

DATA SUMMARY POSTING

Station: Midwest Generation Joliet #29 Generating Station

Regulated Unit(s): Pond 2 (IEPA ID No. W1970450047-02)

In accordance with the new Ill. Adm. Code Title 35, Part 845: Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments (State CCR Rule) groundwater monitoring was completed during the 3rd quarter 2023 which includes the entire list of parameters specified under Section 845.600(a)(1) and (b). Table 1 is a summary table of all available CCR monitoring data to date including any data generated previously as part of the Federal CCR Rule monitoring. In addition, Table 2 provides a summary of turbidity data which was collected as part of State CCR Rule requirements which is a data parameter that was not required under the Federal CCR Rule.

No background statistics or proposed Groundwater Protection Standards are included on these tables. The background statistics and Proposed Groundwater Protection Standards were submitted to Illinois Environmental Protection Agency (EPA) as part of the Application for Initial Operating Permit submitted October 31, 2021. Upon Illinois EPA approval of the Operating Permit and Proposed Groundwater Protection Standards, the approved comparison values will be included on the tables for subsequent data comparisons/evaluations.

Table 2.Turbidity Measurement Data, Midwest Generation, LLC, Joliet #29 Generating Station

Well ID	Date	Turbidity (NTU)
MW-03	3/2/2021	0.45
	4/10/2021	22.9
	4/25/2021	2.40
	5/18/2021	2.53
	6/11/2021	2.34
	6/29/2021	2.86
	7/19/2021	37.40
	8/9/2021	2.71
	8/30/2021	5.70
	9/27/2021	10.27
	11/16/2021	0.80
	3/3/2022	0.00
	5/26/2022	4.26
	8/31/2022	4.10
	11/9/2022	32.60
2/28/2023	6.98	
5/3/2023	3.00	
7/20/2023	5.90	
MW-04	3/2/2021	81.89
	4/10/2021	5.96
	4/25/2021	3.02
	5/18/2021	2.52
	6/11/2021	2.80
	6/29/2021	3.34
	7/19/2021	47.4
	8/9/2021	4.13
	8/30/2021	18.3
	9/27/2021	1.76
	11/16/2021	4.20
	3/3/2022	0.00
	5/26/2022	1.23
	8/31/2022	3.78
	11/9/2022	43.50
2/28/2023	62.10	
5/3/2023	6.30	
7/20/2023	6.00	
MW-05	2/25/2021	1.57
	4/10/2021	8.36
	4/25/2021	2.42
	5/17/2021	5.20
	6/11/2021	14.22
	6/29/2021	5.33
	7/19/2021	26.9
	8/9/2021	3.69
	8/27/2021	8.70
	9/27/2021	14.92
	11/16/2021	8.84
	3/3/2022	3.25
	5/26/2022	1.28
	8/31/2022	8.87
	11/9/2022	63.4
2/28/2023	58.32	
5/3/2023	2.50	
7/20/2023	6.00	
MW-10	3/2/2021	26.07
	4/10/2021	7.31
	4/25/2021	5.21
	5/18/2021	3.73
	6/11/2021	6.65
	6/29/2021	9.49
	7/19/2021	14.5
	8/9/2021	10.08
	8/30/2021	9.3
	9/27/2021	16.3
	11/16/2021	5.59
	3/3/2022	2.86
	5/26/2022	2.08
	8/31/2022	2.93
	11/9/2022	19.6
2/28/2023	17.13	
5/3/2023	2.6	
7/20/2023	5.6	

 **ANALYTICAL REPORT****PREPARED FOR**

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

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JOB DESCRIPTION

Joliet #29 CCR

JOB NUMBER

500-236939-1

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.

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Case Narrative

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

Job ID: 500-236939-1

Job ID: 500-236939-1

Laboratory: Eurofins Chicago

Narrative

**Job Narrative
500-236939-1**

Receipt

The samples were received on 7/20/2023 3:50 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 0.2° C and 1.6° 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.

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Method Summary

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

Job ID: 500-236939-1

Method	Method Description	Protocol	Laboratory
6020A	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: 500-236939-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-236939-1	MW-03	Water	07/20/23 08:28	07/20/23 15:50
500-236939-2	MW-04	Water	07/20/23 09:46	07/20/23 15:50
500-236939-3	MW-05	Water	07/20/23 12:10	07/20/23 15:50
500-236939-4	MW-10	Water	07/20/23 13:54	07/20/23 15:50
500-236939-5	Duplicate	Water	07/20/23 00:00	07/20/23 15:50

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Client Sample Results

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

Job ID: 500-236939-1

Client Sample ID: MW-03
Date Collected: 07/20/23 08:28
Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		07/24/23 08:43	07/26/23 21:58	1
Arsenic	0.0013		0.0010		mg/L		07/24/23 08:43	07/26/23 21:58	1
Barium	0.12		0.0025		mg/L		07/24/23 08:43	08/03/23 14:49	1
Beryllium	<0.0010		0.0010		mg/L		07/24/23 08:43	08/03/23 14:49	1
Boron	0.32		0.050		mg/L		07/24/23 08:43	08/03/23 14:49	1
Cadmium	<0.00050		0.00050		mg/L		07/24/23 08:43	07/26/23 21:58	1
Calcium	130		0.20		mg/L		07/24/23 08:43	07/26/23 21:58	1
Chromium	<0.0050		0.0050		mg/L		07/24/23 08:43	07/26/23 21:58	1
Cobalt	<0.0010		0.0010		mg/L		07/24/23 08:43	07/28/23 23:58	1
Lead	0.00072		0.00050		mg/L		07/24/23 08:43	07/28/23 23:58	1
Lithium	0.010		0.010		mg/L		07/24/23 08:43	08/03/23 14:49	1
Molybdenum	<0.0050		0.0050		mg/L		07/24/23 08:43	07/26/23 21:58	1
Selenium	<0.0025		0.0025		mg/L		07/24/23 08:43	08/03/23 14:49	1
Thallium	<0.0020		0.0020		mg/L		07/24/23 08:43	07/28/23 23:58	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		08/07/23 10:00	08/08/23 09:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1000		10		mg/L			07/27/23 09:00	1
Chloride (SM 4500 Cl- E)	250		20		mg/L			07/25/23 12:21	10
Fluoride (SM 4500 F C)	0.36		0.10		mg/L			07/24/23 12:09	1
Sulfate (SM 4500 SO4 E)	190		50		mg/L			07/27/23 12:51	10

Client Sample Results

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

Job ID: 500-236939-1

Client Sample ID: MW-04
Date Collected: 07/20/23 09:46
Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		07/24/23 08:43	07/26/23 22:02	1
Arsenic	0.0018		0.0010		mg/L		07/24/23 08:43	07/26/23 22:02	1
Barium	0.10		0.0025		mg/L		07/24/23 08:43	08/03/23 14:53	1
Beryllium	<0.0010		0.0010		mg/L		07/24/23 08:43	08/03/23 14:53	1
Boron	0.37		0.050		mg/L		07/24/23 08:43	08/03/23 14:53	1
Cadmium	<0.00050		0.00050		mg/L		07/24/23 08:43	07/26/23 22:02	1
Calcium	120		0.20		mg/L		07/24/23 08:43	07/26/23 22:02	1
Chromium	<0.0050		0.0050		mg/L		07/24/23 08:43	07/26/23 22:02	1
Cobalt	0.0025		0.0010		mg/L		07/24/23 08:43	07/29/23 00:02	1
Lead	<0.00050		0.00050		mg/L		07/24/23 08:43	07/29/23 00:02	1
Lithium	0.012		0.010		mg/L		07/24/23 08:43	08/03/23 14:53	1
Molybdenum	<0.0050		0.0050		mg/L		07/24/23 08:43	07/26/23 22:02	1
Selenium	0.0027		0.0025		mg/L		07/24/23 08:43	08/03/23 14:53	1
Thallium	<0.0020		0.0020		mg/L		07/24/23 08:43	07/29/23 00:02	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		08/07/23 10:00	08/08/23 09:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	970		10		mg/L			07/27/23 09:03	1
Chloride (SM 4500 Cl- E)	240		20		mg/L			07/25/23 12:21	10
Fluoride (SM 4500 F C)	0.41		0.10		mg/L			07/24/23 12:23	1
Sulfate (SM 4500 SO4 E)	180		50		mg/L			07/27/23 12:51	10

Client Sample Results

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

Job ID: 500-236939-1

Client Sample ID: MW-05
Date Collected: 07/20/23 12:10
Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		07/24/23 08:43	07/26/23 22:05	1
Arsenic	0.0011		0.0010		mg/L		07/24/23 08:43	07/26/23 22:05	1
Barium	0.070		0.0025		mg/L		07/24/23 08:43	08/03/23 14:56	1
Beryllium	<0.0010		0.0010		mg/L		07/24/23 08:43	08/03/23 14:56	1
Boron	0.45		0.050		mg/L		07/24/23 08:43	08/03/23 14:56	1
Cadmium	<0.00050		0.00050		mg/L		07/24/23 08:43	07/26/23 22:05	1
Calcium	110		0.20		mg/L		07/24/23 08:43	07/26/23 22:05	1
Chromium	<0.0050		0.0050		mg/L		07/24/23 08:43	07/26/23 22:05	1
Cobalt	<0.0010		0.0010		mg/L		07/24/23 08:43	07/29/23 00:05	1
Lead	<0.00050		0.00050		mg/L		07/24/23 08:43	07/29/23 00:05	1
Lithium	0.016		0.010		mg/L		07/24/23 08:43	08/03/23 14:56	1
Molybdenum	<0.0050		0.0050		mg/L		07/24/23 08:43	07/26/23 22:05	1
Selenium	<0.0025		0.0025		mg/L		07/24/23 08:43	08/03/23 14:56	1
Thallium	<0.0020		0.0020		mg/L		07/24/23 08:43	07/29/23 00:05	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		08/07/23 10:00	08/08/23 09:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	900		10		mg/L			07/27/23 09:08	1
Chloride (SM 4500 Cl- E)	240		20		mg/L			07/25/23 12:22	10
Fluoride (SM 4500 F C)	0.30		0.10		mg/L			07/24/23 12:37	1
Sulfate (SM 4500 SO4 E)	120		50		mg/L			07/27/23 12:52	10

Client Sample Results

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

Job ID: 500-236939-1

Client Sample ID: MW-10

Lab Sample ID: 500-236939-4

Date Collected: 07/20/23 13:54

Matrix: Water

Date Received: 07/20/23 15:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		07/24/23 08:43	07/26/23 22:09	1
Arsenic	<0.0010		0.0010		mg/L		07/24/23 08:43	07/26/23 22:09	1
Barium	0.048		0.0025		mg/L		07/24/23 08:43	08/03/23 15:00	1
Beryllium	<0.0010		0.0010		mg/L		07/24/23 08:43	08/03/23 15:00	1
Boron	0.33		0.050		mg/L		07/24/23 08:43	08/03/23 15:00	1
Cadmium	<0.00050		0.00050		mg/L		07/24/23 08:43	07/26/23 22:09	1
Calcium	110		0.20		mg/L		07/24/23 08:43	07/26/23 22:09	1
Chromium	<0.0050		0.0050		mg/L		07/24/23 08:43	07/26/23 22:09	1
Cobalt	<0.0010		0.0010		mg/L		07/24/23 08:43	07/29/23 00:09	1
Lead	<0.00050		0.00050		mg/L		07/24/23 08:43	07/29/23 00:09	1
Lithium	0.011		0.010		mg/L		07/24/23 08:43	08/03/23 15:00	1
Molybdenum	0.0053		0.0050		mg/L		07/24/23 08:43	07/26/23 22:09	1
Selenium	<0.0025		0.0025		mg/L		07/24/23 08:43	08/03/23 15:00	1
Thallium	<0.0020		0.0020		mg/L		07/24/23 08:43	07/29/23 00:09	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		08/07/23 10:00	08/08/23 10:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	960		10		mg/L			07/27/23 09:09	1
Chloride (SM 4500 Cl- E)	250		20		mg/L			07/25/23 12:22	10
Fluoride (SM 4500 F C)	0.39		0.10		mg/L			07/24/23 12:42	1
Sulfate (SM 4500 SO4 E)	160		50		mg/L			07/27/23 12:52	10

Client Sample Results

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

Job ID: 500-236939-1

Client Sample ID: Duplicate

Lab Sample ID: 500-236939-5

Date Collected: 07/20/23 00:00

Matrix: Water

Date Received: 07/20/23 15:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		07/24/23 08:43	07/26/23 22:12	1
Arsenic	0.0010		0.0010		mg/L		07/24/23 08:43	07/26/23 22:12	1
Barium	0.068		0.0025		mg/L		07/24/23 08:43	08/03/23 15:03	1
Beryllium	<0.0010		0.0010		mg/L		07/24/23 08:43	08/03/23 15:03	1
Boron	0.45		0.050		mg/L		07/24/23 08:43	08/03/23 15:03	1
Cadmium	<0.00050		0.00050		mg/L		07/24/23 08:43	07/26/23 22:12	1
Calcium	110		0.20		mg/L		07/24/23 08:43	07/26/23 22:12	1
Chromium	<0.0050		0.0050		mg/L		07/24/23 08:43	07/26/23 22:12	1
Cobalt	<0.0010		0.0010		mg/L		07/24/23 08:43	07/29/23 00:12	1
Lead	<0.00050		0.00050		mg/L		07/24/23 08:43	07/29/23 00:12	1
Lithium	0.015		0.010		mg/L		07/24/23 08:43	08/03/23 15:03	1
Molybdenum	<0.0050		0.0050		mg/L		07/24/23 08:43	07/26/23 22:12	1
Selenium	<0.0025		0.0025		mg/L		07/24/23 08:43	08/03/23 15:03	1
Thallium	<0.0020		0.0020		mg/L		07/24/23 08:43	07/29/23 00:12	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		08/07/23 10:00	08/08/23 10:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	900		10		mg/L			07/27/23 09:11	1
Chloride (SM 4500 Cl- E)	240		20		mg/L			07/25/23 12:22	10
Fluoride (SM 4500 F C)	0.30		0.10		mg/L			07/24/23 12:47	1
Sulfate (SM 4500 SO4 E)	120		50		mg/L			07/27/23 12:52	10

Definitions/Glossary

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

Job ID: 500-236939-1

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: 500-236939-1

Metals

Prep Batch: 724469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-1	MW-03	Total Recoverable	Water	3005A	
500-236939-2	MW-04	Total Recoverable	Water	3005A	
500-236939-3	MW-05	Total Recoverable	Water	3005A	
500-236939-4	MW-10	Total Recoverable	Water	3005A	
500-236939-5	Duplicate	Total Recoverable	Water	3005A	
MB 500-724469/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-724469/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 725132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-1	MW-03	Total Recoverable	Water	6020A	724469
500-236939-2	MW-04	Total Recoverable	Water	6020A	724469
500-236939-3	MW-05	Total Recoverable	Water	6020A	724469
500-236939-4	MW-10	Total Recoverable	Water	6020A	724469
500-236939-5	Duplicate	Total Recoverable	Water	6020A	724469
MB 500-724469/1-A	Method Blank	Total Recoverable	Water	6020A	724469
LCS 500-724469/2-A	Lab Control Sample	Total Recoverable	Water	6020A	724469

Analysis Batch: 725660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-1	MW-03	Total Recoverable	Water	6020A	724469
500-236939-2	MW-04	Total Recoverable	Water	6020A	724469
500-236939-3	MW-05	Total Recoverable	Water	6020A	724469
500-236939-4	MW-10	Total Recoverable	Water	6020A	724469
500-236939-5	Duplicate	Total Recoverable	Water	6020A	724469
MB 500-724469/1-A	Method Blank	Total Recoverable	Water	6020A	724469
LCS 500-724469/2-A	Lab Control Sample	Total Recoverable	Water	6020A	724469

Analysis Batch: 726413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-1	MW-03	Total Recoverable	Water	6020A	724469
500-236939-2	MW-04	Total Recoverable	Water	6020A	724469
500-236939-3	MW-05	Total Recoverable	Water	6020A	724469
500-236939-4	MW-10	Total Recoverable	Water	6020A	724469
500-236939-5	Duplicate	Total Recoverable	Water	6020A	724469
MB 500-724469/1-A	Method Blank	Total Recoverable	Water	6020A	724469
LCS 500-724469/2-A	Lab Control Sample	Total Recoverable	Water	6020A	724469

Prep Batch: 726639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-1	MW-03	Total/NA	Water	7470A	
500-236939-2	MW-04	Total/NA	Water	7470A	
500-236939-3	MW-05	Total/NA	Water	7470A	
500-236939-4	MW-10	Total/NA	Water	7470A	
500-236939-5	Duplicate	Total/NA	Water	7470A	
MB 500-726639/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-726639/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 726848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-1	MW-03	Total/NA	Water	7470A	726639

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QC Association Summary

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

Job ID: 500-236939-1

Metals (Continued)

Analysis Batch: 726848 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-2	MW-04	Total/NA	Water	7470A	726639
500-236939-3	MW-05	Total/NA	Water	7470A	726639
500-236939-4	MW-10	Total/NA	Water	7470A	726639
500-236939-5	Duplicate	Total/NA	Water	7470A	726639
MB 500-726639/12-A	Method Blank	Total/NA	Water	7470A	726639
LCS 500-726639/13-A	Lab Control Sample	Total/NA	Water	7470A	726639

General Chemistry

Analysis Batch: 724548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-1	MW-03	Total/NA	Water	SM 4500 F C	
500-236939-2	MW-04	Total/NA	Water	SM 4500 F C	
500-236939-3	MW-05	Total/NA	Water	SM 4500 F C	
500-236939-4	MW-10	Total/NA	Water	SM 4500 F C	
500-236939-5	Duplicate	Total/NA	Water	SM 4500 F C	
MB 500-724548/31	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 500-724548/32	Lab Control Sample	Total/NA	Water	SM 4500 F C	
500-236939-1 MS	MW-03	Total/NA	Water	SM 4500 F C	
500-236939-1 MSD	MW-03	Total/NA	Water	SM 4500 F C	

Analysis Batch: 724755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-1	MW-03	Total/NA	Water	SM 4500 Cl- E	
500-236939-2	MW-04	Total/NA	Water	SM 4500 Cl- E	
500-236939-3	MW-05	Total/NA	Water	SM 4500 Cl- E	
500-236939-4	MW-10	Total/NA	Water	SM 4500 Cl- E	
500-236939-5	Duplicate	Total/NA	Water	SM 4500 Cl- E	
MB 500-724755/109	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 500-724755/110	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 725105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-1	MW-03	Total/NA	Water	SM 2540C	
500-236939-2	MW-04	Total/NA	Water	SM 2540C	
500-236939-3	MW-05	Total/NA	Water	SM 2540C	
500-236939-4	MW-10	Total/NA	Water	SM 2540C	
500-236939-5	Duplicate	Total/NA	Water	SM 2540C	
MB 500-725105/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-725105/2	Lab Control Sample	Total/NA	Water	SM 2540C	
500-236939-1 DU	MW-03	Total/NA	Water	SM 2540C	
500-236939-2 DU	MW-04	Total/NA	Water	SM 2540C	

Analysis Batch: 725237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-1	MW-03	Total/NA	Water	SM 4500 SO4 E	
500-236939-2	MW-04	Total/NA	Water	SM 4500 SO4 E	
500-236939-3	MW-05	Total/NA	Water	SM 4500 SO4 E	
500-236939-4	MW-10	Total/NA	Water	SM 4500 SO4 E	
500-236939-5	Duplicate	Total/NA	Water	SM 4500 SO4 E	
MB 500-725237/16	Method Blank	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: 500-236939-1

General Chemistry (Continued)

Analysis Batch: 725237 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-725237/17	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	

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QC Sample Results

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

Job ID: 500-236939-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-724469/1-A
Matrix: Water
Analysis Batch: 725132

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 724469

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	<0.0030		0.0030		mg/L		07/24/23 08:43	07/26/23 20:38	1
Arsenic	<0.0010		0.0010		mg/L		07/24/23 08:43	07/26/23 20:38	1
Cadmium	<0.00050		0.00050		mg/L		07/24/23 08:43	07/26/23 20:38	1
Calcium	<0.20		0.20		mg/L		07/24/23 08:43	07/26/23 20:38	1
Chromium	<0.0050		0.0050		mg/L		07/24/23 08:43	07/26/23 20:38	1
Molybdenum	<0.0050		0.0050		mg/L		07/24/23 08:43	07/26/23 20:38	1

Lab Sample ID: MB 500-724469/1-A
Matrix: Water
Analysis Batch: 725660

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 724469

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cobalt	<0.0010		0.0010		mg/L		07/24/23 08:43	07/28/23 22:48	1
Lead	<0.00050		0.00050		mg/L		07/24/23 08:43	07/28/23 22:48	1
Thallium	<0.0020		0.0020		mg/L		07/24/23 08:43	07/28/23 22:48	1

Lab Sample ID: MB 500-724469/1-A
Matrix: Water
Analysis Batch: 726413

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 724469

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Barium	<0.0025		0.0025		mg/L		07/24/23 08:43	08/03/23 13:20	1
Beryllium	<0.0010		0.0010		mg/L		07/24/23 08:43	08/03/23 13:20	1
Boron	<0.050		0.050		mg/L		07/24/23 08:43	08/03/23 13:20	1
Lithium	<0.010		0.010		mg/L		07/24/23 08:43	08/03/23 13:20	1
Selenium	<0.0025		0.0025		mg/L		07/24/23 08:43	08/03/23 13:20	1

Lab Sample ID: LCS 500-724469/2-A
Matrix: Water
Analysis Batch: 725132

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 724469

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Antimony	0.500	0.506		mg/L		101	80 - 120
Arsenic	0.100	0.102		mg/L		102	80 - 120
Cadmium	0.0500	0.0502		mg/L		100	80 - 120
Calcium	10.0	10.1		mg/L		101	80 - 120
Chromium	0.200	0.193		mg/L		97	80 - 120
Molybdenum	1.00	1.03		mg/L		103	80 - 120

Lab Sample ID: LCS 500-724469/2-A
Matrix: Water
Analysis Batch: 725660

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 724469

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Cobalt	0.500	0.530		mg/L		106	80 - 120
Lead	0.100	0.104		mg/L		104	80 - 120
Thallium	0.100	0.0985		mg/L		99	80 - 120

QC Sample Results

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

Job ID: 500-236939-1

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

Lab Sample ID: LCS 500-724469/2-A
Matrix: Water
Analysis Batch: 726413

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 724469

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Barium	0.500	0.536		mg/L		107	80 - 120	
Beryllium	0.0500	0.0544		mg/L		109	80 - 120	
Boron	1.00	1.05		mg/L		105	80 - 120	
Lithium	0.100	0.102		mg/L		102	80 - 120	
Selenium	0.100	0.101		mg/L		101	80 - 120	

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-726639/12-A
Matrix: Water
Analysis Batch: 726848

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 726639

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	<0.00020		0.00020		mg/L		08/07/23 10:00	08/08/23 09:21	1

Lab Sample ID: LCS 500-726639/13-A
Matrix: Water
Analysis Batch: 726848

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 726639

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Mercury	0.00201	0.00201		mg/L		100	80 - 120	

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

Lab Sample ID: MB 500-725105/1
Matrix: Water
Analysis Batch: 725105

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Dissolved Solids	<10		10		mg/L			07/27/23 08:55	1

Lab Sample ID: LCS 500-725105/2
Matrix: Water
Analysis Batch: 725105

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	258		mg/L		103	80 - 120	

Lab Sample ID: 500-236939-1 DU
Matrix: Water
Analysis Batch: 725105

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD	
								Limit	
Total Dissolved Solids	1000		1020		mg/L		0	5	

QC Sample Results

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

Job ID: 500-236939-1

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

Lab Sample ID: 500-236939-2 DU
Matrix: Water
Analysis Batch: 725105

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	970		976		mg/L		0.2	5

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 500-724755/109
Matrix: Water
Analysis Batch: 724755

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			07/25/23 12:19	1

Lab Sample ID: LCS 500-724755/110
Matrix: Water
Analysis Batch: 724755

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	19.2		mg/L		96	85 - 115

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 500-724548/31
Matrix: Water
Analysis Batch: 724548

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			07/24/23 12:02	1

Lab Sample ID: LCS 500-724548/32
Matrix: Water
Analysis Batch: 724548

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: 500-236939-1 MS
Matrix: Water
Analysis Batch: 724548

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.36		5.00	5.32		mg/L		99	75 - 125

Lab Sample ID: 500-236939-1 MSD
Matrix: Water
Analysis Batch: 724548

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Fluoride	0.36		5.00	5.38		mg/L		100	75 - 125	1	20

QC Sample Results

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

Job ID: 500-236939-1

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 500-725237/16
Matrix: Water
Analysis Batch: 725237

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			07/27/23 12:50	1

Lab Sample ID: LCS 500-725237/17
Matrix: Water
Analysis Batch: 725237

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	20.3		mg/L		102	88 - 123



Eurofins Chicago

2417 Bond Street
 University Park IL 60484
 Phone 708-534-5200 Fax 708-534-5211

Chain of Custody Record



Environm Te ng

Client Information		Sampler: IAN JOHN HENKSON		Lab PM: Mockler Diana J		Carrier Tracking No(s)		COC No: 500-114453-45941 1																					
Client Contact: Patrick Allenstein		Phone: 800-325-1300		E-Mail: Diana Mockler@et.eurofinsus.com		State of Origin		Page: Page 1 of 1																					
Company: KPRG and Associates Inc				PWSID		Analysis Requested																							
Address: 14665 West Lisbon Road Suite 1A		Due Date Requested		TAT Requested (days)		Compliance Project. <input type="checkbox"/> Yes <input type="checkbox"/> No		Job #: 500-236939																					
City: Brookfield		PO #: 4502085968		WO #		Project #: 50011568		SSOW#																					
State, Zip: WI 53005		Phone: 500-236939 COC		Project Name: Joliet #29 CCR/ Event Desc Quarterly MWG Joliet #29 CCR		Site: Illinois		Preservation Codes: A HCL M Hexane B NaOH N None C Zn Acetate O AsNaO2 D Nitric Acid P Na2O4S E - NaHSO4 Q Na2SO3 F MeOH R Na2S2O3 G Amchlor S H2SO4 H Ascorbic Acid T TSP Dodecahydrate I Ice U Acetone J DI Water V MCAA K EDTA W pH 4-5 L EDA Y Trizma Z other (specify)																					
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue A=Air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers		Special Instructions/Note													
										6010C, 6020A, 7470A		2540C, 4500_F_C, SM4500_CI_E, SM4500_SO4_E		903.0, 904.0															
MW-03		7-20-23		08:28		G		Water		N		N		X		X													
MW-04		7-20-23		09:46		G		Water		N		N		X		X													
MW-05		7-20-23		12:10		G		Water		N		N		X		X													
MW-10		7-20-23		13:54		G		Water		N		N		X		X													
Duplicate		7-20-23		-		G		Water		N		N		X		X													
								Water																					
Possible Hazard Identification										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological										<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																			
Deliverable Requested I II III IV, Other (specify)										Special Instructions/QC Requirements																			
Empty Kit Relinquished by:					Date					Time					Method of Shipment.														
Relinquished by: <i>[Signature]</i>					Date/Time: 7-20-23 15:50					Company: KPRG					Received by: Stephonnie Hernandez					Date/Time: 7/20/23 1550					Company: EETA				
Relinquished by:					Date/Time:					Company:					Received by:					Date/Time:					Company:				
Relinquished by:					Date/Time:					Company:					Received by:					Date/Time:					Company:				
Custody Seals Intact. <input type="checkbox"/> Yes <input type="checkbox"/> No					Custody Seal No					Cooler Temperature(s) °C and Other Remarks.																			

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Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-236939-1

Login Number: 236939

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	1.6,0.2
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 <math><6\text{mm}</math> (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: 500-236939-1

Client Sample ID: MW-03
Date Collected: 07/20/23 08:28
Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	726413	FXG	EET CHI	08/03/23 14:49
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	725132	FXG	EET CHI	07/26/23 21:58
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	725660	FXG	EET CHI	07/28/23 23:58
Total/NA	Prep	7470A			726639	MJG	EET CHI	08/07/23 10:00 - 08/07/23 12:00 ¹
Total/NA	Analysis	7470A		1	726848	MJG	EET CHI	08/08/23 09:50
Total/NA	Analysis	SM 2540C		1	725105	MB	EET CHI	07/27/23 09:00
Total/NA	Analysis	SM 4500 Cl- E		10	724755	MM	EET CHI	07/25/23 12:21
Total/NA	Analysis	SM 4500 F C		1	724548	EH	EET CHI	07/24/23 12:09
Total/NA	Analysis	SM 4500 SO4 E		10	725237	MM	EET CHI	07/27/23 12:51

Client Sample ID: MW-04
Date Collected: 07/20/23 09:46
Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	726413	FXG	EET CHI	08/03/23 14:53
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	725132	FXG	EET CHI	07/26/23 22:02
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	725660	FXG	EET CHI	07/29/23 00:02
Total/NA	Prep	7470A			726639	MJG	EET CHI	08/07/23 10:00 - 08/07/23 12:00 ¹
Total/NA	Analysis	7470A		1	726848	MJG	EET CHI	08/08/23 09:53
Total/NA	Analysis	SM 2540C		1	725105	MB	EET CHI	07/27/23 09:03
Total/NA	Analysis	SM 4500 Cl- E		10	724755	MM	EET CHI	07/25/23 12:21
Total/NA	Analysis	SM 4500 F C		1	724548	EH	EET CHI	07/24/23 12:23
Total/NA	Analysis	SM 4500 SO4 E		10	725237	MM	EET CHI	07/27/23 12:51

Client Sample ID: MW-05
Date Collected: 07/20/23 12:10
Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	726413	FXG	EET CHI	08/03/23 14:56
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	725132	FXG	EET CHI	07/26/23 22:05
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	725660	FXG	EET CHI	07/29/23 00:05
Total/NA	Prep	7470A			726639	MJG	EET CHI	08/07/23 10:00 - 08/07/23 12:00 ¹
Total/NA	Analysis	7470A		1	726848	MJG	EET CHI	08/08/23 09:59

Eurofins Chicago

Lab Chronicle

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

Job ID: 500-236939-1

Client Sample ID: MW-05

Date Collected: 07/20/23 12:10

Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	725105	MB	EET CHI	07/27/23 09:08
Total/NA	Analysis	SM 4500 CI- E		10	724755	MM	EET CHI	07/25/23 12:22
Total/NA	Analysis	SM 4500 F C		1	724548	EH	EET CHI	07/24/23 12:37
Total/NA	Analysis	SM 4500 SO4 E		10	725237	MM	EET CHI	07/27/23 12:52

Client Sample ID: MW-10

Date Collected: 07/20/23 13:54

Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	726413	FXG	EET CHI	08/03/23 15:00
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	725132	FXG	EET CHI	07/26/23 22:09
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	725660	FXG	EET CHI	07/29/23 00:09
Total/NA	Prep	7470A			726639	MJG	EET CHI	08/07/23 10:00 - 08/07/23 12:00 ¹
Total/NA	Analysis	7470A		1	726848	MJG	EET CHI	08/08/23 10:01
Total/NA	Analysis	SM 2540C		1	725105	MB	EET CHI	07/27/23 09:09
Total/NA	Analysis	SM 4500 CI- E		10	724755	MM	EET CHI	07/25/23 12:22
Total/NA	Analysis	SM 4500 F C		1	724548	EH	EET CHI	07/24/23 12:42
Total/NA	Analysis	SM 4500 SO4 E		10	725237	MM	EET CHI	07/27/23 12:52

Client Sample ID: Duplicate

Date Collected: 07/20/23 00:00

Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	726413	FXG	EET CHI	08/03/23 15:03
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	725132	FXG	EET CHI	07/26/23 22:12
Total Recoverable	Prep	3005A			724469	BDE	EET CHI	07/24/23 08:43 - 07/24/23 09:13 ¹
Total Recoverable	Analysis	6020A		1	725660	FXG	EET CHI	07/29/23 00:12
Total/NA	Prep	7470A			726639	MJG	EET CHI	08/07/23 10:00 - 08/07/23 12:00 ¹
Total/NA	Analysis	7470A		1	726848	MJG	EET CHI	08/08/23 10:03
Total/NA	Analysis	SM 2540C		1	725105	MB	EET CHI	07/27/23 09:11
Total/NA	Analysis	SM 4500 CI- E		10	724755	MM	EET CHI	07/25/23 12:22
Total/NA	Analysis	SM 4500 F C		1	724548	EH	EET CHI	07/24/23 12:47
Total/NA	Analysis	SM 4500 SO4 E		10	725237	MM	EET CHI	07/27/23 12:52

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 8/16/2023 4:09:25 PM

JOB DESCRIPTION

Joliet #29 CCR (RAD)

JOB NUMBER

500-236939-2

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/Site: Joliet #29 CCR (RAD)

Job ID: 500-236939-2

Job ID: 500-236939-2

Laboratory: Eurofins Chicago

Narrative

Job Narrative 500-236939-2

Receipt

The samples were received on 7/20/2023 3:50 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 0.2° C and 1.6° C.

RAD

Methods 903.0, 9315: Radium-226 batch 621497

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

MW-03 (500-236939-1), MW-04 (500-236939-2), MW-05 (500-236939-3), MW-10 (500-236939-4), Duplicate (500-236939-5), (LCS 160-621497/2-A), (MB 160-621497/1-A) and (500-236939-D-1-A DU)

Methods 904.0, 9320: Radium-228 batch 621498

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

MW-03 (500-236939-1), MW-04 (500-236939-2), MW-05 (500-236939-3), MW-10 (500-236939-4), Duplicate (500-236939-5), (LCS 160-621498/2-A), (MB 160-621498/1-A) and (500-236939-D-1-B DU)

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

Method Summary

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

Job ID: 500-236939-2

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: 500-236939-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-236939-1	MW-03	Water	07/20/23 08:28	07/20/23 15:50
500-236939-2	MW-04	Water	07/20/23 09:46	07/20/23 15:50
500-236939-3	MW-05	Water	07/20/23 12:10	07/20/23 15:50
500-236939-4	MW-10	Water	07/20/23 13:54	07/20/23 15:50
500-236939-5	Duplicate	Water	07/20/23 00:00	07/20/23 15:50

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Client Sample Results

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

Job ID: 500-236939-2

Client Sample ID: MW-03
Date Collected: 07/20/23 08:28
Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-1
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	0.121		0.0756	0.0763	1.00	0.0972	pCi/L	07/25/23 10:55	08/16/23 09:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		30 - 110					07/25/23 10:55	08/16/23 09:32	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	0.102	U	0.295	0.295	1.00	0.523	pCi/L	07/25/23 10:59	08/09/23 12:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		30 - 110					07/25/23 10:59	08/09/23 12:20	1
Y Carrier	88.2		30 - 110					07/25/23 10:59	08/09/23 12:20	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	0.223	U	0.305	0.305	5.00	0.523	pCi/L		08/16/23 14:55	1

Client Sample Results

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

Job ID: 500-236939-2

Client Sample ID: MW-04
Date Collected: 07/20/23 09:46
Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-2
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	0.0815	U	0.0783	0.0786	1.00	0.120	pCi/L	07/25/23 10:55	08/16/23 09:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.2		30 - 110					07/25/23 10:55	08/16/23 09:32	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	0.346	U	0.370	0.371	1.00	0.601	pCi/L	07/25/23 10:59	08/09/23 12:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.2		30 - 110					07/25/23 10:59	08/09/23 12:21	1
Y Carrier	85.6		30 - 110					07/25/23 10:59	08/09/23 12:21	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	0.427	U	0.378	0.379	5.00	0.601	pCi/L		08/16/23 14:55	1

Client Sample Results

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

Job ID: 500-236939-2

Client Sample ID: MW-05

Lab Sample ID: 500-236939-3

Date Collected: 07/20/23 12:10

Matrix: Water

Date Received: 07/20/23 15:50

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	0.102	U	0.0836	0.0841	1.00	0.120	pCi/L	07/25/23 10:55	08/16/23 09:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.4		30 - 110					07/25/23 10:55	08/16/23 09:33	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	0.466	U	0.390	0.392	1.00	0.607	pCi/L	07/25/23 10:59	08/09/23 12:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.4		30 - 110					07/25/23 10:59	08/09/23 12:21	1
Y Carrier	87.9		30 - 110					07/25/23 10:59	08/09/23 12:21	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	0.568	U	0.399	0.401	5.00	0.607	pCi/L		08/16/23 14:55	1

Client Sample Results

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

Job ID: 500-236939-2

Client Sample ID: MW-10

Lab Sample ID: 500-236939-4

Date Collected: 07/20/23 13:54

Matrix: Water

Date Received: 07/20/23 15:50

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	0.0929	U	0.0812	0.0816	1.00	0.123	pCi/L	07/25/23 10:55	08/16/23 09:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		30 - 110					07/25/23 10:55	08/16/23 09:33	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	0.530		0.311	0.315	1.00	0.437	pCi/L	07/25/23 10:59	08/09/23 12:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		30 - 110					07/25/23 10:59	08/09/23 12:21	1
Y Carrier	86.4		30 - 110					07/25/23 10:59	08/09/23 12:21	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	0.623		0.321	0.325	5.00	0.437	pCi/L		08/16/23 14:55	1

Client Sample Results

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

Job ID: 500-236939-2

Client Sample ID: Duplicate
 Date Collected: 07/20/23 00:00
 Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-5
 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	0.130		0.0884	0.0892	1.00	0.121	pCi/L	07/25/23 10:55	08/16/23 09:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		30 - 110					07/25/23 10:55	08/16/23 09:34	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	-0.0623	U	0.311	0.311	1.00	0.596	pCi/L	07/25/23 10:59	08/09/23 12:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		30 - 110					07/25/23 10:59	08/09/23 12:21	1
Y Carrier	86.4		30 - 110					07/25/23 10:59	08/09/23 12:21	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	0.0677	U	0.323	0.324	5.00	0.596	pCi/L		08/16/23 14:55	1

Definitions/Glossary

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

Job ID: 500-236939-2

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: 500-236939-2

Rad

Prep Batch: 621497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-1	MW-03	Total/NA	Water	PrecSep-21	
500-236939-2	MW-04	Total/NA	Water	PrecSep-21	
500-236939-3	MW-05	Total/NA	Water	PrecSep-21	
500-236939-4	MW-10	Total/NA	Water	PrecSep-21	
500-236939-5	Duplicate	Total/NA	Water	PrecSep-21	
MB 160-621497/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-621497/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
500-236939-1 DU	MW-03	Total/NA	Water	PrecSep-21	

Prep Batch: 621498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-236939-1	MW-03	Total/NA	Water	PrecSep_0	
500-236939-2	MW-04	Total/NA	Water	PrecSep_0	
500-236939-3	MW-05	Total/NA	Water	PrecSep_0	
500-236939-4	MW-10	Total/NA	Water	PrecSep_0	
500-236939-5	Duplicate	Total/NA	Water	PrecSep_0	
MB 160-621498/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-621498/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
500-236939-1 DU	MW-03	Total/NA	Water	PrecSep_0	

QC Sample Results

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

Job ID: 500-236939-2

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-621497/1-A
Matrix: Water
Analysis Batch: 624315

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 621497

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.01953	U	0.0832	0.0832	1.00	0.156	pCi/L	07/25/23 10:55	08/16/23 09:31	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	85.7		30 - 110			07/25/23 10:55	08/16/23 09:31	1		

Lab Sample ID: LCS 160-621497/2-A
Matrix: Water
Analysis Batch: 624315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 621497

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	11.30		1.18	1.00	0.102	pCi/L	100	75 - 125
Carrier	LCS	LCS	Limits			Prepared	Analyzed	Dil Fac	
	%Yield	Qualifier							
Ba Carrier	93.7		30 - 110						

Lab Sample ID: 500-236939-1 DU
Matrix: Water
Analysis Batch: 624315

Client Sample ID: MW-03
Prep Type: Total/NA
Prep Batch: 621497

Analyte	Sample Sample		DU	DU	Total	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					
Radium-226	0.121		0.1642		0.0850	1.00	0.0960	pCi/L	0.27	1
Carrier	DU	DU	Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	95.7		30 - 110							

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-621498/1-A
Matrix: Water
Analysis Batch: 623571

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 621498

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.03647	U	0.270	0.270	1.00	0.502	pCi/L	07/25/23 10:59	08/09/23 12:17	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	85.7		30 - 110			07/25/23 10:59	08/09/23 12:17	1		
Y Carrier	88.2		30 - 110			07/25/23 10:59	08/09/23 12:17	1		

QC Sample Results

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

Job ID: 500-236939-2

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

Lab Sample ID: LCS 160-621498/2-A
Matrix: Water
Analysis Batch: 623571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 621498

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	7.97	8.581		1.20	1.00	0.484	pCi/L	108	75 - 125
LCS LCS									
Carrier	%Yield	Qualifier	Limits						
Ba Carrier	93.7		30 - 110						
Y Carrier	86.4		30 - 110						

Lab Sample ID: 500-236939-1 DU
Matrix: Water
Analysis Batch: 623585

Client Sample ID: MW-03
Prep Type: Total/NA
Prep Batch: 621498

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.102	U	0.6561		0.348	1.00	0.472	pCi/L	0.86	1
DU DU										
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	95.7		30 - 110							
Y Carrier	86.4		30 - 110							

Eurofins Chicago

2417 Bond Street
 University Park IL 60484
 Phone 708-534-5200 Fax 708-534-5211

Chain of Custody Record



Environm Te ng

Client Information		Sampler: IAN JOHN HENKSON		Lab PM: Mockler Diana J		Carrier Tracking No(s)		COC No: 500-114453-45941 1																					
Client Contact: Patrick Allenstein		Phone: 800-325-1300		E-Mail: Diana Mockler@et.eurofinsus.com		State of Origin		Page: Page 1 of 1																					
Company: KPRG and Associates Inc				PWSID		Analysis Requested																							
Address: 14665 West Lisbon Road Suite 1A		Due Date Requested		TAT Requested (days)		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		Job #: 500-236939																					
City: Brookfield		PO #: 4502085968		WO #		Project #: 50011568		SSOW#																					
State, Zip: WI 53005		Phone: 500-236939 COC		Project Name: Joliet #29 CCR/ Event Desc Quarterly MWG Joliet #29 CCR		Site: Illinois		Preservation Codes: A HCL M Hexane B NaOH N None C Zn Acetate O AsNaO2 D Nitric Acid P Na2O4S E - NaHSO4 Q Na2SO3 F MeOH R Na2S2O3 G Amchlor S H2SO4 H Ascorbic Acid T TSP Dodecahydrate I Ice U Acetone J DI Water V MCAA K EDTA W pH 4-5 L EDA Y Trizma Z other (specify)																					
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue A=Air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers		Special Instructions/Note													
										6010C, 6020A, 7470A		2540C, 4500_F_C, SM4500_CI_E, SM4500_SO4_E		903.0, 904.0															
MW-03		7-20-23		08:28		G		Water		N		N		X		X													
MW-04		7-20-23		09:46		G		Water		N		N		X		X													
MW-05		7-20-23		12:10		G		Water		N		N		X		X													
MW-10		7-20-23		13:54		G		Water		N		N		X		X													
Duplicate		7-20-23		-		G		Water		N		N		X		X													
								Water																					
Possible Hazard Identification										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological										<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																			
Deliverable Requested I II III IV, Other (specify)										Special Instructions/QC Requirements																			
Empty Kit Relinquished by:					Date					Time					Method of Shipment.														
Relinquished by: <i>[Signature]</i>					Date/Time: 7-20-23 15:50					Company: KPRG					Received by: Stephonnie Hernandez					Date/Time: 7/20/23 1550					Company: EETA				
Relinquished by:					Date/Time:					Company:					Received by:					Date/Time:					Company:				
Relinquished by:					Date/Time:					Company:					Received by:					Date/Time:					Company:				
Custody Seals Intact. <input type="checkbox"/> Yes <input type="checkbox"/> No					Custody Seal No					Cooler Temperature(s) °C and Other Remarks.																			

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Chain of Custody Record



Client Information (Sub Contract Lab)		Lab PM: Mockler, Diana J	Center Tracking No(s): 500-176834-1
Client Contact: Diana.Mockler@et.eurofins.com		E-Mail: Diana.Mockler@et.eurofins.com	Page: Page 1 of 1
Shipping/Receiving		State of Origin: Illinois	
Company: TestAmerica Laboratories, Inc.		Job #: 500-236939-2	
Address: 13715 Rider Trail North,		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Z - other (specify) Other:	
Due Date Requested: 8/9/2023		Analysis Requested	
TAT Requested (days):		Total Number of Containers	
City: Earth City	PO #:	903.0/PreSep. 21 Standard Target List	Special Instructions/Note: Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume; Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume; Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume; Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume; Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume; Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume;
State, Zip: MO, 63045	WO #:	904.0/PreSep. 0 Standard Target List	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	Project #:	Perform MS/MSD (Yes or No)	
Email:	SSOW#:	Field Filtered Sample (Yes or No)	
Project Name: Joliet #29 CCR (RAD)	Sample Date	Sample Time	
Site: NRG Midwest Generation LSO Joliet#29 CCR	Sample Date	Sample Time	

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=Solid, O=Other)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PreSep. 21 Standard Target List	904.0/PreSep. 0 Standard Target List	Ra226Ra228_GFPc	Total Number of Containers	Special Instructions/Note:
MW-03 (500-236939-1)	7/20/23	08:28 Central		Water	X	X	X	X		3	Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume;
MW-04 (500-236939-2)	7/20/23	09:46 Central		Water	X	X	X	X		3	Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume;
MW-05 (500-236939-3)	7/20/23	12:10 Central		Water	X	X	X	X		3	Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume;
MW-10 (500-236939-4)	7/20/23	13:54 Central		Water	X	X	X	X		3	Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume;
Duplicate (500-236939-5)	7/20/23	Central		Water	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/test/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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) _____ Primary Deliverable Rank: 2

Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____

Relinquished by: _____ Date/Time: _____ Company: _____

Relinquished by: *Fedex* Date/Time: _____ Company: _____

Relinquished by: *Sema Westlye* Date/Time: *7/21/23 0840* Company: *CH2M*

Custody Seals Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-236939-2

Login Number: 236939

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	1.6,0.2
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 <math><6\text{mm}</math> (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: 500-236939-2

Login Number: 236939

List Number: 2

Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis

List Creation: 07/24/23 03:37 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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 <6mm (1/4").	True	
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: 500-236939-2

Client Sample ID: MW-03

Date Collected: 07/20/23 08:28

Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			621497	KAC	EET SL	07/25/23 10:55
Total/NA	Analysis	903.0		1	624315	FLC	EET SL	08/16/23 09:32
Total/NA	Prep	PrecSep_0			621498	KAC	EET SL	07/25/23 10:59
Total/NA	Analysis	904.0		1	623585	FLC	EET SL	08/09/23 12:20
Total/NA	Analysis	Ra226_Ra228		1	624470	SCB	EET SL	08/16/23 14:55

Client Sample ID: MW-04

Date Collected: 07/20/23 09:46

Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			621497	KAC	EET SL	07/25/23 10:55
Total/NA	Analysis	903.0		1	624315	FLC	EET SL	08/16/23 09:32
Total/NA	Prep	PrecSep_0			621498	KAC	EET SL	07/25/23 10:59
Total/NA	Analysis	904.0		1	623585	FLC	EET SL	08/09/23 12:21
Total/NA	Analysis	Ra226_Ra228		1	624470	SCB	EET SL	08/16/23 14:55

Client Sample ID: MW-05

Date Collected: 07/20/23 12:10

Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			621497	KAC	EET SL	07/25/23 10:55
Total/NA	Analysis	903.0		1	624315	FLC	EET SL	08/16/23 09:33
Total/NA	Prep	PrecSep_0			621498	KAC	EET SL	07/25/23 10:59
Total/NA	Analysis	904.0		1	623585	FLC	EET SL	08/09/23 12:21
Total/NA	Analysis	Ra226_Ra228		1	624470	SCB	EET SL	08/16/23 14:55

Client Sample ID: MW-10

Date Collected: 07/20/23 13:54

Date Received: 07/20/23 15:50

Lab Sample ID: 500-236939-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			621497	KAC	EET SL	07/25/23 10:55
Total/NA	Analysis	903.0		1	624315	FLC	EET SL	08/16/23 09:33
Total/NA	Prep	PrecSep_0			621498	KAC	EET SL	07/25/23 10:59
Total/NA	Analysis	904.0		1	623585	FLC	EET SL	08/09/23 12:21
Total/NA	Analysis	Ra226_Ra228		1	624470	SCB	EET SL	08/16/23 14:55

Lab Chronicle

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

Job ID: 500-236939-2

Client Sample ID: Duplicate

Lab Sample ID: 500-236939-5

Date Collected: 07/20/23 00:00

Matrix: Water

Date Received: 07/20/23 15:50

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Analyst</u>	<u>Lab</u>	<u>Prepared or Analyzed</u>
Total/NA	Prep	PrecSep-21			621497	KAC	EET SL	07/25/23 10:55
Total/NA	Analysis	903.0		1	624315	FLC	EET SL	08/16/23 09:34
Total/NA	Prep	PrecSep_0			621498	KAC	EET SL	07/25/23 10:59
Total/NA	Analysis	904.0		1	623585	FLC	EET SL	08/09/23 12:21
Total/NA	Analysis	Ra226_Ra228		1	624470	SCB	EET SL	08/16/23 14:55

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: 500-236939-2

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)
500-236939-1	MW-03	96.2
500-236939-1 DU	MW-03	95.7
500-236939-2	MW-04	82.2
500-236939-3	MW-05	76.4
500-236939-4	MW-10	91.7
500-236939-5	Duplicate	90.5
LCS 160-621497/2-A	Lab Control Sample	93.7
MB 160-621497/1-A	Method Blank	85.7

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)
500-236939-1	MW-03	96.2	88.2
500-236939-1 DU	MW-03	95.7	86.4
500-236939-2	MW-04	82.2	85.6
500-236939-3	MW-05	76.4	87.9
500-236939-4	MW-10	91.7	86.4
500-236939-5	Duplicate	90.5	86.4
LCS 160-621498/2-A	Lab Control Sample	93.7	86.4
MB 160-621498/1-A	Method Blank	85.7	88.2

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

PROJECT NAME	NRG - JOLIET #29 STATION (12313.0)		DATE	7-20-23
Sample Name	MW-03	Start Time	08:16	
Condition of Well	GOOD			
Water Level	33.42	Total Depth	—	
Well Diameter	PVC - 2 inch	Volume in Well	—	
Method of Purge	Low-Flow	Purge Characteristics	ODORLESS COLORLESS	
Volume Removed	2.75 Q13	W L at Sample Time	33.44	
Method of Sample	Low-Flow	Sample Characteristics	APPEARS CLEAR CCA WHEN FILTERED	
Sample Analysis	CCA + CCR	Sample Time	08:28	
Water Quality Meter	YSI ProDss			

Time	Depth to Water (ft)	ph (SU)	Temp (°C)	Spec. Cond (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
08:19	33.44	7.08	15.3	1.823	95.3	120.1	6.6
08:22	33.43	6.97	14.9	1.844	89.0	121.8	5.5
08:25	33.43	6.89	14.9	1.855	84.1	124.5	5.7
08:28	33.44	6.86	15.0	1.841	82.0	124.7	5.9

SAMPLING NOTES:

Sampler Name and Company:

KPRG and Associates



PROJECT NAME	NRG - JOLIET #29 STATION (12313.0)		DATE	7-20-23
Sample Name	MW-04	Start Time	09:34	
Condition of Well	GOOD			
Water Level	33.70	Total Depth	—	
Well Diameter	PVC - 2 inch	Volume in Well	—	
Method of Purge	Low-Flow	Purge Characteristics	ODORLESS COLORLESS	
Volume Removed	2.5 GALS	WL at Sample Time	33.72	
Method of Sample	Low-Flow	Sample Characteristics	APPEARS CLEAR CCA FILTERED	
Sample Analysis	CCA + CCR	Sample Time	09:46	
Water Quality Meter	YSI ProDss			

Time	Depth to Water (ft)	ph (SU)	Temp (°C)	Spec. Cond (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
09:37	33.72	7.48	18.1	1.894	98.0	103.0	7.6
09:40	33.71	7.12	17.3	1.871	81.0	113.0	6.8
09:43	33.72	7.05	17.0	1.864	68.2	113.3	6.2
09:46	33.72	7.02	17.3	1.856	65.0	112.6	6.0

SAMPLING NOTES:

Sampler Name and Company:

KPRG and Associates



PROJECT NAME	NRG - JOLIET #29 STATION (12313.0)		DATE	7-20-23
Sample Name	MW-05	Start Time	11:58	
Condition of Well	GOOD			
Water Level	34.43	Total Depth	—	
Well Diameter	PVC - 2 inch	Volume in Well	—	
Method of Purge	Low-Flow	Purge Characteristics	ODORLESS COLORLESS	
Volume Removed	2.5 DTS	W L at Sample Time	34.45	
Method of Sample	Low-Flow	Sample Characteristics	APPEARS CLEAR CCA FILTERED.	
Sample Analysis	CCA + CCR + CCR DUT	Sample Time	12:10	
Water Quality Meter	YSI ProDss			

Time	Depth to Water (ft)	ph (SU)	Temp (°C)	Spec. Cond (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
12:01	34.45	7.18	16.3	1.733	100.7	120.7	7.3
12:04	34.45	6.98	16.4	1.692	95.8	127.0	6.7
12:07	34.45	6.95	16.2	1.675	94.3	127.0	6.3
12:10	34.45	6.94	16.1	1.672	93.6	126.6	6.0

SAMPLING NOTES:

Sampler Name and Company:

KPRG and Associates



PROJECT NAME	NRG - JOLIET #29 STATION (12313.0)		DATE	7-20-23
Sample Name	MW-10	Start Time	13:42	
Condition of Well	GOOD			
Water Level	34.64	Total Depth	—	
Well Diameter	PVC - 2 inch	Volume in Well	—	
Method of Purge	Low-Flow	Purge Characteristics	ODORLESS COLORLESS	
Volume Removed	2.5 QTS	W L at Sample Time	34.64	
Method of Sample	Low-Flow	Sample Characteristics	APPEARS CLEAR CCA FILTERED	
Sample Analysis	CCA + CCR	Sample Time	13:54	
Water Quality Meter	YSI ProDss			

Time	Depth to Water (ft)	ph (SU)	Temp (°C)	Spec. Cond (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
13:45	34.64	7.06	17.3	1.981	91.0	133.5	7.7
13:48	34.64	6.98	14.4	1.832	75.5	140.2	6.4
13:51	34.64	6.95	14.4	1.787	69.7	142.0	5.8
13:54	34.64	6.95	14.3	1.786	69.2	142.4	5.6

SAMPLING NOTES:

Sampler Name and Company:

KPRG and Associates

