24/24 21:16	1
Calcium	96		0.20		mg/L		01/24/24 07:54	01/29/24 13:01	1
Cadmium	<0.00050		0.00050		mg/L		01/24/24 07:54	01/24/24 21:16	1
Cobalt	<0.0010		0.0010		mg/L		01/24/24 07:54	01/24/24 21:16	1
Chromium	<0.0050		0.0050		mg/L		01/24/24 07:54	01/24/24 21:16	1
Molybdenum	0.0054		0.0050		mg/L		01/24/24 07:54	01/24/24 21:16	1
Lead	<0.00050		0.00050		mg/L		01/24/24 07:54	01/24/24 21:16	1
Antimony	<0.0030	^1+	0.0030		mg/L		01/24/24 07:54	01/24/24 21:16	1
Selenium	<0.0025		0.0025		mg/L		01/24/24 07:54	01/25/24 17:27	1
Thallium	<0.0020		0.0020		mg/L		01/24/24 07:54	01/24/24 21:16	1
Lithium	0.013		0.010		mg/L		01/24/24 07:54	01/24/24 21:16	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		02/08/24 10:30	02/09/24 08:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	990		10		mg/L			01/24/24 21:52	1
Chloride (SM 4500 Cl- E)	240		10		mg/L			01/24/24 16:49	5
Fluoride (SM 4500 F C)	0.42		0.10		mg/L			01/24/24 15:25	1
Sulfate (SM 4500 SO4 E)	160		25		mg/L			01/31/24 16:45	5

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Client Sample ID: MW-04

Lab Sample ID: 500-245243-2

Date Collected: 01/23/24 10:57

Matrix: Water

Date Received: 01/23/24 16:20

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0020		0.0010		mg/L		01/24/24 07:54	01/24/24 21:19	1
Boron	0.42		0.050		mg/L		01/24/24 07:54	01/29/24 13:05	1
Barium	0.091		0.0025		mg/L		01/24/24 07:54	01/24/24 21:19	1
Beryllium	<0.0010	^1+	0.0010		mg/L		01/24/24 07:54	01/24/24 21:19	1
Calcium	99		0.20		mg/L		01/24/24 07:54	01/29/24 13:05	1
Cadmium	<0.00050		0.00050		mg/L		01/24/24 07:54	01/24/24 21:19	1
Cobalt	0.0085		0.0010		mg/L		01/24/24 07:54	01/24/24 21:19	1
Chromium	<0.0050		0.0050		mg/L		01/24/24 07:54	01/24/24 21:19	1
Molybdenum	0.0056		0.0050		mg/L		01/24/24 07:54	01/24/24 21:19	1
Lead	0.00051		0.00050		mg/L		01/24/24 07:54	01/24/24 21:19	1
Antimony	<0.0030	^1+	0.0030		mg/L		01/24/24 07:54	01/24/24 21:19	1
Selenium	<0.0025		0.0025		mg/L		01/24/24 07:54	01/25/24 17:30	1
Thallium	<0.0020		0.0020		mg/L		01/24/24 07:54	01/24/24 21:19	1
Lithium	0.018		0.010		mg/L		01/24/24 07:54	01/24/24 21:19	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		02/08/24 10:30	02/09/24 08:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	970		10		mg/L			01/24/24 21:55	1
Chloride (SM 4500 Cl- E)	200		10		mg/L			01/24/24 16:50	5
Fluoride (SM 4500 F C)	0.38		0.10		mg/L			02/09/24 13:58	1
Sulfate (SM 4500 SO4 E)	150		25		mg/L			01/31/24 16:48	5

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Client Sample ID: MW-05

Lab Sample ID: 500-245243-3

Date Collected: 01/23/24 13:14

Matrix: Water

Date Received: 01/23/24 16:20

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0012		0.0010		mg/L		01/24/24 07:54	01/24/24 21:23	1
Boron	0.49		0.050		mg/L		01/24/24 07:54	01/29/24 13:09	1
Barium	0.098		0.0025		mg/L		01/24/24 07:54	01/24/24 21:23	1
Beryllium	<0.0010	^1+	0.0010		mg/L		01/24/24 07:54	01/24/24 21:23	1
Calcium	110		0.20		mg/L		01/24/24 07:54	01/29/24 13:09	1
Cadmium	<0.00050		0.00050		mg/L		01/24/24 07:54	01/24/24 21:23	1
Cobalt	<0.0010		0.0010		mg/L		01/24/24 07:54	01/24/24 21:23	1
Chromium	<0.0050		0.0050		mg/L		01/24/24 07:54	01/24/24 21:23	1
Molybdenum	0.0050		0.0050		mg/L		01/24/24 07:54	01/24/24 21:23	1
Lead	<0.00050		0.00050		mg/L		01/24/24 07:54	01/24/24 21:23	1
Antimony	<0.0030	^1+	0.0030		mg/L		01/24/24 07:54	01/24/24 21:23	1
Selenium	<0.0025		0.0025		mg/L		01/24/24 07:54	01/25/24 17:34	1
Thallium	<0.0020		0.0020		mg/L		01/24/24 07:54	01/24/24 21:23	1
Lithium	0.016		0.010		mg/L		01/24/24 07:54	01/24/24 21:23	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		02/08/24 10:30	02/09/24 08:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1000		10		mg/L			01/24/24 21:57	1
Chloride (SM 4500 Cl- E)	210		10		mg/L			01/29/24 12:47	5
Fluoride (SM 4500 F C)	0.29		0.10		mg/L			02/09/24 14:03	1
Sulfate (SM 4500 SO4 E)	210		50		mg/L			01/31/24 16:49	10

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Client Sample ID: MW-10

Lab Sample ID: 500-245243-4

Date Collected: 01/23/24 14:35

Matrix: Water

Date Received: 01/23/24 16:20

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0013		0.0010		mg/L		01/24/24 07:54	01/24/24 21:37	1
Boron	0.49		0.050		mg/L		01/24/24 07:54	01/29/24 13:12	1
Barium	0.056		0.0025		mg/L		01/24/24 07:54	01/24/24 21:37	1
Beryllium	<0.0010	^1+	0.0010		mg/L		01/24/24 07:54	01/24/24 21:37	1
Calcium	110		0.20		mg/L		01/24/24 07:54	01/29/24 13:12	1
Cadmium	<0.00050		0.00050		mg/L		01/24/24 07:54	01/24/24 21:37	1
Cobalt	<0.0010		0.0010		mg/L		01/24/24 07:54	01/24/24 21:37	1
Chromium	<0.0050		0.0050		mg/L		01/24/24 07:54	01/24/24 21:37	1
Molybdenum	0.0067		0.0050		mg/L		01/24/24 07:54	01/24/24 21:37	1
Lead	0.00064		0.00050		mg/L		01/24/24 07:54	01/24/24 21:37	1
Antimony	<0.0030	^1+	0.0030		mg/L		01/24/24 07:54	01/24/24 21:37	1
Selenium	<0.0025		0.0025		mg/L		01/24/24 07:54	01/25/24 17:37	1
Thallium	<0.0020		0.0020		mg/L		01/24/24 07:54	01/24/24 21:37	1
Lithium	0.014		0.010		mg/L		01/24/24 07:54	01/24/24 21:37	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		02/08/24 10:30	02/09/24 08:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	970		10		mg/L			01/24/24 22:00	1
Chloride (SM 4500 Cl- E)	260		20		mg/L			01/24/24 17:00	10
Fluoride (SM 4500 F C)	0.37		0.10		mg/L			02/09/24 14:07	1
Sulfate (SM 4500 SO4 E)	160		25		mg/L			01/31/24 16:48	5

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Client Sample ID: Duplicate

Lab Sample ID: 500-245243-5

Date Collected: 01/23/24 00:00

Matrix: Water

Date Received: 01/23/24 16:20

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0012		0.0010		mg/L		01/24/24 07:54	01/24/24 21:40	1
Boron	0.45		0.050		mg/L		01/24/24 07:54	01/29/24 14:45	1
Barium	0.093		0.0025		mg/L		01/24/24 07:54	01/24/24 21:40	1
Beryllium	<0.0010	^1+	0.0010		mg/L		01/24/24 07:54	01/24/24 21:40	1
Calcium	110		0.20		mg/L		01/24/24 07:54	01/29/24 14:45	1
Cadmium	<0.00050		0.00050		mg/L		01/24/24 07:54	01/24/24 21:40	1
Cobalt	<0.0010		0.0010		mg/L		01/24/24 07:54	01/24/24 21:40	1
Chromium	<0.0050		0.0050		mg/L		01/24/24 07:54	01/24/24 21:40	1
Molybdenum	<0.0050		0.0050		mg/L		01/24/24 07:54	01/24/24 21:40	1
Lead	<0.00050		0.00050		mg/L		01/24/24 07:54	01/24/24 21:40	1
Antimony	<0.0030	^1+	0.0030		mg/L		01/24/24 07:54	01/24/24 21:40	1
Selenium	<0.0025		0.0025		mg/L		01/24/24 07:54	01/25/24 17:41	1
Thallium	<0.0020		0.0020		mg/L		01/24/24 07:54	01/24/24 21:40	1
Lithium	0.016		0.010		mg/L		01/24/24 07:54	01/24/24 21:40	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		02/08/24 10:30	02/09/24 08:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	970		10		mg/L			01/24/24 22:02	1
Chloride (SM 4500 Cl- E)	220		10		mg/L			01/24/24 16:48	5
Fluoride (SM 4500 F C)	0.29		0.10		mg/L			02/09/24 14:12	1
Sulfate (SM 4500 SO4 E)	200		50		mg/L			01/31/24 16:47	10

Definitions/Glossary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Qualifiers

Metals

Qualifier	Qualifier Description
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Metals

Prep Batch: 751230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-1	MW-03	Total Recoverable	Water	3005A	
500-245243-2	MW-04	Total Recoverable	Water	3005A	
500-245243-3	MW-05	Total Recoverable	Water	3005A	
500-245243-4	MW-10	Total Recoverable	Water	3005A	
500-245243-5	Duplicate	Total Recoverable	Water	3005A	
MB 500-751230/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-751230/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 751409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-1	MW-03	Total Recoverable	Water	6020B	751230
500-245243-2	MW-04	Total Recoverable	Water	6020B	751230
500-245243-3	MW-05	Total Recoverable	Water	6020B	751230
500-245243-4	MW-10	Total Recoverable	Water	6020B	751230
500-245243-5	Duplicate	Total Recoverable	Water	6020B	751230
MB 500-751230/1-A	Method Blank	Total Recoverable	Water	6020B	751230
LCS 500-751230/2-A	Lab Control Sample	Total Recoverable	Water	6020B	751230

Analysis Batch: 751577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-1	MW-03	Total Recoverable	Water	6020B	751230
500-245243-2	MW-04	Total Recoverable	Water	6020B	751230
500-245243-3	MW-05	Total Recoverable	Water	6020B	751230
500-245243-4	MW-10	Total Recoverable	Water	6020B	751230
500-245243-5	Duplicate	Total Recoverable	Water	6020B	751230
MB 500-751230/1-A	Method Blank	Total Recoverable	Water	6020B	751230
LCS 500-751230/2-A	Lab Control Sample	Total Recoverable	Water	6020B	751230

Analysis Batch: 751935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-1	MW-03	Total Recoverable	Water	6020B	751230
500-245243-2	MW-04	Total Recoverable	Water	6020B	751230
500-245243-3	MW-05	Total Recoverable	Water	6020B	751230
500-245243-4	MW-10	Total Recoverable	Water	6020B	751230
500-245243-5	Duplicate	Total Recoverable	Water	6020B	751230
MB 500-751230/1-A	Method Blank	Total Recoverable	Water	6020B	751230
LCS 500-751230/2-A	Lab Control Sample	Total Recoverable	Water	6020B	751230

Prep Batch: 753245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-1	MW-03	Total/NA	Water	7470A	
500-245243-2	MW-04	Total/NA	Water	7470A	
500-245243-3	MW-05	Total/NA	Water	7470A	
500-245243-4	MW-10	Total/NA	Water	7470A	
500-245243-5	Duplicate	Total/NA	Water	7470A	
MB 500-753245/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-753245/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 753469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-1	MW-03	Total/NA	Water	7470A	753245

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QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Metals (Continued)

Analysis Batch: 753469 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-2	MW-04	Total/NA	Water	7470A	753245
500-245243-3	MW-05	Total/NA	Water	7470A	753245
500-245243-4	MW-10	Total/NA	Water	7470A	753245
500-245243-5	Duplicate	Total/NA	Water	7470A	753245
MB 500-753245/12-A	Method Blank	Total/NA	Water	7470A	753245
LCS 500-753245/13-A	Lab Control Sample	Total/NA	Water	7470A	753245

General Chemistry

Analysis Batch: 751341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-1	MW-03	Total/NA	Water	SM 2540C	
500-245243-2	MW-04	Total/NA	Water	SM 2540C	
500-245243-3	MW-05	Total/NA	Water	SM 2540C	
500-245243-4	MW-10	Total/NA	Water	SM 2540C	
500-245243-5	Duplicate	Total/NA	Water	SM 2540C	
MB 500-751341/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-751341/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 751361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-1	MW-03	Total/NA	Water	SM 4500 F C	
MB 500-751361/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 500-751361/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	

Analysis Batch: 751394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-1	MW-03	Total/NA	Water	SM 4500 Cl- E	
500-245243-2	MW-04	Total/NA	Water	SM 4500 Cl- E	
500-245243-4	MW-10	Total/NA	Water	SM 4500 Cl- E	
500-245243-5	Duplicate	Total/NA	Water	SM 4500 Cl- E	
MB 500-751394/52	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 500-751394/53	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 751865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-3	MW-05	Total/NA	Water	SM 4500 Cl- E	
MB 500-751865/15	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 500-751865/16	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 752223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-1	MW-03	Total/NA	Water	SM 4500 SO4 E	
500-245243-2	MW-04	Total/NA	Water	SM 4500 SO4 E	
500-245243-3	MW-05	Total/NA	Water	SM 4500 SO4 E	
500-245243-4	MW-10	Total/NA	Water	SM 4500 SO4 E	
500-245243-5	Duplicate	Total/NA	Water	SM 4500 SO4 E	
MB 500-752223/75	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 500-752223/76	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	

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QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

General Chemistry

Analysis Batch: 753484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-2	MW-04	Total/NA	Water	SM 4500 F C	
500-245243-3	MW-05	Total/NA	Water	SM 4500 F C	
500-245243-4	MW-10	Total/NA	Water	SM 4500 F C	
500-245243-5	Duplicate	Total/NA	Water	SM 4500 F C	
MB 500-753484/31	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 500-753484/32	Lab Control Sample	Total/NA	Water	SM 4500 F C	
500-245243-5 MS	Duplicate	Total/NA	Water	SM 4500 F C	
500-245243-5 MSD	Duplicate	Total/NA	Water	SM 4500 F C	

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-751230/1-A
Matrix: Water
Analysis Batch: 751409

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 751230

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.0010		0.0010		mg/L		01/24/24 07:54	01/24/24 20:00	1
Barium	<0.0025		0.0025		mg/L		01/24/24 07:54	01/24/24 20:00	1
Beryllium	<0.0010	^1+	0.0010		mg/L		01/24/24 07:54	01/24/24 20:00	1
Cadmium	<0.00050		0.00050		mg/L		01/24/24 07:54	01/24/24 20:00	1
Cobalt	<0.0010		0.0010		mg/L		01/24/24 07:54	01/24/24 20:00	1
Chromium	<0.0050		0.0050		mg/L		01/24/24 07:54	01/24/24 20:00	1
Molybdenum	<0.0050		0.0050		mg/L		01/24/24 07:54	01/24/24 20:00	1
Lead	<0.00050		0.00050		mg/L		01/24/24 07:54	01/24/24 20:00	1
Antimony	<0.0030	^1+	0.0030		mg/L		01/24/24 07:54	01/24/24 20:00	1
Thallium	<0.0020		0.0020		mg/L		01/24/24 07:54	01/24/24 20:00	1
Lithium	<0.010		0.010		mg/L		01/24/24 07:54	01/24/24 20:00	1

Lab Sample ID: MB 500-751230/1-A
Matrix: Water
Analysis Batch: 751577

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 751230

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.0025		0.0025		mg/L		01/24/24 07:54	01/25/24 17:16	1

Lab Sample ID: MB 500-751230/1-A
Matrix: Water
Analysis Batch: 751935

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 751230

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.050		0.050		mg/L		01/24/24 07:54	01/29/24 12:54	1

Lab Sample ID: LCS 500-751230/2-A
Matrix: Water
Analysis Batch: 751409

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 751230

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.100	0.0967		mg/L		97	80 - 120
Barium	0.500	0.505		mg/L		101	80 - 120
Beryllium	0.0500	0.0501	^1+	mg/L		100	80 - 120
Cadmium	0.0500	0.0497		mg/L		99	80 - 120
Cobalt	0.500	0.503		mg/L		101	80 - 120
Chromium	0.200	0.191		mg/L		95	80 - 120
Molybdenum	1.00	0.903		mg/L		90	80 - 120
Lead	0.100	0.0967		mg/L		97	80 - 120
Antimony	0.500	0.516	^1+	mg/L		103	80 - 120
Thallium	0.100	0.0957		mg/L		96	80 - 120
Lithium	0.100	0.0992		mg/L		99	80 - 120

Lab Sample ID: LCS 500-751230/2-A
Matrix: Water
Analysis Batch: 751577

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 751230

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Selenium	0.100	0.0902		mg/L		90	80 - 120

Eurofins Chicago

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 500-751230/2-A
Matrix: Water
Analysis Batch: 751935

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 751230

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.00	0.968		mg/L		97	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-753245/12-A
Matrix: Water
Analysis Batch: 753469

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 753245

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		02/08/24 10:30	02/09/24 08:11	1

Lab Sample ID: LCS 500-753245/13-A
Matrix: Water
Analysis Batch: 753469

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 753245

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00201	0.00208		mg/L		104	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 500-751341/1
Matrix: Water
Analysis Batch: 751341

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10		mg/L			01/24/24 21:37	1

Lab Sample ID: LCS 500-751341/2
Matrix: Water
Analysis Batch: 751341

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	250	264		mg/L		106	80 - 120

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 500-751394/52
Matrix: Water
Analysis Batch: 751394

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.0		2.0		mg/L			01/24/24 16:45	1

Lab Sample ID: LCS 500-751394/53
Matrix: Water
Analysis Batch: 751394

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	19.7		mg/L		99	85 - 115

Eurofins Chicago

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: MB 500-751865/15
Matrix: Water
Analysis Batch: 751865

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.0		2.0		mg/L			01/29/24 12:17	1

Lab Sample ID: LCS 500-751865/16
Matrix: Water
Analysis Batch: 751865

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	21.0		mg/L		105	85 - 115

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 500-751361/3
Matrix: Water
Analysis Batch: 751361

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.10		0.10		mg/L			01/24/24 13:12	1

Lab Sample ID: LCS 500-751361/4
Matrix: Water
Analysis Batch: 751361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	10.0	10.2		mg/L		102	90 - 119

Lab Sample ID: MB 500-753484/31
Matrix: Water
Analysis Batch: 753484

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.10		0.10		mg/L			02/09/24 12:56	1

Lab Sample ID: LCS 500-753484/32
Matrix: Water
Analysis Batch: 753484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	10.0	9.90		mg/L		99	90 - 119

Lab Sample ID: 500-245243-5 MS
Matrix: Water
Analysis Batch: 753484

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.29		5.00	5.14		mg/L		97	75 - 125

Eurofins Chicago

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 500-245243-5 MSD
Matrix: Water
Analysis Batch: 753484

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.29		5.00	5.11		mg/L		96	75 - 125	1	20

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 500-752223/75
Matrix: Water
Analysis Batch: 752223

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0		mg/L			01/31/24 16:05	1

Lab Sample ID: LCS 500-752223/76
Matrix: Water
Analysis Batch: 752223

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	20.0	19.7		mg/L		98	88 - 123

eurofins | Environment Testing

Client Information Client Contact: Patrick Allenstein Company: KPRG and Associates, Inc. Address: 14665 West Lisbon Road, Suite 1A City: Brookfield State, Zip: WI, 53005 Phone: Email: patricka@kprginc.com Project Name: Joliet #29 CCR/ Event Desc: Quarterly MWG Joliet #29 CCR Site: Illinois		Sampler: <u>Law John Hawken</u> Phone: <u>630 290 6850</u> PWSID:		Lab PM: Mockler, Diana J E-Mail: Diana.Mockler@et.eurofinsus.com				COC No: 500-120311-45941 1 Page: Page 1 of 1 Job #: <u>500-195243</u>	
				Analysis Ref: 500-245243 COC					
		Due Date Requested TAT Requested (days): Compliance Project: ☐ Yes ☐ No PO #: 4502085968 WO #:		Field Filtered Sample (Yes or No) 6010C, 6020A, 7470A 2540C, 4500_F_C, SM4500_CL_E, SM4500_SO4_E 903.0, 904.0		Total Number of Containers		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
		Project #: 50011568 SSOW#:						Other:	
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab) BT=Tissue, A=Air	Matrix (W=water, S=solid, O=waste/oil) BT=Tissue, A=Air			Special Instructions/Note:	
				Preservation Code:					
MW-03	1-23-24	12:14	G	Water	N	N	X	K	X
MW-04	1-23-24	10:57	G	Water	N	N	X	X	K
MW-05	1-23-24	13:14	G	Water	N	N	X	X	X
MW-10	1-23-24	14:35	G	Water	N	N	X	K	K
Duplicate	1-23-24	—	G	Water	N	N	X	X	X
				Water					
Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological									
Deliverable Requested I, II, III, IV, Other (specify)					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months				
Special Instructions/QC Requirements									
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by: <u>[Signature]</u>		Date/Time: <u>1-23-24 16:20</u>		Company: <u>KPRG</u>		Received by: <u>[Signature]</u>		Date/Time: <u>1/23/24 1620</u>	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks: <u>2.9+2.4, 1.6+2.1</u>					

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-245243-1

Login Number: 245243

List Number: 1

Creator: Hernandez, Stephanie

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4,2.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Client Sample ID: MW-03

Date Collected: 01/23/24 12:14

Date Received: 01/23/24 16:20

Lab Sample ID: 500-245243-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751409	RN	EET CHI	01/24/24 21:16
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751577	RN	EET CHI	01/25/24 17:27
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751935	RN	EET CHI	01/29/24 13:01
Total/NA	Prep	7470A			753245	MJG	EET CHI	02/08/24 10:30 - 02/08/24 12:30 ¹
Total/NA	Analysis	7470A		1	753469	MJG	EET CHI	02/09/24 08:16
Total/NA	Analysis	SM 2540C		1	751341	CLB	EET CHI	01/24/24 21:52
Total/NA	Analysis	SM 4500 Cl- E		5	751394	TR	EET CHI	01/24/24 16:49
Total/NA	Analysis	SM 4500 F C		1	751361	SO	EET CHI	01/24/24 15:25
Total/NA	Analysis	SM 4500 SO4 E		5	752223	TR	EET CHI	01/31/24 16:45

Client Sample ID: MW-04

Date Collected: 01/23/24 10:57

Date Received: 01/23/24 16:20

Lab Sample ID: 500-245243-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751409	RN	EET CHI	01/24/24 21:19
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751577	RN	EET CHI	01/25/24 17:30
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751935	RN	EET CHI	01/29/24 13:05
Total/NA	Prep	7470A			753245	MJG	EET CHI	02/08/24 10:30 - 02/08/24 12:30 ¹
Total/NA	Analysis	7470A		1	753469	MJG	EET CHI	02/09/24 08:18
Total/NA	Analysis	SM 2540C		1	751341	CLB	EET CHI	01/24/24 21:55
Total/NA	Analysis	SM 4500 Cl- E		5	751394	TR	EET CHI	01/24/24 16:50
Total/NA	Analysis	SM 4500 F C		1	753484	SO	EET CHI	02/09/24 13:58
Total/NA	Analysis	SM 4500 SO4 E		5	752223	TR	EET CHI	01/31/24 16:48

Client Sample ID: MW-05

Date Collected: 01/23/24 13:14

Date Received: 01/23/24 16:20

Lab Sample ID: 500-245243-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751409	RN	EET CHI	01/24/24 21:23
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751577	RN	EET CHI	01/25/24 17:34
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751935	RN	EET CHI	01/29/24 13:09
Total/NA	Prep	7470A			753245	MJG	EET CHI	02/08/24 10:30 - 02/08/24 12:30 ¹
Total/NA	Analysis	7470A		1	753469	MJG	EET CHI	02/09/24 08:20

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Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-245243-1

Client Sample ID: MW-05

Date Collected: 01/23/24 13:14

Date Received: 01/23/24 16:20

Lab Sample ID: 500-245243-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	751341	CLB	EET CHI	01/24/24 21:57
Total/NA	Analysis	SM 4500 CI- E		5	751865	TR	EET CHI	01/29/24 12:47
Total/NA	Analysis	SM 4500 F C		1	753484	SO	EET CHI	02/09/24 14:03
Total/NA	Analysis	SM 4500 SO4 E		10	752223	TR	EET CHI	01/31/24 16:49

Client Sample ID: MW-10

Date Collected: 01/23/24 14:35

Date Received: 01/23/24 16:20

Lab Sample ID: 500-245243-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751409	RN	EET CHI	01/24/24 21:37
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751577	RN	EET CHI	01/25/24 17:37
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751935	RN	EET CHI	01/29/24 13:12
Total/NA	Prep	7470A			753245	MJG	EET CHI	02/08/24 10:30 - 02/08/24 12:30 ¹
Total/NA	Analysis	7470A		1	753469	MJG	EET CHI	02/09/24 08:22
Total/NA	Analysis	SM 2540C		1	751341	CLB	EET CHI	01/24/24 22:00
Total/NA	Analysis	SM 4500 CI- E		10	751394	TR	EET CHI	01/24/24 17:00
Total/NA	Analysis	SM 4500 F C		1	753484	SO	EET CHI	02/09/24 14:07
Total/NA	Analysis	SM 4500 SO4 E		5	752223	TR	EET CHI	01/31/24 16:48

Client Sample ID: Duplicate

Date Collected: 01/23/24 00:00

Date Received: 01/23/24 16:20

Lab Sample ID: 500-245243-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751409	RN	EET CHI	01/24/24 21:40
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751577	RN	EET CHI	01/25/24 17:41
Total Recoverable	Prep	3005A			751230	BDE	EET CHI	01/24/24 07:54 - 01/24/24 13:54 ¹
Total Recoverable	Analysis	6020B		1	751935	RN	EET CHI	01/29/24 14:45
Total/NA	Prep	7470A			753245	MJG	EET CHI	02/08/24 10:30 - 02/08/24 12:30 ¹
Total/NA	Analysis	7470A		1	753469	MJG	EET CHI	02/09/24 08:24
Total/NA	Analysis	SM 2540C		1	751341	CLB	EET CHI	01/24/24 22:02
Total/NA	Analysis	SM 4500 CI- E		5	751394	TR	EET CHI	01/24/24 16:48
Total/NA	Analysis	SM 4500 F C		1	753484	SO	EET CHI	02/09/24 14:12
Total/NA	Analysis	SM 4500 SO4 E		10	752223	TR	EET CHI	01/31/24 16:47

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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ANALYTICAL REPORT

PREPARED FOR

Attn: James Thorne
Midwest Generation EME LLC
1800 Channahon Road
Joliet, Illinois 60436

Generated 2/19/2024 8:47:34 AM

JOB DESCRIPTION

Joliet #29 CCR (RAD)

JOB NUMBER

500-245243-2

Eurofins Chicago

Job Notes

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Case Narrative

Client: Midwest Generation EME LLC
Project: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Job ID: 500-245243-2

Eurofins Chicago

Job Narrative 500-245243-2

Receipt

The samples were received on 1/23/2024 4:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.1° C and 2.4° C.

RAD

Methods 904.0, RA-06-RC: Radium-228 batch 645640

The sample duplicate (DUP) precision was outside control limits indicating a possible matrix interference. Due to the nature of the analysis the sample cannot be recounted and still achieve the detection goal. The client should take this into consideration when evaluating the data. (860-66116-B-7-B DU)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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Method Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-245243-1	MW-03	Water	01/23/24 12:14	01/23/24 16:20
500-245243-2	MW-04	Water	01/23/24 10:57	01/23/24 16:20
500-245243-3	MW-05	Water	01/23/24 13:14	01/23/24 16:20
500-245243-4	MW-10	Water	01/23/24 14:35	01/23/24 16:20
500-245243-5	Duplicate	Water	01/23/24 00:00	01/23/24 16:20

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Client Sample ID: MW-03

Lab Sample ID: 500-245243-1

Date Collected: 01/23/24 12:14

Matrix: Water

Date Received: 01/23/24 16:20

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0816	U	0.0778	0.0781	1.00	0.121	pCi/L	01/25/24 11:02	02/16/24 09:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		30 - 110					01/25/24 11:02	02/16/24 09:30	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.13		0.428	0.440	1.00	0.536	pCi/L	01/25/24 11:05	02/06/24 11:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		30 - 110					01/25/24 11:05	02/06/24 11:07	1
Y Carrier	84.9		30 - 110					01/25/24 11:05	02/06/24 11:07	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.21		0.435	0.447	5.00	0.536	pCi/L		02/16/24 17:32	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Client Sample ID: MW-04

Lab Sample ID: 500-245243-2

Date Collected: 01/23/24 10:57

Matrix: Water

Date Received: 01/23/24 16:20

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0852	U	0.0868	0.0872	1.00	0.138	pCi/L	01/25/24 11:02	02/16/24 09:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.7		30 - 110					01/25/24 11:02	02/16/24 09:30	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.287	U	0.388	0.389	1.00	0.649	pCi/L	01/25/24 11:05	02/06/24 11:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.7		30 - 110					01/25/24 11:05	02/06/24 11:07	1
Y Carrier	88.2		30 - 110					01/25/24 11:05	02/06/24 11:07	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.372	U	0.398	0.399	5.00	0.649	pCi/L		02/16/24 17:32	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Client Sample ID: MW-05

Lab Sample ID: 500-245243-3

Date Collected: 01/23/24 13:14

Matrix: Water

Date Received: 01/23/24 16:20

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.142		0.0861	0.0871	1.00	0.116	pCi/L	01/25/24 11:02	02/16/24 09:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		30 - 110					01/25/24 11:02	02/16/24 09:30	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.637		0.334	0.340	1.00	0.463	pCi/L	01/25/24 11:05	02/06/24 11:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		30 - 110					01/25/24 11:05	02/06/24 11:07	1
Y Carrier	88.2		30 - 110					01/25/24 11:05	02/06/24 11:07	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.779		0.345	0.351	5.00	0.463	pCi/L		02/16/24 17:32	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Client Sample ID: MW-10

Lab Sample ID: 500-245243-4

Date Collected: 01/23/24 14:35

Matrix: Water

Date Received: 01/23/24 16:20

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0657	U	0.0777	0.0779	1.00	0.127	pCi/L	01/25/24 11:02	02/16/24 09:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.1		30 - 110					01/25/24 11:02	02/16/24 09:30	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.654	U	0.436	0.440	1.00	0.667	pCi/L	01/25/24 11:05	02/06/24 11:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.1		30 - 110					01/25/24 11:05	02/06/24 11:07	1
Y Carrier	87.1		30 - 110					01/25/24 11:05	02/06/24 11:07	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.720		0.443	0.447	5.00	0.667	pCi/L		02/16/24 18:06	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Client Sample ID: Duplicate

Lab Sample ID: 500-245243-5

Date Collected: 01/23/24 00:00

Matrix: Water

Date Received: 01/23/24 16:20

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.197		0.0961	0.0978	1.00	0.119	pCi/L	01/25/24 11:02	02/16/24 09:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.4		30 - 110					01/25/24 11:02	02/16/24 09:30	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.638		0.375	0.380	1.00	0.547	pCi/L	01/25/24 11:05	02/06/24 11:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.4		30 - 110					01/25/24 11:05	02/06/24 11:01	1
Y Carrier	82.2		30 - 110					01/25/24 11:05	02/06/24 11:01	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.834		0.387	0.392	5.00	0.547	pCi/L		02/16/24 18:06	1

Definitions/Glossary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Rad

Prep Batch: 645639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-1	MW-03	Total/NA	Water	PrecSep-21	
500-245243-2	MW-04	Total/NA	Water	PrecSep-21	
500-245243-3	MW-05	Total/NA	Water	PrecSep-21	
500-245243-4	MW-10	Total/NA	Water	PrecSep-21	
500-245243-5	Duplicate	Total/NA	Water	PrecSep-21	
MB 160-645639/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-645639/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 645640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-245243-1	MW-03	Total/NA	Water	PrecSep_0	
500-245243-2	MW-04	Total/NA	Water	PrecSep_0	
500-245243-3	MW-05	Total/NA	Water	PrecSep_0	
500-245243-4	MW-10	Total/NA	Water	PrecSep_0	
500-245243-5	Duplicate	Total/NA	Water	PrecSep_0	
MB 160-645640/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-645640/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-645639/1-A

Matrix: Water

Analysis Batch: 648592

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 645639

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04555	U	0.0644	0.0645	1.00	0.109	pCi/L	01/25/24 11:02	02/16/24 07:32	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.3		30 - 110					01/25/24 11:02	02/16/24 07:32	1

Lab Sample ID: LCS 160-645639/2-A

Matrix: Water

Analysis Batch: 648592

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 645639

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226		11.3	11.52		1.18	1.00	0.0954	pCi/L	102	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	96.7		30 - 110							

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-645640/1-A

Matrix: Water

Analysis Batch: 647093

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 645640

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1839	U	0.304	0.305	1.00	0.519	pCi/L	01/25/24 11:05	02/06/24 15:06	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.3		30 - 110					01/25/24 11:05	02/06/24 15:06	1
Y Carrier	84.5		30 - 110					01/25/24 11:05	02/06/24 15:06	1

Lab Sample ID: LCS 160-645640/2-A

Matrix: Water

Analysis Batch: 647093

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 645640

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228		9.24	10.43		1.33	1.00	0.413	pCi/L	113	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	96.7		30 - 110							
Y Carrier	84.9		30 - 110							

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[illegible]

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-245243-2

Login Number: 245243

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4,2.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-245243-2

Login Number: 245243

List Number: 2

Creator: Worthington, Sierra M

List Source: Eurofins St. Louis

List Creation: 01/24/24 01:10 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Client Sample ID: MW-03

Date Collected: 01/23/24 12:14

Date Received: 01/23/24 16:20

Lab Sample ID: 500-245243-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			645639	KAC	EET SL	01/25/24 11:02
Total/NA	Analysis	903.0		1	648469	EMH	EET SL	02/16/24 09:30
Total/NA	Prep	PrecSep_0			645640	KAC	EET SL	01/25/24 11:05
Total/NA	Analysis	904.0		1	647093	FLC	EET SL	02/06/24 11:07
Total/NA	Analysis	Ra226_Ra228		1	648594	EMH	EET SL	02/16/24 17:32

Client Sample ID: MW-04

Date Collected: 01/23/24 10:57

Date Received: 01/23/24 16:20

Lab Sample ID: 500-245243-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			645639	KAC	EET SL	01/25/24 11:02
Total/NA	Analysis	903.0		1	648469	EMH	EET SL	02/16/24 09:30
Total/NA	Prep	PrecSep_0			645640	KAC	EET SL	01/25/24 11:05
Total/NA	Analysis	904.0		1	647093	FLC	EET SL	02/06/24 11:07
Total/NA	Analysis	Ra226_Ra228		1	648594	EMH	EET SL	02/16/24 17:32

Client Sample ID: MW-05

Date Collected: 01/23/24 13:14

Date Received: 01/23/24 16:20

Lab Sample ID: 500-245243-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			645639	KAC	EET SL	01/25/24 11:02
Total/NA	Analysis	903.0		1	648469	EMH	EET SL	02/16/24 09:30
Total/NA	Prep	PrecSep_0			645640	KAC	EET SL	01/25/24 11:05
Total/NA	Analysis	904.0		1	647093	FLC	EET SL	02/06/24 11:07
Total/NA	Analysis	Ra226_Ra228		1	648594	EMH	EET SL	02/16/24 17:32

Client Sample ID: MW-10

Date Collected: 01/23/24 14:35

Date Received: 01/23/24 16:20

Lab Sample ID: 500-245243-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			645639	KAC	EET SL	01/25/24 11:02
Total/NA	Analysis	903.0		1	648469	EMH	EET SL	02/16/24 09:30
Total/NA	Prep	PrecSep_0			645640	KAC	EET SL	01/25/24 11:05
Total/NA	Analysis	904.0		1	647093	FLC	EET SL	02/06/24 11:07
Total/NA	Analysis	Ra226_Ra228		1	648594	EMH	EET SL	02/16/24 18:06

Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Client Sample ID: Duplicate

Lab Sample ID: 500-245243-5

Date Collected: 01/23/24 00:00

Matrix: Water

Date Received: 01/23/24 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			645639	KAC	EET SL	01/25/24 11:02
Total/NA	Analysis	903.0		1	648469	EMH	EET SL	02/16/24 09:30
Total/NA	Prep	PrecSep_0			645640	KAC	EET SL	01/25/24 11:05
Total/NA	Analysis	904.0		1	647092	FLC	EET SL	02/06/24 11:01
Total/NA	Analysis	Ra226_Ra228		1	648594	EMH	EET SL	02/16/24 18:06

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Tracer/Carrier Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-245243-2

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	
500-245243-1	MW-03	90.6	
500-245243-2	MW-04	81.7	
500-245243-3	MW-05	94.7	
500-245243-4	MW-10	91.1	
500-245243-5	Duplicate	93.4	
LCS 160-645639/2-A	Lab Control Sample	96.7	
MB 160-645639/1-A	Method Blank	88.3	
Tracer/Carrier Legend			
Ba = Ba Carrier			

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
500-245243-1	MW-03	90.6	84.9
500-245243-2	MW-04	81.7	88.2
500-245243-3	MW-05	94.7	88.2
500-245243-4	MW-10	91.1	87.1
500-245243-5	Duplicate	93.4	82.2
LCS 160-645640/2-A	Lab Control Sample	96.7	84.9
MB 160-645640/1-A	Method Blank	88.3	84.5
Tracer/Carrier Legend			
Ba = Ba Carrier			
Y = Y Carrier			

ANALYTICAL REPORT

PREPARED FOR

Attn: James Thorne
Midwest Generation EME LLC
1800 Channahon Road
Joliet, Illinois 60436

Generated 6/13/2024 3:22:57 PM

JOB DESCRIPTION

Joliet #29 CCR

JOB NUMBER

500-250992-1

Eurofins Chicago

Job Notes

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Authorization



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Authorized for release by
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Case Narrative

Client: Midwest Generation EME LLC
Project: Joliet #29 CCR

Job ID: 500-250992-1

Job ID: 500-250992-1

Eurofins Chicago

Job Narrative 500-250992-1

Receipt

The samples were received on 5/23/2024 8:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.0°C and 1.5°C.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Method Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CHI
SM 4500 Cl- E	Chloride, Total	SM	EET CHI
SM 4500 F C	Fluoride	SM	EET CHI
SM 4500 SO4 E	Sulfate, Total	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-250992-1	MW-03	Water	05/22/24 09:02	05/23/24 08:40
500-250992-2	MW-04	Water	05/22/24 10:33	05/23/24 08:40
500-250992-3	MW-05	Water	05/22/24 11:53	05/23/24 08:40
500-250992-4	MW-10	Water	05/22/24 13:30	05/23/24 08:40
500-250992-5	Duplicate	Water	05/22/24 00:00	05/23/24 08:40

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Client Sample ID: MW-03

Lab Sample ID: 500-250992-1

Date Collected: 05/22/24 09:02

Matrix: Water

Date Received: 05/23/24 08:40

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		06/06/24 09:10	06/07/24 16:25	1
Arsenic	0.0013		0.0010		mg/L		06/06/24 09:10	06/07/24 16:25	1
Barium	0.099		0.0025		mg/L		06/06/24 09:10	06/07/24 16:25	1
Beryllium	<0.0010		0.0010		mg/L		06/06/24 09:10	06/10/24 14:42	1
Boron	0.49		0.050		mg/L		06/06/24 09:10	06/07/24 16:25	1
Cadmium	<0.00050		0.00050		mg/L		06/06/24 09:10	06/07/24 16:25	1
Calcium	110		0.20		mg/L		06/06/24 09:10	06/07/24 16:25	1
Chromium	<0.0050		0.0050		mg/L		06/06/24 09:10	06/07/24 16:25	1
Cobalt	<0.0010		0.0010		mg/L		06/06/24 09:10	06/07/24 16:25	1
Lead	<0.00050		0.00050		mg/L		06/06/24 09:10	06/07/24 16:25	1
Lithium	0.011		0.010		mg/L		06/06/24 09:10	06/10/24 14:42	1
Molybdenum	0.0053		0.0050		mg/L		06/06/24 09:10	06/07/24 16:25	1
Selenium	0.0050		0.0025		mg/L		06/06/24 09:10	06/10/24 14:42	1
Thallium	<0.0020		0.0020		mg/L		06/06/24 09:10	06/07/24 16:25	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		06/12/24 14:50	06/13/24 08:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	990		10		mg/L			05/29/24 00:42	1
Chloride (SM 4500 Cl- E)	220		10		mg/L			05/28/24 14:44	5
Fluoride (SM 4500 F C)	0.43		0.10		mg/L			06/06/24 13:47	1
Sulfate (SM 4500 SO4 E)	170		50		mg/L			06/09/24 14:30	10

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Client Sample ID: MW-04

Lab Sample ID: 500-250992-2

Date Collected: 05/22/24 10:33

Matrix: Water

Date Received: 05/23/24 08:40

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		06/06/24 09:10	06/07/24 16:35	1
Arsenic	0.0016		0.0010		mg/L		06/06/24 09:10	06/07/24 16:35	1
Barium	0.077		0.0025		mg/L		06/06/24 09:10	06/07/24 16:35	1
Beryllium	<0.0010		0.0010		mg/L		06/06/24 09:10	06/10/24 14:52	1
Boron	0.39		0.050		mg/L		06/06/24 09:10	06/07/24 16:35	1
Cadmium	<0.00050		0.00050		mg/L		06/06/24 09:10	06/07/24 16:35	1
Calcium	110		0.20		mg/L		06/06/24 09:10	06/07/24 16:35	1
Chromium	<0.0050		0.0050		mg/L		06/06/24 09:10	06/07/24 16:35	1
Cobalt	0.0091		0.0010		mg/L		06/06/24 09:10	06/07/24 16:35	1
Lead	0.00054		0.00050		mg/L		06/06/24 09:10	06/07/24 16:35	1
Lithium	0.013		0.010		mg/L		06/06/24 09:10	06/10/24 14:52	1
Molybdenum	0.0056		0.0050		mg/L		06/06/24 09:10	06/07/24 16:35	1
Selenium	<0.0025		0.0025		mg/L		06/06/24 09:10	06/10/24 14:52	1
Thallium	<0.0020		0.0020		mg/L		06/06/24 09:10	06/07/24 16:35	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		06/12/24 14:50	06/13/24 08:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	910		10		mg/L			05/29/24 00:48	1
Chloride (SM 4500 Cl- E)	200		10		mg/L			05/28/24 14:45	5
Fluoride (SM 4500 F C)	0.41		0.10		mg/L			06/06/24 13:52	1
Sulfate (SM 4500 SO4 E)	120		25		mg/L			06/09/24 14:30	5

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Client Sample ID: MW-05

Lab Sample ID: 500-250992-3

Date Collected: 05/22/24 11:53

Matrix: Water

Date Received: 05/23/24 08:40

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		06/06/24 09:10	06/07/24 16:41	1
Arsenic	<0.0010		0.0010		mg/L		06/06/24 09:10	06/07/24 16:41	1
Barium	0.072		0.0025		mg/L		06/06/24 09:10	06/07/24 16:41	1
Beryllium	<0.0010		0.0010		mg/L		06/06/24 09:10	06/10/24 14:54	1
Boron	0.58		0.050		mg/L		06/06/24 09:10	06/07/24 16:41	1
Cadmium	<0.00050		0.00050		mg/L		06/06/24 09:10	06/07/24 16:41	1
Calcium	110		0.20		mg/L		06/06/24 09:10	06/07/24 16:41	1
Chromium	<0.0050		0.0050		mg/L		06/06/24 09:10	06/07/24 16:41	1
Cobalt	<0.0010		0.0010		mg/L		06/06/24 09:10	06/07/24 16:41	1
Lead	<0.00050		0.00050		mg/L		06/06/24 09:10	06/07/24 16:41	1
Lithium	0.015		0.010		mg/L		06/06/24 09:10	06/10/24 14:54	1
Molybdenum	<0.0050		0.0050		mg/L		06/06/24 09:10	06/07/24 16:41	1
Selenium	<0.0025		0.0025		mg/L		06/06/24 09:10	06/10/24 14:54	1
Thallium	<0.0020		0.0020		mg/L		06/06/24 09:10	06/07/24 16:41	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		06/12/24 14:50	06/13/24 08:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1100		10		mg/L			05/29/24 00:50	1
Chloride (SM 4500 Cl- E)	260		20		mg/L			05/28/24 14:45	10
Fluoride (SM 4500 F C)	0.34		0.10		mg/L			06/06/24 14:07	1
Sulfate (SM 4500 SO4 E)	180		50		mg/L			06/09/24 14:29	10

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Client Sample ID: MW-10

Lab Sample ID: 500-250992-4

Date Collected: 05/22/24 13:30

Matrix: Water

Date Received: 05/23/24 08:40

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		06/06/24 09:10	06/07/24 16:44	1
Arsenic	<0.0010		0.0010		mg/L		06/06/24 09:10	06/07/24 16:44	1
Barium	0.040		0.0025		mg/L		06/06/24 09:10	06/07/24 16:44	1
Beryllium	<0.0010		0.0010		mg/L		06/06/24 09:10	06/10/24 14:57	1
Boron	0.38		0.050		mg/L		06/06/24 09:10	06/07/24 16:44	1
Cadmium	<0.00050		0.00050		mg/L		06/06/24 09:10	06/07/24 16:44	1
Calcium	110		0.20		mg/L		06/06/24 09:10	06/07/24 16:44	1
Chromium	<0.0050		0.0050		mg/L		06/06/24 09:10	06/07/24 16:44	1
Cobalt	<0.0010		0.0010		mg/L		06/06/24 09:10	06/07/24 16:44	1
Lead	<0.00050		0.00050		mg/L		06/06/24 09:10	06/07/24 16:44	1
Lithium	0.013		0.010		mg/L		06/06/24 09:10	06/10/24 14:57	1
Molybdenum	0.0067		0.0050		mg/L		06/06/24 09:10	06/07/24 16:44	1
Selenium	<0.0025		0.0025		mg/L		06/06/24 09:10	06/10/24 14:57	1
Thallium	<0.0020		0.0020		mg/L		06/06/24 09:10	06/07/24 16:44	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		06/12/24 14:50	06/13/24 09:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	840		10		mg/L			05/29/24 00:53	1
Chloride (SM 4500 Cl- E)	180		10		mg/L			05/28/24 14:46	5
Fluoride (SM 4500 F C)	0.41		0.10		mg/L			06/06/24 14:11	1
Sulfate (SM 4500 SO4 E)	120		25		mg/L			06/09/24 14:29	5

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Client Sample ID: Duplicate

Lab Sample ID: 500-250992-5

Date Collected: 05/22/24 00:00

Matrix: Water

Date Received: 05/23/24 08:40

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		06/06/24 09:10	06/07/24 16:46	1
Arsenic	0.0013		0.0010		mg/L		06/06/24 09:10	06/07/24 16:46	1
Barium	0.099		0.0025		mg/L		06/06/24 09:10	06/07/24 16:46	1
Beryllium	<0.0010		0.0010		mg/L		06/06/24 09:10	06/11/24 15:36	1
Boron	0.50		0.050		mg/L		06/06/24 09:10	06/07/24 16:46	1
Cadmium	<0.00050		0.00050		mg/L		06/06/24 09:10	06/07/24 16:46	1
Calcium	110		0.20		mg/L		06/06/24 09:10	06/07/24 16:46	1
Chromium	<0.0050		0.0050		mg/L		06/06/24 09:10	06/07/24 16:46	1
Cobalt	<0.0010		0.0010		mg/L		06/06/24 09:10	06/07/24 16:46	1
Lead	<0.00050		0.00050		mg/L		06/06/24 09:10	06/07/24 16:46	1
Lithium	0.010		0.010		mg/L		06/06/24 09:10	06/11/24 15:36	1
Molybdenum	0.0053		0.0050		mg/L		06/06/24 09:10	06/07/24 16:46	1
Selenium	0.0049		0.0025		mg/L		06/06/24 09:10	06/11/24 15:36	1
Thallium	<0.0020		0.0020		mg/L		06/06/24 09:10	06/07/24 16:46	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		06/12/24 14:50	06/13/24 09:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	950		10		mg/L			05/29/24 00:55	1
Chloride (SM 4500 Cl- E)	220		10		mg/L			05/28/24 14:46	5
Fluoride (SM 4500 F C)	0.42		0.10		mg/L			06/06/24 14:16	1
Sulfate (SM 4500 SO4 E)	160		50		mg/L			06/09/24 14:30	10

Definitions/Glossary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Metals

Prep Batch: 771296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-1	MW-03	Total Recoverable	Water	3005A	
500-250992-2	MW-04	Total Recoverable	Water	3005A	
500-250992-3	MW-05	Total Recoverable	Water	3005A	
500-250992-4	MW-10	Total Recoverable	Water	3005A	
500-250992-5	Duplicate	Total Recoverable	Water	3005A	
MB 500-771296/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-771296/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-250992-1 MS	MW-03	Total Recoverable	Water	3005A	
500-250992-1 MSD	MW-03	Total Recoverable	Water	3005A	
500-250992-1 DU	MW-03	Total Recoverable	Water	3005A	

Analysis Batch: 771758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-1	MW-03	Total Recoverable	Water	6020B	771296
500-250992-2	MW-04	Total Recoverable	Water	6020B	771296
500-250992-3	MW-05	Total Recoverable	Water	6020B	771296
500-250992-4	MW-10	Total Recoverable	Water	6020B	771296
500-250992-5	Duplicate	Total Recoverable	Water	6020B	771296
MB 500-771296/1-A	Method Blank	Total Recoverable	Water	6020B	771296
LCS 500-771296/2-A	Lab Control Sample	Total Recoverable	Water	6020B	771296
500-250992-1 MS	MW-03	Total Recoverable	Water	6020B	771296
500-250992-1 MSD	MW-03	Total Recoverable	Water	6020B	771296
500-250992-1 DU	MW-03	Total Recoverable	Water	6020B	771296

Analysis Batch: 771932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-1	MW-03	Total Recoverable	Water	6020B	771296
500-250992-2	MW-04	Total Recoverable	Water	6020B	771296
500-250992-3	MW-05	Total Recoverable	Water	6020B	771296
500-250992-4	MW-10	Total Recoverable	Water	6020B	771296
MB 500-771296/1-A	Method Blank	Total Recoverable	Water	6020B	771296
LCS 500-771296/2-A	Lab Control Sample	Total Recoverable	Water	6020B	771296
500-250992-1 MS	MW-03	Total Recoverable	Water	6020B	771296
500-250992-1 MSD	MW-03	Total Recoverable	Water	6020B	771296
500-250992-1 DU	MW-03	Total Recoverable	Water	6020B	771296

Analysis Batch: 772188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-5	Duplicate	Total Recoverable	Water	6020B	771296

Prep Batch: 772288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-1	MW-03	Total/NA	Water	7470A	
500-250992-2	MW-04	Total/NA	Water	7470A	
500-250992-3	MW-05	Total/NA	Water	7470A	
500-250992-4	MW-10	Total/NA	Water	7470A	
500-250992-5	Duplicate	Total/NA	Water	7470A	
MB 500-772288/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-772288/13-A	Lab Control Sample	Total/NA	Water	7470A	
500-250992-5 MS	Duplicate	Total/NA	Water	7470A	
500-250992-5 MSD	Duplicate	Total/NA	Water	7470A	

Eurofins Chicago

QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Metals (Continued)

Prep Batch: 772288 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-5 DU	Duplicate	Total/NA	Water	7470A	

Analysis Batch: 772460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-1	MW-03	Total/NA	Water	7470A	772288
500-250992-2	MW-04	Total/NA	Water	7470A	772288
500-250992-3	MW-05	Total/NA	Water	7470A	772288
500-250992-4	MW-10	Total/NA	Water	7470A	772288
500-250992-5	Duplicate	Total/NA	Water	7470A	772288
MB 500-772288/12-A	Method Blank	Total/NA	Water	7470A	772288
LCS 500-772288/13-A	Lab Control Sample	Total/NA	Water	7470A	772288
500-250992-5 MS	Duplicate	Total/NA	Water	7470A	772288
500-250992-5 MSD	Duplicate	Total/NA	Water	7470A	772288
500-250992-5 DU	Duplicate	Total/NA	Water	7470A	772288

General Chemistry

Analysis Batch: 769837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-1	MW-03	Total/NA	Water	SM 4500 Cl- E	
500-250992-2	MW-04	Total/NA	Water	SM 4500 Cl- E	
500-250992-3	MW-05	Total/NA	Water	SM 4500 Cl- E	
500-250992-4	MW-10	Total/NA	Water	SM 4500 Cl- E	
500-250992-5	Duplicate	Total/NA	Water	SM 4500 Cl- E	
MB 500-769837/92	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 500-769837/93	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 769850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-1	MW-03	Total/NA	Water	SM 2540C	
500-250992-2	MW-04	Total/NA	Water	SM 2540C	
500-250992-3	MW-05	Total/NA	Water	SM 2540C	
500-250992-4	MW-10	Total/NA	Water	SM 2540C	
500-250992-5	Duplicate	Total/NA	Water	SM 2540C	
MB 500-769850/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-769850/2	Lab Control Sample	Total/NA	Water	SM 2540C	
500-250992-1 DU	MW-03	Total/NA	Water	SM 2540C	

Analysis Batch: 771513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-1	MW-03	Total/NA	Water	SM 4500 F C	
500-250992-2	MW-04	Total/NA	Water	SM 4500 F C	
500-250992-3	MW-05	Total/NA	Water	SM 4500 F C	
500-250992-4	MW-10	Total/NA	Water	SM 4500 F C	
500-250992-5	Duplicate	Total/NA	Water	SM 4500 F C	
MB 500-771513/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 500-771513/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	

Analysis Batch: 771679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-1	MW-03	Total/NA	Water	SM 4500 SO4 E	

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QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

General Chemistry (Continued)

Analysis Batch: 771679 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-2	MW-04	Total/NA	Water	SM 4500 SO4 E	
500-250992-3	MW-05	Total/NA	Water	SM 4500 SO4 E	
500-250992-4	MW-10	Total/NA	Water	SM 4500 SO4 E	
500-250992-5	Duplicate	Total/NA	Water	SM 4500 SO4 E	
MB 500-771679/112	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 500-771679/113	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-771296/1-A
Matrix: Water
Analysis Batch: 771758

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 771296

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		06/06/24 09:10	06/07/24 15:51	1
Arsenic	<0.0010		0.0010		mg/L		06/06/24 09:10	06/07/24 15:51	1
Barium	<0.0025		0.0025		mg/L		06/06/24 09:10	06/07/24 15:51	1
Boron	<0.050		0.050		mg/L		06/06/24 09:10	06/07/24 15:51	1
Cadmium	<0.00050		0.00050		mg/L		06/06/24 09:10	06/07/24 15:51	1
Calcium	<0.20		0.20		mg/L		06/06/24 09:10	06/07/24 15:51	1
Chromium	<0.0050		0.0050		mg/L		06/06/24 09:10	06/07/24 15:51	1
Cobalt	<0.0010		0.0010		mg/L		06/06/24 09:10	06/07/24 15:51	1
Lead	<0.00050		0.00050		mg/L		06/06/24 09:10	06/07/24 15:51	1
Molybdenum	<0.0050		0.0050		mg/L		06/06/24 09:10	06/07/24 15:51	1
Thallium	<0.0020		0.0020		mg/L		06/06/24 09:10	06/07/24 15:51	1

Lab Sample ID: MB 500-771296/1-A
Matrix: Water
Analysis Batch: 771932

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 771296

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.0010		0.0010		mg/L		06/06/24 09:10	06/10/24 14:12	1
Lithium	<0.010		0.010		mg/L		06/06/24 09:10	06/10/24 14:12	1
Selenium	<0.0025		0.0025		mg/L		06/06/24 09:10	06/10/24 14:12	1

Lab Sample ID: LCS 500-771296/2-A
Matrix: Water
Analysis Batch: 771758

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 771296

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.500	0.520		mg/L		104	80 - 120
Arsenic	0.100	0.101		mg/L		101	80 - 120
Barium	0.500	0.520		mg/L		104	80 - 120
Boron	1.00	1.03		mg/L		103	80 - 120
Cadmium	0.0500	0.0526		mg/L		105	80 - 120
Calcium	10.0	9.17		mg/L		92	80 - 120
Chromium	0.200	0.212		mg/L		106	80 - 120
Cobalt	0.500	0.543		mg/L		109	80 - 120
Lead	0.100	0.101		mg/L		101	80 - 120
Molybdenum	1.00	1.00		mg/L		100	80 - 120
Thallium	0.100	0.105		mg/L		105	80 - 120

Lab Sample ID: LCS 500-771296/2-A
Matrix: Water
Analysis Batch: 771932

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 771296

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	0.0500	0.0516		mg/L		103	80 - 120
Lithium	0.100	0.105		mg/L		105	80 - 120
Selenium	0.100	0.104		mg/L		104	80 - 120

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QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 500-250992-1 MS
Matrix: Water
Analysis Batch: 771758

Client Sample ID: MW-03
Prep Type: Total Recoverable
Prep Batch: 771296

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<0.0030		0.500	0.536		mg/L		107	75 - 125
Arsenic	0.0013		0.100	0.106		mg/L		105	75 - 125
Barium	0.099		0.500	0.621		mg/L		104	75 - 125
Boron	0.49		1.00	1.52		mg/L		103	75 - 125
Cadmium	<0.00050		0.0500	0.0517		mg/L		103	75 - 125
Calcium	110		10.0	123	4	mg/L		125	75 - 125
Chromium	<0.0050		0.200	0.212		mg/L		105	75 - 125
Cobalt	<0.0010		0.500	0.523		mg/L		105	75 - 125
Lead	<0.00050		0.100	0.102		mg/L		102	75 - 125
Molybdenum	0.0053		1.00	1.05		mg/L		104	75 - 125
Thallium	<0.0020		0.100	0.106		mg/L		106	75 - 125

Lab Sample ID: 500-250992-1 MS
Matrix: Water
Analysis Batch: 771932

Client Sample ID: MW-03
Prep Type: Total Recoverable
Prep Batch: 771296

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	<0.0010		0.0500	0.0516		mg/L		103	75 - 125
Lithium	0.011		0.100	0.114		mg/L		103	75 - 125
Selenium	0.0050		0.100	0.111		mg/L		106	75 - 125

Lab Sample ID: 500-250992-1 MSD
Matrix: Water
Analysis Batch: 771758

Client Sample ID: MW-03
Prep Type: Total Recoverable
Prep Batch: 771296

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<0.0030		0.500	0.534		mg/L		107	75 - 125	0	20
Arsenic	0.0013		0.100	0.104		mg/L		103	75 - 125	2	20
Barium	0.099		0.500	0.619		mg/L		104	75 - 125	0	20
Boron	0.49		1.00	1.52		mg/L		103	75 - 125	0	20
Cadmium	<0.00050		0.0500	0.0516		mg/L		103	75 - 125	0	20
Calcium	110		10.0	120	4	mg/L		94	75 - 125	3	20
Chromium	<0.0050		0.200	0.207		mg/L		103	75 - 125	3	20
Cobalt	<0.0010		0.500	0.512		mg/L		102	75 - 125	2	20
Lead	<0.00050		0.100	0.101		mg/L		101	75 - 125	1	20
Molybdenum	0.0053		1.00	1.04		mg/L		103	75 - 125	1	20
Thallium	<0.0020		0.100	0.104		mg/L		104	75 - 125	1	20

Lab Sample ID: 500-250992-1 MSD
Matrix: Water
Analysis Batch: 771932

Client Sample ID: MW-03
Prep Type: Total Recoverable
Prep Batch: 771296

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Beryllium	<0.0010		0.0500	0.0511		mg/L		102	75 - 125	1	20
Lithium	0.011		0.100	0.112		mg/L		101	75 - 125	1	20
Selenium	0.0050		0.100	0.114		mg/L		108	75 - 125	2	20

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QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 500-250992-1 DU
Matrix: Water
Analysis Batch: 771758

Client Sample ID: MW-03
Prep Type: Total Recoverable
Prep Batch: 771296

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Antimony	<0.0030		<0.0030		mg/L		NC	20
Arsenic	0.0013		0.00131		mg/L		4	20
Barium	0.099		0.101		mg/L		2	20
Boron	0.49		0.501		mg/L		2	20
Cadmium	<0.00050		<0.00050		mg/L		NC	20
Calcium	110		113		mg/L		3	20
Chromium	<0.0050		<0.0050		mg/L		NC	20
Cobalt	<0.0010		<0.0010		mg/L		NC	20
Lead	<0.00050		<0.00050		mg/L		NC	20
Molybdenum	0.0053		0.00542		mg/L		2	20
Thallium	<0.0020		<0.0020		mg/L		NC	20

Lab Sample ID: 500-250992-1 DU
Matrix: Water
Analysis Batch: 771932

Client Sample ID: MW-03
Prep Type: Total Recoverable
Prep Batch: 771296

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Beryllium	<0.0010		<0.0010		mg/L		NC	20
Lithium	0.011		0.0112		mg/L		0.5	20
Selenium	0.0050		0.00649	F5	mg/L		26	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-772288/12-A
Matrix: Water
Analysis Batch: 772460

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 772288

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		06/12/24 14:50	06/13/24 08:36	1

Lab Sample ID: LCS 500-772288/13-A
Matrix: Water
Analysis Batch: 772460

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 772288

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00201	0.00192		mg/L		96	80 - 120

Lab Sample ID: 500-250992-5 MS
Matrix: Water
Analysis Batch: 772460

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 772288

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.00020		0.00100	0.000956		mg/L		96	75 - 125

Lab Sample ID: 500-250992-5 MSD
Matrix: Water
Analysis Batch: 772460

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 772288

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Mercury	<0.00020		0.00100	0.000948		mg/L		95	75 - 125	1	20

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QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: 500-250992-5 DU
Matrix: Water
Analysis Batch: 772460

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 772288

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Mercury	<0.00020		<0.00020		mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 500-769850/1
Matrix: Water
Analysis Batch: 769850

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10		mg/L			05/29/24 00:30	1

Lab Sample ID: LCS 500-769850/2
Matrix: Water
Analysis Batch: 769850

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	250	276		mg/L		110	80 - 120

Lab Sample ID: 500-250992-1 DU
Matrix: Water
Analysis Batch: 769850

Client Sample ID: MW-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	990		1010		mg/L		2	5

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 500-769837/92
Matrix: Water
Analysis Batch: 769837

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.0		2.0		mg/L			05/28/24 14:24	1

Lab Sample ID: LCS 500-769837/93
Matrix: Water
Analysis Batch: 769837

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	22.0		mg/L		110	85 - 115

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 500-771513/3
Matrix: Water
Analysis Batch: 771513

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.10		0.10		mg/L			06/06/24 12:12	1

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QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: LCS 500-771513/4
Matrix: Water
Analysis Batch: 771513

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	10.0	9.64		mg/L		96	90 - 119

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 500-771679/112
Matrix: Water
Analysis Batch: 771679

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0		mg/L			06/09/24 14:14	1

Lab Sample ID: LCS 500-771679/113
Matrix: Water
Analysis Batch: 771679

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	20.0	20.8		mg/L		104	88 - 123

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- 1
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- 3
- 4
- 5

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-250992-1

Login Number: 250992

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.5,1.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Client Sample ID: MW-03

Date Collected: 05/22/24 09:02

Date Received: 05/23/24 08:40

Lab Sample ID: 500-250992-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			771296	RN	EET CHI	06/06/24 09:10 - 06/06/24 15:10 ¹
Total Recoverable	Analysis	6020B		1	771758	RN	EET CHI	06/07/24 16:25
Total Recoverable	Prep	3005A			771296	RN	EET CHI	06/06/24 09:10 - 06/06/24 15:10 ¹
Total Recoverable	Analysis	6020B		1	771932	RN	EET CHI	06/10/24 14:42
Total/NA	Prep	7470A			772288	MJG	EET CHI	06/12/24 14:50 - 06/12/24 16:50 ¹
Total/NA	Analysis	7470A		1	772460	MJG	EET CHI	06/13/24 08:49
Total/NA	Analysis	SM 2540C		1	769850	CLB	EET CHI	05/29/24 00:42
Total/NA	Analysis	SM 4500 CI- E		5	769837	TR	EET CHI	05/28/24 14:44
Total/NA	Analysis	SM 4500 F C		1	771513	SO	EET CHI	06/06/24 13:47
Total/NA	Analysis	SM 4500 SO4 E		10	771679	TR	EET CHI	06/09/24 14:30

Client Sample ID: MW-04

Date Collected: 05/22/24 10:33

Date Received: 05/23/24 08:40

Lab Sample ID: 500-250992-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			771296	RN	EET CHI	06/06/24 09:10 - 06/06/24 15:10 ¹
Total Recoverable	Analysis	6020B		1	771758	RN	EET CHI	06/07/24 16:35
Total Recoverable	Prep	3005A			771296	RN	EET CHI	06/06/24 09:10 - 06/06/24 15:10 ¹
Total Recoverable	Analysis	6020B		1	771932	RN	EET CHI	06/10/24 14:52
Total/NA	Prep	7470A			772288	MJG	EET CHI	06/12/24 14:50 - 06/12/24 16:50 ¹
Total/NA	Analysis	7470A		1	772460	MJG	EET CHI	06/13/24 08:51
Total/NA	Analysis	SM 2540C		1	769850	CLB	EET CHI	05/29/24 00:48
Total/NA	Analysis	SM 4500 CI- E		5	769837	TR	EET CHI	05/28/24 14:45
Total/NA	Analysis	SM 4500 F C		1	771513	SO	EET CHI	06/06/24 13:52
Total/NA	Analysis	SM 4500 SO4 E		5	771679	TR	EET CHI	06/09/24 14:30

Client Sample ID: MW-05

Date Collected: 05/22/24 11:53

Date Received: 05/23/24 08:40

Lab Sample ID: 500-250992-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			771296	RN	EET CHI	06/06/24 09:10 - 06/06/24 15:10 ¹
Total Recoverable	Analysis	6020B		1	771758	RN	EET CHI	06/07/24 16:41
Total Recoverable	Prep	3005A			771296	RN	EET CHI	06/06/24 09:10 - 06/06/24 15:10 ¹
Total Recoverable	Analysis	6020B		1	771932	RN	EET CHI	06/10/24 14:54
Total/NA	Prep	7470A			772288	MJG	EET CHI	06/12/24 14:50 - 06/12/24 16:50 ¹
Total/NA	Analysis	7470A		1	772460	MJG	EET CHI	06/13/24 08:53
Total/NA	Analysis	SM 2540C		1	769850	CLB	EET CHI	05/29/24 00:50
Total/NA	Analysis	SM 4500 CI- E		10	769837	TR	EET CHI	05/28/24 14:45
Total/NA	Analysis	SM 4500 F C		1	771513	SO	EET CHI	06/06/24 14:07
Total/NA	Analysis	SM 4500 SO4 E		10	771679	TR	EET CHI	06/09/24 14:29

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Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-250992-1

Client Sample ID: MW-10

Date Collected: 05/22/24 13:30

Date Received: 05/23/24 08:40

Lab Sample ID: 500-250992-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			771296	RN	EET CHI	06/06/24 09:10 - 06/06/24 15:10 ¹
Total Recoverable	Analysis	6020B		1	771758	RN	EET CHI	06/07/24 16:44
Total Recoverable	Prep	3005A			771296	RN	EET CHI	06/06/24 09:10 - 06/06/24 15:10 ¹
Total Recoverable	Analysis	6020B		1	771932	RN	EET CHI	06/10/24 14:57
Total/NA	Prep	7470A			772288	MJG	EET CHI	06/12/24 14:50 - 06/12/24 16:50 ¹
Total/NA	Analysis	7470A		1	772460	MJG	EET CHI	06/13/24 09:00
Total/NA	Analysis	SM 2540C		1	769850	CLB	EET CHI	05/29/24 00:53
Total/NA	Analysis	SM 4500 Cl- E		5	769837	TR	EET CHI	05/28/24 14:46
Total/NA	Analysis	SM 4500 F C		1	771513	SO	EET CHI	06/06/24 14:11
Total/NA	Analysis	SM 4500 SO4 E		5	771679	TR	EET CHI	06/09/24 14:29

Client Sample ID: Duplicate

Date Collected: 05/22/24 00:00

Date Received: 05/23/24 08:40

Lab Sample ID: 500-250992-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			771296	RN	EET CHI	06/06/24 09:10 - 06/06/24 15:10 ¹
Total Recoverable	Analysis	6020B		1	772188	RN	EET CHI	06/11/24 15:36
Total Recoverable	Prep	3005A			771296	RN	EET CHI	06/06/24 09:10 - 06/06/24 15:10 ¹
Total Recoverable	Analysis	6020B		1	771758	RN	EET CHI	06/07/24 16:46
Total/NA	Prep	7470A			772288	MJG	EET CHI	06/12/24 14:50 - 06/12/24 16:50 ¹
Total/NA	Analysis	7470A		1	772460	MJG	EET CHI	06/13/24 09:02
Total/NA	Analysis	SM 2540C		1	769850	CLB	EET CHI	05/29/24 00:55
Total/NA	Analysis	SM 4500 Cl- E		5	769837	TR	EET CHI	05/28/24 14:46
Total/NA	Analysis	SM 4500 F C		1	771513	SO	EET CHI	06/06/24 14:16
Total/NA	Analysis	SM 4500 SO4 E		10	771679	TR	EET CHI	06/09/24 14:30

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

ANALYTICAL REPORT

PREPARED FOR

Attn: James Thorne
Midwest Generation EME LLC
1800 Channahon Road
Joliet, Illinois 60436

Generated 6/28/2024 2:51:31 PM

JOB DESCRIPTION

Joliet #29 CCR (RAD)

JOB NUMBER

500-250992-2

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization



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Authorized for release by
Diana Mockler, Project Manager I
Diana.Mockler@et.eurofinsus.com
(219)252-7570

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Case Narrative

Client: Midwest Generation EME LLC
Project: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Job ID: 500-250992-2

Eurofins Chicago

Job Narrative 500-250992-2

Receipt

The samples were received on 5/23/2024 8:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.0°C and 1.5°C.

Gas Flow Proportional Counter

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Chicago

Method Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-250992-1	MW-03	Water	05/22/24 09:02	05/23/24 08:40
500-250992-2	MW-04	Water	05/22/24 10:33	05/23/24 08:40
500-250992-3	MW-05	Water	05/22/24 11:53	05/23/24 08:40
500-250992-4	MW-10	Water	05/22/24 13:30	05/23/24 08:40
500-250992-5	Duplicate	Water	05/22/24 00:00	05/23/24 08:40

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Client Sample ID: MW-03

Date Collected: 05/22/24 09:02

Date Received: 05/23/24 08:40

Lab Sample ID: 500-250992-1

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0820	U	0.113	0.113	1.00	0.191	pCi/L	05/30/24 09:05	06/26/24 14:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.8		30 - 110					05/30/24 09:05	06/26/24 14:17	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.472	U	0.384	0.386	1.00	0.594	pCi/L	05/30/24 09:09	06/21/24 12:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.8		30 - 110					05/30/24 09:09	06/21/24 12:50	1
Y Carrier	95.0		30 - 110					05/30/24 09:09	06/21/24 12:50	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.554	U	0.400	0.402	5.00	0.594	pCi/L		06/28/24 13:08	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Client Sample ID: MW-04

Lab Sample ID: 500-250992-2

Date Collected: 05/22/24 10:33

Matrix: Water

Date Received: 05/23/24 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.180		0.105	0.106	1.00	0.137	pCi/L	05/30/24 09:05	06/26/24 14:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.0		30 - 110					05/30/24 09:05	06/26/24 14:17	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.407	U	0.329	0.331	1.00	0.510	pCi/L	05/30/24 09:09	06/21/24 12:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.0		30 - 110					05/30/24 09:09	06/21/24 12:50	1
Y Carrier	96.8		30 - 110					05/30/24 09:09	06/21/24 12:50	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.586		0.345	0.348	5.00	0.510	pCi/L		06/28/24 13:08	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Client Sample ID: MW-05

Lab Sample ID: 500-250992-3

Date Collected: 05/22/24 11:53

Matrix: Water

Date Received: 05/23/24 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.128	U	0.0961	0.0968	1.00	0.135	pCi/L	05/30/24 09:05	06/26/24 14:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.3		30 - 110					05/30/24 09:05	06/26/24 14:18	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.707		0.450	0.455	1.00	0.674	pCi/L	05/30/24 09:09	06/21/24 12:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.3		30 - 110					05/30/24 09:09	06/21/24 12:50	1
Y Carrier	97.9		30 - 110					05/30/24 09:09	06/21/24 12:50	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.834		0.460	0.465	5.00	0.674	pCi/L		06/28/24 13:08	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Client Sample ID: MW-10

Lab Sample ID: 500-250992-4

Date Collected: 05/22/24 13:30

Matrix: Water

Date Received: 05/23/24 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.139		0.0953	0.0961	1.00	0.128	pCi/L	05/30/24 09:05	06/26/24 14:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.0		30 - 110					05/30/24 09:05	06/26/24 14:18	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.222	U	0.310	0.311	1.00	0.633	pCi/L	05/30/24 09:09	06/21/24 12:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.0		30 - 110					05/30/24 09:09	06/21/24 12:51	1
Y Carrier	98.7		30 - 110					05/30/24 09:09	06/21/24 12:51	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0838	U	0.324	0.326	5.00	0.633	pCi/L		06/28/24 13:08	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Client Sample ID: Duplicate

Lab Sample ID: 500-250992-5

Date Collected: 05/22/24 00:00

Matrix: Water

Date Received: 05/23/24 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.150		0.0964	0.0974	1.00	0.128	pCi/L	05/30/24 09:05	06/26/24 14:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.5		30 - 110					05/30/24 09:05	06/26/24 14:18	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.739		0.381	0.387	1.00	0.533	pCi/L	05/30/24 09:09	06/21/24 12:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.5		30 - 110					05/30/24 09:09	06/21/24 12:51	1
Y Carrier	97.2		30 - 110					05/30/24 09:09	06/21/24 12:51	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.889		0.393	0.399	5.00	0.533	pCi/L		06/28/24 13:08	1

Definitions/Glossary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Rad

Prep Batch: 663926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-1	MW-03	Total/NA	Water	PrecSep-21	
500-250992-2	MW-04	Total/NA	Water	PrecSep-21	
500-250992-3	MW-05	Total/NA	Water	PrecSep-21	
500-250992-4	MW-10	Total/NA	Water	PrecSep-21	
500-250992-5	Duplicate	Total/NA	Water	PrecSep-21	
MB 160-663926/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-663926/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 663929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-250992-1	MW-03	Total/NA	Water	PrecSep_0	
500-250992-2	MW-04	Total/NA	Water	PrecSep_0	
500-250992-3	MW-05	Total/NA	Water	PrecSep_0	
500-250992-4	MW-10	Total/NA	Water	PrecSep_0	
500-250992-5	Duplicate	Total/NA	Water	PrecSep_0	
MB 160-663929/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-663929/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-663926/1-A
Matrix: Water
Analysis Batch: 668084

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 663926

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.05886	U	0.0685	0.0687	1.00	0.110	pCi/L	05/30/24 09:05	06/26/24 10:08	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.0		30 - 110					05/30/24 09:05	06/26/24 10:08	1

Lab Sample ID: LCS 160-663926/2-A
Matrix: Water
Analysis Batch: 668084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 663926

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226		11.3	9.528		1.05	1.00	0.120	pCi/L	84	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	85.8		30 - 110							

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-663929/1-A
Matrix: Water
Analysis Batch: 667438

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 663929

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.08492	U	0.351	0.352	1.00	0.642	pCi/L	05/30/24 09:09	06/21/24 16:10	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.0		30 - 110					05/30/24 09:09	06/21/24 16:10	1
Y Carrier	92.3		30 - 110					05/30/24 09:09	06/21/24 16:10	1

Lab Sample ID: LCS 160-663929/2-A
Matrix: Water
Analysis Batch: 667438

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 663929

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228		8.83	9.088		1.44	1.00	0.794	pCi/L	103	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	85.8		30 - 110							
Y Carrier	95.0		30 - 110							

eurolins | Environment Testing

- 1
- 2
- 3
- 4
- 5



Client Information (Sub Contract Lab)						Lab PW:	Carrier Tracking No(s)	COC No.									
Shipping/Receiving						Mockler, Diana J		500-188702-1									
Company						E-Mail	State of Origin:	Page									
TestAmerica Laboratories, Inc.						Diana Mockler@et.eurofins.com	Illinois	Page 1 of 1									
Address:						Accreditations Required (See note)		Job #									
13715 Rider Trail North,						NELAP - Illinois		500-250992-2									
City						Preservation Codes:											
Earth City																	
State, Zip																	
MO, 63045																	
Phone																	
314-298-8566(Tel) 314-298-8757(Fax)																	
Email																	
Project Name																	
Joliet #29 CCR (RAD)																	
Site																	
NRG Midwest Generation LSQ Joliet#29 CCR																	
Sample Identification - Client ID (Lab ID)						Due Date Requested:	Analysis Requested										
						6/26/2024											
						TAT Requested (days):											
						PO #:											
						WO #:											
						Project #:											
						50011568											
						SSOW#:											
						Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=other)	Field Filtered Sample (Yes or No) (BT+Tissue, AVAL)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21 Standard Target List	904.0/PrecSep_0 Standard Target List	Ra226Ra228_GFPc	Total Number of containers	Special Instructions/Note:	
MW-03 (500-250992-1)						5/22/24	09:02 Central		Water	X	X	X	X	X		3	Batch QC must be performed (dup, spikes, etc) - no NCMs concerning limited volume;
MW-04 (500-250992-2)						5/22/24	10:33 Central		Water	X	X	X	X	X		3	Batch QC must be performed (dup, spikes, etc) - no NCMs concerning limited volume;
MW-05 (500-250992-3)						5/22/24	11:53 Central		Water	X	X	X	X	X		3	Batch QC must be performed (dup, spikes, etc) - no NCMs concerning limited volume;
MW-10 (500-250992-4)						5/22/24	13:30 Central		Water	X	X	X	X	X		3	Batch QC must be performed (dup, spikes, etc) - no NCMs concerning limited volume;
Duplicate (500-250992-5)						5/22/24	Central		Water	X	X	X	X	X		3	Batch QC must be performed (dup, spikes, etc) - no NCMs concerning limited volume;
Note. Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Chicago laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Chicago attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Chicago.																	
Possible Hazard Identification																	
Unconfirmed																	
Deliverable Requested: I, II, III, IV, Other (specify)																	
Primary Deliverable Rank: 2																	
Date: _____ Time: _____																	
Empty Kit Relinquished by: _____																	
Relinquished by: _____																	
Relinquished by: _____																	
Relinquished by: _____																	
Custody Seals Intact: _____																	
Custody Seal No.: _____																	
Received by: _____																	
Received by: _____																	
Received by: _____																	
Cooler Temperature(s) °C and Other Remarks:																	

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-250992-2

Login Number: 250992

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.5,1.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-250992-2

Login Number: 250992

List Number: 2

Creator: Thornley, Richard W

List Source: Eurofins St. Louis

List Creation: 05/24/24 12:37 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Client Sample ID: MW-03

Date Collected: 05/22/24 09:02

Date Received: 05/23/24 08:40

Lab Sample ID: 500-250992-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			663926	MLT	EET SL	05/30/24 09:05
Total/NA	Analysis	903.0		1	668008	FLC	EET SL	06/26/24 14:17
Total/NA	Prep	PrecSep_0			663929	MLT	EET SL	05/30/24 09:09
Total/NA	Analysis	904.0		1	667323	CMM	EET SL	06/21/24 12:50
Total/NA	Analysis	Ra226_Ra228		1	668567	CAH	EET SL	06/28/24 13:08

Client Sample ID: MW-04

Date Collected: 05/22/24 10:33

Date Received: 05/23/24 08:40

Lab Sample ID: 500-250992-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			663926	MLT	EET SL	05/30/24 09:05
Total/NA	Analysis	903.0		1	668008	FLC	EET SL	06/26/24 14:17
Total/NA	Prep	PrecSep_0			663929	MLT	EET SL	05/30/24 09:09
Total/NA	Analysis	904.0		1	667323	CMM	EET SL	06/21/24 12:50
Total/NA	Analysis	Ra226_Ra228		1	668567	CAH	EET SL	06/28/24 13:08

Client Sample ID: MW-05

Date Collected: 05/22/24 11:53

Date Received: 05/23/24 08:40

Lab Sample ID: 500-250992-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			663926	MLT	EET SL	05/30/24 09:05
Total/NA	Analysis	903.0		1	668008	FLC	EET SL	06/26/24 14:18
Total/NA	Prep	PrecSep_0			663929	MLT	EET SL	05/30/24 09:09
Total/NA	Analysis	904.0		1	667323	CMM	EET SL	06/21/24 12:50
Total/NA	Analysis	Ra226_Ra228		1	668567	CAH	EET SL	06/28/24 13:08

Client Sample ID: MW-10

Date Collected: 05/22/24 13:30

Date Received: 05/23/24 08:40

Lab Sample ID: 500-250992-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			663926	MLT	EET SL	05/30/24 09:05
Total/NA	Analysis	903.0		1	668008	FLC	EET SL	06/26/24 14:18
Total/NA	Prep	PrecSep_0			663929	MLT	EET SL	05/30/24 09:09
Total/NA	Analysis	904.0		1	667323	CMM	EET SL	06/21/24 12:51
Total/NA	Analysis	Ra226_Ra228		1	668567	CAH	EET SL	06/28/24 13:08

Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Client Sample ID: Duplicate
Date Collected: 05/22/24 00:00
Date Received: 05/23/24 08:40

Lab Sample ID: 500-250992-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			663926	MLT	EET SL	05/30/24 09:05
Total/NA	Analysis	903.0		1	668008	FLC	EET SL	06/26/24 14:18
Total/NA	Prep	PrecSep_0			663929	MLT	EET SL	05/30/24 09:09
Total/NA	Analysis	904.0		1	667323	CMM	EET SL	06/21/24 12:51
Total/NA	Analysis	Ra226_Ra228		1	668567	CAH	EET SL	06/28/24 13:08

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Tracer/Carrier Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-250992-2

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	
500-250992-1	MW-03	75.8	
500-250992-2	MW-04	89.0	
500-250992-3	MW-05	76.3	
500-250992-4	MW-10	80.0	
500-250992-5	Duplicate	87.5	
LCS 160-663926/2-A	Lab Control Sample	85.8	
MB 160-663926/1-A	Method Blank	97.0	
Tracer/Carrier Legend			
Ba = Ba Carrier			

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
500-250992-1	MW-03	75.8	95.0
500-250992-2	MW-04	89.0	96.8
500-250992-3	MW-05	76.3	97.9
500-250992-4	MW-10	80.0	98.7
500-250992-5	Duplicate	87.5	97.2
LCS 160-663929/2-A	Lab Control Sample	85.8	95.0
MB 160-663929/1-A	Method Blank	97.0	92.3
Tracer/Carrier Legend			
Ba = Ba Carrier			
Y = Y Carrier			

ANALYTICAL REPORT

PREPARED FOR

Attn: James Thorne
Midwest Generation EME LLC
1800 Channahon Road
Joliet, Illinois 60436

Generated 8/21/2024 2:03:41 PM

JOB DESCRIPTION

Joliet #29 CCR

JOB NUMBER

500-254274-1

Eurofins Chicago

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization



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Case Narrative

Client: Midwest Generation EME LLC
Project: Joliet #29 CCR

Job ID: 500-254274-1

Job ID: 500-254274-1

Eurofins Chicago

Job Narrative 500-254274-1

Receipt

The samples were received on 7/31/2024 8:55 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 4.3°C and 4.8°C.

Metals

Method 6020B - Total Recoverable: The initial low level calibration verification (ICVL) result for batch 500-782080 was above the upper control limit. The affected analytes are: Lead. Sample results were below the reporting limit, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Chicago

Method Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CHI
SM 4500 Cl- E	Chloride, Total	SM	EET CHI
SM 4500 F C	Fluoride	SM	EET CHI
SM 4500 SO4 E	Sulfate, Total	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-254274-1	MW-03	Water	07/30/24 10:25	07/31/24 08:55
500-254274-2	MW-04	Water	07/30/24 09:14	07/31/24 08:55
500-254274-3	MW-05	Water	07/30/24 11:50	07/31/24 08:55
500-254274-4	MW-10	Water	07/30/24 13:46	07/31/24 08:55
500-254274-5	Duplicate	Water	07/30/24 00:00	07/31/24 08:55

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Client Sample ID: MW-03

Lab Sample ID: 500-254274-1

Date Collected: 07/30/24 10:25

Matrix: Water

Date Received: 07/31/24 08:55

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		08/14/24 15:40	08/16/24 20:47	1
Arsenic	0.0013		0.0010		mg/L		08/14/24 15:40	08/16/24 20:47	1
Barium	0.099		0.0025		mg/L		08/14/24 15:40	08/16/24 20:47	1
Beryllium	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 20:47	1
Boron	0.44		0.050		mg/L		08/14/24 15:40	08/16/24 20:47	1
Cadmium	<0.00050		0.00050		mg/L		08/14/24 15:40	08/16/24 20:47	1
Calcium	100		0.20		mg/L		08/14/24 15:40	08/16/24 20:47	1
Chromium	<0.0050		0.0050		mg/L		08/14/24 15:40	08/16/24 20:47	1
Cobalt	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 20:47	1
Lead	<0.00050	^1+	0.00050		mg/L		08/14/24 15:40	08/16/24 20:47	1
Lithium	0.011		0.010		mg/L		08/14/24 15:40	08/16/24 20:47	1
Molybdenum	0.0052		0.0050		mg/L		08/14/24 15:40	08/16/24 20:47	1
Selenium	0.0037		0.0025		mg/L		08/14/24 15:40	08/16/24 20:47	1
Thallium	<0.0020		0.0020		mg/L		08/14/24 15:40	08/16/24 20:47	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		08/20/24 10:35	08/21/24 05:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	820		10		mg/L			08/04/24 23:17	1
Chloride (SM 4500 Cl- E)	170		10		mg/L			08/04/24 13:24	5
Fluoride (SM 4500 F C)	0.41		0.10		mg/L			08/15/24 13:02	1
Sulfate (SM 4500 SO4 E)	130		25		mg/L			08/05/24 16:18	5

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Client Sample ID: MW-04

Lab Sample ID: 500-254274-2

Date Collected: 07/30/24 09:14

Matrix: Water

Date Received: 07/31/24 08:55

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		08/14/24 15:40	08/16/24 20:49	1
Arsenic	0.0013		0.0010		mg/L		08/14/24 15:40	08/16/24 20:49	1
Barium	0.074		0.0025		mg/L		08/14/24 15:40	08/16/24 20:49	1
Beryllium	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 20:49	1
Boron	0.34		0.050		mg/L		08/14/24 15:40	08/16/24 20:49	1
Cadmium	<0.00050		0.00050		mg/L		08/14/24 15:40	08/16/24 20:49	1
Calcium	110		0.20		mg/L		08/14/24 15:40	08/16/24 20:49	1
Chromium	<0.0050		0.0050		mg/L		08/14/24 15:40	08/16/24 20:49	1
Cobalt	0.0081		0.0010		mg/L		08/14/24 15:40	08/16/24 20:49	1
Lead	<0.00050	^1+	0.00050		mg/L		08/14/24 15:40	08/16/24 20:49	1
Lithium	0.013		0.010		mg/L		08/14/24 15:40	08/16/24 20:49	1
Molybdenum	0.0057		0.0050		mg/L		08/14/24 15:40	08/16/24 20:49	1
Selenium	<0.0025		0.0025		mg/L		08/14/24 15:40	08/16/24 20:49	1
Thallium	<0.0020		0.0020		mg/L		08/14/24 15:40	08/16/24 20:49	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		08/20/24 10:35	08/21/24 05:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	860		10		mg/L			08/04/24 23:20	1
Chloride (SM 4500 Cl- E)	170		10		mg/L			08/04/24 13:24	5
Fluoride (SM 4500 F C)	0.42		0.10		mg/L			08/15/24 13:06	1
Sulfate (SM 4500 SO4 E)	120		25		mg/L			08/05/24 16:18	5

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Client Sample ID: MW-05

Lab Sample ID: 500-254274-3

Date Collected: 07/30/24 11:50

Matrix: Water

Date Received: 07/31/24 08:55

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		08/14/24 15:40	08/16/24 20:51	1
Arsenic	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 20:51	1
Barium	0.068		0.0025		mg/L		08/14/24 15:40	08/16/24 20:51	1
Beryllium	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 20:51	1
Boron	0.52		0.050		mg/L		08/14/24 15:40	08/16/24 20:51	1
Cadmium	<0.00050		0.00050		mg/L		08/14/24 15:40	08/16/24 20:51	1
Calcium	100		0.20		mg/L		08/14/24 15:40	08/16/24 20:51	1
Chromium	<0.0050		0.0050		mg/L		08/14/24 15:40	08/16/24 20:51	1
Cobalt	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 20:51	1
Lead	<0.00050	^1+	0.00050		mg/L		08/14/24 15:40	08/16/24 20:51	1
Lithium	0.014		0.010		mg/L		08/14/24 15:40	08/16/24 20:51	1
Molybdenum	0.0051		0.0050		mg/L		08/14/24 15:40	08/16/24 20:51	1
Selenium	0.0025		0.0025		mg/L		08/14/24 15:40	08/16/24 20:51	1
Thallium	<0.0020		0.0020		mg/L		08/14/24 15:40	08/16/24 20:51	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		08/20/24 10:35	08/21/24 05:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	750		10		mg/L			08/04/24 23:22	1
Chloride (SM 4500 Cl- E)	150		10		mg/L			08/04/24 13:24	5
Fluoride (SM 4500 F C)	0.31		0.10		mg/L			08/15/24 13:11	1
Sulfate (SM 4500 SO4 E)	140		25		mg/L			07/31/24 18:01	5

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Client Sample ID: MW-10

Lab Sample ID: 500-254274-4

Date Collected: 07/30/24 13:46

Matrix: Water

Date Received: 07/31/24 08:55

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		08/14/24 15:40	08/16/24 20:58	1
Arsenic	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 20:58	1
Barium	0.045		0.0025		mg/L		08/14/24 15:40	08/16/24 20:58	1
Beryllium	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 20:58	1
Boron	0.44		0.050		mg/L		08/14/24 15:40	08/16/24 20:58	1
Cadmium	<0.00050		0.00050		mg/L		08/14/24 15:40	08/16/24 20:58	1
Calcium	120		0.20		mg/L		08/14/24 15:40	08/16/24 20:58	1
Chromium	<0.0050		0.0050		mg/L		08/14/24 15:40	08/16/24 20:58	1
Cobalt	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 20:58	1
Lead	<0.00050	^1+	0.00050		mg/L		08/14/24 15:40	08/16/24 20:58	1
Lithium	0.013		0.010		mg/L		08/14/24 15:40	08/16/24 20:58	1
Molybdenum	0.0071		0.0050		mg/L		08/14/24 15:40	08/16/24 20:58	1
Selenium	<0.0025		0.0025		mg/L		08/14/24 15:40	08/16/24 20:58	1
Thallium	<0.0020		0.0020		mg/L		08/14/24 15:40	08/16/24 20:58	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		08/20/24 10:35	08/21/24 05:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	880		10		mg/L			08/04/24 23:25	1
Chloride (SM 4500 Cl- E)	170		10		mg/L			08/04/24 13:25	5
Fluoride (SM 4500 F C)	0.38		0.10		mg/L			08/15/24 13:15	1
Sulfate (SM 4500 SO4 E)	150		25		mg/L			07/31/24 18:00	5

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Client Sample ID: Duplicate

Lab Sample ID: 500-254274-5

Date Collected: 07/30/24 00:00

Matrix: Water

Date Received: 07/31/24 08:55

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		08/14/24 15:40	08/16/24 21:00	1
Arsenic	0.0014		0.0010		mg/L		08/14/24 15:40	08/16/24 21:00	1
Barium	0.075		0.0025		mg/L		08/14/24 15:40	08/16/24 21:00	1
Beryllium	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 21:00	1
Boron	0.34		0.050		mg/L		08/14/24 15:40	08/16/24 21:00	1
Cadmium	<0.00050		0.00050		mg/L		08/14/24 15:40	08/16/24 21:00	1
Calcium	110		0.20		mg/L		08/14/24 15:40	08/16/24 21:00	1
Chromium	<0.0050		0.0050		mg/L		08/14/24 15:40	08/16/24 21:00	1
Cobalt	0.0082		0.0010		mg/L		08/14/24 15:40	08/16/24 21:00	1
Lead	<0.00050	^1+	0.00050		mg/L		08/14/24 15:40	08/16/24 21:00	1
Lithium	0.013		0.010		mg/L		08/14/24 15:40	08/16/24 21:00	1
Molybdenum	0.0056		0.0050		mg/L		08/14/24 15:40	08/16/24 21:00	1
Selenium	<0.0025		0.0025		mg/L		08/14/24 15:40	08/16/24 21:00	1
Thallium	<0.0020		0.0020		mg/L		08/14/24 15:40	08/16/24 21:00	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		08/20/24 10:35	08/21/24 05:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	800		10		mg/L			08/04/24 23:28	1
Chloride (SM 4500 Cl- E)	170		10		mg/L			08/04/24 13:25	5
Fluoride (SM 4500 F C)	0.42		0.10		mg/L			08/15/24 13:20	1
Sulfate (SM 4500 SO4 E)	130		25		mg/L			07/31/24 18:01	5

Definitions/Glossary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Qualifiers

Metals

Qualifier	Qualifier Description
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Metals

Prep Batch: 781451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-254274-1	MW-03	Total Recoverable	Water	3005A	
500-254274-2	MW-04	Total Recoverable	Water	3005A	
500-254274-3	MW-05	Total Recoverable	Water	3005A	
500-254274-4	MW-10	Total Recoverable	Water	3005A	
500-254274-5	Duplicate	Total Recoverable	Water	3005A	
MB 500-781451/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-781451/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 782080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-254274-1	MW-03	Total Recoverable	Water	6020B	781451
500-254274-2	MW-04	Total Recoverable	Water	6020B	781451
500-254274-3	MW-05	Total Recoverable	Water	6020B	781451
500-254274-4	MW-10	Total Recoverable	Water	6020B	781451
500-254274-5	Duplicate	Total Recoverable	Water	6020B	781451
MB 500-781451/1-A	Method Blank	Total Recoverable	Water	6020B	781451
LCS 500-781451/2-A	Lab Control Sample	Total Recoverable	Water	6020B	781451

Prep Batch: 782375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-254274-1	MW-03	Total/NA	Water	7470A	
500-254274-2	MW-04	Total/NA	Water	7470A	
500-254274-3	MW-05	Total/NA	Water	7470A	
500-254274-4	MW-10	Total/NA	Water	7470A	
500-254274-5	Duplicate	Total/NA	Water	7470A	
MB 500-782375/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-782375/13-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 500-782375/34-A	Lab Control Sample Dup	Total/NA	Water	7470A	
500-254274-5 MS	Duplicate	Total/NA	Water	7470A	
500-254274-5 MSD	Duplicate	Total/NA	Water	7470A	
500-254274-5 DU	Duplicate	Total/NA	Water	7470A	

Analysis Batch: 782508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-254274-1	MW-03	Total/NA	Water	7470A	782375
500-254274-2	MW-04	Total/NA	Water	7470A	782375
500-254274-3	MW-05	Total/NA	Water	7470A	782375
500-254274-4	MW-10	Total/NA	Water	7470A	782375
500-254274-5	Duplicate	Total/NA	Water	7470A	782375
MB 500-782375/12-A	Method Blank	Total/NA	Water	7470A	782375
LCS 500-782375/13-A	Lab Control Sample	Total/NA	Water	7470A	782375
LCSD 500-782375/34-A	Lab Control Sample Dup	Total/NA	Water	7470A	782375
500-254274-5 MS	Duplicate	Total/NA	Water	7470A	782375
500-254274-5 MSD	Duplicate	Total/NA	Water	7470A	782375
500-254274-5 DU	Duplicate	Total/NA	Water	7470A	782375

General Chemistry

Analysis Batch: 779372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-254274-3	MW-05	Total/NA	Water	SM 4500 SO4 E	

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QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

General Chemistry (Continued)

Analysis Batch: 779372 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-254274-4	MW-10	Total/NA	Water	SM 4500 SO4 E	
500-254274-5	Duplicate	Total/NA	Water	SM 4500 SO4 E	
MB 500-779372/60	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 500-779372/61	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 779787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-254274-1	MW-03	Total/NA	Water	SM 4500 Cl- E	
500-254274-2	MW-04	Total/NA	Water	SM 4500 Cl- E	
500-254274-3	MW-05	Total/NA	Water	SM 4500 Cl- E	
500-254274-4	MW-10	Total/NA	Water	SM 4500 Cl- E	
500-254274-5	Duplicate	Total/NA	Water	SM 4500 Cl- E	
MB 500-779787/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 500-779787/17	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 779809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-254274-1	MW-03	Total/NA	Water	SM 2540C	
500-254274-2	MW-04	Total/NA	Water	SM 2540C	
500-254274-3	MW-05	Total/NA	Water	SM 2540C	
500-254274-4	MW-10	Total/NA	Water	SM 2540C	
500-254274-5	Duplicate	Total/NA	Water	SM 2540C	
MB 500-779809/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-779809/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 779975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-254274-1	MW-03	Total/NA	Water	SM 4500 SO4 E	
500-254274-2	MW-04	Total/NA	Water	SM 4500 SO4 E	
MB 500-779975/16	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 500-779975/17	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 781815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-254274-1	MW-03	Total/NA	Water	SM 4500 F C	
500-254274-2	MW-04	Total/NA	Water	SM 4500 F C	
500-254274-3	MW-05	Total/NA	Water	SM 4500 F C	
500-254274-4	MW-10	Total/NA	Water	SM 4500 F C	
500-254274-5	Duplicate	Total/NA	Water	SM 4500 F C	
MB 500-781815/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 500-781815/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-781451/1-A
Matrix: Water
Analysis Batch: 782080

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 781451

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		08/14/24 15:40	08/16/24 20:31	1
Arsenic	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 20:31	1
Barium	<0.0025		0.0025		mg/L		08/14/24 15:40	08/16/24 20:31	1
Beryllium	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 20:31	1
Boron	<0.050		0.050		mg/L		08/14/24 15:40	08/16/24 20:31	1
Cadmium	<0.00050		0.00050		mg/L		08/14/24 15:40	08/16/24 20:31	1
Calcium	<0.20		0.20		mg/L		08/14/24 15:40	08/16/24 20:31	1
Chromium	<0.0050		0.0050		mg/L		08/14/24 15:40	08/16/24 20:31	1
Cobalt	<0.0010		0.0010		mg/L		08/14/24 15:40	08/16/24 20:31	1
Lead	<0.00050	^1+	0.00050		mg/L		08/14/24 15:40	08/16/24 20:31	1
Lithium	<0.010		0.010		mg/L		08/14/24 15:40	08/16/24 20:31	1
Molybdenum	<0.0050		0.0050		mg/L		08/14/24 15:40	08/16/24 20:31	1
Selenium	<0.0025		0.0025		mg/L		08/14/24 15:40	08/16/24 20:31	1
Thallium	<0.0020		0.0020		mg/L		08/14/24 15:40	08/16/24 20:31	1

Lab Sample ID: LCS 500-781451/2-A
Matrix: Water
Analysis Batch: 782080

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 781451

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.500	0.529		mg/L		106	80 - 120
Arsenic	0.100	0.103		mg/L		103	80 - 120
Barium	0.500	0.527		mg/L		105	80 - 120
Beryllium	0.0500	0.0502		mg/L		100	80 - 120
Boron	1.00	1.05		mg/L		105	80 - 120
Cadmium	0.0500	0.0518		mg/L		104	80 - 120
Calcium	10.0	8.71		mg/L		87	80 - 120
Chromium	0.200	0.212		mg/L		106	80 - 120
Cobalt	0.500	0.537		mg/L		107	80 - 120
Lead	0.100	0.107	^1+	mg/L		107	80 - 120
Lithium	0.100	0.107		mg/L		107	80 - 120
Molybdenum	1.00	1.00		mg/L		100	80 - 120
Selenium	0.100	0.104		mg/L		104	80 - 120
Thallium	0.100	0.106		mg/L		106	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-782375/12-A
Matrix: Water
Analysis Batch: 782508

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 782375

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		08/20/24 10:35	08/21/24 05:24	1

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QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 500-782375/13-A
Matrix: Water
Analysis Batch: 782508

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 782375

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00200	0.00208		mg/L		104	80 - 120

Lab Sample ID: LCSD 500-782375/34-A
Matrix: Water
Analysis Batch: 782508

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 782375

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00200	0.00200		mg/L		100	80 - 120	4	20

Lab Sample ID: 500-254274-5 MS
Matrix: Water
Analysis Batch: 782508

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 782375

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.00020		0.000999	0.000943		mg/L		94	75 - 125

Lab Sample ID: 500-254274-5 MSD
Matrix: Water
Analysis Batch: 782508

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 782375

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.00020		0.000999	0.000926		mg/L		93	75 - 125	2	20

Lab Sample ID: 500-254274-5 DU
Matrix: Water
Analysis Batch: 782508

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 782375

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	<0.00020		<0.00020		mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 500-779809/1
Matrix: Water
Analysis Batch: 779809

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10		mg/L			08/04/24 22:39	1

Lab Sample ID: LCS 500-779809/2
Matrix: Water
Analysis Batch: 779809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	250	254		mg/L		102	80 - 120

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 500-779787/16
Matrix: Water
Analysis Batch: 779787

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.0		2.0		mg/L			08/04/24 13:04	1

Lab Sample ID: LCS 500-779787/17
Matrix: Water
Analysis Batch: 779787

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	19.8		mg/L		99	85 - 115

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 500-781815/3
Matrix: Water
Analysis Batch: 781815

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.10		0.10		mg/L			08/15/24 12:36	1

Lab Sample ID: LCS 500-781815/4
Matrix: Water
Analysis Batch: 781815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	10.0	9.52		mg/L		95	90 - 119

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 500-779372/60
Matrix: Water
Analysis Batch: 779372

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0		mg/L			07/31/24 17:35	1

Lab Sample ID: LCS 500-779372/61
Matrix: Water
Analysis Batch: 779372

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	20.0	21.1		mg/L		106	88 - 123

Lab Sample ID: MB 500-779975/16
Matrix: Water
Analysis Batch: 779975

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0		mg/L			08/05/24 16:17	1

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QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Lab Sample ID: LCS 500-779975/17				Client Sample ID: Lab Control Sample			
Matrix: Water				Prep Type: Total/NA			
Analysis Batch: 779975							
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	20.0	22.7		mg/L		113	88 - 123

Environment Testing

Ver: 04/02/2028/21/2024

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-254274-1

Login Number: 254274

List Number: 1

Creator: Scott, Sherri L

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.8,4.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Client Sample ID: MW-03

Date Collected: 07/30/24 10:25

Date Received: 07/31/24 08:55

Lab Sample ID: 500-254274-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			781451	S1Z	EET CHI	08/14/24 15:40 - 08/14/24 21:40 ¹
Total Recoverable	Analysis	6020B		1	782080	RN	EET CHI	08/16/24 20:47
Total/NA	Prep	7470A			782375	MJG	EET CHI	08/20/24 10:35 - 08/20/24 12:35 ¹
Total/NA	Analysis	7470A		1	782508	MJG	EET CHI	08/21/24 05:28
Total/NA	Analysis	SM 2540C		1	779809	CLB	EET CHI	08/04/24 23:17
Total/NA	Analysis	SM 4500 CI- E		5	779787	TR	EET CHI	08/04/24 13:24
Total/NA	Analysis	SM 4500 F C		1	781815	SO	EET CHI	08/15/24 13:02
Total/NA	Analysis	SM 4500 SO4 E		5	779975	TR	EET CHI	08/05/24 16:18

Client Sample ID: MW-04

Date Collected: 07/30/24 09:14

Date Received: 07/31/24 08:55

Lab Sample ID: 500-254274-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			781451	S1Z	EET CHI	08/14/24 15:40 - 08/14/24 21:40 ¹
Total Recoverable	Analysis	6020B		1	782080	RN	EET CHI	08/16/24 20:49
Total/NA	Prep	7470A			782375	MJG	EET CHI	08/20/24 10:35 - 08/20/24 12:35 ¹
Total/NA	Analysis	7470A		1	782508	MJG	EET CHI	08/21/24 05:30
Total/NA	Analysis	SM 2540C		1	779809	CLB	EET CHI	08/04/24 23:20
Total/NA	Analysis	SM 4500 CI- E		5	779787	TR	EET CHI	08/04/24 13:24
Total/NA	Analysis	SM 4500 F C		1	781815	SO	EET CHI	08/15/24 13:06
Total/NA	Analysis	SM 4500 SO4 E		5	779975	TR	EET CHI	08/05/24 16:18

Client Sample ID: MW-05

Date Collected: 07/30/24 11:50

Date Received: 07/31/24 08:55

Lab Sample ID: 500-254274-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			781451	S1Z	EET CHI	08/14/24 15:40 - 08/14/24 21:40 ¹
Total Recoverable	Analysis	6020B		1	782080	RN	EET CHI	08/16/24 20:51
Total/NA	Prep	7470A			782375	MJG	EET CHI	08/20/24 10:35 - 08/20/24 12:35 ¹
Total/NA	Analysis	7470A		1	782508	MJG	EET CHI	08/21/24 05:32
Total/NA	Analysis	SM 2540C		1	779809	CLB	EET CHI	08/04/24 23:22
Total/NA	Analysis	SM 4500 CI- E		5	779787	TR	EET CHI	08/04/24 13:24
Total/NA	Analysis	SM 4500 F C		1	781815	SO	EET CHI	08/15/24 13:11
Total/NA	Analysis	SM 4500 SO4 E		5	779372	TR	EET CHI	07/31/24 18:01

Client Sample ID: MW-10

Date Collected: 07/30/24 13:46

Date Received: 07/31/24 08:55

Lab Sample ID: 500-254274-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			781451	S1Z	EET CHI	08/14/24 15:40 - 08/14/24 21:40 ¹
Total Recoverable	Analysis	6020B		1	782080	RN	EET CHI	08/16/24 20:58

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Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-254274-1

Client Sample ID: MW-10

Date Collected: 07/30/24 13:46

Date Received: 07/31/24 08:55

Lab Sample ID: 500-254274-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			782375	MJG	EET CHI	08/20/24 10:35 - 08/20/24 12:35 ¹
Total/NA	Analysis	7470A		1	782508	MJG	EET CHI	08/21/24 05:34
Total/NA	Analysis	SM 2540C		1	779809	CLB	EET CHI	08/04/24 23:25
Total/NA	Analysis	SM 4500 Cl- E		5	779787	TR	EET CHI	08/04/24 13:25
Total/NA	Analysis	SM 4500 F C		1	781815	SO	EET CHI	08/15/24 13:15
Total/NA	Analysis	SM 4500 SO4 E		5	779372	TR	EET CHI	07/31/24 18:00

Client Sample ID: Duplicate

Date Collected: 07/30/24 00:00

Date Received: 07/31/24 08:55

Lab Sample ID: 500-254274-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			781451	S1Z	EET CHI	08/14/24 15:40 - 08/14/24 21:40 ¹
Total Recoverable	Analysis	6020B		1	782080	RN	EET CHI	08/16/24 21:00
Total/NA	Prep	7470A			782375	MJG	EET CHI	08/20/24 10:35 - 08/20/24 12:35 ¹
Total/NA	Analysis	7470A		1	782508	MJG	EET CHI	08/21/24 05:36
Total/NA	Analysis	SM 2540C		1	779809	CLB	EET CHI	08/04/24 23:28
Total/NA	Analysis	SM 4500 Cl- E		5	779787	TR	EET CHI	08/04/24 13:25
Total/NA	Analysis	SM 4500 F C		1	781815	SO	EET CHI	08/15/24 13:20
Total/NA	Analysis	SM 4500 SO4 E		5	779372	TR	EET CHI	07/31/24 18:01

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

ANALYTICAL REPORT

PREPARED FOR

Attn: James Thorne
Midwest Generation EME LLC
1800 Channahon Road
Joliet, Illinois 60436

Generated 9/5/2024 12:42:53 PM

JOB DESCRIPTION

Joliet #29 CCR (RAD)

JOB NUMBER

500-254274-2

Eurofins Chicago

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization



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Case Narrative

Client: Midwest Generation EME LLC
Project: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Job ID: 500-254274-2

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Job Narrative
500-254274-2

Receipt

The samples were received on 7/31/2024 8:55 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 4.3°C and 4.8°C.

Gas Flow Proportional Counter

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Method Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-254274-1	MW-03	Water	07/30/24 10:25	07/31/24 08:55
500-254274-2	MW-04	Water	07/30/24 09:14	07/31/24 08:55
500-254274-3	MW-05	Water	07/30/24 11:50	07/31/24 08:55
500-254274-4	MW-10	Water	07/30/24 13:46	07/31/24 08:55
500-254274-5	Duplicate	Water	07/30/24 00:00	07/31/24 08:55

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Client Sample ID: MW-03

Lab Sample ID: 500-254274-1

Date Collected: 07/30/24 10:25

Matrix: Water

Date Received: 07/31/24 08:55

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.108		0.0665	0.0672	1.00	0.0844	pCi/L	08/08/24 07:47	09/03/24 14:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.9		30 - 110					08/08/24 07:47	09/03/24 14:50	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.388	U	0.362	0.364	1.00	0.577	pCi/L	08/08/24 07:52	08/16/24 11:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.9		30 - 110					08/08/24 07:52	08/16/24 11:49	1
Y Carrier	83.4		30 - 110					08/08/24 07:52	08/16/24 11:49	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.497	U	0.368	0.370	5.00	0.577	pCi/L		09/05/24 10:11	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Client Sample ID: MW-04

Lab Sample ID: 500-254274-2

Date Collected: 07/30/24 09:14

Matrix: Water

Date Received: 07/31/24 08:55

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.111		0.0637	0.0644	1.00	0.0765	pCi/L	08/08/24 07:47	09/03/24 14:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		30 - 110					08/08/24 07:47	09/03/24 14:50	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.167	U	0.275	0.275	1.00	0.471	pCi/L	08/08/24 07:52	08/16/24 11:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		30 - 110					08/08/24 07:52	08/16/24 11:49	1
Y Carrier	85.2		30 - 110					08/08/24 07:52	08/16/24 11:49	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.278	U	0.282	0.282	5.00	0.471	pCi/L		09/05/24 10:11	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Client Sample ID: MW-05

Lab Sample ID: 500-254274-3

Date Collected: 07/30/24 11:50

Matrix: Water

Date Received: 07/31/24 08:55

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.123		0.0670	0.0679	1.00	0.0800	pCi/L	08/08/24 07:47	09/03/24 14:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.5		30 - 110					08/08/24 07:47	09/03/24 14:50	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.159	U	0.283	0.284	1.00	0.488	pCi/L	08/08/24 07:52	08/16/24 11:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.5		30 - 110					08/08/24 07:52	08/16/24 11:50	1
Y Carrier	85.2		30 - 110					08/08/24 07:52	08/16/24 11:50	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.281	U	0.291	0.292	5.00	0.488	pCi/L		09/05/24 10:11	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Client Sample ID: MW-10

Lab Sample ID: 500-254274-4

Date Collected: 07/30/24 13:46

Matrix: Water

Date Received: 07/31/24 08:55

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0440	U	0.0511	0.0513	1.00	0.0825	pCi/L	08/08/24 07:47	09/03/24 14:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.6		30 - 110					08/08/24 07:47	09/03/24 14:50	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.411	U	0.301	0.303	1.00	0.453	pCi/L	08/08/24 07:52	08/16/24 11:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.6		30 - 110					08/08/24 07:52	08/16/24 11:50	1
Y Carrier	87.9		30 - 110					08/08/24 07:52	08/16/24 11:50	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.455		0.305	0.307	5.00	0.453	pCi/L		09/05/24 10:11	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Client Sample ID: Duplicate

Lab Sample ID: 500-254274-5

Date Collected: 07/30/24 00:00

Matrix: Water

Date Received: 07/31/24 08:55

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0966		0.0690	0.0695	1.00	0.0953	pCi/L	08/08/24 07:47	09/03/24 14:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.3		30 - 110					08/08/24 07:47	09/03/24 14:50	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.363	U	0.345	0.346	1.00	0.550	pCi/L	08/08/24 07:52	08/16/24 11:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.3		30 - 110					08/08/24 07:52	08/16/24 11:50	1
Y Carrier	85.6		30 - 110					08/08/24 07:52	08/16/24 11:50	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.459	U	0.352	0.353	5.00	0.550	pCi/L		09/05/24 10:11	1

Definitions/Glossary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Rad

Prep Batch: 674253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-254274-1	MW-03	Total/NA	Water	PrecSep-21	
500-254274-2	MW-04	Total/NA	Water	PrecSep-21	
500-254274-3	MW-05	Total/NA	Water	PrecSep-21	
500-254274-4	MW-10	Total/NA	Water	PrecSep-21	
500-254274-5	Duplicate	Total/NA	Water	PrecSep-21	
MB 160-674253/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-674253/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
500-254274-3 DU	MW-05	Total/NA	Water	PrecSep-21	

Prep Batch: 674254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-254274-1	MW-03	Total/NA	Water	PrecSep_0	
500-254274-2	MW-04	Total/NA	Water	PrecSep_0	
500-254274-3	MW-05	Total/NA	Water	PrecSep_0	
500-254274-4	MW-10	Total/NA	Water	PrecSep_0	
500-254274-5	Duplicate	Total/NA	Water	PrecSep_0	
MB 160-674254/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-674254/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
500-254274-3 DU	MW-05	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-674253/1-A
Matrix: Water
Analysis Batch: 677423

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 674253

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04662	U	0.0624	0.0626	1.00	0.105	pCi/L	08/08/24 07:47	08/30/24 17:51	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.8		30 - 110					08/08/24 07:47	08/30/24 17:51	1

Lab Sample ID: LCS 160-674253/2-A
Matrix: Water
Analysis Batch: 677423

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 674253

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226		9.58	10.16		1.05	1.00	0.0926	pCi/L	106	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	94.1		30 - 110							

Lab Sample ID: 500-254274-3 DU
Matrix: Water
Analysis Batch: 677738

Client Sample ID: MW-05
Prep Type: Total/NA
Prep Batch: 674253

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.123		0.07832		0.0540	1.00	0.0685	pCi/L	0.36	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	96.8		30 - 110							

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-674254/1-A
Matrix: Water
Analysis Batch: 675292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 674254

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3593	U	0.420	0.421	1.00	0.691	pCi/L	08/08/24 07:52	08/16/24 11:48	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.8		30 - 110					08/08/24 07:52	08/16/24 11:48	1
Y Carrier	68.8		30 - 110					08/08/24 07:52	08/16/24 11:48	1

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-674254/2-A
Matrix: Water
Analysis Batch: 675292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 674254

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228		8.60	9.886		1.31	1.00	0.502	pCi/L	115	75 - 125
	LCS	LCS								
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	94.1		30 - 110							
Y Carrier	86.0		30 - 110							

Lab Sample ID: 500-254274-3 DU
Matrix: Water
Analysis Batch: 675292

Client Sample ID: MW-05
Prep Type: Total/NA
Prep Batch: 674254

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.159	U	0.1016	U	0.251	1.00	0.445	pCi/L	0.11	1
	DU	DU								
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	96.8		30 - 110							
Y Carrier	84.5		30 - 110							

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-254274-2

Login Number: 254274

List Number: 1

Creator: Scott, Sherri L

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.8,4.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-254274-2

Login Number: 254274

List Number: 2

Creator: Pinette, Meadow L

List Source: Eurofins St. Louis

List Creation: 08/01/24 01:31 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Client Sample ID: MW-03

Date Collected: 07/30/24 10:25

Date Received: 07/31/24 08:55

Lab Sample ID: 500-254274-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			674253	MLT	EET SL	08/08/24 07:47
Total/NA	Analysis	903.0		1	677738	SWS	EET SL	09/03/24 14:50
Total/NA	Prep	PrecSep_0			674254	MLT	EET SL	08/08/24 07:52
Total/NA	Analysis	904.0		1	675292	SWS	EET SL	08/16/24 11:49
Total/NA	Analysis	Ra226_Ra228		1	677882	FLC	EET SL	09/05/24 10:11

Client Sample ID: MW-04

Date Collected: 07/30/24 09:14

Date Received: 07/31/24 08:55

Lab Sample ID: 500-254274-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			674253	MLT	EET SL	08/08/24 07:47
Total/NA	Analysis	903.0		1	677738	SWS	EET SL	09/03/24 14:50
Total/NA	Prep	PrecSep_0			674254	MLT	EET SL	08/08/24 07:52
Total/NA	Analysis	904.0		1	675292	SWS	EET SL	08/16/24 11:49
Total/NA	Analysis	Ra226_Ra228		1	677882	FLC	EET SL	09/05/24 10:11

Client Sample ID: MW-05

Date Collected: 07/30/24 11:50

Date Received: 07/31/24 08:55

Lab Sample ID: 500-254274-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			674253	MLT	EET SL	08/08/24 07:47
Total/NA	Analysis	903.0		1	677738	SWS	EET SL	09/03/24 14:50
Total/NA	Prep	PrecSep_0			674254	MLT	EET SL	08/08/24 07:52
Total/NA	Analysis	904.0		1	675292	SWS	EET SL	08/16/24 11:50
Total/NA	Analysis	Ra226_Ra228		1	677882	FLC	EET SL	09/05/24 10:11

Client Sample ID: MW-10

Date Collected: 07/30/24 13:46

Date Received: 07/31/24 08:55

Lab Sample ID: 500-254274-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			674253	MLT	EET SL	08/08/24 07:47
Total/NA	Analysis	903.0		1	677738	SWS	EET SL	09/03/24 14:50
Total/NA	Prep	PrecSep_0			674254	MLT	EET SL	08/08/24 07:52
Total/NA	Analysis	904.0		1	675292	SWS	EET SL	08/16/24 11:50
Total/NA	Analysis	Ra226_Ra228		1	677882	FLC	EET SL	09/05/24 10:11

Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Client Sample ID: Duplicate
Date Collected: 07/30/24 00:00
Date Received: 07/31/24 08:55

Lab Sample ID: 500-254274-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			674253	MLT	EET SL	08/08/24 07:47
Total/NA	Analysis	903.0		1	677738	SWS	EET SL	09/03/24 14:50
Total/NA	Prep	PrecSep_0			674254	MLT	EET SL	08/08/24 07:52
Total/NA	Analysis	904.0		1	675292	SWS	EET SL	08/16/24 11:50
Total/NA	Analysis	Ra226_Ra228		1	677882	FLC	EET SL	09/05/24 10:11

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Tracer/Carrier Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-254274-2

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	
500-254274-1	MW-03	88.9	
500-254274-2	MW-04	92.6	
500-254274-3	MW-05	97.5	
500-254274-3 DU	MW-05	96.8	
500-254274-4	MW-10	91.6	
500-254274-5	Duplicate	84.3	
LCS 160-674253/2-A	Lab Control Sample	94.1	
MB 160-674253/1-A	Method Blank	94.8	
Tracer/Carrier Legend			
Ba = Ba Carrier			

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
500-254274-1	MW-03	88.9	83.4
500-254274-2	MW-04	92.6	85.2
500-254274-3	MW-05	97.5	85.2
500-254274-3 DU	MW-05	96.8	84.5
500-254274-4	MW-10	91.6	87.9
500-254274-5	Duplicate	84.3	85.6
LCS 160-674254/2-A	Lab Control Sample	94.1	86.0
MB 160-674254/1-A	Method Blank	94.8	68.8
Tracer/Carrier Legend			
Ba = Ba Carrier			
Y = Y Carrier			

ANALYTICAL REPORT

PREPARED FOR

Attn: James Thorne
Midwest Generation EME LLC
1800 Channahon Road
Joliet, Illinois 60436

Generated 11/22/2024 2:33:58 PM

JOB DESCRIPTION

Joliet #29 CCR

JOB NUMBER

500-259254-1

Eurofins Chicago

Job Notes

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Authorization



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Case Narrative

Client: Midwest Generation EME LLC
Project: Joliet #29 CCR

Job ID: 500-259254-1

Job ID: 500-259254-1

Eurofins Chicago

Job Narrative 500-259254-1

Receipt

The samples were received on 10/30/2024 8:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.8° C and 2.5° C.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Eurofins Chicago

Method Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CHI
SM 4500 F C	Fluoride	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-259254-1	MW-03	Water	10/29/24 08:33	10/30/24 08:40
500-259254-2	MW-04	Water	10/29/24 09:54	10/30/24 08:40
500-259254-3	MW-05	Water	10/29/24 11:30	10/30/24 08:40
500-259254-4	MW-10	Water	10/29/24 14:35	10/30/24 08:40
500-259254-5	Duplicate	Water	10/29/24 00:00	10/30/24 08:40

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Client Sample ID: MW-03

Lab Sample ID: 500-259254-1

Date Collected: 10/29/24 08:33

Matrix: Water

Date Received: 10/30/24 08:40

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		11/19/24 07:00	11/19/24 17:08	1
Arsenic	0.0013		0.0010		mg/L		11/19/24 07:00	11/19/24 17:08	1
Barium	0.11		0.0025		mg/L		11/19/24 07:00	11/19/24 17:08	1
Beryllium	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 17:08	1
Boron	0.40		0.050		mg/L		11/19/24 07:00	11/19/24 17:08	1
Cadmium	<0.00050		0.00050		mg/L		11/19/24 07:00	11/19/24 17:08	1
Calcium	110		0.20		mg/L		11/19/24 07:00	11/19/24 17:08	1
Chromium	<0.0050		0.0050		mg/L		11/19/24 07:00	11/19/24 17:08	1
Cobalt	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 17:08	1
Lead	<0.00050		0.00050		mg/L		11/19/24 07:00	11/19/24 17:08	1
Lithium	0.011		0.010		mg/L		11/19/24 07:00	11/19/24 17:08	1
Molybdenum	0.0050		0.0050		mg/L		11/19/24 07:00	11/19/24 17:08	1
Selenium	0.0031		0.0025		mg/L		11/19/24 07:00	11/19/24 17:08	1
Thallium	<0.0020		0.0020		mg/L		11/19/24 07:00	11/19/24 17:08	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		11/19/24 11:00	11/19/24 17:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	180		5.0		mg/L			11/18/24 18:56	5
Sulfate (EPA 300.0)	130		5.0		mg/L			11/18/24 18:56	5
Total Dissolved Solids (SM 2540C)	1000		10		mg/L			11/03/24 19:48	1
Fluoride (SM 4500 F C)	0.39		0.10		mg/L			11/18/24 20:14	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Client Sample ID: MW-04

Lab Sample ID: 500-259254-2

Date Collected: 10/29/24 09:54

Matrix: Water

Date Received: 10/30/24 08:40

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		11/19/24 07:00	11/19/24 17:11	1
Arsenic	0.0013		0.0010		mg/L		11/19/24 07:00	11/19/24 17:11	1
Barium	0.078		0.0025		mg/L		11/19/24 07:00	11/19/24 17:11	1
Beryllium	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 17:11	1
Boron	0.38		0.050		mg/L		11/19/24 07:00	11/19/24 17:11	1
Cadmium	<0.00050		0.00050		mg/L		11/19/24 07:00	11/19/24 17:11	1
Calcium	120		0.20		mg/L		11/19/24 07:00	11/19/24 17:11	1
Chromium	<0.0050		0.0050		mg/L		11/19/24 07:00	11/19/24 17:11	1
Cobalt	0.0095		0.0010		mg/L		11/19/24 07:00	11/19/24 17:11	1
Lead	<0.00050		0.00050		mg/L		11/19/24 07:00	11/19/24 17:11	1
Lithium	0.013		0.010		mg/L		11/19/24 07:00	11/19/24 17:11	1
Molybdenum	0.0055		0.0050		mg/L		11/19/24 07:00	11/19/24 17:11	1
Selenium	<0.0025		0.0025		mg/L		11/19/24 07:00	11/19/24 17:11	1
Thallium	<0.0020		0.0020		mg/L		11/19/24 07:00	11/19/24 17:11	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		11/19/24 11:00	11/19/24 17:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	190		5.0		mg/L			11/18/24 19:27	5
Sulfate (EPA 300.0)	120		5.0		mg/L			11/18/24 19:27	5
Total Dissolved Solids (SM 2540C)	980		10		mg/L			11/03/24 19:50	1
Fluoride (SM 4500 F C)	0.43		0.10		mg/L			11/20/24 16:42	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Client Sample ID: MW-05

Lab Sample ID: 500-259254-3

Date Collected: 10/29/24 11:30

Matrix: Water

Date Received: 10/30/24 08:40

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		11/19/24 07:00	11/19/24 17:13	1
Arsenic	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 17:13	1
Barium	0.072		0.0025		mg/L		11/19/24 07:00	11/19/24 17:13	1
Beryllium	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 17:13	1
Boron	0.48		0.050		mg/L		11/19/24 07:00	11/19/24 17:13	1
Cadmium	<0.00050		0.00050		mg/L		11/19/24 07:00	11/19/24 17:13	1
Calcium	100		0.20		mg/L		11/19/24 07:00	11/19/24 17:13	1
Chromium	<0.0050		0.0050		mg/L		11/19/24 07:00	11/19/24 17:13	1
Cobalt	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 17:13	1
Lead	<0.00050		0.00050		mg/L		11/19/24 07:00	11/19/24 17:13	1
Lithium	0.015		0.010		mg/L		11/19/24 07:00	11/19/24 17:13	1
Molybdenum	<0.0050		0.0050		mg/L		11/19/24 07:00	11/19/24 17:13	1
Selenium	<0.0025		0.0025		mg/L		11/19/24 07:00	11/19/24 17:13	1
Thallium	<0.0020		0.0020		mg/L		11/19/24 07:00	11/19/24 17:13	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		11/19/24 11:00	11/19/24 17:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	150		10		mg/L			11/18/24 20:29	10
Sulfate (EPA 300.0)	150		10		mg/L			11/18/24 20:29	10
Total Dissolved Solids (SM 2540C)	840		10		mg/L			11/03/24 19:53	1
Fluoride (SM 4500 F C)	0.32		0.10		mg/L			11/20/24 16:58	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Client Sample ID: MW-10

Lab Sample ID: 500-259254-4

Date Collected: 10/29/24 14:35

Matrix: Water

Date Received: 10/30/24 08:40

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		11/19/24 07:00	11/19/24 17:15	1
Arsenic	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 17:15	1
Barium	0.048		0.0025		mg/L		11/19/24 07:00	11/19/24 17:15	1
Beryllium	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 17:15	1
Boron	0.46		0.050		mg/L		11/19/24 07:00	11/19/24 17:15	1
Cadmium	<0.00050		0.00050		mg/L		11/19/24 07:00	11/19/24 17:15	1
Calcium	130		0.20		mg/L		11/19/24 07:00	11/19/24 17:15	1
Chromium	<0.0050		0.0050		mg/L		11/19/24 07:00	11/19/24 17:15	1
Cobalt	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 17:15	1
Lead	<0.00050		0.00050		mg/L		11/19/24 07:00	11/19/24 17:15	1
Lithium	0.013		0.010		mg/L		11/19/24 07:00	11/19/24 17:15	1
Molybdenum	0.0063		0.0050		mg/L		11/19/24 07:00	11/19/24 17:15	1
Selenium	<0.0025		0.0025		mg/L		11/19/24 07:00	11/19/24 17:15	1
Thallium	<0.0020		0.0020		mg/L		11/19/24 07:00	11/19/24 17:15	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		11/19/24 11:00	11/19/24 17:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	220		10		mg/L			11/18/24 13:44	10
Sulfate (EPA 300.0)	160		10		mg/L			11/18/24 13:44	10
Total Dissolved Solids (SM 2540C)	1000		10		mg/L			11/03/24 19:55	1
Fluoride (SM 4500 F C)	0.38		0.10		mg/L			11/20/24 17:03	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Client Sample ID: Duplicate

Lab Sample ID: 500-259254-5

Date Collected: 10/29/24 00:00

Matrix: Water

Date Received: 10/30/24 08:40

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		11/19/24 07:00	11/19/24 17:18	1
Arsenic	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 17:18	1
Barium	0.073		0.0025		mg/L		11/19/24 07:00	11/19/24 17:18	1
Beryllium	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 17:18	1
Boron	0.50		0.050		mg/L		11/19/24 07:00	11/19/24 17:18	1
Cadmium	<0.00050		0.00050		mg/L		11/19/24 07:00	11/19/24 17:18	1
Calcium	110		0.20		mg/L		11/19/24 07:00	11/19/24 17:18	1
Chromium	<0.0050		0.0050		mg/L		11/19/24 07:00	11/19/24 17:18	1
Cobalt	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 17:18	1
Lead	<0.00050		0.00050		mg/L		11/19/24 07:00	11/19/24 17:18	1
Lithium	0.015		0.010		mg/L		11/19/24 07:00	11/19/24 17:18	1
Molybdenum	<0.0050		0.0050		mg/L		11/19/24 07:00	11/19/24 17:18	1
Selenium	<0.0025		0.0025		mg/L		11/19/24 07:00	11/19/24 17:18	1
Thallium	<0.0020		0.0020		mg/L		11/19/24 07:00	11/19/24 17:18	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		11/19/24 11:00	11/19/24 17:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	150		10		mg/L			11/18/24 14:16	10
Sulfate (EPA 300.0)	140		10		mg/L			11/18/24 14:16	10
Total Dissolved Solids (SM 2540C)	900		10		mg/L			11/03/24 19:58	1
Fluoride (SM 4500 F C)	0.32		0.10		mg/L			11/20/24 17:07	1

Definitions/Glossary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Metals

Prep Batch: 795876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-259254-1	MW-03	Total Recoverable	Water	3005A	
500-259254-2	MW-04	Total Recoverable	Water	3005A	
500-259254-3	MW-05	Total Recoverable	Water	3005A	
500-259254-4	MW-10	Total Recoverable	Water	3005A	
500-259254-5	Duplicate	Total Recoverable	Water	3005A	
MB 500-795876/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-795876/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 796023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-259254-1	MW-03	Total/NA	Water	7470A	
500-259254-2	MW-04	Total/NA	Water	7470A	
500-259254-3	MW-05	Total/NA	Water	7470A	
500-259254-4	MW-10	Total/NA	Water	7470A	
500-259254-5	Duplicate	Total/NA	Water	7470A	
MB 500-796023/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-796023/13-A	Lab Control Sample	Total/NA	Water	7470A	
500-259254-1 MS	MW-03	Total/NA	Water	7470A	
500-259254-1 MSD	MW-03	Total/NA	Water	7470A	
500-259254-1 DU	MW-03	Total/NA	Water	7470A	

Analysis Batch: 796189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-259254-1	MW-03	Total/NA	Water	7470A	796023
500-259254-2	MW-04	Total/NA	Water	7470A	796023
500-259254-3	MW-05	Total/NA	Water	7470A	796023
500-259254-4	MW-10	Total/NA	Water	7470A	796023
500-259254-5	Duplicate	Total/NA	Water	7470A	796023
MB 500-796023/12-A	Method Blank	Total/NA	Water	7470A	796023
LCS 500-796023/13-A	Lab Control Sample	Total/NA	Water	7470A	796023
500-259254-1 MS	MW-03	Total/NA	Water	7470A	796023
500-259254-1 MSD	MW-03	Total/NA	Water	7470A	796023
500-259254-1 DU	MW-03	Total/NA	Water	7470A	796023

Analysis Batch: 796286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-259254-1	MW-03	Total Recoverable	Water	6020B	795876
500-259254-2	MW-04	Total Recoverable	Water	6020B	795876
500-259254-3	MW-05	Total Recoverable	Water	6020B	795876
500-259254-4	MW-10	Total Recoverable	Water	6020B	795876
500-259254-5	Duplicate	Total Recoverable	Water	6020B	795876
MB 500-795876/1-A	Method Blank	Total Recoverable	Water	6020B	795876
LCS 500-795876/2-A	Lab Control Sample	Total Recoverable	Water	6020B	795876

General Chemistry

Analysis Batch: 793633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-259254-1	MW-03	Total/NA	Water	SM 2540C	
500-259254-2	MW-04	Total/NA	Water	SM 2540C	
500-259254-3	MW-05	Total/NA	Water	SM 2540C	

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QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

General Chemistry (Continued)

Analysis Batch: 793633 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-259254-4	MW-10	Total/NA	Water	SM 2540C	
500-259254-5	Duplicate	Total/NA	Water	SM 2540C	
MB 500-793633/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-793633/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 795822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-259254-1	MW-03	Total/NA	Water	300.0	
500-259254-2	MW-04	Total/NA	Water	300.0	
500-259254-3	MW-05	Total/NA	Water	300.0	
MB 500-795822/3	Method Blank	Total/NA	Water	300.0	
LCS 500-795822/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 795841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-259254-4	MW-10	Total/NA	Water	300.0	
500-259254-5	Duplicate	Total/NA	Water	300.0	
MB 500-795841/3	Method Blank	Total/NA	Water	300.0	
LCS 500-795841/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 795979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-259254-1	MW-03	Total/NA	Water	SM 4500 F C	
MB 500-795979/25	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 500-795979/26	Lab Control Sample	Total/NA	Water	SM 4500 F C	

Analysis Batch: 796396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-259254-2	MW-04	Total/NA	Water	SM 4500 F C	
500-259254-3	MW-05	Total/NA	Water	SM 4500 F C	
500-259254-4	MW-10	Total/NA	Water	SM 4500 F C	
500-259254-5	Duplicate	Total/NA	Water	SM 4500 F C	
MB 500-796396/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 500-796396/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
500-259254-2 MS	MW-04	Total/NA	Water	SM 4500 F C	
500-259254-2 MSD	MW-04	Total/NA	Water	SM 4500 F C	

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 500-795876/1-A
Matrix: Water
Analysis Batch: 796286

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 795876

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		11/19/24 07:00	11/19/24 16:52	1
Arsenic	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 16:52	1
Barium	<0.0025		0.0025		mg/L		11/19/24 07:00	11/19/24 16:52	1
Beryllium	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 16:52	1
Boron	<0.050		0.050		mg/L		11/19/24 07:00	11/19/24 16:52	1
Cadmium	<0.00050		0.00050		mg/L		11/19/24 07:00	11/19/24 16:52	1
Calcium	<0.20		0.20		mg/L		11/19/24 07:00	11/19/24 16:52	1
Chromium	<0.0050		0.0050		mg/L		11/19/24 07:00	11/19/24 16:52	1
Cobalt	<0.0010		0.0010		mg/L		11/19/24 07:00	11/19/24 16:52	1
Lead	<0.00050		0.00050		mg/L		11/19/24 07:00	11/19/24 16:52	1
Lithium	<0.010		0.010		mg/L		11/19/24 07:00	11/19/24 16:52	1
Molybdenum	<0.0050		0.0050		mg/L		11/19/24 07:00	11/19/24 16:52	1
Selenium	<0.0025		0.0025		mg/L		11/19/24 07:00	11/19/24 16:52	1
Thallium	<0.0020		0.0020		mg/L		11/19/24 07:00	11/19/24 16:52	1

Lab Sample ID: LCS 500-795876/2-A
Matrix: Water
Analysis Batch: 796286

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 795876

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.500	0.511		mg/L		102	80 - 120
Arsenic	0.100	0.0953		mg/L		95	80 - 120
Barium	0.500	0.488		mg/L		98	80 - 120
Beryllium	0.0500	0.0497		mg/L		99	80 - 120
Boron	1.00	0.947		mg/L		95	80 - 120
Cadmium	0.0500	0.0501		mg/L		100	80 - 120
Calcium	10.0	8.08		mg/L		81	80 - 120
Chromium	0.200	0.204		mg/L		102	80 - 120
Cobalt	0.500	0.527		mg/L		105	80 - 120
Lead	0.100	0.0988		mg/L		99	80 - 120
Lithium	0.100	0.102		mg/L		102	80 - 120
Molybdenum	1.00	0.976		mg/L		98	80 - 120
Selenium	0.100	0.0947		mg/L		95	80 - 120
Thallium	0.100	0.101		mg/L		101	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-796023/12-A
Matrix: Water
Analysis Batch: 796189

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 796023

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		11/19/24 11:00	11/19/24 17:10	1

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QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 500-796023/13-A
Matrix: Water
Analysis Batch: 796189

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 796023

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00200	0.00216		mg/L		108	80 - 120

Lab Sample ID: 500-259254-1 MS
Matrix: Water
Analysis Batch: 796189

Client Sample ID: MW-03
Prep Type: Total/NA
Prep Batch: 796023

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.00020		0.000999	0.00113		mg/L		113	75 - 125

Lab Sample ID: 500-259254-1 MSD
Matrix: Water
Analysis Batch: 796189

Client Sample ID: MW-03
Prep Type: Total/NA
Prep Batch: 796023

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.00020		0.000999	0.00108		mg/L		108	75 - 125	5	20

Lab Sample ID: 500-259254-1 DU
Matrix: Water
Analysis Batch: 796189

Client Sample ID: MW-03
Prep Type: Total/NA
Prep Batch: 796023

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	<0.00020		<0.00020		mg/L		NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-795822/3
Matrix: Water
Analysis Batch: 795822

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.0		1.0		mg/L			11/18/24 10:36	1
Sulfate	<1.0		1.0		mg/L			11/18/24 10:36	1

Lab Sample ID: LCS 500-795822/4
Matrix: Water
Analysis Batch: 795822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	18.6		mg/L		93	90 - 110
Sulfate	20.0	20.2		mg/L		101	90 - 110

Lab Sample ID: MB 500-795841/3
Matrix: Water
Analysis Batch: 795841

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.0		1.0		mg/L			11/18/24 11:55	1
Sulfate	<1.0		1.0		mg/L			11/18/24 11:55	1

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QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 500-795841/4
Matrix: Water
Analysis Batch: 795841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	20.2		mg/L		101	90 - 110
Sulfate	20.0	21.2		mg/L		106	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 500-793633/1
Matrix: Water
Analysis Batch: 793633

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10		mg/L			11/03/24 19:12	1

Lab Sample ID: LCS 500-793633/2
Matrix: Water
Analysis Batch: 793633

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	250	264		mg/L		106	80 - 120

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 500-795979/25
Matrix: Water
Analysis Batch: 795979

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.10		0.10		mg/L			11/18/24 17:58	1

Lab Sample ID: LCS 500-795979/26
Matrix: Water
Analysis Batch: 795979

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	10.0	9.55		mg/L		96	90 - 119

Lab Sample ID: MB 500-796396/3
Matrix: Water
Analysis Batch: 796396

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.10		0.10		mg/L			11/20/24 16:28	1

Lab Sample ID: LCS 500-796396/4
Matrix: Water
Analysis Batch: 796396

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	10.0	10.0		mg/L		100	90 - 119

Eurofins Chicago

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 500-259254-2 MS
Matrix: Water
Analysis Batch: 796396

Client Sample ID: MW-04
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	0.43		5.00	5.40		mg/L		99	75 - 125		

Lab Sample ID: 500-259254-2 MSD
Matrix: Water
Analysis Batch: 796396

Client Sample ID: MW-04
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.43		5.00	5.32		mg/L		98	75 - 125	1	20

MKE 232

[illegible]

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-259254-1

Login Number: 259254

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8,2.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Client Sample ID: MW-03

Date Collected: 10/29/24 08:33

Date Received: 10/30/24 08:40

Lab Sample ID: 500-259254-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			795876	DAJ	EET CHI	11/19/24 07:00 - 11/19/24 13:00 ¹
Total Recoverable	Analysis	6020B		1	796286	RN	EET CHI	11/19/24 17:08
Total/NA	Prep	7470A			796023	S1Z	EET CHI	11/19/24 11:00 - 11/19/24 13:00 ¹
Total/NA	Analysis	7470A		1	796189	S1Z	EET CHI	11/19/24 17:14
Total/NA	Analysis	300.0		5	795822	MM	EET CHI	11/18/24 18:56
Total/NA	Analysis	SM 2540C		1	793633	CLB	EET CHI	11/03/24 19:48
Total/NA	Analysis	SM 4500 F C		1	795979	SO	EET CHI	11/18/24 20:14

Client Sample ID: MW-04

Date Collected: 10/29/24 09:54

Date Received: 10/30/24 08:40

Lab Sample ID: 500-259254-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			795876	DAJ	EET CHI	11/19/24 07:00 - 11/19/24 13:00 ¹
Total Recoverable	Analysis	6020B		1	796286	RN	EET CHI	11/19/24 17:11
Total/NA	Prep	7470A			796023	S1Z	EET CHI	11/19/24 11:00 - 11/19/24 13:00 ¹
Total/NA	Analysis	7470A		1	796189	S1Z	EET CHI	11/19/24 17:21
Total/NA	Analysis	300.0		5	795822	MM	EET CHI	11/18/24 19:27
Total/NA	Analysis	SM 2540C		1	793633	CLB	EET CHI	11/03/24 19:50
Total/NA	Analysis	SM 4500 F C		1	796396	SO	EET CHI	11/20/24 16:42

Client Sample ID: MW-05

Date Collected: 10/29/24 11:30

Date Received: 10/30/24 08:40

Lab Sample ID: 500-259254-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			795876	DAJ	EET CHI	11/19/24 07:00 - 11/19/24 13:00 ¹
Total Recoverable	Analysis	6020B		1	796286	RN	EET CHI	11/19/24 17:13
Total/NA	Prep	7470A			796023	S1Z	EET CHI	11/19/24 11:00 - 11/19/24 13:00 ¹
Total/NA	Analysis	7470A		1	796189	S1Z	EET CHI	11/19/24 17:23
Total/NA	Analysis	300.0		10	795822	MM	EET CHI	11/18/24 20:29
Total/NA	Analysis	SM 2540C		1	793633	CLB	EET CHI	11/03/24 19:53
Total/NA	Analysis	SM 4500 F C		1	796396	SO	EET CHI	11/20/24 16:58

Client Sample ID: MW-10

Date Collected: 10/29/24 14:35

Date Received: 10/30/24 08:40

Lab Sample ID: 500-259254-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			795876	DAJ	EET CHI	11/19/24 07:00 - 11/19/24 13:00 ¹
Total Recoverable	Analysis	6020B		1	796286	RN	EET CHI	11/19/24 17:15
Total/NA	Prep	7470A			796023	S1Z	EET CHI	11/19/24 11:00 - 11/19/24 13:00 ¹
Total/NA	Analysis	7470A		1	796189	S1Z	EET CHI	11/19/24 17:25
Total/NA	Analysis	300.0		10	795841	MM	EET CHI	11/18/24 13:44

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Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR

Job ID: 500-259254-1

Client Sample ID: MW-10

Date Collected: 10/29/24 14:35

Date Received: 10/30/24 08:40

Lab Sample ID: 500-259254-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	793633	CLB	EET CHI	11/03/24 19:55
Total/NA	Analysis	SM 4500 F C		1	796396	SO	EET CHI	11/20/24 17:03

Client Sample ID: Duplicate

Date Collected: 10/29/24 00:00

Date Received: 10/30/24 08:40

Lab Sample ID: 500-259254-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			795876	DAJ	EET CHI	11/19/24 07:00 - 11/19/24 13:00 ¹
Total Recoverable	Analysis	6020B		1	796286	RN	EET CHI	11/19/24 17:18
Total/NA	Prep	7470A			796023	S1Z	EET CHI	11/19/24 11:00 - 11/19/24 13:00 ¹
Total/NA	Analysis	7470A		1	796189	S1Z	EET CHI	11/19/24 17:27
Total/NA	Analysis	300.0		10	795841	MM	EET CHI	11/18/24 14:16
Total/NA	Analysis	SM 2540C		1	793633	CLB	EET CHI	11/03/24 19:58
Total/NA	Analysis	SM 4500 F C		1	796396	SO	EET CHI	11/20/24 17:07

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

ANALYTICAL REPORT

PREPARED FOR

Attn: James Thorne
Midwest Generation EME LLC
1800 Channahon Road
Joliet, Illinois 60436

Generated 12/4/2024 9:20:52 AM

JOB DESCRIPTION

Joliet #29 CCR (RAD)

JOB NUMBER

500-259254-2

Eurofins Chicago

Job Notes

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Authorization



Generated
12/4/2024 9:20:52 AM

Authorized for release by
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Case Narrative

Client: Midwest Generation EME LLC
Project: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Job ID: 500-259254-2

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Job Narrative 500-259254-2

Receipt

The samples were received on 10/30/2024 8:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.8°C and 2.5°C.

Gas Flow Proportional Counter

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Method Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-259254-1	MW-03	Water	10/29/24 08:33	10/30/24 08:40
500-259254-2	MW-04	Water	10/29/24 09:54	10/30/24 08:40
500-259254-3	MW-05	Water	10/29/24 11:30	10/30/24 08:40
500-259254-4	MW-10	Water	10/29/24 14:35	10/30/24 08:40
500-259254-5	Duplicate	Water	10/29/24 00:00	10/30/24 08:40

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Client Sample ID: MW-03

Lab Sample ID: 500-259254-1

Date Collected: 10/29/24 08:33

Matrix: Water

Date Received: 10/30/24 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.178		0.110	0.111	1.00	0.144	pCi/L	11/01/24 09:04	11/25/24 09:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.6		30 - 110					11/01/24 09:04	11/25/24 09:16	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.351	U	0.444	0.445	1.00	0.738	pCi/L	11/01/24 09:09	11/21/24 12:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.6		30 - 110					11/01/24 09:09	11/21/24 12:22	1
Y Carrier	73.3		30 - 110					11/01/24 09:09	11/21/24 12:22	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.529	U	0.457	0.459	5.00	0.738	pCi/L		12/03/24 21:36	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Client Sample ID: MW-04

Lab Sample ID: 500-259254-2

Date Collected: 10/29/24 09:54

Matrix: Water

Date Received: 10/30/24 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.134	U	0.103	0.104	1.00	0.148	pCi/L	11/01/24 09:04	11/25/24 09:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.1		30 - 110					11/01/24 09:04	11/25/24 09:16	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0636	U	0.346	0.346	1.00	0.632	pCi/L	11/01/24 09:09	11/21/24 12:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.1		30 - 110					11/01/24 09:09	11/21/24 12:22	1
Y Carrier	75.9		30 - 110					11/01/24 09:09	11/21/24 12:22	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.197	U	0.361	0.361	5.00	0.632	pCi/L		12/03/24 21:36	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Client Sample ID: MW-05

Lab Sample ID: 500-259254-3

Date Collected: 10/29/24 11:30

Matrix: Water

Date Received: 10/30/24 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.245		0.149	0.151	1.00	0.203	pCi/L	11/01/24 09:04	11/25/24 09:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.5		30 - 110					11/01/24 09:04	11/25/24 09:16	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0552	U	0.398	0.398	1.00	0.746	pCi/L	11/01/24 09:09	11/21/24 12:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.5		30 - 110					11/01/24 09:09	11/21/24 12:23	1
Y Carrier	83.4		30 - 110					11/01/24 09:09	11/21/24 12:23	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.190	U	0.425	0.426	5.00	0.746	pCi/L		12/03/24 21:36	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Client Sample ID: MW-10

Lab Sample ID: 500-259254-4

Date Collected: 10/29/24 14:35

Matrix: Water

Date Received: 10/30/24 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.134	U	0.103	0.104	1.00	0.146	pCi/L	11/01/24 09:04	11/25/24 09:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.0		30 - 110					11/01/24 09:04	11/25/24 09:16	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.202	U	0.364	0.364	1.00	0.628	pCi/L	11/01/24 09:09	11/21/24 12:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.0		30 - 110					11/01/24 09:09	11/21/24 12:23	1
Y Carrier	80.4		30 - 110					11/01/24 09:09	11/21/24 12:23	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.337	U	0.378	0.379	5.00	0.628	pCi/L		12/03/24 21:36	1

Client Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Client Sample ID: Duplicate

Lab Sample ID: 500-259254-5

Date Collected: 10/29/24 00:00

Matrix: Water

Date Received: 10/30/24 08:40

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.174	U	0.128	0.129	1.00	0.185	pCi/L	11/01/24 09:04	11/25/24 09:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.8		30 - 110					11/01/24 09:04	11/25/24 09:16	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.380	U	0.371	0.373	1.00	0.596	pCi/L	11/01/24 09:09	11/21/24 12:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.8		30 - 110					11/01/24 09:09	11/21/24 12:23	1
Y Carrier	87.5		30 - 110					11/01/24 09:09	11/21/24 12:23	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.554	U	0.392	0.395	5.00	0.596	pCi/L		12/03/24 21:36	1

Definitions/Glossary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Rad

Prep Batch: 686249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-259254-1	MW-03	Total/NA	Water	PrecSep-21	
500-259254-2	MW-04	Total/NA	Water	PrecSep-21	
500-259254-3	MW-05	Total/NA	Water	PrecSep-21	
500-259254-4	MW-10	Total/NA	Water	PrecSep-21	
500-259254-5	Duplicate	Total/NA	Water	PrecSep-21	
MB 160-686249/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-686249/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 686250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-259254-1	MW-03	Total/NA	Water	PrecSep_0	
500-259254-2	MW-04	Total/NA	Water	PrecSep_0	
500-259254-3	MW-05	Total/NA	Water	PrecSep_0	
500-259254-4	MW-10	Total/NA	Water	PrecSep_0	
500-259254-5	Duplicate	Total/NA	Water	PrecSep_0	
MB 160-686250/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-686250/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-686249/1-A
Matrix: Water
Analysis Batch: 690403

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 686249

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1548	U	0.119	0.120	1.00	0.175	pCi/L	11/01/24 09:04	11/25/24 09:15	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.8		30 - 110					11/01/24 09:04	11/25/24 09:15	1

Lab Sample ID: LCS 160-686249/2-A
Matrix: Water
Analysis Batch: 690403

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 686249

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226		9.58	8.273		0.947	1.00	0.138	pCi/L	86	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	90.6		30 - 110							

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-686250/1-A
Matrix: Water
Analysis Batch: 689807

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 686250

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4630	U	0.344	0.346	1.00	0.517	pCi/L	11/01/24 09:09	11/21/24 12:22	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.8		30 - 110					11/01/24 09:09	11/21/24 12:22	1
Y Carrier	82.6		30 - 110					11/01/24 09:09	11/21/24 12:22	1

Lab Sample ID: LCS 160-686250/2-A
Matrix: Water
Analysis Batch: 689807

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 686250

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228		8.33	8.391		1.22	1.00	0.545	pCi/L	101	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	90.6		30 - 110							
Y Carrier	81.1		30 - 110							

MKE 232

Client Information		Sampler TAS John Howard		Lab PM Mockler, Diana J		Carrier Tracking No(s)		COC No: 500-129754-45941 1					
Client Contact: Patrick Allenstein		Phone: 630 290 6850		E-Mail: Diana.Mockler@et.eurofinsus.com		State of Origin:		Page: Page 1 of 1					
Company: KPRG and Associates, Inc.		PWSID		Analysis Requested						Job #: 500-259254			
Address: 14665 West Lisbon Road, Suite 1A		Due Date Requested		 500-259254 COC						Preservation Codes: D - HNO3 N - None			
City: Brookfield		TAT Requested (days)								Other:			
State, Zip: WI, 53005		Compliance Project Δ Yes Δ No											
Phone:		PO #: 4502153835											
Email: patricka@kprginc.com		WO #:											
Project Name: Joliet #29 CCR/ Event Desc. Quarterly MWG Joliet #29 CCR		Project #: 50011568		Total Number of Containers						Special Instructions/Note:			
Site: Illinois		SSOW#:											
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/soil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No)	6010C, 6020A, 7470A	2540C, 4500_F_C, SM4500_CL_E, SM4500_SO4_E	903.0, 904.0				
							D	N	D				
MW-03	10-29-24	08:33	G	Water	NN	X	X	X					
MW-04	10-29-24	09:54	G	Water	NN	X	X	X					
MW-05	10-29-24	11:30	G	Water	NN	X	X	X					
MW-10	10-29-24	14:35	G	Water	NN	X	X	X					
Duplicate	10-29-24	-	G	Water	NN	X	X	X					
				Water									
Possible Hazard Identification		Non-Hazard		Flammable		Skin Irritant		Poison B		Unknown		Radiological	
Deliverable Requested I, II, III, IV, Other (specify)		Empty Kit Relinquished by		Date	Time	Method of Shipment:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months					
Relinquished by: [Signature]		Date/Time:	10-30-24	08:40	Company:	Stephanie Hernandez	Date/Time:	10/30/24	0840	Company:	EIA		
Relinquished by:		Date/Time:			Company:		Date/Time:			Company:			
Relinquished by:		Date/Time:			Company:		Date/Time:			Company:			
Cooler Temperature(s) °C and Other Remarks:		11+0.8, 2.6±2.5											

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-259254-2

Login Number: 259254

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8,2.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Eurofins Chicago

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-259254-2

Login Number: 259254

List Number: 2

Creator: Forrest, Cheyenne L

List Source: Eurofins St. Louis

List Creation: 10/31/24 02:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Eurofins Chicago

Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Client Sample ID: MW-03

Date Collected: 10/29/24 08:33

Date Received: 10/30/24 08:40

Lab Sample ID: 500-259254-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			686249	BCE	EET SL	11/01/24 09:04
Total/NA	Analysis	903.0		1	690403	FLC	EET SL	11/25/24 09:16
Total/NA	Prep	PrecSep_0			686250	BCE	EET SL	11/01/24 09:09
Total/NA	Analysis	904.0		1	689807	SCB	EET SL	11/21/24 12:22
Total/NA	Analysis	Ra226_Ra228		1	691725	SCB	EET SL	12/03/24 21:36

Client Sample ID: MW-04

Date Collected: 10/29/24 09:54

Date Received: 10/30/24 08:40

Lab Sample ID: 500-259254-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			686249	BCE	EET SL	11/01/24 09:04
Total/NA	Analysis	903.0		1	690403	FLC	EET SL	11/25/24 09:16
Total/NA	Prep	PrecSep_0			686250	BCE	EET SL	11/01/24 09:09
Total/NA	Analysis	904.0		1	689807	SCB	EET SL	11/21/24 12:22
Total/NA	Analysis	Ra226_Ra228		1	691725	SCB	EET SL	12/03/24 21:36

Client Sample ID: MW-05

Date Collected: 10/29/24 11:30

Date Received: 10/30/24 08:40

Lab Sample ID: 500-259254-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			686249	BCE	EET SL	11/01/24 09:04
Total/NA	Analysis	903.0		1	690403	FLC	EET SL	11/25/24 09:16
Total/NA	Prep	PrecSep_0			686250	BCE	EET SL	11/01/24 09:09
Total/NA	Analysis	904.0		1	689807	SCB	EET SL	11/21/24 12:23
Total/NA	Analysis	Ra226_Ra228		1	691725	SCB	EET SL	12/03/24 21:36

Client Sample ID: MW-10

Date Collected: 10/29/24 14:35

Date Received: 10/30/24 08:40

Lab Sample ID: 500-259254-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			686249	BCE	EET SL	11/01/24 09:04
Total/NA	Analysis	903.0		1	690403	FLC	EET SL	11/25/24 09:16
Total/NA	Prep	PrecSep_0			686250	BCE	EET SL	11/01/24 09:09
Total/NA	Analysis	904.0		1	689807	SCB	EET SL	11/21/24 12:23
Total/NA	Analysis	Ra226_Ra228		1	691725	SCB	EET SL	12/03/24 21:36

Lab Chronicle

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Client Sample ID: Duplicate
Date Collected: 10/29/24 00:00
Date Received: 10/30/24 08:40

Lab Sample ID: 500-259254-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			686249	BCE	EET SL	11/01/24 09:04
Total/NA	Analysis	903.0		1	690403	FLC	EET SL	11/25/24 09:16
Total/NA	Prep	PrecSep_0			686250	BCE	EET SL	11/01/24 09:09
Total/NA	Analysis	904.0		1	689807	SCB	EET SL	11/21/24 12:23
Total/NA	Analysis	Ra226_Ra228		1	691725	SCB	EET SL	12/03/24 21:36

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Tracer/Carrier Summary

Client: Midwest Generation EME LLC
Project/Site: Joliet #29 CCR (RAD)

Job ID: 500-259254-2

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)
500-259254-1	MW-03	86.6
500-259254-2	MW-04	88.1
500-259254-3	MW-05	80.5
500-259254-4	MW-10	82.0
500-259254-5	Duplicate	83.8
LCS 160-686249/2-A	Lab Control Sample	90.6
MB 160-686249/1-A	Method Blank	86.8

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
500-259254-1	MW-03	86.6	73.3
500-259254-2	MW-04	88.1	75.9
500-259254-3	MW-05	80.5	83.4
500-259254-4	MW-10	82.0	80.4
500-259254-5	Duplicate	83.8	87.5
LCS 160-686250/2-A	Lab Control Sample	90.6	81.1
MB 160-686250/1-A	Method Blank	86.8	82.6

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier