

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: )  
 ) AS 2021-001  
PETITION OF MIDWEST )  
GENERATION, LLC FOR AN )  
ADJUSTED STANDARD FROM ) (Adjusted Standard)  
845.740(a) AND FINDING OF )  
INAPPLICABILITY OF PART 845 )  
(JOLIET 29 STATION) )

**NOTICE OF FILING**

To: See attached Service List

PLEASE TAKE NOTICE that I have today electronically filed with the Office of the Clerk of the Pollution Control Board Petitioner Midwest Generation, LLC's Responses to The Illinois Pollution Control Board Questions, a copy of which is herewith served upon you.

Dated: February 2, 2023

MIDWEST GENERATION, LLC

By:     /s/Kristen L. Gale    

Kristen L. Gale  
Susan M. Franzetti  
NIJMAN FRANZETTI LLP  
10 South LaSalle Street Suite 3600  
Chicago, IL 60603  
(312) 251-5590  
[kg@nijmanfranzetti.com](mailto:kg@nijmanfranzetti.com)  
[sf@nijmanfranzetti.com](mailto:sf@nijmanfranzetti.com)

**SERVICE LIST**

Don Brown, Clerk of the Board  
Illinois Pollution Control Board  
60 E. Van Buren Street, Suite 630  
Chicago, IL 60605  
[don.brown@illinois.gov](mailto:don.brown@illinois.gov)

Bradley P. Halloran, Hearing Officer  
Illinois Pollution Control Board  
60 E. Van Buren Street, Suite 630  
Chicago, IL 60605  
[Brad.Halloran@illinois.gov](mailto:Brad.Halloran@illinois.gov)

Stefanie Diers  
Sara Terranova  
Division of Legal Counsel  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, IL 62794-9276  
[Stefanie.Diers@illinois.gov](mailto:Stefanie.Diers@illinois.gov)  
[Sara.Terranova@illinois.gov](mailto:Sara.Terranova@illinois.gov)

Greg Stucka  
Assistant Counsel  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
Springfield, Illinois 62794  
(217) 524-1376  
[Gregory.Stucka@Illinois.gov](mailto:Gregory.Stucka@Illinois.gov)

**CERTIFICATE OF SERVICE**

The undersigned, an attorney, certifies that a true copy of the foregoing Notice of Filing, and Petitioner Midwest Generation, LLC's Responses to The Illinois Pollution Control Board Questions was electronically filed on February 2, 2023 with the following:

Don Brown, Clerk of the Board  
Illinois Pollution Control Board  
60 E. Van Buren Street, Suite 630  
Chicago, IL 60605  
[don.brown@illinois.gov](mailto:don.brown@illinois.gov)

and that copies were sent via e-mail on February 2, 2023 to the parties on the service list.

Dated: February 2, 2023

/s/Kristen L. Gale

Kristen L Gale  
Susan M. Franzetti  
Nijman Franzetti LLP  
10 S. LaSalle Street, Suite 3600  
Chicago, IL 60603  
(312) 251-5590  
[kg@nijmanfranzetti.com](mailto:kg@nijmanfranzetti.com)  
[sf@nijmanfranzetti.com](mailto:sf@nijmanfranzetti.com)

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

IN THE MATTER OF:	)	
	)	
Midwest Generation, LLC’s Petition for	)	
an Adjusted Standard and Finding of	)	AS 2021-001
Inapplicability from 35 Ill. Adm.	)	
Code 845 (Joliet 29 Station)	)	

**MIDWEST GENERATION LLC’S RESPONSES TO THE ILLINOIS POLLUTION CONTROL BOARD QUESTIONS**

Respondent Midwest Generation, LLC (“MWG”), by its undersigned counsel, submits its responses to the Illinois Pollution Control Board (“Board”) January 18, 2023 Questions for the above captioned matter. To assist the Board in its evaluation, MWG has answered not only the questions directed to it, but also the questions directed to the Illinois Environmental Protection Agency (“Agency”).

**Board Question No. 1**

Please submit quarterly groundwater monitoring data for monitoring wells MW- 10, MW-3, MW-4, and MW-5 for all monitored constituents, including cobalt, from August 2021 to the present.

**MWG’s Response to Board Question 1:**

The quarterly groundwater monitoring data for monitoring wells MW- 10, MW-3, MW-4, and MW-5 for all monitored constituents, including cobalt, from August 2021 to the present is attached as Attachment A.

**Board Question No. 2**

Regarding MWG’s contention that chloride from road salt is causing elevated levels of cobalt in MW-04, please explain why MW-03 and MW-05 are not being similarly affected.

**MWG’s Response to Board Question 2:**

Cobalt has been detected in both MW-03 and MW-05, but each have been below the Part 620 Class I Groundwater standard (1 mg/l) and the Part 845 groundwater standard (0.006 mg/l). 35 Ill. Adm. Code 620.410(a), 845.600(a). As shown in the updated groundwater monitoring results in attachment A, cobalt has been detected in MW-3 at concentrations between 0.0011-0.002 mg/l,

and detected in MW-5 at 0.0013 mg/l. (Attachment A, Table 1). Cobalt in these monitoring wells is due to the technical mechanisms described in the Maxwell Expert Opinion (MWG Ex. 22) and the supporting technical studies: “A Review of the Combined Threats of Road Salts and Heavy Metals to Freshwater Systems” (Exhibit D of MWG Exhibit 22) and “Road Salt Retention and Transport in Soils and Subsequent releases of toxic trace elements in porewaters” (MWG Ex. 30). Both studies show that cobalt, normally bound (*i.e.*, immobile) in natural soils, is being mobilized into the groundwater due to high concentrations of chloride from the road salt along the highway adjacent to the MWG site.

The recent groundwater monitoring results also show that the cobalt concentrations in MW-4 range from 0.0018 – 0.0037 mg/l, similar to the concentrations in MW-3 and MW-5 and below the Part 845 groundwater standards. *Id.*

**Board Question No. 3**

Please comment on whether MWG performed any correlation between chloride and cobalt concentrations in all four monitoring wells to determine if chloride levels in groundwater is influencing cobalt concentrations. Submit any additional information that supports MWG’s contention that elevated cobalt concentration in the groundwater is due to chloride from road salt applications.

**MWG’s Response to Board Question 3:**

MWG understands that the Board is asking if MWG performed any temporal correlation analysis of the concentrations of chlorides and cobalt in the groundwater. MWG did not perform this analysis because the technical studies cited by Mr. Maxwell do not show there would be a temporal correlation between the two concentrations. Rather, as one study succinctly describes in its title, the naturally occurring heavy metals materialize later – “Road Salt Retention and Transport in Soils and Subsequent Releases of Toxic Trace Elements in Porewaters”. (Ex. 30). That study further states that the road salt triggers an ion exchange process within the soil, which

retains the road salt in the soils and releasing the heavy metals “to groundwater over longer timescales.” *Id.*

Both studies show that road salts trigger ion exchange of heavy metals in soils, including cobalt. (MWG Ex. 22, Ex. D, p. 331, MWG 30). Moreover, “A Review of the Combined Threats of Road Salts and Heavy Metals to Freshwater Systems” specifically states that “[d]ozens of experimental and field investigations show that road salts increase the mobility of heavy metals through interrelated mechanisms” and that the heavy metals can enter groundwater. (MWG Ex. 22, Ex. D, p. 331). In response to the Board’s request for additional information, another reference indicating that deicing salt can mobilize metals normally bound in the soil is presented in Attachment B, a poster by Andrew Lazur of the University of Maryland Extension. Consistent with the other technical studies, the poster indicates that ion exchange resulting from use of deicing salt on roadways is a key mechanism resulting in mobility of heavy metals in the soil that can have a subsequent impact on groundwater quality.

**Board Question No. 4**

Please comment on whether MWG is aware of whether the cobalt spikes are related to any precipitation events.

**MWG’s Response to Board Question 4:**

MWG has not observed spikes in cobalt concentrations in the groundwater. Instead, the concentrations of cobalt concentrations are consistently low and below the Part 845 standard since the rule became effective. The groundwater sampling events are not timed to coincide with any precipitation events, because the samples are collected quarterly pursuant to Part 845. Further, as described herein, the technical studies do not show that detection of the heavy metals (including cobalt) would be correlated with a precipitation event. Instead, the heavy metals are mobilized from the soil and into the groundwater over long periods of time. *See* (Ex. 30 - “Road Salt

Retention and Transport in Soils and Subsequent Releases of Toxic Trace Elements in Porewaters”)

**Board Question No. 5**

If the Board grants the requested relief, IEPA recommends, in part, that MWG must be required to conduct the ASTM D 3987-85 shake tests to evaluate the leaching potential of the CCR (CCW) materials underlying the HDPE liner within Pond 2’s containment structure. Does the Agency have any concerns regarding creation of migration pathways for contaminants during the subsurface sampling of CCR material for the required shake tests? If so, are there any alternatives, including testing of similar material from another site or location?

**MWG’s Response to Board Question 5:**

MWG’s experts, Mr. Dehlin and Mr. Maxwell, specifically advised against sampling the material underlying the HDPE liner because of the potential to unnecessarily create a migration pathway. (6/28/22 Tr., p. 161:7-162:12, 6/28/22 Tr., p. 227:16-21). Importantly though, the Agency’s demand that MWG conduct the ASTM D3987-85 shake test is premised upon the unfounded speculation that the material below the HDPE liner is CCW (a/k/a CCR).<sup>1</sup> MWG’s fact and expert witnesses testimony, along with the other evidence introduced at hearing, including boring logs and photographs, demonstrates that the material under the HDPE liner in Pond 2 is natural fill material, *not* CCW. *See* MWG’s Post-Hearing Br., pp. 5-8, 12-14, MWG’s Resp. Br., pp. 7-9. Because there is no requirement under the Act or the Board rules to sample soil or fill material that is not CCW and because the evidence demonstrates that the material is *not* CCW, no sampling of the material should be required. *See* MWG Response Brief, p. 8, 415 ILCS 5/3.135.

Even though the evidence demonstrates that the material below the HDPE liner is not CCW and thus no sampling is required, MWG is currently conducting an alternative sampling method through its groundwater monitoring program, that would detect the presence of CCW indicators that could leach into the groundwater. MWG has sampled the groundwater for twelve years for the

---

<sup>1</sup> Illinois EPA agrees that coal combustion waste also means CCR. (6/29/22 Tr., p. 79:18-22).

purpose of detecting potential contamination from CCW, and will continue to sample the groundwater for at least three years after the closure of Pond 2 is complete, pursuant to Part 845.

35 Ill. Adm. Code 845.740(b). No further sampling is necessary.

**Board Question No. 6**

In response to IEPA's concern regarding Poz-a-pac material, MWG states that the "Agency's own exhibit, the Federal Highway Administration ("FHWA") User Guidelines, states that over 100 projects in Illinois used Poz-o-pac for state and county roads, and that one-third to one-half of the 30 million tons of the material used in the United States was placed in the metropolitan Chicago area." MWG Resp. Br. at 9 citing IEPA Ex. C.

- a. Please clarify whether Poz-a-pac used in the state and county road projects are subject to the Beneficial Use Determination under Section 3.135 of the Act.
- b. If not, explain why the Agency is concerned regarding Poz-a-pac material used as liner material in Pond 2 when the same material is allowed to be used in roadway projects without IEPA's review and approval.

**MWG's Response to Board Question 6:**

Poz-a-pac used in present state and county road projects "under the approval of Department of Transportation for IDOT projects" is *not* subject to a beneficial use determination or any conditions for use under the Act. 415 ILCS 5/3.135(a)(3)(B). Section 3.135(a-5)(C) specifically excludes IDOT approved projects from the requirements to certify compliance with the use conditions under Section 3.135(a-5) and notify to Illinois EPA. 415 ILCS 5/3.135(a-5)(C).<sup>2</sup>

Also, the road projects described in the FHWA User Guidelines the Agency relied upon were *not* subject to any coal ash use conditions, because Section 3.135 of the Act did not exist when the roads were built. The FHWA User Guidelines states that the Chicago-area poz-o-pac material was placed before 1990 and over 100 Illinois state and county roads were made with ash between 1955 and 1985. (IEPA Ex. C). The term "coal combustion by-product (CCB)" was added to the Act in 1995, long after the roads were built (the "1995 CCB definition"). (*See* P.A. 89-0093; 1995 vol. II

---

<sup>2</sup> Additionally, as MWG stated in its Post- Hearing Brief and Response Brief, the poz-o-pac in Pond 2 is a cementitious product, also without use conditions under Section 3.135 of the Act. *See* MWG Post-Hearing Brief, pp. 8-11 and Response Brief, pp. 3-7.

1796, at p. 1804, attached as Att. C). The 1995 CCB definition allowed coal ash to be used for IDOT-approved roads without any analysis or conditions. *Id* at Sec. 3.94(3).<sup>3</sup> It only required analysis of coal ash for non-IDOT pavement base, structural fill, and mine subsidence. *Id* at Sec. 3.94(10). Importantly, the 1995 CCB definition did not include a requirement to revisit and analyze roads or other materials built with coal ash before 1995. *Id*. Since 1995, the General Assembly has modified the CCB definition, including requiring conditions for additional uses, and yet coal ash used for approved IDOT projects continues not to have any use conditions or a requirement for a beneficial use designation. 415 ILCS 5/3.135(a)(3)(B). Clearly, the General Assembly has concluded that there is no risk to the environment or public health to use coal ash in road projects throughout Illinois, including using poz-o-pac, because it has not required any analysis of the coal ash used for the roads, nor analysis of the roads or surrounding groundwater following construction.

The Board is right to question the Agency as to why it is concerned about the poz-o-pac in Pond 2, when poz-o-pac, and other pozzolan-stabilized base materials have been used throughout Illinois for decades. As Dr. Radlinski testified:

“Quite frankly, you know, there are literally thousands of miles of concrete pavements in the United States and worldwide, concrete with -- you know, pavements with -- made with concrete fly ash, and it's just not a -- they get a lot of rain and otherwise precipitation, a lot of exposure and potential for leaching, and to my knowledge it's just not a concern.”  
6/28/2022 Tr., p. 86:4-11

Moreover, contrary to the Agency’s assertion in its answer to the Board’s Question No. 6, the FHWA Guideline does *not* state that poz-o-pac is no longer used. *See* Agency Response to Board Question #6(a) and (b), Feb. 2, 2023. Instead, it states that when the poz-o-pac patents expired

---

<sup>3</sup> In 2002, the General Assembly renumbered the definition Sections of the Act, including changing Section 3.94 changed to Section 3.135. P.A. 92-0574.

“during the early 1970’s, numerous variations of the basic lime-fly ash-aggregate formulations have evolved,” and they are now described as under the general heading of pozzolan-stabilized base (“PSB materials”). (IEPA Ex. C). The continued use of the PSB materials is likely due in part because it is better able to control cracking, compared to other mixtures. *Id.*

Because the Pond 2 poz-o-pac is no different than the poz-o-pac used in the over 100 state and county roads built in Illinois before 1990, the Agency’s concern over the Pond 2 poz-o-pac is inconsistent and misplaced. It is also baseless because after twelve years of groundwater monitoring, there is no evidence that the poz-o-pac (or any other materials underlying Pond 2) is causing groundwater contamination. *See* MWG’s Post-Hearing Br., pp. 17-18, and MWG’s Resp. Br., pp. 3-7.

The Agency’s claim in its response to Board question No. 6 that the cobalt “detections” in MW-4 but not in MW-10 is due the poz-o-pac, thus requiring additional analysis is misleading and not based in fact nor law. *See* Agency Response to Board Question #6(a) and (b), Feb. 2, 2023. As MWG explained in its Response, the difference in cobalt concentrations between MW-4 and MW-10 are so small, that merely because cobalt is not detected in MW-10 does not mean that it is not present. *See* MWG Resp. p. 10. Instead, based upon the technical studies and Mr. Maxwell’s expert opinion, it is more likely that there is cobalt at MW-10, but below the detection limit, and as the chloride-laden groundwater passes downgradient, more naturally occurring cobalt is mobilized, such that it is detected by the time it reaches MW-4. *Id.* Also, the Agency’s attempt to compare the cobalt concentrations between MW-10 and MW-4 when both are below the groundwater protection standard, is improper under Part 845. In Part 845, only if there is an exceedance of a groundwater protection standard, must any further action be conducted. 35 Ill. Adm. Code 845.660. Here, cobalt is not detected above the Part 845 groundwater protection standard in any

of the groundwater monitoring wells, and has not been detected above the standard since the Board passed Part 845. *See* Attachment A. Because cobalt is not detected above the Part 845 standard, no further action or analysis is required, regardless of the concentration difference between the up-gradient and down-gradient wells. *See* 35 Ill. Adm. Code 845.600 and 845.660.

Respectfully submitted,  
MIDWEST GENERATION, LLC

By:           /s/Kristen L. Gale            
          One of Its Attorneys

Kristen L. Gale  
Susan M. Franzetti  
Nijman Franzetti LLP  
10 S. LaSalle Street, Suite 3600  
Chicago, IL 60603  
(312) 251-5590  
[kg@nijmanfranzetti.com](mailto:kg@nijmanfranzetti.com)  
[sf@nijmanfranzetti.com](mailto:sf@nijmanfranzetti.com)

# **ATTACHMENT A**

**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 4<sup>th</sup> quarter 2022 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.

Well	Date	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Radium 226 + 228	Selenium	Thallium	
MW-10 up-gradient	10/28/2015	0.47	100	200	0.41	7.04	84	790	< 0.003	< 0.001	0.041	^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.013	< 0.0002	0.0060	0.2981	< 0.0025	< 0.002	
	2/10/2016	0.41	100	210	0.44	7.17	120	820	< 0.003	0.001	0.043	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.011	< 0.0002	0.0067	< 0.438	< 0.0025	< 0.002	
	5/12/2016	0.29	100	300	0.42	7.02	110	920	< 0.003	< 0.001	0.046	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.012	< 0.0002	0.0051	< 0.414	< 0.0025	< 0.002	
	8/31/2016	0.36	89	170	0.46	6.95	100	760	< 0.003	< 0.001	0.039	^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.010	< 0.0002	0.0077	< 0.394	< 0.0025	< 0.002	
	11/2/2016	0.48	100	130	0.45	6.99	95	720	< 0.003	0.0018	0.025	< 0.001	< 0.0005	< 0.005	< 0.001	0.0014	0.011	< 0.0002	0.0061	< 0.626	< 0.0025	< 0.002	
	2/6/2017	0.44	120	190	0.36	6.99	88	820	< 0.003	0.0011	0.048	< 0.001	< 0.0005	< 0.005	< 0.001	0.00086	0.014	< 0.0002	0.0056	< 0.389	< 0.0025	< 0.002	
	4/26/2017	0.35	120	200	0.35	7.27	87	760	< 0.003	0.0015	0.046	< 0.001	< 0.0005	< 0.005	< 0.001	0.0012	< 0.01	< 0.0002	0.006	< 0.34	< 0.0025	< 0.002	
	6/14/2017	0.29	91	160	0.43	7.48	75	690	< 0.003	< 0.001	0.034	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.012	< 0.0002	0.0072	< 0.356	< 0.0025	< 0.002	
	8/2/2017	0.45	97	170	0.38	7.23	110	750	< 0.003	0.0011	0.036	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.011	< 0.0002	0.0079	< 0.429	< 0.0025	< 0.002	
	10/18/2017	0.61	120	140	0.41	7.14	130	820	< 0.003	0.0012	0.04	^ < 0.001	< 0.0005	< 0.005	< 0.001	0.00059	0.013	< 0.0002	0.0066	< 0.422	< 0.0025	^ < 0.002	
	4/24/2018	0.4	110	260	0.39	7.28	120	910	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/17/2018	0.63	120	180	0.42	7.30	110	810	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/24/2018 R	0.44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/7/2019	0.56	130	410	0.39	7.17	95	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/3/2019 R	NA	NA	230	NA	NA	NA	830	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/7/2019	0.35	90	130	0.36	7.40	59	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/20/2020	0.85	120	250	0.41	6.90	100	960	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	6/11/2020 R	0.26	NA	NA	NA	NA	NA	770	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/22/2020	0.34	110	230	0.41	7.11	93	850	< 0.003	0.001	0.043	< ^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.011	< 0.0002	0.0057	NA	< 0.0025	< 0.002	
	5/18/2021	0.33	140	350	0.39	7.16	210	1,200	< 0.003	0.0014	0.06	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.015	< 0.0002	0.0055	< 0.4800	< 0.0025	< 0.002	
	6/29/2021 R	NA	NA	420	NA	7.32	190	1,300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	8/30/2021	0.28	120	330	0.37	7.56	170	990	< ^+ < 0.003	0.0012	0.051	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.012	< 0.0002	0.0065	0.51	< 0.0025	< 0.002	
	11/16/2021	0.39	120	260	0.38	7.01	150	1,000	< 0.003	0.0012	0.049	< ^+ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.011	< 0.0002	0.0066	0.692	< 0.0025	< 0.002	
	3/3/2022	0.47	120	280	0.41	7.05	190	1,000	< 0.003	0.0014	0.055	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.013	< 0.0002	0.0066	< 0.4	< 0.0025	< 0.002	
	5/26/2022	0.39	120	280	0.41	6.9	160	1,000	< 0.003	0.0013	0.046	< ^+ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.0064	< 0.593	< 0.0025	< 0.002	
	8/31/2022	0.33	110	240	0.41	6.58	160	970	< 0.003	0.0012	0.042	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.0057	0.534	< 0.0025	< 0.002	
	11/9/2022	0.32	110	240	0.37	7.00	150	880	< 0.003	0.0014	0.043	< 0.001	< 0.0005	< 0.005	< 0.001	< ^+ < 0.0005	< 0.01	< 0.0002	0.0055	0.728	< 0.0025	< 0.002	
	MW-03 down-gradient	10/28/2015	0.34	110	230	0.41	7.11	110	960	< 0.003	0.0015	0.100	^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.013	< 0.0002	< 0.0050	0.41	< 0.0025	< 0.002
2/10/2016		0.49	100	220	0.44	7.31	130	790	< 0.003	0.0017	0.100	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.011	< 0.0002	0.0060	< 1.68	< 0.0025	< 0.002	
5/10/2016		0.48	240	0.44	7.07	130	800	< 0.003	0.0011	0.095	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.012	< 0.0002	0.0062	< 0.326	< 0.0025	< 0.002		
8/31/2016		0.49	100	250	0.45	7.18	120	920	< 0.003	0.0013	0.095	^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.012	< 0.0002	0.0086	< 0.373	< 0.0025	< 0.002	
11/2/2016		0.34	87	190	0.44	7.45	94	780	< 0.003	0.0019	0.082	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.010	< 0.0002	0.0059	< 0.965	< 0.0025	< 0.002	
2/6/2017		0.40	97	140	0.39	7.35	77	720	< 0.003	0.0019	0.093	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.012	< 0.0002	0.0066	< 0.356	< 0.0025	< 0.002	
4/26/2017		0.54	100	210	0.36	7.03	120	820	< 0.003	0.0017	0.11	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.010	< 0.0002	0.0088	< 0.411	< 0.0025	< 0.002	
6/14/2017		0.45	88	190	0.44	7.43	75	760	< 0.003	0.0014	0.09	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.012	< 0.0002	0.0072	< 0.358	< 0.0025	< 0.002	
8/2/2017		0.41	99	200	0.40	7.34	110	850	< 0.003	0.0022	0.10	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.011	< 0.0002	0.0065	< 0.414	< 0.0025	< 0.002	
10/18/2017		0.35	93	160	0.42	7.11	100	850	< 0.003	0.0015	0.088	< ^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.012	< 0.0002	0.0055	< 0.417	< 0.0025	^ < 0.002	
4/24/2018		0.52	100	220	0.42	7.2	150	930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7/31/2018 R		NA	NA	NA	NA	NA	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/17/2018		0.25	100	250	0.4	7.04	110	870	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5/7/2019		0.43	120	280	0.4	7.27	140	880	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7/3/2019 R		NA	NA	NA	NA	NA	65	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/7/2019		0.34	100	150	0.4	7.32	64	660	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5/20/2020		0.38	100	230	0.42	7.56	78	960	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/11/2020 R		NA	NA	NA	NA	NA	NA	930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10/22/2020		0.32	110	180	0.43	7.23	90	770	< 0.003	0.0014	0.1	< ^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.01	< 0.0002	< 0.005	NA	< 0.0025	< 0.002	
5/18/2021		0.28	130	290	0.4	7.13	190	1,200	< 0.003	0.0016	0.14	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.014	< 0.0002	< 0.0050	1.1000	< 0.0025	< 0.002	
6/29/2021 R		NA	NA	NA	NA	7.34	210	1,300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8/30/2021		0.23	120	290	0.36	7.33	140	800	< ^+ < 0.003	0.0018	0.12	< 0.001	< 0.0005	< 0.005	0.0014	< 0.0005	0.012	< 0.0002	< 0.005	0.641	< 0.0025	< 0.002	

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	
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	43.5	
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	63.40	
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	

# **ANALYTICAL REPORT**

## **PREPARED FOR**

Attn: John Niedzwiecki  
Midwest Generation EME LLC  
1800 Channahon Road  
Joliet, Illinois 60436

Generated 12/1/2022 1:47:14 PM

## **JOB DESCRIPTION**

Joliet #29 CCR

## **JOB NUMBER**

500-225174-1

# Eurofins Chicago

## Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

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



Generated  
12/1/2022 1:47:14 PM

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



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	3
Case Narrative . . . . .	4
Method Summary . . . . .	5
Sample Summary . . . . .	6
Client Sample Results . . . . .	7
Definitions . . . . .	12
QC Association . . . . .	13
QC Sample Results . . . . .	15
Chain of Custody . . . . .	19
Receipt Checklists . . . . .	22
Chronicle . . . . .	24

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

Job ID: 500-225174-1

---

**Job ID: 500-225174-1**

---

**Laboratory: Eurofins Chicago**

**Narrative**

---

**Job Narrative  
500-225174-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 11/10/2022 8:45 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 1.3° C and 3.2° C.

**Metals**

Method 6020A: The continuing calibration verification (CCV) at line 108 associated with batch 500-687308 recovered above the upper control limit for Lead. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported.

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

**General Chemistry**

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



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

Job ID: 500-225174-1

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 PEN
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

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001



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

Job ID: 500-225174-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-225174-1	MW-03	Water	11/09/22 09:19	11/10/22 08:45
500-225174-2	MW-04	Water	11/09/22 10:25	11/10/22 08:45
500-225174-3	MW-05	Water	11/09/22 12:11	11/10/22 08:45
500-225174-4	MW-10	Water	11/09/22 14:48	11/10/22 08:45
500-225174-5	Duplicate	Water	11/09/22 00:00	11/10/22 08:45

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

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

Job ID: 500-225174-1

**Client Sample ID: MW-03**  
**Date Collected: 11/09/22 09:19**  
**Date Received: 11/10/22 08:45**

**Lab Sample ID: 500-225174-1**  
**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		11/23/22 08:54	11/28/22 21:05	1
<b>Arsenic</b>	<b>0.0020</b>		0.0010		mg/L		11/23/22 08:54	11/28/22 21:05	1
<b>Barium</b>	<b>0.12</b>		0.0025		mg/L		11/23/22 08:54	11/28/22 21:05	1
Beryllium	<0.0010		0.0010		mg/L		11/23/22 08:54	11/28/22 21:05	1
<b>Boron</b>	<b>0.25</b>		0.050		mg/L		11/23/22 08:54	11/28/22 21:05	1
Cadmium	<0.00050		0.00050		mg/L		11/23/22 08:54	11/28/22 21:05	1
<b>Calcium</b>	<b>120</b>		0.20		mg/L		11/23/22 08:54	11/28/22 21:05	1
Chromium	<0.0050		0.0050		mg/L		11/23/22 08:54	11/28/22 21:05	1
<b>Cobalt</b>	<b>0.0015</b>		0.0010		mg/L		11/23/22 08:54	11/28/22 21:05	1
Lead	<0.00050	^+	0.00050		mg/L		11/23/22 08:54	11/28/22 21:05	1
<b>Lithium</b>	<b>0.012</b>		0.010		mg/L		11/23/22 08:54	11/30/22 16:29	1
Molybdenum	<0.0050		0.0050		mg/L		11/23/22 08:54	11/28/22 21:05	1
Selenium	<0.0025		0.0025		mg/L		11/23/22 08:54	11/28/22 21:05	1
Thallium	<0.0020		0.0020		mg/L		11/23/22 08:54	11/28/22 21:05	1

**Method: SW846 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		11/21/22 10:20	11/22/22 07:17	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids (SM 2540C)</b>	<b>1100</b>		10		mg/L			11/15/22 23:38	1
<b>Chloride (SM 4500 Cl- E)</b>	<b>300</b>		20		mg/L			11/23/22 10:30	10
<b>Fluoride (SM 4500 F C)</b>	<b>0.54</b>		0.10		mg/L			11/16/22 11:39	1
<b>Sulfate (SM 4500 SO4 E)</b>	<b>140</b>		50		mg/L			11/29/22 09:15	10

**Client Sample Results**

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

Job ID: 500-225174-1

**Client Sample ID: MW-04**

**Lab Sample ID: 500-225174-2**

Date Collected: 11/09/22 10:25

Matrix: Water

Date Received: 11/10/22 08:45

**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		11/23/22 08:54	11/28/22 21:09	1
<b>Arsenic</b>	<b>0.0021</b>		0.0010		mg/L		11/23/22 08:54	11/28/22 21:09	1
<b>Barium</b>	<b>0.11</b>		0.0025		mg/L		11/23/22 08:54	11/28/22 21:09	1
Beryllium	<0.0010		0.0010		mg/L		11/23/22 08:54	11/28/22 21:09	1
<b>Boron</b>	<b>0.34</b>		0.050		mg/L		11/23/22 08:54	11/28/22 21:09	1
Cadmium	<0.00050		0.00050		mg/L		11/23/22 08:54	11/28/22 21:09	1
<b>Calcium</b>	<b>120</b>		0.20		mg/L		11/23/22 08:54	11/28/22 21:09	1
Chromium	<0.0050		0.0050		mg/L		11/23/22 08:54	11/28/22 21:09	1
<b>Cobalt</b>	<b>0.0030</b>		0.0010		mg/L		11/23/22 08:54	11/28/22 21:09	1
Lead	<0.00050	^+	0.00050		mg/L		11/23/22 08:54	11/28/22 21:09	1
<b>Lithium</b>	<b>0.012</b>		0.010		mg/L		11/23/22 08:54	11/30/22 16:32	1
<b>Molybdenum</b>	<b>0.0056</b>		0.0050		mg/L		11/23/22 08:54	11/28/22 21:09	1
Selenium	<0.0025		0.0025		mg/L		11/23/22 08:54	11/28/22 21:09	1
Thallium	<0.0020		0.0020		mg/L		11/23/22 08:54	11/28/22 21:09	1

**Method: SW846 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		11/21/22 10:20	11/22/22 07:19	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids (SM 2540C)</b>	<b>940</b>		10		mg/L			11/16/22 03:53	1
<b>Chloride (SM 4500 Cl- E)</b>	<b>240</b>		20		mg/L			11/23/22 10:31	10
<b>Fluoride (SM 4500 F C)</b>	<b>0.61</b>		0.10		mg/L			11/16/22 11:42	1
<b>Sulfate (SM 4500 SO4 E)</b>	<b>150</b>		50		mg/L			11/29/22 09:15	10

**Client Sample Results**

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

Job ID: 500-225174-1

**Client Sample ID: MW-05**

**Lab Sample ID: 500-225174-3**

Date Collected: 11/09/22 12:11

Matrix: Water

Date Received: 11/10/22 08:45

**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		11/23/22 08:54	11/28/22 21:12	1
<b>Arsenic</b>	<b>0.0021</b>		0.0010		mg/L		11/23/22 08:54	11/28/22 21:12	1
<b>Barium</b>	<b>0.068</b>		0.0025		mg/L		11/23/22 08:54	11/28/22 21:12	1
Beryllium	<0.0010		0.0010		mg/L		11/23/22 08:54	11/28/22 21:12	1
<b>Boron</b>	<b>0.39</b>		0.050		mg/L		11/23/22 08:54	11/28/22 21:12	1
Cadmium	<0.00050		0.00050		mg/L		11/23/22 08:54	11/28/22 21:12	1
<b>Calcium</b>	<b>120</b>		0.20		mg/L		11/23/22 08:54	11/28/22 21:12	1
Chromium	<0.0050		0.0050		mg/L		11/23/22 08:54	11/28/22 21:12	1
Cobalt	<0.0010		0.0010		mg/L		11/23/22 08:54	11/28/22 21:12	1
<b>Lead</b>	<b>0.00093</b>		0.00050		mg/L		11/23/22 08:54	11/30/22 16:36	1
<b>Lithium</b>	<b>0.015</b>		0.010		mg/L		11/23/22 08:54	11/30/22 16:36	1
Molybdenum	<0.0050		0.0050		mg/L		11/23/22 08:54	11/28/22 21:12	1
Selenium	<0.0025		0.0025		mg/L		11/23/22 08:54	11/28/22 21:12	1
Thallium	<0.0020		0.0020		mg/L		11/23/22 08:54	11/28/22 21:12	1

**Method: SW846 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		11/21/22 10:20	11/22/22 07:54	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids (SM 2540C)</b>	<b>910</b>		10		mg/L			11/16/22 04:00	1
<b>Chloride (SM 4500 Cl- E)</b>	<b>230</b>		20		mg/L			11/23/22 10:31	10
<b>Fluoride (SM 4500 F C)</b>	<b>0.42</b>		0.10		mg/L			11/16/22 11:45	1
<b>Sulfate (SM 4500 SO4 E)</b>	<b>120</b>		50		mg/L			11/29/22 09:16	10

**Client Sample Results**

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

Job ID: 500-225174-1

**Client Sample ID: MW-10**

**Lab Sample ID: 500-225174-4**

Date Collected: 11/09/22 14:48

Matrix: Water

Date Received: 11/10/22 08:45

**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		11/23/22 08:54	11/28/22 21:16	1
<b>Arsenic</b>	<b>0.0014</b>		0.0010		mg/L		11/23/22 08:54	11/28/22 21:16	1
<b>Barium</b>	<b>0.043</b>		0.0025		mg/L		11/23/22 08:54	11/28/22 21:16	1
Beryllium	<0.0010		0.0010		mg/L		11/23/22 08:54	11/28/22 21:16	1
<b>Boron</b>	<b>0.32</b>		0.050		mg/L		11/23/22 08:54	11/28/22 21:16	1
Cadmium	<0.00050		0.00050		mg/L		11/23/22 08:54	11/28/22 21:16	1
<b>Calcium</b>	<b>110</b>		0.20		mg/L		11/23/22 08:54	11/28/22 21:16	1
Chromium	<0.0050		0.0050		mg/L		11/23/22 08:54	11/28/22 21:16	1
Cobalt	<0.0010		0.0010		mg/L		11/23/22 08:54	11/28/22 21:16	1
Lead	<0.00050	^+	0.00050		mg/L		11/23/22 08:54	11/28/22 21:16	1
<b>Lithium</b>	<b>0.010</b>		0.010		mg/L		11/23/22 08:54	11/30/22 16:39	1
<b>Molybdenum</b>	<b>0.0055</b>		0.0050		mg/L		11/23/22 08:54	11/28/22 21:16	1
Selenium	<0.0025		0.0025		mg/L		11/23/22 08:54	11/28/22 21:16	1
Thallium	<0.0020		0.0020		mg/L		11/23/22 08:54	11/28/22 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		11/21/22 10:20	11/22/22 07:56	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids (SM 2540C)</b>	<b>880</b>		10		mg/L			11/16/22 04:06	1
<b>Chloride (SM 4500 Cl- E)</b>	<b>240</b>		20		mg/L			11/23/22 10:48	10
<b>Fluoride (SM 4500 F C)</b>	<b>0.57</b>		0.10		mg/L			11/16/22 11:48	1
<b>Sulfate (SM 4500 SO4 E)</b>	<b>150</b>		50		mg/L			11/29/22 09:04	10

**Client Sample Results**

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

Job ID: 500-225174-1

**Client Sample ID: Duplicate**

**Lab Sample ID: 500-225174-5**

Date Collected: 11/09/22 00:00

Matrix: Water

Date Received: 11/10/22 08:45

**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		11/23/22 08:54	11/28/22 21:19	1
<b>Arsenic</b>	<b>0.0021</b>		0.0010		mg/L		11/23/22 08:54	11/28/22 21:19	1
<b>Barium</b>	<b>0.11</b>		0.0025		mg/L		11/23/22 08:54	11/28/22 21:19	1
Beryllium	<0.0010		0.0010		mg/L		11/23/22 08:54	11/28/22 21:19	1
<b>Boron</b>	<b>0.33</b>		0.050		mg/L		11/23/22 08:54	11/28/22 21:19	1
Cadmium	<0.00050		0.00050		mg/L		11/23/22 08:54	11/28/22 21:19	1
<b>Calcium</b>	<b>120</b>		0.20		mg/L		11/23/22 08:54	11/28/22 21:19	1
Chromium	<0.0050		0.0050		mg/L		11/23/22 08:54	11/28/22 21:19	1
<b>Cobalt</b>	<b>0.0031</b>		0.0010		mg/L		11/23/22 08:54	11/28/22 21:19	1
Lead	<0.00050	^+	0.00050		mg/L		11/23/22 08:54	11/28/22 21:19	1
<b>Lithium</b>	<b>0.012</b>		0.010		mg/L		11/23/22 08:54	11/30/22 16:43	1
<b>Molybdenum</b>	<b>0.0054</b>		0.0050		mg/L		11/23/22 08:54	11/28/22 21:19	1
Selenium	<0.0025		0.0025		mg/L		11/23/22 08:54	11/28/22 21:19	1
Thallium	<0.0020		0.0020		mg/L		11/23/22 08:54	11/28/22 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		11/21/22 10:20	11/22/22 08:09	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids (SM 2540C)</b>	<b>960</b>		10		mg/L			11/16/22 04:08	1
<b>Chloride (SM 4500 Cl- E)</b>	<b>240</b>		20		mg/L			11/23/22 10:48	10
<b>Fluoride (SM 4500 F C)</b>	<b>0.61</b>		0.10		mg/L			11/16/22 11:51	1
<b>Sulfate (SM 4500 SO4 E)</b>	<b>150</b>		50		mg/L			11/29/22 09:04	10

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

Job ID: 500-225174-1

**Qualifiers**

**Metals**

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) 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

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

Job ID: 500-225174-1

**Metals**

**Prep Batch: 686309**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-225174-1	MW-03	Total/NA	Water	7470A	
500-225174-2	MW-04	Total/NA	Water	7470A	
500-225174-3	MW-05	Total/NA	Water	7470A	
500-225174-4	MW-10	Total/NA	Water	7470A	
500-225174-5	Duplicate	Total/NA	Water	7470A	
MB 500-686309/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-686309/13-A	Lab Control Sample	Total/NA	Water	7470A	
500-225174-2 MS	MW-04	Total/NA	Water	7470A	
500-225174-2 MSD	MW-04	Total/NA	Water	7470A	
500-225174-2 DU	MW-04	Total/NA	Water	7470A	

**Analysis Batch: 686552**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-225174-1	MW-03	Total/NA	Water	7470A	686309
500-225174-2	MW-04	Total/NA	Water	7470A	686309
500-225174-3	MW-05	Total/NA	Water	7470A	686309
500-225174-4	MW-10	Total/NA	Water	7470A	686309
500-225174-5	Duplicate	Total/NA	Water	7470A	686309
MB 500-686309/12-A	Method Blank	Total/NA	Water	7470A	686309
LCS 500-686309/13-A	Lab Control Sample	Total/NA	Water	7470A	686309
500-225174-2 MS	MW-04	Total/NA	Water	7470A	686309
500-225174-2 MSD	MW-04	Total/NA	Water	7470A	686309
500-225174-2 DU	MW-04	Total/NA	Water	7470A	686309

**Prep Batch: 686689**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-225174-1	MW-03	Total Recoverable	Water	3005A	
500-225174-2	MW-04	Total Recoverable	Water	3005A	
500-225174-3	MW-05	Total Recoverable	Water	3005A	
500-225174-4	MW-10	Total Recoverable	Water	3005A	
500-225174-5	Duplicate	Total Recoverable	Water	3005A	
MB 500-686689/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-686689/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

**Analysis Batch: 687308**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-225174-1	MW-03	Total Recoverable	Water	6020A	686689
500-225174-2	MW-04	Total Recoverable	Water	6020A	686689
500-225174-3	MW-05	Total Recoverable	Water	6020A	686689
500-225174-4	MW-10	Total Recoverable	Water	6020A	686689
500-225174-5	Duplicate	Total Recoverable	Water	6020A	686689
MB 500-686689/1-A	Method Blank	Total Recoverable	Water	6020A	686689
LCS 500-686689/2-A	Lab Control Sample	Total Recoverable	Water	6020A	686689

**Analysis Batch: 687746**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-225174-1	MW-03	Total Recoverable	Water	6020A	686689
500-225174-2	MW-04	Total Recoverable	Water	6020A	686689
500-225174-3	MW-05	Total Recoverable	Water	6020A	686689
500-225174-4	MW-10	Total Recoverable	Water	6020A	686689
500-225174-5	Duplicate	Total Recoverable	Water	6020A	686689

Eurofins Chicago

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

Job ID: 500-225174-1

**General Chemistry**

**Analysis Batch: 600791**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-225174-1	MW-03	Total/NA	Water	SM 4500 F C	
500-225174-2	MW-04	Total/NA	Water	SM 4500 F C	
500-225174-3	MW-05	Total/NA	Water	SM 4500 F C	
500-225174-4	MW-10	Total/NA	Water	SM 4500 F C	
500-225174-5	Duplicate	Total/NA	Water	SM 4500 F C	
MB 400-600791/33	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-600791/36	Lab Control Sample	Total/NA	Water	SM 4500 F C	
MRL 400-600791/35	Lab Control Sample	Total/NA	Water	SM 4500 F C	

**Analysis Batch: 685172**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-225174-1	MW-03	Total/NA	Water	SM 2540C	
MB 500-685172/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-685172/2	Lab Control Sample	Total/NA	Water	SM 2540C	

**Analysis Batch: 685176**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-225174-2	MW-04	Total/NA	Water	SM 2540C	
500-225174-3	MW-05	Total/NA	Water	SM 2540C	
500-225174-4	MW-10	Total/NA	Water	SM 2540C	
500-225174-5	Duplicate	Total/NA	Water	SM 2540C	
MB 500-685176/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-685176/2	Lab Control Sample	Total/NA	Water	SM 2540C	
500-225174-2 MS	MW-04	Total/NA	Water	SM 2540C	
500-225174-2 DU	MW-04	Total/NA	Water	SM 2540C	
500-225174-3 DU	MW-05	Total/NA	Water	SM 2540C	

**Analysis Batch: 686775**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-225174-1	MW-03	Total/NA	Water	SM 4500 CI- E	
500-225174-2	MW-04	Total/NA	Water	SM 4500 CI- E	
500-225174-3	MW-05	Total/NA	Water	SM 4500 CI- E	
500-225174-4	MW-10	Total/NA	Water	SM 4500 CI- E	
500-225174-5	Duplicate	Total/NA	Water	SM 4500 CI- E	
MB 500-686775/52	Method Blank	Total/NA	Water	SM 4500 CI- E	
MB 500-686775/85	Method Blank	Total/NA	Water	SM 4500 CI- E	
LCS 500-686775/53	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
LCS 500-686775/86	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	

**Analysis Batch: 687313**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-225174-1	MW-03	Total/NA	Water	SM 4500 SO4 E	
500-225174-2	MW-04	Total/NA	Water	SM 4500 SO4 E	
500-225174-3	MW-05	Total/NA	Water	SM 4500 SO4 E	
500-225174-4	MW-10	Total/NA	Water	SM 4500 SO4 E	
500-225174-5	Duplicate	Total/NA	Water	SM 4500 SO4 E	
MB 500-687313/16	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 500-687313/17	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	

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

Job ID: 500-225174-1

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

**Lab Sample ID: MB 500-686689/1-A**  
**Matrix: Water**  
**Analysis Batch: 687308**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 686689**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		11/23/22 08:54	11/28/22 20:09	1
Arsenic	<0.0010		0.0010		mg/L		11/23/22 08:54	11/28/22 20:09	1
Barium	<0.0025		0.0025		mg/L		11/23/22 08:54	11/28/22 20:09	1
Beryllium	<0.0010		0.0010		mg/L		11/23/22 08:54	11/28/22 20:09	1
Boron	<0.050		0.050		mg/L		11/23/22 08:54	11/28/22 20:09	1
Cadmium	<0.00050		0.00050		mg/L		11/23/22 08:54	11/28/22 20:09	1
Calcium	<0.20		0.20		mg/L		11/23/22 08:54	11/28/22 20:09	1
Chromium	<0.0050		0.0050		mg/L		11/23/22 08:54	11/28/22 20:09	1
Cobalt	<0.0010		0.0010		mg/L		11/23/22 08:54	11/28/22 20:09	1
Lead	<0.00050	^+	0.00050		mg/L		11/23/22 08:54	11/28/22 20:09	1
Lithium	<0.010		0.010		mg/L		11/23/22 08:54	11/28/22 20:09	1
Molybdenum	<0.0050		0.0050		mg/L		11/23/22 08:54	11/28/22 20:09	1
Selenium	<0.0025		0.0025		mg/L		11/23/22 08:54	11/28/22 20:09	1
Thallium	<0.0020		0.0020		mg/L		11/23/22 08:54	11/28/22 20:09	1

**Lab Sample ID: LCS 500-686689/2-A**  
**Matrix: Water**  
**Analysis Batch: 687308**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 686689**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.500	0.486		mg/L		97	80 - 120
Arsenic	0.100	0.0877		mg/L		88	80 - 120
Barium	2.00	1.99		mg/L		100	80 - 120
Beryllium	0.0500	0.0445		mg/L		89	80 - 120
Boron	1.00	0.961		mg/L		96	80 - 120
Cadmium	0.0500	0.0460		mg/L		92	80 - 120
Calcium	10.0	9.56		mg/L		96	80 - 120
Chromium	0.200	0.196		mg/L		98	80 - 120
Cobalt	0.500	0.509		mg/L		102	80 - 120
Lead	0.100	0.104	^+	mg/L		104	80 - 120
Lithium	0.500	0.492		mg/L		98	80 - 120
Molybdenum	1.00	0.924		mg/L		92	80 - 120
Selenium	0.100	0.0912		mg/L		91	80 - 120
Thallium	0.100	0.104		mg/L		104	80 - 120

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

**Lab Sample ID: MB 500-686309/12-A**  
**Matrix: Water**  
**Analysis Batch: 686552**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 686309**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		11/21/22 10:20	11/22/22 07:02	1

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

Job ID: 500-225174-1

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

Lab Sample ID: LCS 500-686309/13-A  
 Matrix: Water  
 Analysis Batch: 686552

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 686309

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00198	0.00177		mg/L		89	80 - 120

Lab Sample ID: 500-225174-2 MS  
 Matrix: Water  
 Analysis Batch: 686552

Client Sample ID: MW-04  
 Prep Type: Total/NA  
 Prep Batch: 686309

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.00020		0.00100	0.000972		mg/L		97	75 - 125

Lab Sample ID: 500-225174-2 MSD  
 Matrix: Water  
 Analysis Batch: 686552

Client Sample ID: MW-04  
 Prep Type: Total/NA  
 Prep Batch: 686309

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.00020		0.00100	0.000964		mg/L		96	75 - 125	1	20

Lab Sample ID: 500-225174-2 DU  
 Matrix: Water  
 Analysis Batch: 686552

Client Sample ID: MW-04  
 Prep Type: Total/NA  
 Prep Batch: 686309

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 500-685172/1  
 Matrix: Water  
 Analysis Batch: 685172

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			11/15/22 22:39	1

Lab Sample ID: LCS 500-685172/2  
 Matrix: Water  
 Analysis Batch: 685172

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	252		mg/L		101	80 - 120

Lab Sample ID: MB 500-685176/1  
 Matrix: Water  
 Analysis Batch: 685176

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			11/16/22 03:48	1

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

Job ID: 500-225174-1

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

Lab Sample ID: LCS 500-685176/2  
 Matrix: Water  
 Analysis Batch: 685176

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	240		mg/L		96	80 - 120

Lab Sample ID: 500-225174-2 MS  
 Matrix: Water  
 Analysis Batch: 685176

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
Total Dissolved Solids	940		250	1170		mg/L		92	75 - 125

Lab Sample ID: 500-225174-2 DU  
 Matrix: Water  
 Analysis Batch: 685176

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	940		974		mg/L		4	5

Lab Sample ID: 500-225174-3 DU  
 Matrix: Water  
 Analysis Batch: 685176

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	910		904		mg/L		0.4	5

**Method: SM 4500 Cl- E - Chloride, Total**

Lab Sample ID: MB 500-686775/52  
 Matrix: Water  
 Analysis Batch: 686775

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			11/23/22 10:23	1

Lab Sample ID: MB 500-686775/85  
 Matrix: Water  
 Analysis Batch: 686775

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			11/23/22 10:46	1

Lab Sample ID: LCS 500-686775/53  
 Matrix: Water  
 Analysis Batch: 686775

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	20.1		mg/L		100	85 - 115

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

Job ID: 500-225174-1

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

Lab Sample ID: LCS 500-686775/86  
 Matrix: Water  
 Analysis Batch: 686775

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	20.4		mg/L		102	85 - 115

**Method: SM 4500 F C - Fluoride**

Lab Sample ID: MB 400-600791/33  
 Matrix: Water  
 Analysis Batch: 600791

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			11/16/22 12:40	1

Lab Sample ID: LCS 400-600791/36  
 Matrix: Water  
 Analysis Batch: 600791

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	5.00	5.19		mg/L		104	90 - 110

Lab Sample ID: MRL 400-600791/35  
 Matrix: Water  
 Analysis Batch: 600791

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.100	0.105		mg/L		105	

**Method: SM 4500 SO4 E - Sulfate, Total**

Lab Sample ID: MB 500-687313/16  
 Matrix: Water  
 Analysis Batch: 687313

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			11/29/22 08:58	1

Lab Sample ID: LCS 500-687313/17  
 Matrix: Water  
 Analysis Batch: 687313

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	21.9		mg/L		109	88 - 123



# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Shipping/Receiving		Phone:	Mockler, Diana J		500-167316.1
Company: Eurofins Environment Testing Southeast,		E-Mail:	Diana.Mockler@et.eurofins.com	State of Origin:	Page:
Address: 3355 McLemore Drive,		Accreditations Required (See note):		Illinois	Page 1 of 1
City: Pensacola		NELAP - Illinois		Job #:	500-225174-1
State, Zip: FL, 32514		Due Date Requested:		Preservation Codes:	
Phone: 850-474-1001(Tel) 850-478-2671(Fax)		12/5/2022		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
Email:		TAT Requested (days):		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Project #: 50011568		PO #:		Total Number of containers	
Site: NRG Midwest Generation LSQ Joliet#29 CCR		WO #:		X	
		Project #:		1	
		SSOW#:		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene, A=Air)		1	
		Sample Date		1	
		Sample Time		1	
		Sample Type (C=Comp, G=grab)		1	
		Matrix (Water, Seawater, Oil, BT=Fluorene			

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

13069-434 NTW EXP 09/23

ORIGIN ID: JOTA (708) 534-5200  
SAMPLE LOGIN  
TESTAMERICA LABS  
2417 BOND ST

SHIP DATE: 10NOV22  
ACTWGT: 22.00 LB MAN  
CAD: 033264/CAFE3616

UNIVERSITY PARK, IL 60484  
UNITED STATES US

BILL SENDER

TO **SAMPLE RECEIVING  
EUROFINS - PENSACOLA  
3355 MCLEMORE DR.**

**PENSACOLA FL 32514**

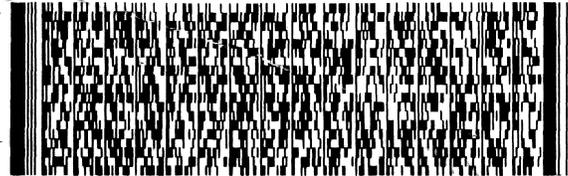
(850) 474-1001

REF: 225074 104 174 SH

*Handwritten:* 11/11/22

5776/E4HP 4326

1 2 3 4 5 6 7 8 9 10 11 12



**FedEx**  
Express



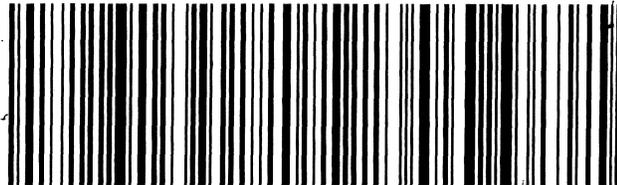
J222022032801uv

TRK# 6180 7191 9563  
0201

**FRI - 11 NOV 10:30A  
PRIORITY OVERNIGHT**

# XH PNSA

**32514  
FL-US BFM**



## Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-225174-1

Login Number: 225174

List Number: 1

Creator: Scott, Sherri L

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	1.3.3.2
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").	True	
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: 500-225174-1

**Login Number: 225174****List Source: Eurofins Pensacola****List Number: 3****List Creation: 11/12/22 08:32 AM****Creator: Whitley, Adrian**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	4.4°C IR8
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.	N/A	
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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

Job ID: 500-225174-1

**Client Sample ID: MW-03**  
**Date Collected: 11/09/22 09:19**  
**Date Received: 11/10/22 08:45**

**Lab Sample ID: 500-225174-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			686689	BDE	EET CHI	11/23/22 08:54 - 11/23/22 09:24 <sup>1</sup>
Total Recoverable	Analysis	6020A		1	687308	FXG	EET CHI	11/28/22 21:05
Total Recoverable	Prep	3005A			686689	BDE	EET CHI	11/23/22 08:54 - 11/23/22 09:24 <sup>1</sup>
Total Recoverable	Analysis	6020A		1	687746	FXG	EET CHI	11/30/22 16:29
Total/NA	Prep	7470A			686309	MJG	EET CHI	11/21/22 10:20 - 11/21/22 12:20 <sup>1</sup>
Total/NA	Analysis	7470A		1	686552	MJG	EET CHI	11/22/22 07:17
Total/NA	Analysis	SM 2540C		1	685172	CLB	EET CHI	11/15/22 23:38
Total/NA	Analysis	SM 4500 CI- E		10	686775	LP	EET CHI	11/23/22 10:30
Total/NA	Analysis	SM 4500 F C		1	600791	JP	EET PEN	11/16/22 11:39
Total/NA	Analysis	SM 4500 SO4 E		10	687313	LP	EET CHI	11/29/22 09:15

**Client Sample ID: MW-04**  
**Date Collected: 11/09/22 10:25**  
**Date Received: 11/10/22 08:45**

**Lab Sample ID: 500-225174-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			686689	BDE	EET CHI	11/23/22 08:54 - 11/23/22 09:24 <sup>1</sup>
Total Recoverable	Analysis	6020A		1	687308	FXG	EET CHI	11/28/22 21:09
Total Recoverable	Prep	3005A			686689	BDE	EET CHI	11/23/22 08:54 - 11/23/22 09:24 <sup>1</sup>
Total Recoverable	Analysis	6020A		1	687746	FXG	EET CHI	11/30/22 16:32
Total/NA	Prep	7470A			686309	MJG	EET CHI	11/21/22 10:20 - 11/21/22 12:20 <sup>1</sup>
Total/NA	Analysis	7470A		1	686552	MJG	EET CHI	11/22/22 07:19
Total/NA	Analysis	SM 2540C		1	685176	CLB	EET CHI	11/16/22 03:53
Total/NA	Analysis	SM 4500 CI- E		10	686775	LP	EET CHI	11/23/22 10:31
Total/NA	Analysis	SM 4500 F C		1	600791	JP	EET PEN	11/16/22 11:42
Total/NA	Analysis	SM 4500 SO4 E		10	687313	LP	EET CHI	11/29/22 09:15

**Client Sample ID: MW-05**  
**Date Collected: 11/09/22 12:11**  
**Date Received: 11/10/22 08:45**

**Lab Sample ID: 500-225174-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			686689	BDE	EET CHI	11/23/22 08:54 - 11/23/22 09:24 <sup>1</sup>
Total Recoverable	Analysis	6020A		1	687308	FXG	EET CHI	11/28/22 21:12
Total Recoverable	Prep	3005A			686689	BDE	EET CHI	11/23/22 08:54 - 11/23/22 09:24 <sup>1</sup>
Total Recoverable	Analysis	6020A		1	687746	FXG	EET CHI	11/30/22 16:36
Total/NA	Prep	7470A			686309	MJG	EET CHI	11/21/22 10:20 - 11/21/22 12:20 <sup>1</sup>
Total/NA	Analysis	7470A		1	686552	MJG	EET CHI	11/22/22 07:54
Total/NA	Analysis	SM 2540C		1	685176	CLB	EET CHI	11/16/22 04:00
Total/NA	Analysis	SM 4500 CI- E		10	686775	LP	EET CHI	11/23/22 10:31
Total/NA	Analysis	SM 4500 F C		1	600791	JP	EET PEN	11/16/22 11:45
Total/NA	Analysis	SM 4500 SO4 E		10	687313	LP	EET CHI	11/29/22 09:16

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

Job ID: 500-225174-1

**Client Sample ID: MW-10**

**Lab Sample ID: 500-225174-4**

**Date Collected: 11/09/22 14:48**

**Matrix: Water**

**Date Received: 11/10/22 08:45**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			686689	BDE	EET CHI	11/23/22 08:54 - 11/23/22 09:24 <sup>1</sup>
Total Recoverable	Analysis	6020A		1	687308	FXG	EET CHI	11/28/22 21:16
Total Recoverable	Prep	3005A			686689	BDE	EET CHI	11/23/22 08:54 - 11/23/22 09:24 <sup>1</sup>
Total Recoverable	Analysis	6020A		1	687746	FXG	EET CHI	11/30/22 16:39
Total/NA	Prep	7470A			686309	MJG	EET CHI	11/21/22 10:20 - 11/21/22 12:20 <sup>1</sup>
Total/NA	Analysis	7470A		1	686552	MJG	EET CHI	11/22/22 07:56
Total/NA	Analysis	SM 2540C		1	685176	CLB	EET CHI	11/16/22 04:06
Total/NA	Analysis	SM 4500 Cl- E		10	686775	LP	EET CHI	11/23/22 10:48
Total/NA	Analysis	SM 4500 F C		1	600791	JP	EET PEN	11/16/22 11:48
Total/NA	Analysis	SM 4500 SO4 E		10	687313	LP	EET CHI	11/29/22 09:04

**Client Sample ID: Duplicate**

**Lab Sample ID: 500-225174-5**

**Date Collected: 11/09/22 00:00**

**Matrix: Water**

**Date Received: 11/10/22 08:45**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			686689	BDE	EET CHI	11/23/22 08:54 - 11/23/22 09:24 <sup>1</sup>
Total Recoverable	Analysis	6020A		1	687308	FXG	EET CHI	11/28/22 21:19
Total Recoverable	Prep	3005A			686689	BDE	EET CHI	11/23/22 08:54 - 11/23/22 09:24 <sup>1</sup>
Total Recoverable	Analysis	6020A		1	687746	FXG	EET CHI	11/30/22 16:43
Total/NA	Prep	7470A			686309	MJG	EET CHI	11/21/22 10:20 - 11/21/22 12:20 <sup>1</sup>
Total/NA	Analysis	7470A		1	686552	MJG	EET CHI	11/22/22 08:09
Total/NA	Analysis	SM 2540C		1	685176	CLB	EET CHI	11/16/22 04:08
Total/NA	Analysis	SM 4500 Cl- E		10	686775	LP	EET CHI	11/23/22 10:48
Total/NA	Analysis	SM 4500 F C		1	600791	JP	EET PEN	11/16/22 11:51
Total/NA	Analysis	SM 4500 SO4 E		10	687313	LP	EET CHI	11/29/22 09:04

<sup>1</sup> Completion dates and times are reported or not reported per method requirements or individual lab discretion.

**Laboratory References:**

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

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

# ANALYTICAL REPORT

## PREPARED FOR

Attn: John Niedzwiecki  
Midwest Generation EME LLC  
1800 Channahon Road  
Joliet, Illinois 60436

Generated 12/16/2022 8:18:55 AM

## JOB DESCRIPTION

Joliet #29 CCR (RAD)

## JOB NUMBER

500-225174-2

# Eurofins Chicago

## Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

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



Generated  
12/16/2022 8:18:55 AM

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



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	3
Case Narrative . . . . .	4
Method Summary . . . . .	5
Sample Summary . . . . .	6
Client Sample Results . . . . .	7
Definitions . . . . .	12
QC Association . . . . .	13
QC Sample Results . . . . .	14
Chain of Custody . . . . .	16
Receipt Checklists . . . . .	18
Chronicle . . . . .	20
Tracer Carrier Summary . . . . .	22

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

Job ID: 500-225174-2

---

**Job ID: 500-225174-2**

---

**Laboratory: Eurofins Chicago**

**Narrative**

---

**Job Narrative  
500-225174-2**

**Comments**

No additional comments.

**Receipt**

The samples were received on 11/10/2022 8:45 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 1.3° C and 3.2° C.

**RAD**

Method 903.0: Radium-226 batch 590762

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 (500-225174-1), MW-04 (500-225174-2), MW-05 (500-225174-3), MW-10 (500-225174-4), Duplicate (500-225174-5), (LCS 160-590762/2-A), (MB 160-590762/1-A) and (500-225174-E-1-B DU)

Method 904.0: Radium 228 Batch 590768:

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 (500-225174-1), MW-04 (500-225174-2), MW-05 (500-225174-3), MW-10 (500-225174-4), Duplicate (500-225174-5), (LCS 160-590768/2-A), (MB 160-590768/1-A) and (500-225174-E-1-C DU)

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



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

Job ID: 500-225174-2

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



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

Job ID: 500-225174-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-225174-1	MW-03	Water	11/09/22 09:19	11/10/22 08:45
500-225174-2	MW-04	Water	11/09/22 10:25	11/10/22 08:45
500-225174-3	MW-05	Water	11/09/22 12:11	11/10/22 08:45
500-225174-4	MW-10	Water	11/09/22 14:48	11/10/22 08:45
500-225174-5	Duplicate	Water	11/09/22 00:00	11/10/22 08:45

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

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

Job ID: 500-225174-2

**Client Sample ID: MW-03**  
**Date Collected: 11/09/22 09:19**  
**Date Received: 11/10/22 08:45**

**Lab Sample ID: 500-225174-1**  
**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	0.0314	U	0.136	0.136	1.00	0.262	pCi/L	11/21/22 09:12	12/13/22 07:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110					11/21/22 09:12	12/13/22 07:28	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	0.276	U	0.326	0.327	1.00	0.536	pCi/L	11/21/22 09:28	12/12/22 11:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.2		40 - 110					11/21/22 09:28	12/12/22 11:38	1
Y Carrier	74.4		40 - 110					11/21/22 09:28	12/12/22 11:38	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	0.307	U	0.353	0.354	5.00	0.536	pCi/L		12/15/22 17:35	1

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

Job ID: 500-225174-2

**Client Sample ID: MW-04**  
**Date Collected: 11/09/22 10:25**  
**Date Received: 11/10/22 08:45**

**Lab Sample ID: 500-225174-2**  
**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	0.0278	U	0.145	0.145	1.00	0.280	pCi/L	11/21/22 09:12	12/13/22 07:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.6		40 - 110					11/21/22 09:12	12/13/22 07:29	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-228</b>	<b>0.638</b>		0.384	0.389	1.00	0.564	pCi/L	11/21/22 09:28	12/12/22 11:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.6		40 - 110					11/21/22 09:28	12/12/22 11:39	1
Y Carrier	77.8		40 - 110					11/21/22 09:28	12/12/22 11:39	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
<b>Combined Radium 226 + 228</b>	<b>0.666</b>		0.410	0.415	5.00	0.564	pCi/L		12/15/22 17:35	1

**Client Sample Results**

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

Job ID: 500-225174-2

**Client Sample ID: MW-05**

**Lab Sample ID: 500-225174-3**

Date Collected: 11/09/22 12:11

Matrix: Water

Date Received: 11/10/22 08:45

**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	0.0413	U	0.139	0.139	1.00	0.263	pCi/L	11/21/22 09:12	12/13/22 07:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.6		40 - 110					11/21/22 09:12	12/13/22 07:29	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	-0.0517	U	0.255	0.255	1.00	0.501	pCi/L	11/21/22 09:28	12/12/22 11:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.6		40 - 110					11/21/22 09:28	12/12/22 11:39	1
Y Carrier	76.3		40 - 110					11/21/22 09:28	12/12/22 11:39	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	-0.0104	U	0.290	0.290	5.00	0.501	pCi/L		12/15/22 17:35	1

**Client Sample Results**

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

Job ID: 500-225174-2

**Client Sample ID: MW-10**

**Lab Sample ID: 500-225174-4**

Date Collected: 11/09/22 14:48

Matrix: Water

Date Received: 11/10/22 08:45

**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	0.473		0.217	0.221	1.00	0.254	pCi/L	11/21/22 09:12	12/13/22 09:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					11/21/22 09:12	12/13/22 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	0.255	U	0.293	0.294	1.00	0.481	pCi/L	11/21/22 09:28	12/12/22 11:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					11/21/22 09:28	12/12/22 11:39	1
Y Carrier	81.9		40 - 110					11/21/22 09:28	12/12/22 11:39	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	0.728		0.365	0.368	5.00	0.481	pCi/L		12/15/22 17:35	1

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

Job ID: 500-225174-2

**Client Sample ID: Duplicate**  
 Date Collected: 11/09/22 00:00  
 Date Received: 11/10/22 08:45

**Lab Sample ID: 500-225174-5**  
 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
<b>Radium-226</b>	<b>0.483</b>		0.225	0.229	1.00	0.272	pCi/L	11/21/22 09:12	12/13/22 09:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.4		40 - 110					11/21/22 09:12	12/13/22 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	0.338	U	0.327	0.328	1.00	0.524	pCi/L	11/21/22 09:28	12/12/22 11:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.4		40 - 110					11/21/22 09:28	12/12/22 11:39	1
Y Carrier	85.2		40 - 110					11/21/22 09:28	12/12/22 11:39	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
<b>Combined Radium 226 + 228</b>	<b>0.821</b>		0.397	0.400	5.00	0.524	pCi/L		12/15/22 17:35	1

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

Job ID: 500-225174-2

**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



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

Job ID: 500-225174-2

**Rad**

**Prep Batch: 590762**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-225174-1	MW-03	Total/NA	Water	PrecSep-21	
500-225174-2	MW-04	Total/NA	Water	PrecSep-21	
500-225174-3	MW-05	Total/NA	Water	PrecSep-21	
500-225174-4	MW-10	Total/NA	Water	PrecSep-21	
500-225174-5	Duplicate	Total/NA	Water	PrecSep-21	
MB 160-590762/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-590762/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
500-225174-1 DU	MW-03	Total/NA	Water	PrecSep-21	

**Prep Batch: 590768**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-225174-1	MW-03	Total/NA	Water	PrecSep_0	
500-225174-2	MW-04	Total/NA	Water	PrecSep_0	
500-225174-3	MW-05	Total/NA	Water	PrecSep_0	
500-225174-4	MW-10	Total/NA	Water	PrecSep_0	
500-225174-5	Duplicate	Total/NA	Water	PrecSep_0	
MB 160-590768/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-590768/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
500-225174-1 DU	MW-03	Total/NA	Water	PrecSep_0	



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

Job ID: 500-225174-2

**Method: 903.0 - Radium-226 (GFPC)**

**Lab Sample ID: MB 160-590762/1-A**  
**Matrix: Water**  
**Analysis Batch: 593453**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 590762**

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.05696	U	0.134	0.134	1.00	0.247	pCi/L	11/21/22 09:12	12/13/22 07:23	1
Carrier	MB		Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	%Yield	MB Qualifier	40 - 110					11/21/22 09:12	12/13/22 07:23	1
	96.1									

**Lab Sample ID: LCS 160-590762/2-A**  
**Matrix: Water**  
**Analysis Batch: 593453**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 590762**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	10.57		1.31	1.00	0.312	pCi/L	93	75 - 125
Carrier	LCS	LCS	Limits						
Ba Carrier	%Yield	LCS Qualifier	40 - 110						
	86.9								

**Lab Sample ID: 500-225174-1 DU**  
**Matrix: Water**  
**Analysis Batch: 593452**

**Client Sample ID: MW-03**  
**Prep Type: Total/NA**  
**Prep Batch: 590762**

Analyte	Sample		DU		Total	RL	MDC	Unit	RER	RER Limit
	Result	Sample Qual	Result	DU Qual	Uncert. (2σ+/-)					
Radium-226	0.0314	U	0.1074	U	0.173	1.00	0.299	pCi/L	0.25	1
Carrier	DU	DU	Limits							
Ba Carrier	%Yield	DU Qualifier	40 - 110							
	96.4									

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

**Lab Sample ID: MB 160-590768/1-A**  
**Matrix: Water**  
**Analysis Batch: 593164**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 590768**

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.1152	U	0.275	0.276	1.00	0.487	pCi/L	11/21/22 09:28	12/12/22 11:31	1
Carrier	MB		Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	%Yield	MB Qualifier	40 - 110					11/21/22 09:28	12/12/22 11:31	1
Y Carrier	78.9		40 - 110					11/21/22 09:28	12/12/22 11:31	1

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

Job ID: 500-225174-2

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

**Lab Sample ID: LCS 160-590768/2-A**  
**Matrix: Water**  
**Analysis Batch: 593164**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 590768**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits												
Radium-228	8.37	9.980		1.35	1.00	0.492	pCi/L	119	75 - 125												
<table border="1"> <thead> <tr> <th>Carrier</th> <th>LCS %Yield</th> <th>LCS Qualifier</th> <th>Limits</th> </tr> </thead> <tbody> <tr> <td>Ba Carrier</td> <td>86.9</td> <td></td> <td>40 - 110</td> </tr> <tr> <td>Y Carrier</td> <td>81.9</td> <td></td> <td>40 - 110</td> </tr> </tbody> </table>										Carrier	LCS %Yield	LCS Qualifier	Limits	Ba Carrier	86.9		40 - 110	Y Carrier	81.9		40 - 110
Carrier	LCS %Yield	LCS Qualifier	Limits																		
Ba Carrier	86.9		40 - 110																		
Y Carrier	81.9		40 - 110																		

**Lab Sample ID: 500-225174-1 DU**  
**Matrix: Water**  
**Analysis Batch: 593259**

**Client Sample ID: MW-03**  
**Prep Type: Total/NA**  
**Prep Batch: 590768**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit												
Radium-228	0.276	U	0.3325	U	0.319	1.00	0.506	pCi/L	0.09	1												
<table border="1"> <thead> <tr> <th>Carrier</th> <th>DU %Yield</th> <th>DU Qualifier</th> <th>Limits</th> </tr> </thead> <tbody> <tr> <td>Ba Carrier</td> <td>96.4</td> <td></td> <td>40 - 110</td> </tr> <tr> <td>Y Carrier</td> <td>72.9</td> <td></td> <td>40 - 110</td> </tr> </tbody> </table>											Carrier	DU %Yield	DU Qualifier	Limits	Ba Carrier	96.4		40 - 110	Y Carrier	72.9		40 - 110
Carrier	DU %Yield	DU Qualifier	Limits																			
Ba Carrier	96.4		40 - 110																			
Y Carrier	72.9		40 - 110																			

<b>Client Information</b>		Sampler <i>IAN JOHN HOWISON</i>	Lab PM Mockler Diana J	Carrier Tracking No(s)	COC No: 500-91207-40679 1																																					
Client Contact Mitchel Dolan		Phone <i>630-325-1300</i>	E-Mail Diana.Mockler@Eurofinset.com	State of Origin	Page Page 1 of 1																																					
Company KPRG and Associates, Inc		PWSID	<b>Analysis Requested</b>																																							
Address: 14665 West Lisbon Road, Suite 1A		Due Date Requested	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Field Filtered Sample (Yes or No)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Perform MS/MSD (Yes or No)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">6010C - Lithium</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">6020A - 13 elements, 7470A - Mercury</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">2540C - TDS</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">4500FC - Fluoride</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">SM00CLE - Chloride</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">SM4500SO4 - Sulfate</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">903 - Rad 226</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">904 - Rad 228</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Rad Combined</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Number of Containers</td> </tr> <tr> <td></td> </tr> </table>			Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C - Lithium	6020A - 13 elements, 7470A - Mercury	2540C - TDS	4500FC - Fluoride	SM00CLE - Chloride	SM4500SO4 - Sulfate	903 - Rad 226	904 - Rad 228	Rad Combined	Total Number of Containers																									
Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C - Lithium				6020A - 13 elements, 7470A - Mercury	2540C - TDS	4500FC - Fluoride	SM00CLE - Chloride	SM4500SO4 - Sulfate	903 - Rad 226	904 - Rad 228	Rad Combined	Total Number of Containers																												
City Brookfield		TAT Requested (days)				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2">Preservation Codes</td> </tr> <tr> <td>A HCL</td> <td>M Hexane</td> </tr> <tr> <td>B NaOH</td> <td>N None</td> </tr> <tr> <td>C Zn Acetate</td> <td>O AsNaO2</td> </tr> <tr> <td>D Nitric Acid</td> <td>P Na2O4S</td> </tr> <tr> <td>E NaHSO4</td> <td>Q Na2SO3</td> </tr> <tr> <td>F MeOH</td> <td>R Na2S2O3</td> </tr> <tr> <td>G Amchlor</td> <td>S H2SO4</td> </tr> <tr> <td>H Ascorbic Acid</td> <td>T TSP Dodecahydrate</td> </tr> <tr> <td>I Ice</td> <td>U Acetone</td> </tr> <tr> <td>J DI Water</td> <td>V MCAA</td> </tr> <tr> <td>K EDTA</td> <td>W pH 4.5</td> </tr> <tr> <td>L EDA</td> <td>Z other (specify)</td> </tr> <tr> <td colspan="2">Other</td> </tr> </table>			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	Z other (specify)	Other							
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	Z other (specify)																																									
Other																																										
State Zip: WI 53005		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2">Special Instructions/Note</td> </tr> <tr> <td colspan="2">Metals List Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Mo,Se,Tl</td> </tr> </table>			Special Instructions/Note		Metals List Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Mo,Se,Tl																																		
Special Instructions/Note																																										
Metals List Sb,As,Ba,Be,B,Cd,Ca,Cr,Co,Pb,Mo,Se,Tl																																										
Phone 262-781-0475		PO # 4502042860				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2">Sample Identification</td> <td>Sample Date</td> <td>Sample Time</td> <td>Sample Type (C=Comp, G=grab)</td> <td>Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)</td> <td>Field Filtered Sample (Yes or No)</td> <td>Perform MS/MSD (Yes or No)</td> <td>6010C - Lithium</td> <td>6020A - 13 elements, 7470A - Mercury</td> <td>2540C - TDS</td> <td>4500FC - Fluoride</td> <td>SM00CLE - Chloride</td> <td>SM4500SO4 - Sulfate</td> <td>903 - Rad 226</td> <td>904 - Rad 228</td> <td>Rad Combined</td> <td>Total Number of Containers</td> </tr> <tr> <td colspan="2">Email: mitcheld@kprginc.com</td> <td>WO #</td> <td colspan="2">Preservation Code:</td> <td></td> </tr> </table>			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)	6010C - Lithium	6020A - 13 elements, 7470A - Mercury	2540C - TDS	4500FC - Fluoride	SM00CLE - Chloride	SM4500SO4 - Sulfate	903 - Rad 226	904 - Rad 228	Rad Combined	Total Number of Containers	Email: mitcheld@kprginc.com		WO #	Preservation Code:												
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)	6010C - Lithium	6020A - 13 elements, 7470A - Mercury	2540C - TDS	4500FC - Fluoride	SM00CLE - Chloride	SM4500SO4 - Sulfate	903 - Rad 226	904 - Rad 228	Rad Combined	Total Number of Containers																						
Email: mitcheld@kprginc.com		WO #	Preservation Code:																																							
Project Name Quarterly MWG Joliet #29 CCR		Project # 50011568	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2">Possible Hazard Identification</td> <td colspan="2">Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</td> </tr> <tr> <td><input type="checkbox"/> Non-Hazard</td> <td><input type="checkbox"/> Flammable</td> <td><input type="checkbox"/> Skin Irritant</td> <td><input type="checkbox"/> Poison B</td> <td><input type="checkbox"/> Unknown</td> <td><input type="checkbox"/> Radiological</td> <td><input type="checkbox"/> Return To Client</td> <td><input type="checkbox"/> Disposal By Lab</td> <td><input type="checkbox"/> Archive For</td> <td>Months</td> </tr> </table>			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																							
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																																	
Site: Illinois		SSOW#	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2">Empty Kit Relinquished by:</td> <td>Date</td> <td>Time</td> <td>Method of Shipment:</td> </tr> <tr> <td colspan="2">Relinquished by: <i>[Signature]</i></td> <td>11-10-22</td> <td>08:45</td> <td>KPRG</td> </tr> <tr> <td colspan="2">Relinquished by:</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2">Relinquished by:</td> <td></td> <td></td> <td></td> </tr> </table>			Empty Kit Relinquished by:		Date	Time	Method of Shipment:	Relinquished by: <i>[Signature]</i>		11-10-22	08:45	KPRG	Relinquished by:					Relinquished by:																					
Empty Kit Relinquished by:		Date				Time	Method of Shipment:																																			
Relinquished by: <i>[Signature]</i>		11-10-22	08:45	KPRG																																						
Relinquished by:																																										
Relinquished by:																																										
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2">Cooler Temperature(s) °C and Other Remarks <i>(2.3-1.3) (8.2-3.2)</i></td> </tr> </table>			Cooler Temperature(s) °C and Other Remarks <i>(2.3-1.3) (8.2-3.2)</i>																																				
Cooler Temperature(s) °C and Other Remarks <i>(2.3-1.3) (8.2-3.2)</i>																																										
Custody Seal No			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2">Page 16 of 22</td> </tr> </table>			Page 16 of 22																																				
Page 16 of 22																																										

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13

1  
2  
3  
4  
5  
6

**urofins Chicago**  
 17 Bond Street  
 University Park, IL 60484  
 Phone: 708-534-5200 Fax: 708-534-5211

**Chain of Custody Record**



Environment Testing



<b>Client Information (Sub Contract Lab)</b>		Lab PM: Mockler, Diana J		Camer Tracking No(s): 500-167324.1	
Company: America Laboratories, Inc.		E-Mail: Diana.Mockler@st.eurofinsus.com		Page: 1 of 1	
Address: 715 Rider Trail North, Joliet, IL 61701		Accreditations Required (See note): NELAP - Illinois		Job #: 500-225174-2	
Due Date Requested: 12/19/2022		Analysis Requested		Preservation Codes:	
TAT Requested (days):		Field Filtered Sample (Yes or No)		A - HCL 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)	
PO #:		Perform MS/MSD (Yes or No)		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 Other:	
WO #:		903.0/PreSep_21 Standard Target List		Total Number of containers	
Project #: 50011568		904.0/PreSep_0 Standard Target List		3	
SSOW#:		Raz26Ra228_GPC		3	
RG Midwest Generation LSQ Joliet#29 CCR				3	
Sample ID		Preservation Code:		Special Instructions/Note:	
N-08 (500-225174-1)		Water		Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume;	
N-09 (500-225174-2)		Water		Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume;	
N-10 (500-225174-3)		Water		Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume;	
N-11 (500-225174-4)		Water		Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume;	
N-12 (500-225174-5)		Water		Batch QC must be performed (dup. spikes, etc) - no NCMs concerning limited volume;	

Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon out 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 immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Chicago.

**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:

Primary Deliverable Rank: 2

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: **FED EX** Company: **EETA**

Received by: *Autumn R. Johnson* Company: **EPSTC**

Received by: **Autumn R. Johnson** Company: \_\_\_\_\_

Cooler Temperature(s) °C and Other Remarks:



## Login Sample Receipt Checklist

Client: Midwest Generation EME LLC

Job Number: 500-225174-2

Login Number: 225174

List Source: Eurofins Chicago

List Number: 1

Creator: Scott, Sherri L

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	1.3,3.2
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").	True	
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: 500-225174-2

**Login Number: 225174****List Number: 2****Creator: Booker, Autumn R****List Source: Eurofins St. Louis****List Creation: 11/11/22 01:18 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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

Job ID: 500-225174-2

**Client Sample ID: MW-03**  
**Date Collected: 11/09/22 09:19**  
**Date Received: 11/10/22 08:45**

**Lab Sample ID: 500-225174-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			590762	DJP	EET SL	11/21/22 09:12
Total/NA	Analysis	903.0		1	593452	FLC	EET SL	12/13/22 07:28
Total/NA	Prep	PrecSep_0			590768	DJP	EET SL	11/21/22 09:28
Total/NA	Analysis	904.0		1	593259	FLC	EET SL	12/12/22 11:38
Total/NA	Analysis	Ra226_Ra228		1	593807	CLP	EET SL	12/15/22 17:35

**Client Sample ID: MW-04**  
**Date Collected: 11/09/22 10:25**  
**Date Received: 11/10/22 08:45**

**Lab Sample ID: 500-225174-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			590762	DJP	EET SL	11/21/22 09:12
Total/NA	Analysis	903.0		1	593452	FLC	EET SL	12/13/22 07:29
Total/NA	Prep	PrecSep_0			590768	DJP	EET SL	11/21/22 09:28
Total/NA	Analysis	904.0		1	593259	FLC	EET SL	12/12/22 11:39
Total/NA	Analysis	Ra226_Ra228		1	593807	CLP	EET SL	12/15/22 17:35

**Client Sample ID: MW-05**  
**Date Collected: 11/09/22 12:11**  
**Date Received: 11/10/22 08:45**

**Lab Sample ID: 500-225174-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			590762	DJP	EET SL	11/21/22 09:12
Total/NA	Analysis	903.0		1	593452	FLC	EET SL	12/13/22 07:29
Total/NA	Prep	PrecSep_0			590768	DJP	EET SL	11/21/22 09:28
Total/NA	Analysis	904.0		1	593259	FLC	EET SL	12/12/22 11:39
Total/NA	Analysis	Ra226_Ra228		1	593807	CLP	EET SL	12/15/22 17:35

**Client Sample ID: MW-10**  
**Date Collected: 11/09/22 14:48**  
**Date Received: 11/10/22 08:45**

**Lab Sample ID: 500-225174-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			590762	DJP	EET SL	11/21/22 09:12
Total/NA	Analysis	903.0		1	593452	FLC	EET SL	12/13/22 09:30
Total/NA	Prep	PrecSep_0			590768	DJP	EET SL	11/21/22 09:28
Total/NA	Analysis	904.0		1	593259	FLC	EET SL	12/12/22 11:39
Total/NA	Analysis	Ra226_Ra228		1	593807	CLP	EET SL	12/15/22 17:35

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

Job ID: 500-225174-2

**Client Sample ID: Duplicate**  
**Date Collected: 11/09/22 00:00**  
**Date Received: 11/10/22 08:45**

**Lab Sample ID: 500-225174-5**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			590762	DJP	EET SL	11/21/22 09:12
Total/NA	Analysis	903.0		1	593452	FLC	EET SL	12/13/22 09:30
Total/NA	Prep	PrecSep_0			590768	DJP	EET SL	11/21/22 09:28
Total/NA	Analysis	904.0		1	593259	FLC	EET SL	12/12/22 11:39
Total/NA	Analysis	Ra226_Ra228		1	593807	CLP	EET SL	12/15/22 17:35

**Laboratory References:**

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



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

Job ID: 500-225174-2

**Method: 903.0 - Radium-226 (GFPC)**

**Matrix: Water**

**Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	
500-225174-1	MW-03	92.2	
500-225174-1 DU	MW-03	96.4	
500-225174-2	MW-04	95.6	
500-225174-3	MW-05	95.6	
500-225174-4	MW-10	95.9	
500-225174-5	Duplicate	95.4	
LCS 160-590762/2-A	Lab Control Sample	86.9	
MB 160-590762/1-A	Method Blank	96.1	

**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 (40-110)	Y (40-110)
500-225174-1	MW-03	92.2	74.4
500-225174-1 DU	MW-03	96.4	72.9
500-225174-2	MW-04	95.6	77.8
500-225174-3	MW-05	95.6	76.3
500-225174-4	MW-10	95.9	81.9
500-225174-5	Duplicate	95.4	85.2
LCS 160-590768/2-A	Lab Control Sample	86.9	81.9
MB 160-590768/1-A	Method Blank	96.1	78.9

**Tracer/Carrier Legend**  
 Ba = Ba Carrier  
 Y = Y Carrier

PROJECT NAME	NRG - JOLIET #29 STATION (12313.0)		DATE	11-9-22
Sample Name	MW-03	Start Time	09:01 CT	
Condition of Well	Good			
Water Level	33.32	Total Depth	—	
Well Diameter	PVC - 2 inch	Volume in Well	—	
Method of Purge	Low-Flow	Purge Characteristics	TRACE TURB	
Volume Removed	3 QTS	WL at Sample Time	33.32	
Method of Sample	Low-Flow	Sample Characteristics	APPEARS CLEAR.	
Sample Analysis	CCA & CCR	Sample Time	09:19 CT	
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)
09:04	33.33	7.36	13.2	1.764	9.41	160.1	13.8
09:07	33.32	7.16	13.1	1.886	8.60	164.7	37.0
09:10	33.32	7.07	13.0	1.911	7.64	165.7	35.6
09:13	33.32	7.05	12.9	1.921	7.13	165.8	33.6
09:16	33.32	7.04	12.9	1.925	6.85	165.5	32.8
09:19	33.32	7.03	13.0	1.928	6.67	165.0	32.6

SAMPLING NOTES:

Sampler Name and Company:

KPRG and Associates

*LAS SOHN HOWLSON* 

PROJECT NAME	NRG - JOLIET #29 STATION (12313.0)		DATE	11-9-22
Sample Name	MW-04	Start Time	10:10 CT	
Condition of Well	Good			
Water Level	33.59	Total Depth	—	
Well Diameter	PVC - 2 inch	Volume in Well	—	
Method of Purge	Low-Flow	Purge Characteristics	CLOUDY TRACE TURB	
Volume Removed	3 QTS	W L at Sample Time	33.59	
Method of Sample	Low-Flow	Sample Characteristics	CLOUDY	
Sample Analysis	CCA + CCR + CCR DUPS	Sample Time	10:25 CT	
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)
10:13	33.60	7.05	14.4	1.756	8.09	158.2	18.2
10:16	33.60	7.11	14.3	1.772	7.30	156.1	36.1
10:19	33.59	7.10	14.2	1.773	4.87	152.6	37.8
10:22	33.59	7.08	14.3	1.774	4.66	150.6	42.4
10:25	33.59	7.08	14.3	1.772	4.53	149.5	43.5

SAMPLING NOTES:

Sampler Name and Company:

KPRG and Associates

IAN JOHN HANWESON 

PROJECT NAME	NRG - JOLIET #29 STATION (12313.0)		DATE	11-9-22
Sample Name	MW-05	Start Time	11:47 CT	
Condition of Well	GOOD			
Water Level	34.31	Total Depth	—	
Well Diameter	PVC - 2 inch	Volume in Well	—	
Method of Purge	Low-Flow	Purge Characteristics	MOD TURBIDITY CLOUDY	
Volume Removed	4.5 GALS	W L at Sample Time	34.31	
Method of Sample	Low-Flow	Sample Characteristics	CLOUDY / CLEAR	
Sample Analysis	CCA + CCR	Sample Time	12:11 CT	
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)
11:50	34.31	7.10	13.5	1.686	4.53	147.8	121.2
11:53	34.31	7.06	13.6	1.677	4.10	148.2	142.7
11:56	34.32	7.04	14.5	1.670	4.18	147.4	144.3
11:59	34.32	7.02	15.0	1.668	4.21	146.5	131.8
12:02	34.32	7.01	15.1	1.666	4.34	145.4	120.2
12:05	34.32	7.01	15.0	1.662	4.40	144.5	99.1
12:08	34.31	7.01	14.9	1.660	4.43	144.2	72.5
12:11	34.31	7.00	14.9	1.657	4.46	144.0	63.4

SAMPLING NOTES:

Sampler Name and Company:

KPRG and Associates

IAN JOHN HOWESON



PROJECT NAME	NRG - JOLIET #29 STATION (12313.0)		DATE	11-9-22
Sample Name	MW-10	Start Time	14:33 CT	
Condition of Well	Good			
Water Level	34.48	Total Depth	—	
Well Diameter	PVC - 2 inch	Volume in Well	—	
Method of Purge	Low-Flow	Purge Characteristics	TRACE TURB CLOUDY	
Volume Removed	3.5 QTS	W L at Sample Time	34.49	
Method of Sample	Low-Flow	Sample Characteristics	APPEARS CLEAR.	
Sample Analysis	CEA + CER	Sample Time	14:48 CT	
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)
14:36	34.50	6.99	13.6	1.731	6.62	143.0	70.2
14:39	34.50	6.99	13.2	1.706	5.84	145.4	60.7
14:42	34.50	6.99	13.1	1.698	5.80	146.9	39.0
14:45	34.50	6.99	13.0	1.695	5.78	148.1	25.2
14:48	34.49	7.00	13.0	1.695	5.76	149.4	19.6

SAMPLING NOTES:

Sampler Name and Company:

KPRG and Associates

JAN JOHN HANWESON 

# **ATTACHMENT B**

# Road salts contribute to lead leaching from plumbing, and mobilization of heavy metals and radionuclides in ground and surface waters.

## Impacts of deicing salt use on metal and radionuclide mobilization – implications for ground and surface water quality

Andrew Lazur  
University of Maryland Extension

### INTRODUCTION

- Salt is the main tool for deicing roads in the U.S., with use increasing exponentially since the 1940's.
- Approximately 22 million tons of salt is applied to roads in the US and 91,000 tons were used in Maryland in the 2017-18 winter.

Research has reported:

- ↑ Chloride/sodium in ground and surface waters
- ↑ Miles of rivers or streams impaired (~ 3K in mid-Atlantic)
- ↑ Leaching of dissolved organic C
- ↑ Leaching of nitrogen
- ↑ Sodium and soil dispersion
- ↑ Mobilization of soil base cations
- ↑ Corrosivity on plumbing and lead
- ↑ Mobilization of heavy metals and radionuclides
- ↑ Risks to public health
- ↓ Aquatic species populations and diversity
- ↓ Soil pH
- ↓ Soil organic matter
- ↓ Soil microbial decomposition
- ↓ Soil permeability
- ↓ Drinking water quality

### CORROSIVENESS

- Chloride to sulfate ratios (CSMR) > 0.5 are corrosive
- Flint, MI lead crisis due to CSMRs going from 0.45 to > 2.0 with water source and treatment change
- Virginia study showed 89% of wells had CSMR > 0.5
- Costs >\$30 billion/year damage to public water supply infrastructure
- Damage to private home plumbing is estimated at more than twice that of public water supply

### HEAVY METAL MOBILITY

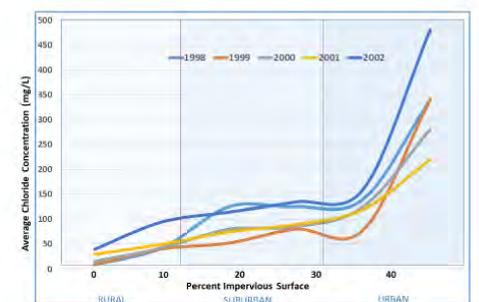
- Chloride induced metal mobilization mechanisms due to ion exchange, pH decrease, formation of complexes, and colloidal transport
- Chloride complexes greatest with Zn, followed by Pb, Cd and Hg
- Cr, Pb, Ni, Fe, and Cu leaching increases as salt increases mostly due to OM mobilization
- Higher soil organic matter increases metal retention

### MOBILIZATION OF RADIONUCLIDES

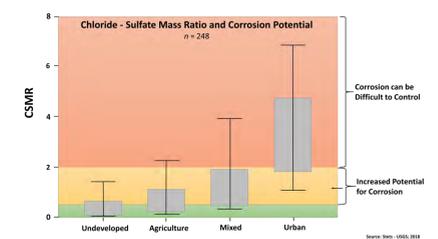
- EPA has established MCL's for radionuclides as follows: gross alpha particle - 15 picocuries per liter (pCi/L); radium-226 and radium-228 - 5 pCi/L; and uranium - 30 micrograms per liter (µg/L).
- A national study of 94 wells from public water supplies, Focazio et al. (1998) observed that 21 samples exceeded the current combined radium standard
- Bolton (2000) tested 203 wells in MD and observed that radium-226, radium-228, gross alpha particle and gross beta particle activity increased with increasing total dissolved solids and sodium and chloride concentrations. All the samples having greater than 10 and 15 mg/Liter sodium and chloride respectively had radium-226 plus radium-228 concentrations greater than the MCL of 5 pCi/L picocuries per liter

### CONCLUSIONS

- Accumulating salts in both ground and surface waters increases risks of metal and radionuclide exposure to ecosystems and drinking water requiring expanded action
- Actions include enhanced voluntary adoption of proven salt reduction practices, or regulations to require practices and engagement of the entire community in deicing activities



Average annual stream chloride concentration and percent impervious surface in Baltimore area watershed (adapted from Kaushal et al. 2005).



Corrosion potential based on Chloride to Sulfate Mass Ratio (CSMR) for various land uses.



Anti-icing or pre-wetting with salt brine prior to storms is one of several salt management practices used to reduce salt application.



Water quality testing including first draw and 3 minute flush is required to determine influence of corrosion on presence of heavy metals in drinking water.

### References

- Bolton, D.W. 2000. Occurrence and distribution of radium, gross alpha-particle activity, and gross beta-particle activity in ground water in the Magogy Formation and Potomac Group Aquifers, Upper Chesapeake Bay Area, Maryland. Maryland Geological Survey Report of Investigations No. 70.
- Edwards, M. and S. Triantafyllidou. 2007. Chloride-to-sulfate mass ratio and lead leaching to water. *Journal AWWA* 99(7):96-109.
- Focazio, M.J., Z. Sabo, T.F. Kraemer, A.H. Mullin, T.H. Barringer, and T. DePaul. 1998. Occurrence of selected radionuclides in ground water used for drinking water in the United States: a targeted reconnaissance survey, 1998. US Geological Survey Water-Resources Investigations Report 00-4273.
- Kaushal, S. S., Groffman, P. M., Likens, G. E., Belt, K. T., Stack, W. P., Kelly, V. R., Band, L. E., Fisher, G. T. 2005. Increased salinization of fresh water in the northeastern United States. *Proc. Natl. Acad. Sci. U.S.A.* 102:13517-13520.
- Stets, E. G., C.J. Lee, D.A. Lytle, and M.R. Schock. 2018. Increasing chloride in rivers of the conterminous U.S. and linkages to potential corrosivity and lead action level exceedances in drinking water. *Science of the Total Environment* 613-614:1498-1509.
- \* Additional references found in draft review article available through QR code below

# **ATTACHMENT C**



DATE DOWNLOADED: Wed Jan 18 16:08:26 2023  
SOURCE: Content Downloaded from [HeinOnline](#)

Citations:

Bluebook 21st ed.  
1995 vol. II 1796 .

ALWD 7th ed.  
, , 1995 vol. II 1796 .

Chicago 17th ed.  
," Illinois - 89th General Assembly, 1995 Session : 1796-1815

AGLC 4th ed.  
" Illinois - 89th General Assembly, 1995 Session 1796

OSCOLA 4th ed.  
" 1995 vol II 1796

-- Your use of this HeinOnline PDF indicates your acceptance of HeinOnline's Terms and Conditions of the license agreement available at

<https://heinonline.org/HOL/License>

-- The search text of this PDF is generated from uncorrected OCR text.

PUBLIC ACT 89-92

1796

*family financial responsibility driving permit to the parent.*

(c) In any post-judgment proceeding to enforce or modify the judgment the parties shall continue to be designated as in the original proceeding.

(Source: P.A. 85-2.)

Section 99. Effective date. This Act takes effect July 1, 1996.

Passed in the General Assembly May 15, 1995.

Approved July 6, 1995.

Effective July 1, 1996.

PUBLIC ACT 89-0093  
(Senate Bill No. 327)

AN ACT concerning coal combustion by-products, amending named Acts.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 5. The Natural Resources Act is amended by changing Section 3 as follows:

(20 ILCS 1105/3) (from Ch. 96 1/2, par. 7403)

Sec. 3. Powers and Duties.

(a) In addition to its other powers, the Department has the following powers:

(1) To administer for the State any energy programs and activities under federal law, regulations or guidelines, and to coordinate such programs and activities with other State agencies, units of local government, and educational institutions.

(2) To represent the State in energy matters involving the federal government, other states, units of local government, and regional agencies.

(3) To prepare energy contingency plans for consideration by the Governor and the General Assembly. Such plans shall include procedures for determining when a foreseeable danger exists of energy shortages, including shortages of petroleum, coal, nuclear power, natural gas, and other forms of energy, and shall specify the actions to be taken to minimize hardship and maintain the general welfare during such energy shortages.

(4) To cooperate with State colleges and universities and their governing boards in energy programs and activities.

(5) To obtain, store, process, and provide data and information related to the powers and duties of the Department under this Section. Nothing herein shall be deemed to give authority to the Department to require reports from non-governmental sources or entities.

(6) To accept, receive, expend, and administer, including by contracts and grants to other State agencies, any energy-related gifts, grants, cooperative agreement funds, and other funds made available to the Department by the federal government and other public and private sources.

(7) To investigate practical problems, seek and utilize financial assistance, implement studies and conduct research

New matter indicated by italics - deletions by strikeout.

relating to the production, distribution and use of alcohol fuels.

(8) To serve as a clearinghouse for information on alcohol production technology; provide assistance, information and data relating to the production and use of alcohol; develop informational packets and brochures, and hold public seminars to encourage the development and utilization of the best available technology.

(9) To coordinate with other State agencies in order to promote the maximum flow of information and to avoid unnecessary overlapping of alcohol fuel programs. In order to effectuate this goal, the Director of the Department or his representative shall consult with the Directors, or their representatives, of the Departments of Agriculture, Commerce and Community Affairs, Central Management Services, Transportation, and Revenue, the Office of the State Fire Marshal and the Environmental Protection Agency.

(10) To operate, within the Department, an office of Coal Marketing, to cooperate with the Department of Commerce and Community Affairs for the promotion and marketing of Illinois coal both domestically and internationally. The Department may use monies appropriated for this purpose for necessary administrative expenses.

Beginning on the effective date of this amendatory Act of 1993, the Office of Coal Marketing shall develop, and subsequently implement, an initiative to assist the coal industry in Illinois to increase its share of the international coal market.

(11) To assist the Department of Central Management Services in establishing and maintaining a system to analyze and report energy consumption of facilities leased by the Department of Central Management Services.

(12) To cooperate with and support the Governor's Science Advisory Committee and the Illinois Coalition for the purpose of facilitating the effective operations and activities of such entities. Support may include, but need not be limited to providing space for the operations of the Committee and the Illinois Coalition.

(13) *To consult with the Departments of Mines and Minerals and Transportation, and the Illinois Environmental Protection Agency for the purpose of developing methods and standards that encourage the utilization of coal combustion by-products as value added products in productive and benign applications.*

(b) In addition to its other powers and duties, the Department shall have the following powers and duties which shall be performed by the surveys and museum:

(1) To investigate and study the natural resources of the State and to prepare printed reports and furnish information fundamental to the conservation and development of natural resources and for that purpose the officers and employees thereof may, pursuant to rule adopted by the Department, enter and cross all lands in this State, doing no damage to private property.

(2) To cooperate with and advise departments having administrative powers and duties relating to the natural

resources of the State, and to cooperate with similar departments in other states and with the United States Government.

(3) To conduct a natural history survey of the state, giving preference to subjects of educational and economical importance.

(4) To publish, from time to time, reports covering the entire field of zoology and botany of the State.

(5) To supply natural history specimens to the State educational institutions and to the public schools.

(6) To investigate the entomology of the State.

(7) To investigate all insects dangerous or injurious to agricultural or horticultural plants and crops, livestock, to nursery trees and plants, to the products of the truck farm and vegetable garden, to shade trees and other ornamental vegetation of cities and villages, to the products of the mills and the contents of warehouses, and all insects injurious or dangerous to the public health.

(8) To conduct experiments with methods for the prevention, arrest, abatement and control of insects injurious to persons or property.

(9) To instruct the people, by lecture, demonstration or bulletin, in the best methods of preserving and protecting their property and health against injuries by insects.

(10) To publish, from time to time, articles on the injurious and beneficial insects of the State.

(11) To study the geological formation of the State with reference to its resources of coal, ores, clays, building stones, cement, materials suitable for use in the construction of roads, gas, mineral and artesian water and other products.

(12) To publish, from time to time, topographical, geological and other maps to illustrate resources of the State.

(13) To publish, from time to time, bulletins giving a general and detailed description of the geological and mineral resources, including water resources, of the State.

(14) To cooperate with United States federal agencies in the preparation and completion of a contour topographic map and the collection, recording and printing of water and atmospheric resource data including stream flow measurements and to collect facts and data concerning the volumes and flow of underground, surface and atmospheric waters of the State and to determine the mineral qualities of water from different geological formations and surface and atmospheric waters for the various sections of the State.

(15) To publish, from time to time, the results of its investigations of the mineral qualities, volumes and flow of underground and surface waters of the State to the end that the available water resources of the State may be better known and to make mineral analyses of samples of water from municipal or private sources giving no opinion from those analyses of the hygienic, physiological or medicinal qualities of such waters.

(16) To act as the central data repository and research coordinator for the State in matters related to water and atmospheric resources. The State Water Survey Division of the

New matter indicated by italics - deletions by strikeout.

Department may monitor and evaluate all weather modification operations in Illinois.

(17) To distribute, in its discretion, to the various educational institutions of the State, specimens, samples, and materials collected by it after the same have served the purposes of the Department.

(18) To cooperate with the Illinois State Academy of Science and to publish a suitable number of the results of the investigations and research in the field of natural science to the end that the same may be distributed to the interested public.

(19) To maintain a State museum, and to collect and preserve objects of scientific and artistic value, representing past and present fauna and flora, the life and work of man, geological history, natural resources, and the manufacturing and fine arts; to interpret for and educate the public concerning the foregoing.

(20) To cooperate with the Illinois State Museum Society for the mutual benefit of the museum and the society, with the museum furnishing necessary space for the society to carry on its functions and keep its records, and, upon the recommendation of the Museum Director with the approval of the Board of State Museum Advisors and the Director of the Department, to enter into agreements with the Illinois State Museum Society for the operation of a sales counter and other concessions for the mutual benefit of the museum and the society.

(21) To accept grants of property and to hold property to be administered as part of the State museum for the purpose of preservation, research of interpretation of significant areas within the State for the purpose of preserving, studying and interpreting archaeological and natural phenomena.

(22) To contribute to and support the operations, programs and capital development of public museums in this State. For the purposes of this Section, "public museum" means a facility operating for the purposes of promoting cultural development through special activities or programs, and acquiring, conserving, preserving, studying, interpreting, enhancing, and in particular, organizing and continuously exhibiting specimens, artifacts, articles, documents and other things of historical, anthropological, archaeological, industrial, scientific or artistic import, to the public for its instruction and enjoyment, and operated by or located upon land owed by a unit of local government.

The Department shall formulate rules and regulations relating to the allocation of any funds appropriated by the General Assembly for the purpose of contributing to the support of public museums in this State.

(23) Beginning January 1, 1979, to perform all other duties and assume all obligations of the Department of Registration and Education pertaining to the State Water Survey, the State Geological Survey and the State Natural History Survey, and the State museum.

(24) To maintain all previously existing relationships between the State Water Survey, State Geological

Survey and State Natural History Survey and the public and private colleges and universities in Illinois.

(25) To provide technical assistance and information to sellers and distributors of storage hot water heaters doing business in Illinois, pursuant to Section 1 of the Hot Water Heater Efficiency Act.

(26) To participate in federal geologic mapping programs.

(c) The Department is authorized to make grants to local not-for-profit organizations for the purposes of development, maintenance and study of wetland areas.

(d) The Department shall develop a package of educational materials regarding the necessity of waste reduction and recycling to reduce dependence on landfills and to maintain environmental quality. The materials developed shall be suitable for instructional use in grades 3, 4 and 5. The Department shall distribute such instructional material to all public elementary and unit school districts no later than November 1, of each year.

(e) The Department shall study the feasibility of requiring that wood and sawdust from construction waste, demolition projects, sawmills, or other projects or industries where wood is used in a large amount be shredded and composted, and that such wood be prohibited from being disposed of in a landfill. The Department shall report the results of this study to the General Assembly by January 1, 1991.

(f) The Department has the authority to accept, receive and administer on behalf of the State any gifts, bequests, donations, income from property rental and endowments. Any such funds received by the Department shall be deposited into the Natural Resources Fund, a special fund which is hereby created in the State treasury, and used for the purposes of this Act or, when appropriate, for such purposes and under such restrictions, terms and conditions as are predetermined by the donor or grantor of such funds or property. Any accrued interest from money deposited into the Natural Resources Fund shall be reinvested into the Fund and used in the same manner as the principal. The Director shall maintain records which account for and assure that restricted funds or property are disbursed or used pursuant to the restrictions, terms or conditions of the donor.

(g) The Department shall develop a program designated to encourage the recycling of outdated telephone directories and to encourage the printing of new directories on recycled paper. The Department shall work in conjunction with printers and distributors of telephone directories distributed in the State to provide them with any technical assistance available in their efforts to procure appropriate recycled paper. The Department shall also encourage directory distributors to pick up outdated directories as they distribute new ones, and shall assist any distributor who is willing to do so in finding a recycler willing to purchase the old directories and in publicizing and promoting with citizens of the area the distributor's collection efforts and schedules.

(h) The Department shall assist, cooperate with and provide necessary staff and resources for the Interagency Energy Conservation Committee, which shall be chaired by the Director of the Department.

(Source: P.A. 87-435; 87-727; 87-735; 87-852; 87-886; 87-895; 88-45;

New matter indicated by italics - deletions by ~~strikeout~~.

1801

PUBLIC ACT 89-93

88-339.)

Section 10. The Civil Administrative Code of Illinois is amended by changing Section 45 as follows:

(20 ILCS 1905/45) (from Ch. 127, par. 45)

Sec. 45. The Department of Mines and Minerals shall have power:

1. To acquire and diffuse information concerning the nature, causes and prevention of mine accidents;

2. To acquire and diffuse information concerning the improvement of methods, conditions and equipment of mines, with special reference to health, safety and conservation of mineral resources;

3. To make inquiries into the economic conditions affecting the mining, quarrying, metallurgical, clay, oil and other mineral industries;

4. To promote the technical efficiency of all persons working in and about the mines of the State, and to assist them better to overcome the increasing difficulties of mining, and for that purpose to provide bulletins, traveling libraries, lectures, correspondence work, classes of systematic instruction, or meetings for the reading and discussion of papers, and to that end to cooperate with the University of Illinois;

5. To investigate violations of "An Act concerning the use of Illinois mined coal in certain plants and institutions," filed July 13, 1937, and to institute proceedings for the prosecution of violators thereof in circuit courts;

6. To transfer jurisdiction of any realty under the control of the Department to any other Department of the State Government, or to acquire or accept Federal lands, when such transfer, acquisition or acceptance is advantageous to the State and is approved in writing by the Governor.

7. To investigate violations of the "Illinois Coal Mining Act", approved June 30, 1953, as amended, and regulations issued pursuant to that Act, to institute criminal proceedings for prosecution of such violation; and, to institute civil actions for relief, including applications for temporary restraining orders, preliminary and permanent injunctions or any other appropriate action to enforce any order, notice or decision of the Director, Mining Board and Department of Mines and Minerals.

8. To call or subpoena witnesses, documents or other evidence for the purpose of conducting hearings pursuant to the Illinois Coal Mining Act and to administer oaths and compensate witnesses pursuant to such statutes made and provided.

9. To make all records of the Department open for inspection by interested persons and the public.

10. *To foster the utilization of coal combustion by-products for the benefaction of soils in the reclamation of previously surface-mined areas and in the stabilization of final cuts, in the stabilization of underground mined-out areas to mitigate subsidence of surface lands, and in the reduction of acid mine drainage.*

Any statute which by its terms is to be administered by the State Mining Board shall be administered by the Board without any direction, supervision or control of the Director of Mines and Minerals except that which he or she may exercise by virtue of being a member of the Board and as may be provided in each statute.

Whenever the Department is authorized or required by law to

New matter indicated by italics - deletions by strikeout.

consider some aspect of criminal history record information for the purpose of carrying out its statutory powers and responsibilities, then upon request and payment of fees in conformance with the requirements of subsection 22 of Section 55a of "The Civil Administrative Code of Illinois", the Department of State Police is authorized to furnish, pursuant to positive identification, such information contained in State files as is necessary to fulfill the request.

(Source: P.A. 86-610.)

Section 15. The Civil Administrative Code of Illinois is amended by adding Section 49.33 as follows:

(20 ILCS 2705/49.33 new)

*Sec. 49.33. Use of coal combustion by-products. The Department shall, where economically feasible and safe, foster the use of coal combustion by-products by specifying usage of these by-products in road building materials and by developing and including specifications for their use in beds, fills, backfills, trenches, and embankments.*

Section 20. The Environmental Protection Act is amended by changing Sections 3.32, 3.53, 3.76, 21, and 22.15 and adding Section 3.94 as follows:

(415 ILCS 5/3.32) (from Ch. 111 1/2, par. 1003.32)

Sec. 3.32. (a) "Pollution control facility" is any waste storage site, sanitary landfill, waste disposal site, waste transfer station, waste treatment facility, or waste incinerator. This includes sewers, sewage treatment plants, and any other facilities owned or operated by sanitary districts organized under the Metropolitan Water Reclamation District Act.

The following are not pollution control facilities:

- (1) (Blank);
- (2) waste storage sites regulated under 40 CFR, Part 761.42;
- (3) sites or facilities used by any person conducting a waste storage, waste treatment, waste disposal, waste transfer or waste incineration operation, or a combination thereof, for wastes generated by such person's own activities, when such wastes are stored, treated, disposed of, transferred or incinerated within the site or facility owned, controlled or operated by such person, or when such wastes are transported within or between sites or facilities owned, controlled or operated by such person;
- (4) sites or facilities at which the State is performing removal or remedial action pursuant to Section 22.2 or 55.3;
- (5) abandoned quarries used solely for the disposal of concrete, earth materials, gravel, or aggregate debris resulting from road construction activities conducted by a unit of government or construction activities due to the construction and installation of underground pipes, lines, conduit or wires off of the premises of a public utility company which are conducted by a public utility;
- (6) sites or facilities used by any person to specifically conduct a landscape composting operation;
- (7) regional facilities as defined in the Central Midwest Interstate Low-Level Radioactive Waste Compact;
- (8) the portion of a site or facility where coal combustion wastes are stored or disposed of in accordance with

New matter indicated by italics - deletions by strikeout.

subdivision (r)(2) or (r)(3) of Section 21;

(9) the portion of a site or facility used for the collection, storage or processing of waste tires as defined in Title XIV;

(10) the portion of a site or facility used for treatment of petroleum contaminated materials by application onto or incorporation into the soil surface and any portion of that site or facility used for storage of petroleum contaminated materials before treatment. Only those categories of petroleum listed in paragraph (5) of subsection (a) of Section 22.18b are exempt under this subdivision (10);

(11) the portion of a site or facility where used oil is collected or stored prior to shipment to a recycling or energy recovery facility, provided that the used oil is generated by households or commercial establishments, and the site or facility is a recycling center or a business where oil or gasoline is sold at retail;

(12) the portion of a site or facility utilizing coal combustion waste for stabilization and treatment of only waste generated on that site or facility when used in connection with response actions pursuant to the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, the federal Resource Conservation and Recovery Act of 1976, or the Illinois Environmental Protection Act or as authorized by the Agency.

(b) A new pollution control facility is:

(1) a pollution control facility initially permitted for development or construction after July 1, 1981; or

(2) the area of expansion beyond the boundary of a currently permitted pollution control facility; or

(3) a permitted pollution control facility requesting approval to store, dispose of, transfer or incinerate, for the first time, any special or hazardous waste.

(Source: P.A. 87-1088; 87-1213; 88-45; 88-681, eff. 12-22-94.)

(415 ILCS 5/3.53) (from Ch. 111 1/2, par. 1003.53)

Sec. 3.53. "Waste" means any garbage, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility or other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows, or coal combustion by-products as defined in Section 3.94, or industrial discharges which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as now or hereafter amended, or source, special nuclear, or by-product materials as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 921) or any solid or dissolved material from any facility subject to the Federal Surface Mining Control and Reclamation Act of 1977 (P.L. 95-87) or the rules and regulations thereunder or any law or rule or regulation adopted by the State of Illinois pursuant thereto.

(Source: P.A. 86-671.)

(415 ILCS 5/3.76) (from Ch. 111 1/2, par. 1003.76)

Sec. 3.76. "Coal combustion waste" means any fly ash, bottom

New matter indicated by italics - deletions by strikeout.

ash, slag, or flue gas or fluid bed boiler desulfurization by-products generated as a result of the combustion of:

(1) coal, or  
(2) coal in combination with: (i) fuel grade petroleum coke, (ii) other fossil fuel, or (iii) both fuel grade petroleum coke and other fossil fuel, or

(3) coal (with or without: (i) fuel grade petroleum coke, (ii) other fossil fuel, or (iii) both fuel grade petroleum coke and other fossil fuel) in combination with no more than 20% of tire derived fuel or wood or other materials by weight of the materials combusted; provided that the coal is burned with other materials, the Agency has made a written determination that the storage or disposal of the resultant wastes in accordance with the provisions of item (r) of Section 21 would result in no environmental impact greater than that of wastes generated as a result of the combustion of coal alone, and the storage disposal of the resultant wastes would not violate applicable federal law.

~~of the following materials generated as a result of the combustion of coal or of coal in combination with no more than 10% fuel grade petroleum coke or no more than 20% of tire derived fuel and wood by weight of the materials combusted: (1) fly ash; (2) bottom ash; (3) flue gas desulfurization byproducts.~~  
(Source: P.A. 88-668, eff. 9-16-94.)

(415 ILCS 5/3.94 new)

Sec. 3.94. "Coal combustion by-product" (CCB) means coal combustion waste when used beneficially for any of the following purposes:

(1) The extraction or recovery of material compounds contained within CCB.

(2) The use of CCB as a raw ingredient or mineral filler in the manufacture of cement; concrete and concrete mortars; concrete products including block, pipe and precast/prestressed components; asphalt or cement based roofing shingles; plastic products including pipes and fittings; paints and metal alloys.

(3) CCB used in conformance with the specifications and under the approval of the Department of Transportation.

(4) Bottom ash used as antiskid material, athletic tracks, or foot paths.

(5) Use as a substitute for lime (CaO and MgO) in the lime modification of soils providing the CCB meets the Illinois Department of Transportation ("IDOT") specifications for byproduct limes.

(6) CCB used as a functionally equivalent substitute for agricultural lime as a soil conditioner.

(7) Bottom ash used in non-IDOT pavement base, pipe bedding, or foundation backfill.

(8) Structural fill, when used in an engineered application or combined with cement, sand, or water to produce a controlled strength fill material and covered with 12 inches of soil unless infiltration is prevented by the material itself or other cover material.

(9) Mine subsidence, mine fire control, mine sealing, and mine reclamation.

(10) Except to the extent that the uses are otherwise authorized by law without such restrictions, uses (7) through (9) shall be subject to the following conditions:

New matter indicated by italics - deletions by strikeout.

(A) CCB shall not have been mixed with hazardous waste prior to use;

(B) CCB shall not exceed Class I Groundwater Standards for metals when tested utilizing test method ASTM D3987-85;

(C) Unless otherwise exempted, users of CCB shall provide notification to the Agency for each project utilizing CCB documenting the quantity of CCB utilized and certification of compliance with conditions (A) and (B). Notification shall not be required for pavement base, parking lot base, or building base projects utilizing less than 10,000 tons, flowable fill/grout projects utilizing less than 1,000 cubic yards or other applications utilizing less than 100 tons;

(D) Fly ash shall be applied in a manner that minimizes the generation of airborne particles and dust using techniques such as moisture conditioning, granulating, inground application, or other demonstrated method; and

(E) CCB is not to be accumulated speculatively. CCB is not accumulated speculatively if during the calendar year, the CCB used is equal to 75% of the CCB by weight or volume accumulated at the beginning of the period.

To encourage and promote the utilization of CCB in productive and beneficial applications, the Agency may make a written determination that coal-combustion waste is CCB when used in a manner other than that specified in this Section if the use has been shown to have no adverse environmental impact greater than the beneficial uses specified, in consultation with the Department of Mines and Minerals, the Illinois Clean Coal Institute, the Department of Transportation, and such other agencies as may be appropriate.

(415 ILCS 5/21) (from Ch. 111 1/2, par. 1021)

Sec. 21. No person shall:

(a) Cause or allow the open dumping of any waste.

(b) Abandon, dump, or deposit any waste upon the public highways or other public property, except in a sanitary landfill approved by the Agency pursuant to regulations adopted by the Board.

(c) Abandon any vehicle in violation of the "Abandoned Vehicles Amendment to the Illinois Vehicle Code", as enacted by the 76th General Assembly.

(d) Conduct any waste-storage, waste-treatment, or waste-disposal operation:

(1) without a permit granted by the Agency or in violation of any conditions imposed by such permit, including periodic reports and full access to adequate records and the inspection of facilities, as may be necessary to assure compliance with this Act and with regulations and standards adopted thereunder; provided, however, that, except for municipal solid waste landfill units that receive waste on or after October 9, 1993, no permit shall be required for (i) any person conducting a waste-storage, waste-treatment, or waste-disposal operation for wastes generated by such person's own activities which are stored, treated, or disposed within the site where such wastes are generated, or (ii) for a corporation organized under the General Not For Profit Corporation Act of 1986, as now or hereafter amended, or a predecessor Act, constructing a land form in conformance with local zoning provisions, within a municipality having a population of more than 1,000,000 inhabitants, with clean

construction or demolition debris generated within the municipality, provided that the corporation has contracts for economic development planning with the municipality; or

(2) in violation of any regulations or standards adopted by the Board under this Act; or

(3) which receives waste after August 31, 1988, does not have a permit issued by the Agency, and is (i) a landfill used exclusively for the disposal of waste generated at the site, (ii) a surface impoundment receiving special waste not listed in an NPDES permit, (iii) a waste pile in which the total volume of waste is greater than 100 cubic yards or the waste is stored for over one year, or (iv) a land treatment facility receiving special waste generated at the site; without giving notice of the operation to the Agency by January 1, 1989, or 30 days after the date on which the operation commences, whichever is later, and every 3 years thereafter. The form for such notification shall be specified by the Agency, and shall be limited to information regarding: the name and address of the location of the operation; the type of operation; the types and amounts of waste stored, treated or disposed of on an annual basis; the remaining capacity of the operation; and the remaining expected life of the operation.

Paragraph (3) of this subsection (d) shall not apply to any person engaged in agricultural activity who is disposing of a substance that constitutes solid waste, if the substance was acquired for use by that person on his own property, and the substance is disposed of on his own property in accordance with regulations or standards adopted by the Board.

This subsection (d) shall not apply to hazardous waste.

(e) Dispose, treat, store or abandon any waste, or transport any waste into this State for disposal, treatment, storage or abandonment, except at a site or facility which meets the requirements of this Act and of regulations and standards thereunder.

(f) Conduct any hazardous waste-storage, hazardous waste-treatment or hazardous waste-disposal operation:

(1) without a RCRA permit for the site issued by the Agency under subsection (d) of Section 39 of this Act, or in violation of any condition imposed by such permit, including periodic reports and full access to adequate records and the inspection of facilities, as may be necessary to assure compliance with this Act and with regulations and standards adopted thereunder; or

(2) in violation of any regulations or standards adopted by the Board under this Act; or

(3) in violation of any RCRA permit filing requirement established under standards adopted by the Board under this Act; or

(4) in violation of any order adopted by the Board under this Act.

Notwithstanding the above, no RCRA permit shall be required under this subsection or subsection (d) of Section 39 of this Act for any person engaged in agricultural activity who is disposing of a substance which has been identified as a hazardous waste, and which has been designated by Board regulations as being subject to

this exception, if the substance was acquired for use by that person on his own property and the substance is disposed of on his own property in accordance with regulations or standards adopted by the Board.

(g) Conduct any hazardous waste-transportation operation:

(1) without a permit issued by the Agency or in violation of any conditions imposed by such permit, including periodic reports and full access to adequate records and the inspection of facilities, as may be necessary to assure compliance with this Act and with regulations or standards adopted thereunder; or

(2) in violation of any regulations or standards adopted by the Board under this Act.

(h) Conduct any hazardous waste-recycling or hazardous waste-reclamation or hazardous waste-reuse operation in violation of any regulations, standards or permit requirements adopted by the Board under this Act.

(i) Conduct any process or engage in any act which produces hazardous waste in violation of any regulations or standards adopted by the Board under subsections (a) and (c) of Section 22.4 of this Act.

(j) Conduct any special waste transportation operation in violation of any regulations, standards or permit requirements adopted by the Board under this Act. However, sludge from a water or sewage treatment plant owned and operated by a unit of local government which (1) is subject to a sludge management plan approved by the Agency or a permit granted by the Agency, and (2) has been tested and determined not to be a hazardous waste as required by applicable State and federal laws and regulations, may be transported in this State without a special waste hauling permit, and the preparation and carrying of a manifest shall not be required for such sludge under the rules of the Pollution Control Board. The unit of local government which operates the treatment plant producing such sludge shall fill a semiannual report with the Agency identifying the volume of such sludge transported during the reporting period, the hauler of the sludge, and the disposal sites to which it was transported. This subsection (j) shall not apply to hazardous waste.

(k) Fail or refuse to pay any fee imposed under this Act.

(l) Locate a hazardous waste disposal site above an active or inactive shaft or tunneled mine or within 2 miles of an active fault in the earth's crust. In counties of population less than 225,000 no hazardous waste disposal site shall be located (1) within 1 1/2 miles of the corporate limits as defined on June 30, 1978, of any municipality without the approval of the governing body of the municipality in an official action; or (2) within 1000 feet of an existing private well or the existing source of a public water supply measured from the boundary of the actual active permitted site and excluding existing private wells on the property of the permit applicant. The provisions of this subsection do not apply to publicly-owned sewage works or the disposal or utilization of sludge from publicly-owned sewage works.

(m) Transfer interest in any land which has been used as a hazardous waste disposal site without written notification to the Agency of the transfer and to the transferee of the conditions imposed by the Agency upon its use under subsection (g) of Section

39.

(n) Use any land which has been used as a hazardous waste disposal site except in compliance with conditions imposed by the Agency under subsection (g) of Section 39.

(o) Conduct a sanitary landfill operation which is required to have a permit under subsection (d) of this Section, in a manner which results in any of the following conditions:

- (1) refuse in standing or flowing waters;
- (2) leachate flows entering waters of the State;
- (3) leachate flows exiting the landfill confines (as determined by the boundaries established for the landfill by a permit issued by the Agency);
- (4) open burning of refuse in violation of Section 9 of this Act;
- (5) uncovered refuse remaining from any previous operating day or at the conclusion of any operating day, unless authorized by permit;
- (6) failure to provide final cover within time limits established by Board regulations;
- (7) acceptance of wastes without necessary permits;
- (8) scavenging as defined by Board regulations;
- (9) deposition of refuse in any unpermitted portion of the landfill;
- (10) acceptance of a special waste without a required manifest;
- (11) failure to submit reports required by permits or Board regulations;
- (12) failure to collect and contain litter from the site by the end of each operating day;
- (13) failure to submit any cost estimate for the site or any performance bond or other security for the site as required by this Act or Board rules.

The prohibitions specified in this subsection (o) shall be enforceable by the Agency either by administrative citation under Section 31.1 of this Act or as otherwise provided by this Act. The specific prohibitions in this subsection do not limit the power of the Board to establish regulations or standards applicable to sanitary landfills.

(p) In violation of subdivision (a) of this Section, cause or allow the open dumping of any waste in a manner which results in any of the following occurrences at the dump site:

- (1) litter;
- (2) scavenging;
- (3) open burning;
- (4) deposition of waste in standing or flowing waters;
- (5) proliferation of disease vectors;
- (6) standing or flowing liquid discharge from the dump

site.

The prohibitions specified in this subsection (p) shall be enforceable by the Agency either by administrative citation under Section 31.1 of this Act or as otherwise provided by this Act. The specific prohibitions in this subsection do not limit the power of the Board to establish regulations or standards applicable to open dumping.

(q) Conduct a landscape waste composting operation without an Agency permit, provided, however, that no permit shall be required

1809

PUBLIC ACT 89-93

for any person:

(1) conducting a landscape waste composting operation for landscape wastes generated by such person's own activities which are stored, treated or disposed of within the site where such wastes are generated; or

(2) applying landscape waste or composted landscape waste at agronomic rates; or

(3) operating a landscape waste composting facility on a farm, if the facility meets all of the following criteria:

(A) the composting facility is operated by the farmer on property on which the composting material is utilized, and the composting facility constitutes no more than 2% of the property's total acreage, except that the Agency may allow a higher percentage for individual sites where the owner or operator has demonstrated to the Agency that the site's soil characteristics or crop needs require a higher rate;

(B) the property on which the composting facility is located, and any associated property on which the compost is used, is principally and diligently devoted to the production of agricultural crops and is not owned, leased or otherwise controlled by any waste hauler or generator of nonagricultural compost materials, and the operator of the composting facility is not an employee, partner, shareholder, or in any way connected with or controlled by any such waste hauler or generator;

(C) all compost generated by the composting facility is applied at agronomic rates and used as mulch, fertilizer or soil conditioner on land actually farmed by the person operating the composting facility, and the finished compost is not stored at the composting site for a period longer than 18 months prior to its application as mulch, fertilizer, or soil conditioner;

(D) the owner or operator, by January 1, 1990 (or the January 1 following commencement of operation, whichever is later) and January 1 of each year thereafter, (i) registers the site with the Agency, (ii) reports to the Agency on the volume of composting material received and used at the site, (iii) certifies to the Agency that the site complies with the requirements set forth in subparagraphs (A), (B) and (C) of this paragraph (q)(3), and (iv) certifies to the Agency that all composting material was placed more than 200 feet from the nearest potable water supply well, was placed outside the boundary of the 10-year floodplain or on a part of the site that is floodproofed, was placed at least 1/4 mile from the nearest residence (other than a residence located on the same property as the facility) and there are not more than 10 occupied non-farm residences within 1/2 mile of the boundaries of the site on the date of application, and was placed more than 5 feet above the water table.

For the purposes of this subsection (q), "agronomic rates" means the application of not more than 20 tons per acre per year,

New matter indicated by italics - deletions by strikeout.

except that the Agency may allow a higher rate for individual sites where the owner or operator has demonstrated to the Agency that the site's soil characteristics or crop needs require a higher rate.

(r) Cause or allow the storage or disposal of coal combustion *by-products waste* unless:

(1) such *by-product waste* is stored or disposed of at a site or facility for which a permit has been obtained or is not otherwise required under subsection (d) of this Section; or

(2) such *by-product waste* is stored or disposed of as a part of the design and reclamation of a site or facility which is an abandoned mine site in accordance with the Abandoned Mined Lands and Water Reclamation Act; or

(3) such *by-product waste* is stored or disposed of at a site or facility which is operating under NPDES and Subtitle D permits issued by the Agency pursuant to regulations adopted by the Board for mine-related water pollution and permits issued pursuant to the Federal Surface Mining Control and Reclamation Act of 1977 (P.L. 95-87) or the rules and regulations thereunder or any law or rule or regulation adopted by the State of Illinois pursuant thereto, and the owner or operator of the facility agrees to accept the *by-product waste*; and either

(i) such *by-product waste* is stored or disposed of in accordance with requirements applicable to refuse disposal under regulations adopted by the Board for mine-related water pollution and pursuant to NPDES and Subtitle D permits issued by the Agency under such regulations; or

(ii) the owner or operator of the facility demonstrates all of the following to the Agency, and the facility is operated in accordance with the demonstration as approved by the Agency: (1) the disposal area will be covered in a manner that will support continuous vegetation, (2) the facility will be adequately protected from wind and water erosion, (3) the pH will be maintained so as to prevent excessive leaching of metal ions, and (4) adequate containment or other measures will be provided to protect surface water and groundwater from contamination at levels prohibited by this Act, the Illinois Groundwater Protection Act, or regulations adopted pursuant thereto.

Notwithstanding any other provision of this Title, the disposal of coal combustion *by-product waste* pursuant to item (2) or (3) of this subdivision (r) shall be exempt from the other provisions of this Title V, and notwithstanding the provisions of Title X of this Act, the Agency is authorized to grant experimental permits which include provision for the disposal of wastes from the combustion of coal and other materials pursuant to items (2) and (3) of this subdivision (r).

(s) After April 1, 1989, offer for transportation, transport, deliver, receive or accept special waste for which a manifest is required, unless the manifest indicates that the fee required under Section 22.8 of this Act has been paid.

(t) Cause or allow a lateral expansion of a municipal solid

1811

PUBLIC ACT 89-93

waste landfill unit on or after October 9, 1993, without a permit modification, granted by the Agency, that authorizes the lateral expansion.

(u) Conduct any vegetable by-product treatment, storage, disposal or transportation operation in violation of any regulation, standards or permit requirements adopted by the Board under this Act. However, no permit shall be required under this Title V for the land application of vegetable by-products conducted pursuant to Agency permit issued under Title III of this Act to the generator of the vegetable by-products. In addition, vegetable by-products may be transported in this State without a special waste hauling permit, and without the preparation and carrying of a manifest.

(Source: P.A. 87-608; 87-752; 87-895; 88-454; 88-496; 88-670, eff. 12-2-94.)

(415 ILCS 5/22.15) (from Ch. 111 1/2, par. 1022.15)

Sec. 22.15. (a) There is hereby created within the State Treasury a special fund to be known as the "Solid Waste Management Fund" constituted from the fees collected by the State pursuant to this Section and from repayments of loans made from the Fund for solid waste projects. Moneys received by the Illinois Department of Energy and Natural Resources in repayment of loans made pursuant to the Illinois Solid Waste Management Act shall be deposited into the Solid Waste Management Revolving Loan Fund.

(b) On and after January 1, 1987, the Agency shall assess and collect a fee in the amount set forth herein from the owner or operator of each sanitary landfill permitted or required to be permitted by the Agency to dispose of solid waste if the sanitary landfill is located off the site where such waste was produced and if such sanitary landfill is owned, controlled, and operated by a person other than the generator of such waste. The Agency shall deposit all fees collected into the Solid Waste Management Fund. If a site is contiguous to one or more landfills owned or operated by the same person, the volumes permanently disposed of by each landfill shall be combined for purposes of determining the fee under this subsection.

(1) If more than 150,000 cubic yards of non-hazardous solid waste is permanently disposed of at a site in a calendar year, the owner or operator shall either pay a fee of 45 cents per cubic yard (60¢ per cubic yard from January 1, 1989 through December 31, 1993), or alternatively the owner or operator may weigh the quantity of the solid waste permanently disposed of with a device for which certification has been obtained under the Weights and Measures Act and pay a fee of 95 cents per ton (\$1.27 per ton from January 1, 1989 through December 31, 1993) of solid waste permanently disposed of. An owner or operator that is subject to any fee, tax, or surcharge imposed under the authority of subsection (j) of this Section on September 26, 1991, with respect to fees due to the Agency under this paragraph after December 31, 1991 and before January 1, 1994, shall deduct from the amount paid to the Agency the amount by which the fee paid under subsection (j) exceeds 45 cents per cubic yard or 95 cents per ton. In no case shall the fee collected or paid by the owner or operator under this paragraph exceed \$1.05 per cubic yard or \$2.22 per ton.

(2) If more than 100,000 cubic yards, but not more than

New matter indicated by italics - deletions by ~~strikeout~~.

150,000 cubic yards of non-hazardous waste is permanently disposed of at a site in a calendar year, the owner or operator shall pay a fee of \$25,000 (\$33,350 in 1989, 1990 and 1991).

(3) If more than 50,000 cubic yards, but not more than 100,000 cubic yards of non-hazardous solid waste is permanently disposed of at a site in a calendar year, the owner or operator shall pay a fee of \$11,300 (\$15,500 in 1989, 1990 and 1991).

(4) If more than 10,000 cubic yards, but not more than 50,000 cubic yards of non-hazardous solid waste is permanently disposed of at a site in a calendar year, the owner or operator shall pay a fee of \$3,450 (\$4,650 in 1989, 1990 and 1991).

(5) If not more than 10,000 cubic yards of non-hazardous solid waste is permanently disposed of at a site in a calendar year, the owner or operator shall pay a fee of \$500 (\$650 in 1989, 1990 and 1991).

(c) From January 1, 1987 through December 31, 1988, the fee set forth in this Section shall not apply to:

(1) Solid waste which is hazardous waste;

(2) Any landfill which is permitted by the Agency to receive only demolition or construction debris or landscape waste; or

(3) The following wastes:

(A) Foundry sand;

(B) Coal combustion *by-product* waste, including scrubber waste and fluidized bed boiler waste which does not contain metal cleaning waste;

(C) Slag from the manufacture of iron and steel;

(D) Pollution Control Waste;

(E) Wastes from recycling, reclamation or reuse processes designed to remove any contaminant from wastes so as to render such wastes reusable, provided that the process renders at least 50% of the waste reusable;

(F) Non-hazardous solid waste that is received at a sanitary landfill after January 1, 1987 and recycled through a process permitted by the Agency.

(d) The Agency shall establish rules relating to the collection of the fees authorized by this Section. Such rules shall include, but not be limited to:

(1) necessary records identifying the quantities of solid waste received or disposed;

(2) the form and submission of reports to accompany the payment of fees to the Agency;

(3) the time and manner of payment of fees to the Agency, which payments shall not be more often than quarterly; and

(4) procedures setting forth criteria establishing when an owner or operator may measure by weight or volume during any given quarter or other fee payment period.

(e) Pursuant to appropriation, all monies in the Solid Waste Management Fund shall be used by the Agency and the Department for the purposes set forth in this Section and in the Illinois Solid Waste Management Act, including for the costs of fee collection and administration, and through June 30, 1989, by the University of

1813

PUBLIC ACT 89-93

Illinois for research consistent with the Illinois Solid Waste Management Act.

(f) The Agency is authorized to enter into such agreements and to promulgate such rules as are necessary to carry out its duties under this Section and the Illinois Solid Waste Management Act.

(g) The Agency is authorized to provide financial assistance to units of local government in planning for the management of nonhazardous solid waste or municipal waste where alternatives to disposal of nonhazardous solid waste or municipal waste in a sanitary landfill will receive full evaluation and consideration in the planning process or in plans prepared pursuant to the Local Solid Waste Disposal Act or the Solid Waste Planning and Recycling Act. The Agency, in cooperation with the Department, shall develop guidelines for the plans prepared under this Section.

The Agency may provide financial assistance from the Solid Waste Management Fund to counties and municipal joint action agencies for implementing solid waste management plans adopted pursuant to the Solid Waste Planning and Recycling Act. Such assistance shall not exceed 70% of the projected cost of the project or program. Priority in the awarding of such assistance shall be given to projects and programs that are designed to produce significant increases in waste reduction or recycling.

The Agency shall promulgate by rule, pursuant to the Illinois Administrative Procedure Act, precise standards to be used by the Agency in determining whether to grant prior approval for project changes proposed by a grantee, whether to grant prior approval to a grantee to negotiate subagreements with respect to procurements, and in determining the substance and timing of progress and financial reports that grantees are required to submit to the Agency. The Agency shall also specify by rule precise standards to be used by the Agency in determining whether to allow a waiver of grant requirements and in attaching conditions to such a waiver. The Department shall review and comment on the plans prepared with financial assistance provided under this Section.

(h) The Agency is authorized to provide financial assistance to units of local government for the performance of inspecting, investigating and enforcement activities pursuant to Section 4(r) at nonhazardous solid waste disposal sites.

(i) The Agency is authorized to support the operations of an industrial materials exchange service, and to conduct household waste collection and disposal programs.

(j) A unit of local government, as defined in the Local Solid Waste Disposal Act, in which a solid waste disposal facility is located may establish a fee, tax or surcharge with regard to the permanent disposal of solid waste, to be utilized for solid waste management purposes, including long-term monitoring and maintenance of landfills, planning, implementation, inspection, enforcement and other activities consistent with the Solid Waste Management Act and the Local Solid Waste Disposal Act. However, the total fee, tax or surcharge imposed by all units of local government under this subsection (j) upon the solid waste disposal facility shall not exceed:

(1) 45¢ per cubic yard (60¢ per cubic yard beginning January 1, 1992) if more than 150,000 cubic yards of non-hazardous solid waste is permanently disposed of at the

New matter indicated by italics - deletions by strikeout.

site in a calendar year, unless the owner or operator weighs the quantity of the solid waste received with a device for which certification has been obtained under the Weights and Measures Act, in which case the fee shall not exceed 95¢ per ton (\$1.27 per ton beginning January 1, 1992) of solid waste permanently disposed of.

(2) \$25,000 (\$33,350 beginning in 1992) if more than 100,000 cubic yards, but not more than 150,000 cubic yards, of non-hazardous waste is permanently disposed of at the site in a calendar year.

(3) \$11,300 (\$15,500 beginning in 1992) if more than 50,000 cubic yards, but not more than 100,000 cubic yards, of non-hazardous solid waste is permanently disposed of at the site in a calendar year.

(4) \$3,450 (\$4,650 beginning in 1992) if more than 10,000 cubic yards, but not more than 50,000 cubic yards, of non-hazardous solid waste is permanently disposed of at the site in a calendar year.

(5) \$500 (\$650 beginning in 1992) if not more than 10,000 cubic yards of non-hazardous solid waste is permanently disposed of at the site in a calendar year.

The corporate authorities of the unit of local government may use proceeds from the fee, tax, or surcharge to reimburse a highway commissioner whose road district lies wholly or partially within the corporate limits of the unit of local government for expenses incurred in the removal of nonhazardous, nonfluid municipal waste that has been dumped on public property in violation of a State law or local ordinance.

A county or Municipal Joint Action Agency that imposes a fee, tax, or surcharge under this subsection may use the proceeds thereof to reimburse a municipality that lies wholly or partially within its boundaries for expenses incurred in the removal of nonhazardous, nonfluid municipal waste that has been dumped on public property in violation of a State law or local ordinance.

If the fees are to be used to conduct a local sanitary landfill inspection or enforcement program, the unit of local government must enter into a written delegation agreement with the Agency pursuant to subsection (r) of Section 4. The unit of local government and the Agency shall enter into such a written delegation agreement within 60 days after the establishment of such fees or August 23, 1988, whichever is later. For the year commencing January 1, 1989, and at least annually thereafter, the Agency shall conduct an audit of the expenditures made by units of local government from the funds granted by the Agency to the units of local government for purposes of local sanitary landfill inspection and enforcement programs, to ensure that the funds have been expended for the prescribed purposes under the grant.

The fees, taxes or surcharges collected under this subsection (j) shall be placed by the unit of local government in a separate fund, and the interest received on the moneys in the fund shall be credited to the fund. The monies in the fund may be accumulated over a period of years to be expended in accordance with this subsection.

A unit of local government, as defined in the Local Solid Waste Disposal Act, shall prepare and distribute to the agency, in April of each year, a report that details spending plans for monies collected in accordance with this subsection. The report

1815

PUBLIC ACT 89-93

will at a minimum include the following:

(1) The total monies collected pursuant to this subsection.

(2) The most current balance of monies collected pursuant to this subsection.

(3) An itemized accounting of all monies expended for the previous year pursuant to this subsection.

(4) An estimation of monies to be collected for the following 3 years pursuant to this subsection.

(5) A narrative detailing the general direction and scope of future expenditures for one, 2 and 3 years.

The exemptions granted under Sections 22.16 and 22.16a, and under subsections (c) and (k) of this Section, shall be applicable to any fee, tax or surcharge imposed under this subsection (j); except that the fee, tax or surcharge authorized to be imposed under this subsection (j) may be made applicable by a unit of local government to the permanent disposal of solid waste after December 31, 1986, under any contract lawfully executed before June 1, 1986 under which more than 150,000 cubic yards (or 50,000 tons) of solid waste is to be permanently disposed of, even though the waste is exempt from the fee imposed by the State under subsection (b) of this Section pursuant to an exemption granted under Section 22.16.

(k) In accordance with the findings and purposes of the Illinois Solid Waste Management Act, beginning January 1, 1989 the fee under subsection (b) and the fee, tax or surcharge under subsection (j) shall not apply to:

(1) Waste which is hazardous waste; or

(2) Waste which is pollution control waste; or

(3) Waste from recycling, reclamation or reuse processes which have been approved by the Agency as being designed to remove any contaminant from wastes so as to render such wastes reusable, provided that the process renders at least 50% of the waste reusable; or

(4) Non-hazardous solid waste that is received at a sanitary landfill and composted or recycled through a process permitted by the Agency; or

(5) Any landfill which is permitted by the Agency to receive only demolition or construction debris or landscape waste.

(Source: P.A. 87-330; 87-650; 87-735; 87-895; 87-1227; 88-474.)  
Section 99. Effective date. This Act takes effect upon becoming law.

Passed in the General Assembly May 21, 1995.

Approved July 6, 1995.

Effective July 6, 1995.

**PUBLIC ACT 89-0094**  
**(Senate Bill No. 448)**

**AN ACT concerning pesticides, amending named Acts.**

**Be it enacted by the People of the State of Illinois, represented in the General Assembly:**

**Section 5. The Environmental Protection Act is amended by changing Section 22.2 as follows:**

**(415 ILCS 5/22.2) (from Ch. 111 1/2, par. 1022.2)**

**New matter indicated by italics - deletions by strikethrough.**