BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

Midwest Generation, LLC	)	
(Will County Station)	)	PCB 2021-108
	)	
v.	)	
	)	
Illinois Environmental Protection Agency	)	

To: See attached service list.

NOTICE OF ELECTRONIC FILING

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board the RECOMMENDATION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, a copy of which is herewith served upon you.

Respectfully submitted,

Dated: July 1, 2021

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY,

Respondent,

BY: /s/Christine Zeivel
Christine Zeivel

Christine Zeivel, #6298033
Division of Legal Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-5544
Christine.Zeivel@Illinois.Gov

THIS FILING IS SUBMITTED ELECTRONICALLY

SERVICE LIST

MIDWEST GENERATION, LLC
Kristen L. Gale
Susan M. Franzetti
Molly Snittjer
NIJMAN FRANZETTI, LLP
10 S. LaSalle St., Suite 3600
Chicago, Illinois 60603
kg@nijmanfranzetti.com
sf@nijmanfranzetti.com
ms@nijmanfranzetti.com

ILLINOIS POLLUTION CONTROL BOARD
Carol Webb, Hearing Officer
Don Brown, Clerk
James R. Thompson Center
100 W. Randolph, Suite 11-500
Chicago, IL 60601
Don.Brown@illinois.gov
Carol.Webb@illinois.gov

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RECOMMENDATION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Agency ("Illinois EPA" or "Agency"), by one of its attorneys, hereby files its Recommendation pursuant to Section 37(a) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/37(a), and 35 Ill. Adm. Code §104.216. For reasons described below, the Illinois EPA neither supports nor objects to the Illinois Pollution Control Board ("Board") granting the requests of Midwest Generation, LLC ("MWG" or "Petitioner") for variances to certain requirements of 35 Ill. Adm. Code 845 for Ponds 1N and 1S at its Will County Station, except that Illinois EPA recommends that the Board deny Petitioner's request for extension of time to complete its fugitive dust control plan and emergency action plan. In support of its Recommendation, the Illinois EPA states as follows:

I. INTRODUCTION

1. On April 15, 2021, the Board adopted new rules for coal combustion residuals ("CCR") in surface impoundments at 35 Ill. Adm. Code 845 ("Part 845"). *See* Board Docket R2020-019. The Part 845 rules became effective on April 21, 2021. 45 Ill. Reg. 5884 (May 7, 2021).

2. On May 11, 2021, MWG filed a petition ("Petition") for variance for Ponds 1N and 1S at its Will County Generating Station, which included a request for hearing, along with a Motion for Expedited Review of the Petition. The Petition requests additional time to comply with certain specified requirements to collect data and submit information under Part 845.

3. Specifically, MWG is seeking a variance to extend the following deadlines contained in Part 845:

a. 35 Ill. Adm. Code §845.650(b)(1)(A): The deadline to collect, analyze, and statistically evaluate the eight independent samples from each background and downgradient well that determine the representative background levels is October 18, 2021. MWG seeks a variance to extend the deadline to January 31, 2022.
b. 35 Ill. Adm. Code §§845.230(d)(1), 845.520(c), 845.500(b)(4): The deadline to submit an initial operating permit application, the initial emergency action plan and fugitive dust control plan is October 30, 2021. MWG seeks a variance to extend the deadline to March 31, 2022.
c. 35 Ill. Adm. Code §845.700(c): The deadline to submit the Category designations of Ponds 1N and 1S Closure Prioritization under Section 845.700(g) is May 21, 2021. MWG seeks a variance to extend the deadline to March 31, 2022, concurrent with the initial operating permit application.
d. 35 Ill. Adm. Code §845.700(h)(1): If Ponds 1N and 1S are designated Category 4 CCR surface impoundments, the deadline to submit a construction permit application for CCR Surface Impoundments in Category 4 is February 1, 2022. MWG seeks a variance to extend the deadline to submit the construction permit application to July 1, 2022.

4. On May 25, 2021, the Board granted MWG's Motion for Expedited Review of the Petition.

5. Illinois EPA must make a recommendation to the Board as to the disposition of the Petition within 45 days of filing of the petition or at least 30 days before a scheduled hearing, whichever is earlier. 35 Ill. Adm. Code §104.216(b). On May 20, 2021, the Board ordered that Illinois EPA's recommendation is due on June 25, 2021.

6. The Agency filed a motion for extension of time, seeking to extend the deadline to file its Recommendation to July 1, 2021. On June 24, 2021, the Hearing Officer indicated Illinois EPA's

motion for extension of time was granted. Therefore, the Agency's Recommendation is due July 1, 2021.

II. NOTICE & ACCEPTANCE

7. A petitioner must provide prompt public notice of the filing of its petition, including publishing notice within 14 days after filing the petition in a newspaper of general circulation in the county where the facility is located. 415 ILCS 5/37(a) (2018); 35 Ill. Adm. Code §104.214(a).

8. On June 1, 2021, MWG filed with the Board a certification of publication and a copy of the notice published on May 17, 2021 pursuant to 35 Ill. Adm. Code §104.214(e).

9. On June 17, 2021, the Board accepted MWG's petition for hearing. At the time of this filing, hearing in this matter is set for July 27, 2021.

III. INVESTIGATION

10. Upon receipt of a petition for variance, the Illinois EPA must promptly investigate the petition and consider the views of persons who might be adversely affected by the grant of a variance. 415 ILCS 5/37(a); 35 Ill. Adm. Code §104.216(a). The Agency's Recommendation must include a description of the efforts made by the Agency to investigate the facts as alleged and to ascertain the views of persons who might be affected, and a summary of the views so ascertained. 35 Ill. Adm. Code §104.216(b)(1).

11. Illinois EPA conducted a thorough investigation of the information contained in Petitioner's variance request and of additional information in support of the variance request offered informally by Petitioner in subsequent meetings with Illinois EPA staff. In preparing this Recommendation, Illinois EPA reviewed testimony, documents, and comments provided in the Board's Part 845 rulemaking proceedings (Docket R2020-019) and consulted staff within several sections of the Bureau of Water.

12. As a result of this investigation, Illinois EPA neither supports nor objects to the Board granting the requests of MWG for variances to certain requirements of 35 Ill. Adm. Code Part 845, except that Illinois EPA objects to MWG's requests for extensions of time to complete its fugitive dust control plan and emergency action plan for Ponds 1N and 1S.

IV. AIR MONITORING

13. Illinois EPA's Recommendation must include the location of the nearest air monitoring station maintained by the Agency, where applicable. 35 Ill. Adm. Code §104.216(b)(2). This requirement is not applicable in this matter.

V. ESTIMATED COST OF COMPLIANCE

14. Illinois EPA's Recommendation must include the Agency's estimate of the costs that compliance would impose on the petitioner and others. 35 Ill. Adm. Code §104.216(b)(5). Also, Section 35(a) of the Act requires the Board to determine if the petitioner has presented adequate proof that it would suffer an arbitrary or unreasonable hardship if required to immediately comply with the Board regulation at issue. However, the Board is not required to find that an arbitrary or unreasonable hardship exists exclusively because the regulatory standard is under review and the costs of compliance are substantial and certain. 415 ILCS 5/35(a) (2018).

15. Petitioner states that the total cost of its groundwater sampling plan is $104,000, which includes site clearing and grubbing and fence modifications. *See* Petition, p. 21. Petitioner further estimates that the operating permit application preparation will cost $50,000 and the construction permit application preparation will cost $150,000. *Id*.

16. Illinois EPA does not challenge Petitioner's cost estimates provided by its consultant for complying with the respective Part 845 requirements.[1] However, Illinois EPA does not believe there are any increased costs associated with immediate compliance as required by Part 845. Petitioner agrees. *Id.*

VI. FACTUAL ALLEGATIONS

17. Illinois EPA's Recommendation must include a statement of the degree to which, if at all, the Agency disagrees with the facts as alleged in the petition, including facts refuting any allegations in the petition for variance, as well as allegations of any other facts the Agency believes relevant to the disposition of the petition, including any past or pending enforcement actions against petitioner. 35 Ill. Adm. Code §§104.216(b)(3) and (b)(4). Illinois EPA's Recommendation must also allege any facts that the Agency believes are relevant to whether the Board should condition a grant of variance on the posting of a performance bond under Section 104.246. 35 Ill. Adm. Code §104.216(b)(9).

18. **MWG states that Ponds 1N and 1S are inactive, being removed from service in 2010 and "dewatered" in 2013. *See* Petition, pp. 2, 8, 19. MWG further states that MWG implemented the dewatering system as part of a 2012 Compliance Commitment Agreement ("CCA") with Illinois EPA so that water does not exceed one-foot depth in Ponds 1N and 1S. *See* Petition, p. 8.**

19. Ponds 1N and 1S are "inactive CCR surface impoundments" under Part 845. Inactive CCR surface impoundments are subject to all the Part 845 requirements that are applicable to existing CCR surface impoundments, except as provided in Section 845.170, which is specific to inactive

[1] Illinois EPA does not challenge Petitioner's cost estimates for purposes of evaluating this variance request. Any Agency review of cost estimates submitted pursuant to Subpart I of Part 845 is separate and distinct and will not be limited by statements made in this Recommendation.

closed CCR surface impoundments. 35 Ill. Adm. Code 845.100(d). Ponds 1N and 1S are not closed.

20. Illinois EPA records indicate that the CCA executed October 24, 2012, to satisfy Violation Notice ("VN") W-2012-00058, issued June 11, 2012, for exceedances of Part 620 groundwater quality standards, required MWG to remove Ponds 1N and 1S from service and implement a dewatering system. *See* Exhibit A and Petition, Exhibit E. The dewatering system must not allow water to exceed a depth of one foot above the bottom of Ponds 1N and 1S. *See* Petition, Exhibit E. The one-foot water level restriction does not ensure that the CCR surface impoundment is dry. The dewatering system is gravity driven and, by design, does not drain unless the water level is cresting above the one-foot water limit. *See* Petition, Exhibit F. Therefore, the CCR surface impoundments can, and likely do, contain one foot or more of water much of the time. One foot of water in the impoundment will likely saturate at least a portion of any CCR that remains. Testimony presented in *Sierra Club, et al. v. MWG* indicates that Ponds 1N and 1S still contained CCR at the time of the hearing (October 23, 2017), are not capped, and allow for one foot of water in them. *See* Exhibit B, p. 56.

21. **MWG states that 1N and 1S were constructed in 1977 and are each lined with a poz-o-pac liner, which is a dense, concrete-like liner consisting of six 6-inch layers. *See* Petition, p. 8. MWG cites a 2009 Hydrogeological Assessment that the potential for release was low during the active life of the impoundments because of the poz-o-pac liner. *Id.* MWG further states that there is no "head" in the CCR surface impoundments that could cause a release of CCR constituents to groundwater. *See* Petition, p. 19.**

22. The Board determined in its June 20, 2019 Interim Opinion and Order in *Sierra Club, et al. v. MWG* that the Complainants established that the poz-o-pac liners at Will County crack and

get damaged on occasion. *See* Exhibit B, p. 55. Evidence presented during the proceedings shows that MWG's consultant rated the poz-o-pac liners at all the Will County CCR surface impoundments as poor, and potential for contamination as high, resulting in MWG relining Ponds 2S and 3S. *See* Exhibit B, p. 54. MWG admitted that the 40-year-old poz-o-pac liners at Ponds 1N and 1S are in poor condition due to age. *See* Exhibit B, p. 56. The Board found that it is more likely than not that the Will County CCR surface impoundments leached contaminants into the groundwater *See* Exhibit B, p. 55.

23. Illinois EPA maintains that if the poz-o-pac liner is cracked or otherwise compromised, contaminants can continue to leach into the groundwater. Ponds 1N and 1S are at least one foot below average groundwater elevations. A February 2011 Hydrogeologic Assessment Report ("HAR") for the Will County Station indicates the bottom of Pond 1N is approximately 581.50 feet above mean sea level (ft MSL). *See* Exhibit C, Figure 4. The same Figure 4 indicates that potentiometric surface, at that time, was approximately 583 ft MSL. Wells specifically associated with Ash Pond 1N, MW-1 and MW-2 (both up gradient), and MW-7 (downgradient), contained groundwater elevations above 581.50 ft MSL. *See* Exhibit C, Table 3. The HAR did not contain a cross section of Ash Pond 1S, so the Agency did not do a similar comparison.

24. Quarterly groundwater monitoring reports submitted by MWG, which include groundwater elevations for all of the monitoring wells at the Will County Station from December 2010 through March 2021 (41 quarters) never reported groundwater elevations at monitoring wells MW-1 or MW-2 below 581.50 ft MSL. *See* Exhibit D. At monitoring well MW-7, the groundwater elevation was reported below 581.5 feet only eight times during the same 10-year period. The groundwater elevation surrounding Ash Pond 1N only occasionally falls below a portion of the bottom of the impoundment. Testimony further indicated that, because the bottom of the CCR surface

impoundments are sitting below the water table, the cracks in the liners of Ponds 1N and 1S allow groundwater to flow into the surface impoundments and for CCR constituents to leak out into the groundwater. *See* Exhibit B, p. 56. Therefore, groundwater can flow into the concrete-like poz-o-pac, become contaminated by CCR material, and either flow out through the dewatering system or leak back out of the cracked poz-o-pac as leachate.

25. Nevertheless, Illinois EPA disputes that there is no head in the CCR surface impoundments that could cause a release. Groundwater requires a difference in head to flow – the difference is what determines the direction. If groundwater is flowing out of the impoundment, there is more head in the impoundment. If groundwater is flowing into the impoundment, there is more head outside of the impoundment. *See* Exhibit D. The Board found that groundwater has flowed both into and out of the CCR surface impoundments carrying coal ash constituents [2] and, therefore, there is head that threatens to contaminate groundwater.

26. Groundwater contamination can persist at a CCR surface impoundment even after the CCR is removed. *See* Exhibit D. Illinois EPA issued the 2012 VN due to exceedances of Part 620 groundwater quality standards downgradient of Ponds 1N and 1S. *See* Exhibit A. The most recent groundwater quarterly monitoring report (April 2021) indicates exceedances of the Class I groundwater quality standards listed in 35 Ill. Adm. Code §620.410 downgradient of Ponds 1N and 1S. *See* Exhibit E.

27. **MWG states that Ponds 1N and 1S collected bottom ash fines, with most of the bottom ash collected on a concrete pad next to the CCR surface impoundments, which was then**

[2] *See* Exhibit B, p. 56 ("Ponds 1N and 1S are at least one foot below average groundwater elevations. 2/2/18 Tr. at 309:21-310:19, 143:5-148:4. Because the bottom of these ponds is sitting below the water table, the cracks in the poz-o-pac liners allow groundwater to seep into the ponds and for ash constituents to leak out into the groundwater. 2/2/18 Tr. at 149:15-18. Groundwater leaked through poz-o-pac at 1N and 1S ponds. EG Exh. 302; 10/24/17 Tr. at 211:18-213:20, 213:1-6 (contractors were requested to "cut holes in liner to pump out groundwater" and "then patch the holes").)

transported off-site for beneficial use. *See* Petition, pp. 7-8. MWG further states that Ponds 1N and 1S have not collected ash or process water since they were taken out of service in 2010. *See* Petition, p. 8.

28. The design and use of Ponds 1N and 1S are why the Agency has identified them as CCR surface impoundments. These practices, as described by MWG, over many years and certain conditions, including cracked poz-o-pac below the water table, threaten groundwater contamination. Illinois EPA has consistently considered Ponds 1N and 1S as CCR surface impoundments, as evidenced in the December 2019 initial invoice for fees, a March 2020 Illinois EPA letter to MWG, and during various meetings and the Part 845 rulemaking proceedings. *See* Exhibits F, G and IEPA Pre-Filed Answers, pp. 141, 181-82 (R2020-019, filed Aug. 3, 2020). Further, MWG submitted its CCR surface impoundment fee in March 2021, acknowledging Ponds 1N and 1S to be CCR surface impoundments. *See* Exhibit H. Testimony presented in *Sierra Club, et al. v. MWG* indicates that Ponds 1N and 1S still contained CCR, are not capped, and allow for one foot of water in them. *See* Exhibit B, p. 56.

29. **MWG states it does not have years of accumulated groundwater data required to satisfy Part 845. *See* Petition, p. 2. MWG further states that it would need to "guess" as to whether the groundwater at Ponds 1N and 1S would meet groundwater protection standards because it would not have the background groundwater monitoring data available at the time of the May 21, 2021 deadline to submit a closure priority category designation. See Petition, pp. 3, 15.**

30. In accordance with Illinois EPA's request that Petitioner develop a groundwater monitoring plan, the Will County facility has conducted significant historical groundwater monitoring since at least 2010. *See* Exhibit I. The 2012 VN included wells downgradient of Ponds 1N and 1S due

to exceedances of the Class I groundwater quality standards contained in 35 Ill. Adm. Code §620.410. *See* Exhibit A. One of the requirements listed in the CCA was to establish a sitewide Groundwater Management Zone ("GMZ") to monitor the groundwater exceedances at the Will County facility. *See* Petition, Exhibit E. Ponds 1N and 1S are within the boundary of the sitewide GMZ established in 2013 and, as part of the CCA, MWG agreed to ongoing groundwater monitoring of the wells at the Will County Station, including those associated with Ponds 1N and 1S. *See* Petition, Exhibit E and Exhibit J.[3] The most recent groundwater quarterly monitoring report (April 2021) indicates exceedances of the Class I groundwater quality standards listed in 35 Ill. Adm. Code §620.410. *See* Exhibit E, Table 2. Monitoring wells MW-7 and MW-8 are situated downgradient of the two CCR surface impoundments. Downgradient of Pond 1N, MW-7 has general exceedances of boron, sulfate and TDS. Downgradient of Pond 1S, MW-8 has general exceedances of boron, chloride, sulfate and TDS. *See* Exhibit E, Table 2, pp. 7-8. Therefore, existing data indicates that Ponds 1N and 1S may be contributing to groundwater contamination.

31. The numerical Class I groundwater quality standards for boron, chloride, sulfate, and TDS in Section 620.410 are the same concentrations as the groundwater protection standards ("GWPS") for those constituents in Section 845.600. Illinois EPA agrees that the groundwater quality data that currently exists at Ponds 1N and 1S is limited to dissolved (filtered) chemical constituents, instead of total (not filtered) chemical constituent analysis as required by 35 Ill. Adm. Code §845.640(i), and does not include the full list of constituents required in 35 Ill. Adm. Code §845.600. However, except for natural variation in groundwater quality and laboratory or sampling variability, the concentrations of filtered boron, chloride, sulfate and TDS samples should not yield higher concentrations than total analysis for those constituents. Therefore, it is Illinois EPA's

[3] Illinois EPA has searched its records and cannot locate the GMZ approval letter.

position that MWG could make informed conclusions to conservatively categorize Ponds 1N and 1S as Category 4 based on existing data, which would not be mere "guesswork."

32. The exceedances of the Part 620 groundwater quality standards alleged in the 2012 VN resulting in the CCA, amongst other allegations, were also the subject of the citizen suit brought against MWG by environmental groups in 2012. After extensive hearings, the Board found that MWG violated various sections of the Act and the Board's groundwater quality regulations at the Will County Station, including Class I groundwater quality standards. *See* Exhibit B. Illinois EPA issued VN W-2020-00045 to MWG on July 28, 2020, and VN W-2020-00086 on December 16, 2020, for failure to pay fees related to Ponds 1N and 1S, but MWG has since paid the appropriate fees and the Agency considers the VNs resolved. Illinois EPA's Bureau of Water is not aware of any other past or pending enforcement actions relevant to MWG's operation of CCR surface impoundments at the Will County Station.

33. Subpart I of Part 845 requires financial assurance for CCR surface impoundments in Illinois, which includes financial assurance for closure, post-closure care, and corrective action, all of which would include associated groundwater monitoring requirements. Therefore, the Board should not have to condition the grant of a variance on any additional performance bond.

VII. ARBITRARY AND UNREASONABLE HARDSHIP

34. The burden of proof in a variance proceeding is on the petitioner to demonstrate that compliance with the rule or regulation would impose an arbitrary or unreasonable hardship. 415 ILCS 5/37(a); 35 Ill. Adm. Code §104.238(a).

35. MWG states that denying the requested variance would impose an arbitrary and unreasonable hardship for two reasons: (1) compliance is not logistically possible without sacrificing the sufficiency and quality of the data to be relied upon to satisfy the substantive

requirements of Part 845; and (2) the requested variance will have no environmental impacts. *See* Petition, pp. 14-15. Below, Illinois EPA will provide a response to the logistics of compliance for each deadline extension request and, in Section VIII, will provide a response concerning the environmental impact of each variance request.

36. **MWG states that collecting and analyzing accurate and reliable groundwater monitoring data in 180 days is not feasible. *See* Petition, pp. 15-16. MWG states that the 180-day deadline (October 18, 2021) for the requirement under 35 Ill. Adm. Code §845.650(b)(1)(A) to collect and analyze eight independent samples from each background and downgradient well at Ponds 1N and 1S must be extended in order to collect representative background groundwater quality.**

37. Illinois EPA concurs that the 180-day requirement as provided in 35 Ill. Adm. Code §845.650(b)(1)(A) to collect and analyze eight independent samples from each background and downgradient well at Ponds 1N and 1S will not yield high quality background groundwater quality data. However, 40 CFR 257.94(b) requires that new CCR surface impoundments and lateral expansions of CCR surface impoundments collect eight independent samples from each background well within the first six months of sampling. Therefore, the quality of the background data collected for statistical analysis would be on par with the data required under Part 257.[4]

38. MWG does not consider Ponds 1N and 1S to be regulated as 40 CFR 257 CCR surface impoundments under the federal program; therefore, background groundwater quality data does not exist that would meet the requirements of Part 845. The groundwater quality data that currently exists at Ponds 1N and 1S is limited to dissolved (filtered) chemical constituents, while 35 Ill.

[4] This is consistent with the Agency's position in the Board's rulemaking proceedings for *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundment: Proposed New 35 Ill. Adm. Code 845*, PCB R2020-019. *See* First Supplement to IEPA's Pre-Filed Answers, pp. 24-25 (Aug. 5, 2020) and Hearing Transcript, pp.138-39 (August 13, 2020).

Adm. Code §845.640(i) requires total (not filtered) chemical constituent analysis. Further, the chemicals monitored historically at Ponds 1N and 1S do not include the full list of constituents required in 35 Ill. Adm. Code §845.600.

39. Independent samples provide greater statistical power when adequate time between sampling events can account for temporal variation such as seasonal variation in the data. Accounting for temporal variation can vary from site to site, depending on hydrogeologic conditions, but typically requires at least a month between sampling events. MWG began sampling the newly installed and developed wells at Ponds 1N and 1S on May 3-4, 2021. *See* Petition, p. 10. Because of logistical considerations resulting in MWG only recently beginning collection of the required eight independent groundwater samples, MWG cannot meet the deadline of 180 days after April 21, 2021, to complete the sampling as provided in 35 Ill. Adm. Code §845.650(b)(1)(A). For these reasons, Illinois EPA neither supports nor objects to MWG's request for additional time.

40. **MWG states that meeting the October 30, 2021 operating permit application deadline is not possible without the completion and inclusion of background groundwater quality data in the initial operating permit application. *See* Petition, pp. 16-18. MWG further states that its deadlines to submit the initial emergency action plan and fugitive dust control plan pursuant to Sections 845.520(c) and 845.500(b)(4), which must be submitted as a part of the operating permit application, should similarly be extended.**

41. Illinois EPA considers Petitioner's requested time extension to submit the initial operating permit application to be unnecessary based on its interpretation of 35 Ill. Adm. Code §845.230(d)(1) and §845.230(d)(2). Specifically, Illinois EPA interprets the plain language of Section 845.230(d)(2)(I)(iv) as allowing for a <u>proposed</u> monitoring program for site-specific situations when groundwater monitoring wells, data, or statistical procedures do not yet fully exist.

However, Illinois EPA also recognizes that Section 845.610(b)(1)(D) does not include the term "proposed" when describing the monitoring program generally required for all CCR surface impoundments and lateral expansions of CCR surface impoundments. The absence of the term "proposed" could be construed to mean that the collection of background as required by Section 845.650 and the application of a statistical method pursuant to Section 845.640 must be completed prior to submission of the initial operating permit.

42. Illinois EPA notes that the cracked poz-o-pac liners located one foot lower than average groundwater elevations, which will not meet the location restrictions in Section 845.300 (Placement Above the Uppermost Aquifer), are an additional consideration impacting Petitioner's operating permit applications, along with the category designations and construction permit applications. Section 845.350 states that a CCR surface impoundment that fails to demonstrate compliance with the location restrictions of Subpart C is subject to the requirements of Section 845.700. Section 845.700(a) requires an owner or operator to initiate closure where compliance with location restrictions has not been demonstrated. Section 845.700(c) states that CCR surface impoundments that are required to close under subsection (a) must "immediately" take steps to categorize the CCR surface impoundment and to comply with the closure alternatives analysis. MWG has petitioned for relief from Section 845.700(c) based on the lack of background groundwater quality data.

43. Section 845.230 and Subpart C require that location restriction demonstrations be submitted in the initial operating permit applications, which must be submitted by October 30, 2021, pursuant to Section 845.230(d)(1). <u>Failure to complete</u> the location restriction demonstrations require owners or operators to initiate closure within six months under Section 845.700(d)(1). MWG does not include in their petition for relief Subpart C or Section

845.700(d)(1), but the only requirement to complete the location restriction demonstrations is tied to submission of the operating permit application.

44. If the Board denies MWG's request to extend the operating permit application, and MWG fails to complete its location restriction demonstrations and include them with its October 2021 operating permit application, MWG would have to initiate closure by submitting a construction permit application by April 2022. <u>Failure to comply</u> with location restrictions requires owners or operators to immediately categorize and comply with closure alternatives analysis pursuant to Sections 845.700(a)(1) and 845.700(c). Failure to comply with location restrictions is also a basis for the Agency to designate a CCR surface impoundment as Category 2, which would require a construction permit application to be submitted by February 1, 2022.[5] 35 Ill. Adm. Code §§845.700(g)(5) and 845.700(h)(1). However, if the Board grants the extension of time to calculate statistically based background groundwater quality and MWG uses those calculations to determine that a Category 6 is applicable, unless the Agency exercises its option to change the category designation, Section 845.700(h)(3) sets August 2023 as the date for submission of a closure construction permit. By filing the petition, MWG has an automatic stay of its requirement to submit its category designation for Agency review by May 21, 2021, pursuant to Section 845.700(c). 415 ILCS 5/38(b).

45. Regardless of groundwater contamination, MWG and the Agency have knowledge that Ponds 1N and 1S do not meet the Placement Above the Uppermost Aquifer requirement in Section 845.300. Had MWG submitted its category designations by May 21, 2021, as required by Section 845.700(c), Illinois EPA could have already designated those CCR surface impoundments as

[5] Section 845.700(g)(5) authorizes but does not require the Agency to change a category designation for failure to demonstrate compliance with location restriction demonstrations, amongst other justifications for redesignation. 35 Ill. Adm. Code §845.700(g)(5).

Category 2 by the time of this filing or any time after the May 21, 2021 submission deadline, requiring initiation of closure by February 1, 2022 – the same closure deadline as a Category 4. Allowing MWG an extension of time to submit its operating permit application would simultaneously allow an additional extension of time to submit its location restriction demonstrations for Agency review, delaying or preventing such Agency designation.

46. Nevertheless, MWG only requests four to five additional months to submit its operating and construction permit applications, with the same amount of time between the two as is allowed under Part 845. This is the less than the six months allowed to initiate closure under Section 845.700(d)(1), and earlier in time, than if the Board were to grant Petitioner's request to extend the operating permit deadline to March 2022 and Petitioner failed to complete location restriction demonstrations. Additionally, Illinois EPA agrees that allowing an extension of time should yield a more complete and accurate operating permit application, which is an important consideration. For these reasons, Illinois EPA neither supports nor opposes Petitioner's requested extension of time to submit its initial operating permit application.

47. Illinois EPA maintains that MWG has sufficient time to complete the initial emergency action plan and fugitive dust control plan by October 30, 2021, as required by 35 Ill. Adm. Code §845.520(c) and §845.500(b)(4). Illinois EPA invoiced Ponds 1N and 1S as CCR Surface Impoundments in December 2019 and has maintained that it is a CCR surface impoundment since that time in various meetings and during the Part 845 rulemaking proceedings. *See* Exhibit F, G and IEPA Pre-Filed Answers, pp. 141, 181-82 (R2020-019, filed Aug. 3, 2020). Further, MWG submitted its CCR surface impoundment fee in March 2021, acknowledging Ponds 1N and 1S to be a CCR surface impoundment. *See* Exhibit H.

48. MWG argues that it would be "arbitrary and unreasonable" to require submission of these two plans before it can complete the rest of the operating permit application because "[w]hile separately stated, the clear intent is that both of these plans accompany the submission of the operating permit application." *See* Petition, p. 18. Illinois EPA agrees that both plans share the same deadline for completion as the initial operating permit application submission, and both plans are required to be submitted with the initial operating permit application. However, Sections 845.520(c) and 845.500(b)(4), from which MWG seeks variances, solely require owners or operators to "prepare" the reports — these provisions do not require submission. These provisions also specify that fugitive dust control plans and emergency action plans are for a facility, not individual CCR surface impoundments. Section 845.800 requires these plans to be placed into the facility's operating record as soon as they become available.

49. MWG operates two other CCR surface impoundments at the Will County facility for which fugitive dust control plans and emergency action plans must be completed and submitted with initial operating permit applications by October 30, 2021, and for which no variances were requested and no stays of Part 845 are in place.[6] If Ponds 1N and 1S require any special operational considerations regarding the facility's fugitive dust control plan and emergency action plan, they should amount to minor additions to the facility's overall plans.

50. As outlined in Paragraph 47 above, MWG has had time to consider and include any adjustments for Ponds 1N and 1S in the facility's fugitive dust control plan and emergency action plan. Further, any Professional Engineer's certification of a fugitive dust control plan and an emergency action plan that fails to include the entire facility, as required by Part 845, would be certification of an incomplete plan. Therefore, because the fugitive dust control plan and

[6] Referring to Pond 2S and Pond 3S

emergency action plan must already be prepared for the entire facility and submitted as part of the initial operating permit applications for the other Will County CCR surface impoundments by October 30, 2021, requiring the plans to be completed so as to include Ponds 1N and 1S and to be placed in the facility's operating record is not arbitrary or unreasonable. An extension of time to complete these plans so that they include Ponds 1N and 1S is unnecessary.

51. **MWG states that it cannot provide the priority category designation for Ponds 1N and 1S because the groundwater monitoring data is insufficient. S*ee* Petition, p. 18.**

52. Illinois EPA's position is that the construction of Section 845.700(g) is such that every existing and inactive CCR surface impoundment in the State fits into at least one category. Specifically, subsection (g)(2) provides that if a CCR surface impoundment can be categorized in more than one category, then the more conservative category, which requires closure sooner, must be assigned. Thus, if groundwater compliance is unknown, the applicant must use the more conservative of the categories. In this case, unless otherwise designated by the Agency, the presence of groundwater exceedances determines whether these two inactive CCR surface impoundments are either Category 4 (with groundwater exceedances) or Category 6 (without groundwater exceedances) CCR surface impoundments.

53. MWG states this it would be forced to "guess" whether groundwater exceedances are present. *See* Petition, p. 3. However, historical groundwater data could be used to make an informed decision about whether groundwater is contaminated at Ponds 1N and 1S. MWG has been submitting quarterly groundwater monitoring results to Illinois EPA since 2010. *See* Exhibits C, E. The most recent monitoring results available for the Will County Station (April 2021) indicate concentrations of boron, chloride, sulfate and TDS immediately downgradient of Ponds 1N and 1S in excess of the numeric value in GWPS of Section 845.600. *See* Exhibit E, Table 2, p.

7-8. While this is not a comprehensive analysis, existing data indicates that Ponds 1N and 1S may be contributing to groundwater contamination. Therefore, choosing the higher Category 4 and respective construction permit application submission date would be conservative, but appropriately protective, especially considering the location of the CCR surface impoundments within the groundwater table.

54. Nevertheless, Illinois EPA agrees that a category designation will be more accurate if it considers established background groundwater quality. Furthermore, the purpose of the category designation is to determine when the construction permit application is submitted, and Illinois EPA prefers that the construction permit application, which includes the closure alternatives analysis and all of its requisite modeling, be complete and accurate to ensure that the closure method chosen is sufficiently protective. The modeling required in the construction permit application will go beyond calculating groundwater quality background. The downgradient groundwater conditions will be compared to the upgradient/background data to determine if any impact to groundwater from Ponds 1N and 1S has occurred. The downgradient groundwater quality data will be used in the model to predict future constituent concentrations, predict the extent of any future migration from the CCR surface impoundments, including any potential impacts to surface water, and to estimate the time needed to complete remediation. MWG will use the modeling, which will require 845-compliant groundwater data, to make an accurate demonstration of closure alternatives and the ultimate closure decision. For these reasons, the Agency neither supports nor opposes submission of the category designations for Ponds 1N and 1S with the initial operating permit applications.

55. **MWG states that a February 1, 2022 deadline to submit construction permit applications is not feasible for Ponds 1N and 1S if they are Category 4 CCR surface impoundments. *See* Petition, p. 19.**

56. If the Board grants MWG's request for extension of time to obtain background groundwater quality data, the February 1, 2022 deadline for construction permit applications for Category 1 through 4 CCR surface impoundments will not be attainable. MWG projects that it can determine their background groundwater quality levels by January 31, 2022. Even if Petitioner could get its background groundwater quality determination before the proposed date, they would not have time to complete the public notice and public meeting requirements of Section 845.240 for a construction permit application.

57. Furthermore, the construction permit application for closure must include a closure plan that includes a closure alternatives analysis. 35 Ill. Adm. Code §845.220(d)(2). The closure alternatives analysis must include modeling that demonstrates that the closure method will achieve compliance with the Part 845 GWPS. 35 Ill. Adm. Code §845.710(d)(2). The modeling required in the construction permit application will go beyond calculating groundwater quality background, as described in Paragraph 54 above. It is important that the construction permit application for closure be complete and accurate to ensure that the closure method chosen is sufficiently protective.

58. Part 845 allows six months for a CCR surface impoundment to initiate closure of a CCR surface impoundment, if required due to failing to complete location restriction demonstrations. 35 Ill. Adm. Code §845.700(d)(1). The requirement for closure six months after failing to complete location restrictions is also consistent with 40 CFR 257.101. Therefore, six months has been recognized as an adequate time to initiate closure at both the state and federal level and is sufficient

to submit a construction permit application. The proposed submission date of July 1, 2022 would provide approximately six months from the establishment of background to complete and submit a construction permit application. For these reasons, Illinois EPA neither supports nor opposes the extension of time for the construction permit application for Ponds 1N and 1S, should the Board grant the requested extension of time to complete the background groundwater quality data.

VIII. PUBLIC INJURY & ENVIRONMENTAL IMPACT

59. Illinois EPA's Recommendation must include the Agency's estimate of the injury that the grant of the variance would impose on the public, including the effect that the continued discharge of contaminants will have upon the environment. 35 Ill. Adm. Code §104.216(b)(6). MWG argues that the lack of environmental impact from granting the variance supports a finding of arbitrary and unreasonable hardship if compliance were compelled. *See* Petition, pp. 19, 22.

60. When deciding to grant or deny a variance petition, the Board is required to balance the petitioner's hardship in complying with the Board regulations against the impact that the requested variance will have on the environment. *Monsanto Co. v. Pollution Control Bd*, 67 Ill. 2d 276, 292 (1977). Petitioner must establish that the hardship it would face from denial of its variance request would outweigh any injury to the public or the environment from granting the relief, and "[o]nly if the hardship outweighs the injury does the evidence rise to the level of an arbitrary or unreasonable hardship." *Marathon Oil Co. v. EPA*, 242 Ill. App. 3d 200, 206 (5th Dist. 1993).

61. MWG states that the requested relief is not substantive but, instead, is limited to the timing of representative data collection and initial information submission requirements, and therefore, there is no environmental benefit to requiring MWG to meet the Part 845 deadlines as promulgated by the Board. *See* Petition, pp. 4, 19, 22. MWG further points out that Ponds 1N and 1S at Will County Station are inactive and dewatered so that they are unable to accumulate liquids exceeding

a depth of one foot, regulated by the facility's NPDES Permit, and have no potable wells located downgradient. *See* Petition, pp. 4, 8, 22. MWG states the only potable wells located at the Will County Station are two MWG wells, which are used only for the Station's purposes and that there is no potential impact to these wells from any of the Will County Station CCR surface impoundments. *See* Petition, p. 22.

62. The Agency conducted a potable well survey using the publicly available Source Water Assessment Protection Program (SWAP) website that maps potable wells in the state. According to the SWAP website, no potable wells were identified in the downgradient direction. *See* Exhibit D. The two potable wells referenced by the Petition are non-transient non-community water supply ("NTNCWS") wells. Due to the depth of the NTNCWS wells and the existence of a confining layer between the uppermost aquifer and the aquifer supplying the wells, the likelihood of impact from the Will County Station CCR surface impoundments is low.

63. Ponds 1N and 1S are inactive CCR surface impoundments that have not been properly closed. Because Ponds 1N and 1S are located below average groundwater elevations, the cracks in the poz-o-pac liners allow groundwater to seep into the ponds and for CCR constituents to leak out into the groundwater. Monitoring wells MW-7 and MW-8 are downgradient of Ponds 1N and 1S and continue to show exceedances of the Class I groundwater quality standards in 35 Ill. Adm. Code §620.410.

64. There is public and environmental benefit to having pollution sources under enforceable operating permits, as stated by the legislature and evidenced by the passage of the Coal Ash Pollution Prevention Act.[7] Part 845 operating permits are intended to go well beyond the scope of

[7] "The General Assembly finds that...CCR generated by the electric generating industry has caused groundwater contamination and other forms of pollution at active and inactive plants throughout this State" and "environmental laws should be supplemented to ensure consistent, responsible regulation of all existing CCR surface impoundments."

the facility's NPDES permit. For example, Will County's NPDES Permit does not contain groundwater monitoring requirements for CCR surface impoundments. *See* Exhibit K. It is the Agency's position that having fugitive dust control plans and emergency action plans in place for CCR surface impoundments is critical to the protection of public health and the environment. Further, there is certainly public and environmental benefit to having sources of groundwater contamination identified and remedied, whether through corrective action or closure. There is also environmental benefit to ensuring that background groundwater quality is established utilizing sufficient and appropriate data and that sufficiently protective closure methods are chosen and implemented; nevertheless, delaying the permitting and closure of CCR surface impoundments does have implications for the public and the environment.

65. Considering the above environmental benefits weighed against the hardship claimed by Petitioner and discussed in Section VII, Illinois EPA neither supports nor objects to MWG's request to extend its deadlines for completing its background groundwater sampling, submitting its operating permit application and category designation for Ponds 1N and 1S, and submitting its construction permit application for closure, but recommends that the Board deny MWG's requests to extend its deadlines to complete the fugitive dust control plan and emergency action plan.

IX. CONSISTENCY WITH FEDERAL LAW

66. Petitions for variances from the Board's waste disposal regulations must indicate whether the Board can grant the requested relief consistent with RCRA and its regulations. 35 Ill. Adm. Code §104.208(d). Illinois EPA's Recommendation must include an analysis of applicable federal laws and regulations and an opinion concerning the consistency of the petition with those federal laws and regulations. 35 Ill. Adm. Code §104.216(b)(7).

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415 ILCS 5/22.59(a)(3), (a)(4). "The Board shall adopt rules establishing construction permit requirements, operating permit requirements, design standards...." 415 ILCS 5/22.59(g).

67. It is true that MWG does not consider Ponds 1N and 1S to be a federally regulated surface impoundment under 40 CFR 257. *See* Petition, p. 23. However, since 40 CFR 257 is a self-implementing program, whether a particular unit is considered regulated is a determination made by the owner or operator unless challenged. MWG goes on to say that granting the variance to allow more than 180 days is "more consistent" with federal requirements. *Id.* As stated above, 40 CFR 257.94(b) requires that new CCR surface impoundments and lateral expansions of CCR surface impoundments collect eight independent samples from each background well within the first six months of sampling to establish background. Therefore, the quality of the background data collected for statistical analysis would be on par with the data required under Part 257. [8] However, Illinois EPA agrees with Petitioner that the requested variances are not inconsistent with 40 CFR 257 and federal law does not provide any barrier to the granting of the relief requested.

X. PERMITTING STATUS

68. Illinois EPA's Recommendation must include the status of any permits or pending permit applications that are associated or affected by the requested variance. 35 Ill. Adm. Code §104.216(b)(8).

69. The Will County Station and its surface impoundments are currently regulated by NPDES Permit No. IL0002208. *See* Exhibit K. MWG timely applied for renewal of NPDES Permit No. IL0002208, which expired April 30, 2019. Therefore, the permit is effective under administrative continuance. At the time of this filing, there are no other Illinois EPA Bureau of Water permits issued to MWG and currently effective for the Will County Station. Granting any of the Petitioner's variance requests will not impact the NPDES Permit.

[8] This is consistent with the Agency's position in the Board's rulemaking proceedings for *In the Matter of Standards for the Disposal of Coal Combustion Residuals in Surface Impoundment: Proposed New 35 Ill. Adm. Code 845*, PCB R2020-019. *See* First Supplement to IEPA's Pre-Filed Answers, pp. 24-25 (Aug. 5, 2020) and Hearing Transcript, pp. 138-39 (August 13, 2020).

70. The variance request affects operating and construction permit applications for Ponds 1N and 1S under Part 845, but any relief requested specific to Ponds 1N and 1S will not impact the operating and construction permit applications for any other CCR surface impoundment located at the Will County Station, provided that the facility-wide plans submitted with those applications are complete.

XI. RECOMMENDATION

71. The petitioner is required to present a detailed compliance plan in its Petition for Variance. 35 Ill. Adm. Code §104.204(f). The Petition provides such a compliance plan along with recommended variance conditions. *See* Petition, pp. 20-23.

72. MWG proposes that the requested variance from the deadlines imposed by Part 845 (*see* Section I above) be granted subject to the following conditions:

a. The variance applies only to MWG's Will County Station, Ponds 1N and 1S.

b. MWG shall collect and analyze eight independent samples from each background and downgradient well for all constituents with a groundwater protection standard listed in Section 845.600(a) and also for Calcium, and Turbidity by January 31, 2022.

c. MWG shall submit the operating permit application required by Section 845.230 for Pond 1N and 1S by March 31, 2022.

d. MWG shall submit the closure category designation required by Section 845.700(c) for Ponds 1N and 1S to the Illinois EPA by March 31, 2022.

e. If MWG designates Ponds 1N and 1S as a Category 4 CCR surface impoundments, then it shall submit the construction permit applications pursuant to Section 845.220 by July 1, 2022.

f. If Ponds 1N and 1S are not designated as Category 4 CCR surface impoundments, no variance relief from the construction permit application deadline has been requested or granted.

g. The variance shall begin on May 11, 2021.

h. The variance ends on March 31, 2022 if Ponds 1N and 1S are not designated as Category 4 CCR Surface Impoundments pursuant to Section 845.700(g). The variance ends on July 1, 2022 if Ponds 1N and 1S are instead designated as Category 4 CCR Surface Impoundments.

See Petition, pp. 22-23.

73. Illinois EPA must recommend to the Board what disposition should be made of the petition, deny or grant, and suggested conditions. If the Agency recommends that variance be granted, the Agency must also recommend a beginning and end date of the requested variance and recommend any conditions on the variance. 415 ILCS 5/37(a); 35 Ill. Adm. Code §104.216(b)(11).

74. Illinois EPA neither supports nor opposes MWG's request to extend its deadlines for completing its background groundwater sampling and submitting its operating permit application, category designation, and construction permit application for Ponds 1N and 1S, but recommends that the Board deny MWG's request to extend its deadlines to complete the fugitive dust control plan and emergency action plan.

75. Regarding the specific variance conditions proposed by Petitioner and listed in Paragraph 72 above, Illinois EPA neither supports nor opposes any of the conditions as proposed. Illinois EPA does recommend that the Board deny Petitioner's request to extend its deadlines to complete the fugitive dust control plan and emergency action plan.

76. Section 36 of the Act provides that "[i]f the hardship complained of consists solely of the need for a reasonable delay in which to correct a violation of this Act or of the Board regulations, the Board shall condition the grant of such a variance upon the posting of sufficient performance bond or other security to assure the completion of the work covered by the variance." Subpart I of Part 845 requires financial assurance for CCR surface impoundments in Illinois, which includes financial assurance for closure, post-closure care, and corrective action, all of which would include

associated groundwater monitoring requirements. Therefore, the Board should not have to condition the grant of a variance on any additional performance bond.

77. Illinois EPA reserves the right to supplement this Recommendation any time prior to the closure of the record in this proceeding.

Wherefore, for the reasons stated and subject to the conditions provided above, Illinois EPA neither supports nor objects to MWG's request to extend its deadlines for completing its background groundwater sampling and submitting its operating permit application, category designation, and construction permit application for Ponds 1N and 1S, but Illinois EPA recommends that the Board deny MWG's requests to extend its deadlines to complete the fugitive dust control plan and emergency action plan.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY,

Respondent,

Dated: July 1, 2021

BY: /s/ Christine Zeivel
Christine Zeivel, #6298033
Division of Legal Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-5544
Christine.Zeivel@Illinois.Gov

THIS FILING IS SUBMITTED ELECTRONICALLY

CERTIFICATE OF SERVICE

I, the undersigned, on affirmation certify the following:

That I have served the attached **RECOMMENDATION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY** by e-mail upon Kristen L. Gale at the e-mail address of kg@nijmanfranzetti.com, upon Susan Franzetti at the e-mail address of sf@nijmanfranzetti.com, upon Molly Snittjer at the e-mail address of ms@nijmanfranzetti.com, upon Carol Webb at the e-mail address of Carol.Webb@illinois.gov, and upon Don Brown at the e-mail address of Don.Brown@illinois.gov.

That I have served the attached **RECOMMENDATION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY** upon any other persons, if any, listed on the Service List, by placing a true copy in an envelope duly address bearing proper first-class postage in the United States mail at Springfield, Illinois on July 1, 2021.

That my e-mail address is Christine.Zeivel@Illinois.gov.

That the number of pages in the e-mail transmission is four hundred twenty-six (426).

That the e-mail transmission took place before 4:30 p.m. on the date of July 1, 2021.

/s/ Christine Zeivel
July 1, 2021

Exhibit List

Exhibit A – Illinois EPA Violation Notice No. W-2012-00058, issued June 11, 2012.

Exhibit B – *Sierra Club, et. al v. Midwest Gen., LLC,* PCB 13-15, Interim Opinion and Order of the Board (June 20, 2019).

Exhibit C – Hydrogeologic Assessment Report for the Will County Generating Station, submitted to Illinois EPA, February 2011.

Exhibit D – Affidavit of Melinda Shaw

Exhibit E – Quarterly Groundwater Monitoring Report for the Will County Station, received April 30, 2021.

Exhibit F – Illinois EPA Initial Invoice, issued for the Will County Station December 16, 2019.

Exhibit G – Illinois EPA Letter to MWG re: Invoice for CCR Surface Impoundments, dated March 24, 2020.

Exhibit H – MWG Letter to Illinois EPA Accounts Receivable, dated March 18, 2021.

Exhibit I – Illinois EPA Letter to MWG re: Development of Groundwater Monitoring Plan, dated April 10, 2009.

Exhibit J - MWG Groundwater Management Zone Application for the Powerton Station, received January 22, 2013.

Exhibit K – NPDES Permit No. IL0002208 for the Will County Generating Station, issued May 15, 2014 and modified April 24, 2017.

Exhibit L – Affidavit of Darin LeCrone

Exhibit A

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

PAT QUINN, GOVERNOR **JOHN J. KIM**, INTERIM DIRECTOR

217/785-0561

June 11, 2012

CERTIFIED MAIL # 7010 2780 0002 1163 7230
RETURN RECEIPT REQUESTED

Mr. Basil G. Constantelos: Managing Director, Environmental Services
Midwest Generation EME, LLC
2535 Remington Blvd
Suite A
Bolingbrook, IL 60440

Re: Violation Notice: Midwest Generation, LLC, Will County Generating Station
Identification No.: 6283
Violation Notice No.: W-2012-00058

Dear Mr. Constantelos:

This constitutes a Violation Notice pursuant to Section 31(a)(1) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(1), and is based upon a review of available information and an investigation by representatives of the Illinois Environmental Protection Agency ("Illinois EPA").

The Illinois EPA hereby provides notice of alleged violations of environmental laws, regulations, or permits as set forth in Attachment A to this notice. Attachment A includes an explanation of the activities that the Illinois EPA believes may resolve the specified alleged violations. Due to the nature and seriousness of the alleged violations, please be advised that resolution of the violations may also require the involvement of a prosecutorial authority for purposes that may include, among others, the imposition of statutory penalties.

A written response, which may include a request for a meeting with representatives of the Illinois EPA, must be submitted via certified mail to the Illinois EPA within 45 days of receipt of this letter. If a meeting is requested, it shall be held within 60 days of receipt of this notice. The response must include information in rebuttal, explanation, or justification of each alleged violation and a statement indicating whether or not the facility wishes to enter into a Compliance Commitment Agreement ("CCA") pursuant to Section 31(a) of the Act. If the facility wishes to enter into a CCA, the written response must also include proposed terms for the CCA that includes dates for achieving each commitment and may include a statement that compliance has been achieved for some or all of the alleged violations. The proposed terms of the CCA should contain sufficient detail and must include steps to be taken to achieve compliance and the necessary dates by which compliance will be achieved.

The Illinois EPA will review the proposed terms for a CCA provided by the facility and, within 30 days of receipt, will respond with either a proposed CCA or a notice that no CCA will be issued by the Illinois EPA. If the Illinois EPA sends a proposed CCA, the facility must respond in writing by either agreeing to and signing the proposed CCA or by notifying the Illinois EPA that the facility rejects the terms of the proposed CCA.

If a timely written response to this Violation Notice is not provided, it shall be considered a waiver of the opportunity to respond and meet, and the Illinois EPA may proceed with referral to a prosecutorial authority.

Written communications should be directed to:

Illinois EPA – Division of Public Water Supplies
Attn: Andrea Rhodes, CAS #19
P.O. BOX 19276
Springfield, IL 62794-9276

All communications must include reference to this Violation Notice number, W-2012-00058.

Questions regarding this Violation Notice should be directed to Andrea Rhodes at 217/785-0561.

Sincerely,

Michael Crumly
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

Attachments

cc: Maria Race

CASE ID: 2012-006

ATTACHMENT A

MIDWEST GENERATION, LLC, WILL COUNTY GENERATING STATION, ID:6283
VIOLATION NOTICE NO. W-2012-00058:

A review of information available to the Illinois EPA indicates the following on-going violations of statutes, regulations, or permits. Included with each type of violation is an explanation of the activities that the Illinois EPA believes may resolve the violation.

Groundwater Quality

No person shall cause, threaten or allow the release of any contaminant to a resource groundwater such that: treatment or additional treatment is necessary to continue an existing use or to assure a potential use of such groundwater; or an existing or potential use of such groundwater is precluded. No person shall cause, threaten or allow the release of any contaminant to groundwater so as to cause a groundwater quality standard to be exceeded. Midwest Generation, LLC must take actions to mitigate existing contamination and prevent the continuing release of contaminants into the environment.

Violation
Description

Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-1 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
Antimony	0.0063 mg/l	0.006 mg/l	12/08/2011
Manganese	0.16 mg/l	0.15 mg/l	03/16/2012
Manganese	0.17 mg/l	0.15 mg/l	12/08/2011
Manganese	0.16 mg/l	0.15 mg/l	09/15/2011
Manganese	0.22 mg/l	0.15 mg/l	06/15/2011
Manganese	0.20 mg/l	0.15 mg/l	12/13/2010
Sulfate	430 mg/l	400 mg/l	03/16/2012
Sulfate	530 mg/l	400 mg/l	12/13/2010
Chloride	210 mg/l	200 mg/l	03/28/2011

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

ATTACHMENT A

MIDWEST GENERATION, LLC, WILL COUNTY GENERATING STATION, ID:6283
VIOLATION NOTICE NO. W-2012-00058:

Violation
Description

Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-2 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
Antimony	0.017 mg/l	0.006 mg/l	12/08/2011
Antimony	0.0073 mg/l	0.006 mg/l	09/15/2011
Boron	2.30 mg/l	2.0 mg/l	09/15/2011
Boron	2.30 mg/l	2.0 mg/l	06/15/2011
Sulfate	430 mg/l	400 mg/l	12/13/2010
Chloride	250 mg/l	200 mg/l	03/28/2011

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

Violation
Description

Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-3 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
Boron	2.7 mg/l	2.0 mg/l	03/16/2012
Boron	2.8 mg/l	2.0 mg/l	12/08/2011
Boron	3.3 mg/l	2.0 mg/l	09/15/2011
Boron	2.6 mg/l	2.0 mg/l	06/15/2011
Boron	2.4 mg/l	2.0 mg/l	03/28/2011
Boron	2.7 mg/l	2.0 mg/l	12/13/2010
Chloride	250 mg/l	200 mg/l	03/28/2011
Manganese	0.27 mg/l	0.15 mg/l	03/16/2012
Manganese	0.29 mg/l	0.15 mg/l	12/08/2011
Manganese	0.26 mg/l	0.15 mg/l	09/15/2011
Manganese	0.34 mg/l	0.15 mg/l	06/15/2011
Manganese	0.31 mg/l	0.15 mg/l	03/28/2011
Manganese	0.34 mg/l	0.15 mg/l	12/13/2010

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

ATTACHMENT A

MIDWEST GENERATION, LLC, WILL COUNTY GENERATING STATION, ID:6283
VIOLATION NOTICE NO. W-2012-00058:

Violation
Description
Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-4 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
Boron	4.0 mg/l	2.0 mg/l	03/16/2012
Boron	3.0 mg/l	2.0 mg/l	12/08/2011
Boron	4.3 mg/l	2.0 mg/l	09/15/2011
Boron	3.6 mg/l	2.0 mg/l	06/15/2011
Boron	3.3 mg/l	2.0 mg/l	03/29/2011
Boron	3.7 mg/l	2.0 mg/l	12/13/2010
Manganese	0.60 mg/l	0.15 mg/l	03/16/2012
Manganese	0.60 mg/l	0.15 mg/l	12/08/2011
Manganese	1.00 mg/l	0.15 mg/l	09/15/2011
Manganese	0.70 mg/l	0.15 mg/l	06/15/2011
Manganese	0.58 mg/l	0.15 mg/l	03/29/2011
Manganese	0.52 mg/l	0.15 mg/l	12/13/2010
Sulfate	2,000 mg/l	400 mg/l	03/16/2012
Sulfate	1,600 mg/l	400 mg/l	12/08/2011
Sulfate	4,800 mg/l	400 mg/l	09/15/2011
Sulfate	1,600 mg/l	400 mg/l	06/15/2011
Sulfate	1,500 mg/l	400 mg/l	03/29/2011
Sulfate	1,500 mg/l	400 mg/l	12/13/2010
TDS	3,700 mg/l	1,200 mg/l	03/16/2012
TDS	3,100 mg/l	1,200 mg/l	12/08/2011
TDS	6,000 mg/l	1,200 mg/l	09/15/2011
TDS	2,800 mg/l	1,200 mg/l	06/15/2011
TDS	2,600 mg/l	1,200 mg/l	03/29/2011
TDS	2,500 mg/l	1,200 mg/l	12/13/2010

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

Violation
Description
Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-5 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
pH	9.3 su	6.5-9.0 su	03/16/2012
pH	9.51 su	6.5-9.0 su	03/28/2011

ATTACHMENT A

MIDWEST GENERATION, LLC, WILL COUNTY GENERATING STATION, ID:6283
VIOLATION NOTICE NO. W-2012-00058:

Violation
Description
MW-5 continued

Parameter	Sample Value	GW Standard	Collection Date
Boron	2.9 mg/l	2.0 mg/l	03/16/2012
Boron	3.2 mg/l	2.0 mg/l	12/08/2011
Boron	4.0 mg/l	2.0 mg/l	09/15/2011
Boron	3.2 mg/l	2.0 mg/l	06/15/2011
Boron	2.7 mg/l	2.0 mg/l	03/29/2011
Boron	2.6 mg/l	2.0 mg/l	12/13/2010
Sulfate	500 mg/l	400 mg/l	12/08/2011
Sulfate	690 mg/l	400 mg/l	09/15/2011
Sulfate	540 mg/l	400 mg/l	06/15/2011
Sulfate	570 mg/l	400 mg/l	03/29/2011
Sulfate	580 mg/l	400 mg/l	12/13/2010
TDS	1,500 mg/l	1,200 mg/l	09/15/2011
TDS	1,400 mg/l	1,200 mg/l	06/15/2011
TDS	1,300 mg/l	1,200 mg/l	03/29/2011

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

Violation
Description
Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-6 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
pH	9.39 su	6.5-9.0 su	03/16/2012
pH	9.44 su	6.5-9.0 su	09/15/2011
pH	9.27 su	6.5-9.0 su	06/15/2011
pH	9.65 su	6.5-9.0 su	03/29/2011
Boron	2.5 mg/l	2.0 mg/l	03/16/2012
Boron	2.5 mg/l	2.0 mg/l	12/08/2011
Boron	3.0 mg/l	2.0 mg/l	09/15/2011
Boron	2.4 mg/l	2.0 mg/l	06/15/2011
Boron	2.5 mg/l	2.0 mg/l	03/28/2011
Boron	2.7 mg/l	2.0 mg/l	12/13/2010
Chloride	210 mg/l	200 mg/l	03/28/2011
Sulfate	440 mg/l	400 mg/l	12/08/2011
Sulfate	420 mg/l	400 mg/l	09/15/2011

ATTACHMENT A

MIDWEST GENERATION, LLC, WILL COUNTY GENERATING STATION, ID:6283
VIOLATION NOTICE NO. W-2012-00058:

Violation
Description
MW-6 continued

Parameter	Sample Value	GW Standard	Collection Date
Sulfate	570 mg/l	400 mg/l	06/15/2011
Sulfate	540 mg/l	400 mg/l	03/28/2011
Sulfate	500 mg/l	400 mg/l	12/13/2010

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

Violation
Description
Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-7 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
Manganese	0.20 mg/l	0.15 mg/l	03/16/2012
Manganese	0.20 mg/l	0.15 mg/l	12/08/2011
Manganese	0.18 mg/l	0.15 mg/l	09/15/2011
Boron	5.1 mg/l	2.0 mg/l	03/16/2012
Boron	5.0 mg/l	2.0 mg/l	12/08/2011
Boron	3.4 mg/l	2.0 mg/l	09/15/2011
Boron	5.7 mg/l	2.0 mg/l	06/15/2011
Boron	5.0 mg/l	2.0 mg/l	03/29/2011
Boron	4.7 mg/l	2.0 mg/l	12/13/2010
Sulfate	770 mg/l	400 mg/l	03/16/2012
Sulfate	710 mg/l	400 mg/l	12/08/2011
Sulfate	710 mg/l	400 mg/l	09/15/2011
Sulfate	1,000 mg/l	400 mg/l	06/15/2011
Sulfate	650 mg/l	400 mg/l	03/29/2011
Sulfate	610 mg/l	400 mg/l	12/13/2010
TDS	1,400 mg/l	1,200 mg/l	03/16/2012
TDS	1,300 mg/l	1,200 mg/l	12/08/2011
TDS	1,400 mg/l	1,200 mg/l	09/15/2011
TDS	1,600 mg/l	1,200 mg/l	06/15/2011
TDS	1,500 mg/l	1,200 mg/l	03/29/2011
TDS	1,300 mg/l	1,200 mg/l	12/13/2010

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

ATTACHMENT A

MIDWEST GENERATION, LLC, WILL COUNTY GENERATING STATION, ID:6283
VIOLATION NOTICE NO. W-2012-00058:

Violation
Description
Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-8 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
Boron	2.3 mg/l	2.0 mg/l	09/15/2011
Chloride	270 mg/l	200 mg/l	03/29/2011
Manganese	0.40 mg/l	0.15 mg/l	12/08/2011
Manganese	0.45 mg/l	0.15 mg/l	09/15/2011
Manganese	0.47 mg/l	0.15 mg/l	06/15/2011
Manganese	0.44 mg/l	0.15 mg/l	03/29/2011
Manganese	0.33 mg/l	0.15 mg/l	12/13/2010
Sulfate	600 mg/l	400 mg/l	09/15/2011
Sulfate	420 mg/l	400 mg/l	06/15/2011
Sulfate	440 mg/l	400 mg/l	03/29/2011
Sulfate	440 mg/l	400 mg/l	12/13/2010
TDS	1,300 mg/l	1,200 mg/l	09/15/2011

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

Violation
Description
Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-9 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
pH	10.56 su	6.5-9.0 su	03/16/2012
pH	9.55 su	6.5-9.0 su	12/08/2011
pH	10.27 su	6.5-9.0 su	09/15/2011
pH	10.44 su	6.5-9.0 su	06/15/2011
pH	10.87 su	6.5-9.0 su	03/29/2011
Boron	2.2 mg/l	2.0 mg/l	12/13/2010
Chloride	230 mg/l	200 mg/l	06/15/2011
Chloride	280 mg/l	200 mg/l	03/29/2011
Sulfate	410 mg/l	400 mg/l	06/15/2011
Sulfate	410 mg/l	400 mg/l	12/13/2010

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

ATTACHMENT A

MIDWEST GENERATION, LLC, WILL COUNTY GENERATING STATION, ID:6283
VIOLATION NOTICE NO. W-2012-00058:

Violation
Description
Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-10 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
Boron	2.1 mg/l	2.0 mg/l	03/16/2012
Boron	2.5 mg/l	2.0 mg/l	12/08/2011
Boron	2.8 mg/l	2.0 mg/l	09/15/2011
Boron	2.2 mg/l	2.0 mg/l	06/15/2011
Boron	2.1 mg/l	2.0 mg/l	12/13/2010
Manganese	0.25 mg/l	0.15 mg/l	03/16/2012
Manganese	0.29 mg/l	0.15 mg/l	12/08/2011
Manganese	0.27 mg/l	0.15 mg/l	09/15/2011
Manganese	0.25 mg/l	0.15 mg/l	06/15/2011
Manganese	0.22 mg/l	0.15 mg/l	03/28/2011
Manganese	0.25 mg/l	0.15 mg/l	12/13/2010
Sulfate	420 mg/l	400 mg/l	09/15/2011

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

Exhibit

B

ILLINOIS POLLUTION CONTROL BOARD
June 20, 2019

SIERRA CLUB, ENVIRONMENTAL LAW AND POLICY CENTER, PRAIRIE RIVERS NETWORK, and CITIZENS AGAINST RUINING THE ENVIRONMENT,	)	
Complainants,	)	
v.	)	PCB 13-15 (Enforcement – Water, Land)
MIDWEST GENERATION, LLC,	)	
Respondent.	)	

GREG WANNIER OF SIERRA CLUB; FAITH BUGELAND LINDSAY DUBIN OF ENVIRONMENTAL LAW AND POLICY CENTER; ABEL RUSS AND SYLVIA LAM OF ENVIRONMENTAL INTEGRITY CENTER APPEARED ON BEHALF OF COMPLAINANTS;

JENNIFER T. NIJMAN AND KRISTEN GALE APPEARED ON BEHALF OF RESPONDENT.

INTERIM OPINION AND ORDER OF THE BOARD (by K. Papadimitriu)[1]:

On October 3, 2012, Sierra Club, Environmental Law and Policy Center, Prairie Rivers Network, and Citizens Against Ruining the Environment (collectively, Environmental Groups) filed a seven-count complaint against Midwest Generation, LLC (MWG). The complaint alleges groundwater contamination and open dumping in violation of the Environmental Protection Act (Act) and Board regulations. The Environmental Groups allege that MWG discarded contaminants into the environment through the coal ash disposal ponds and historical coal ash storage sites at MWG's four electric generation stations (EGUs or Stations) in Illinois: (1) the Joliet #29 Station, in Joliet, Will County (Joliet 29); (2) the Powerton Station, in Pekin, Tazewell County (Powerton); (3) the Will County Station, in Romeoville, Will County (Will County); and (4) the Waukegan Station, in Waukegan, Lake County (Waukegan).

After partially granting and partially denying MWG's motion to dismiss, the Board held 10 days of hearings. In today's order, the Board finds that the Environmental Groups met their burden in establishing that it is more probable than not that MWG violated the Act and Board regulations as alleged in the amended complaint. Specifically, the Board finds that MWG

[1] Daniel Pauley, who externed at Chicago Legal Clinic while a law student and prior to joining the Board as a staff attorney, took no part in the Board's drafting or deliberation of any order or issue in this matter.

violated Section 12(a) of the Act at all four Stations. 415 ILCS 5/12(a) (2016). The Board finds that MWG caused or allowed discharge of coal ash constituents into groundwater at all four Stations, thereby causing exceedances of the Board's Class I antimony (Joliet 29, Will County), arsenic (Powerton, Will County), boron (Powerton, Will County, and Waukegan), sulfate (Joliet 29, Powerton, Will County, and Waukegan) and TDS (Joliet 29, Powerton, Will County, and Waukegan) GQS during 2010-2017, violating Sections 620.115, 620.301(a), and 620.405 of the Board's regulations (35 Ill. Adm. Code 620.115, 620.301(a), 620.405). 415 ILCS 5/12(a) (2016).).

The Board also finds that MWG violated Section 12(a) of the Act at all four Stations by causing or allowing discharge of contaminants into groundwater causing water pollution. Specifically, the Board finds that MWG exceeded the statewide 90th percentile levels for sulfate and boron at all four Stations between 2010 and 2017. 415 ILCS 5/12(a)(2016). The Board, however, finds no violation of Section 12(a) of the Act at Joliet 29, Powerton, and Will County during the performance of corrective actions in October 2013 under the GMZs established at those three Stations.

The Board finds that MWG also violated Section 12(d) of the Act at Powerton Station by depositing coal ash cinders directly upon the land, thereby creating a water pollution hazard. 415 ILCS 5/12(d) (2016). The Board, however, finds that the Environmental Groups did not establish violations of Section 12(d) of the Act at Joliet 29, Will County, or Waukegan Stations.

Lastly, the Board finds that MWG violated Section 21(a) of the Act at all four Stations by allowing coal ash to consolidate in the fill areas around the ash ponds and in historical coal ash storage areas. The Board finds that MWG did not take measures to remove it or prevent its leaking of contaminants into the groundwaters.

The Board finds the record is insufficient to determine the appropriate relief in this proceeding. Therefore, the Board directs the hearing officer to hold additional hearings to determine the appropriate relief.

GUIDE TO THE BOARD'S OPINION

The Board first summarizes the procedural history of this case at page 4, before providing the relevant legal background including the standard of review and applicable law at page 10. The Board then summarizes the parties' positions starting at page 15. Next, the Board makes its factual findings, both regarding the general facts relating to all four MWG Stations (page 15) and separate facts specific to each of the Stations beginning on: page 22 for Joliet 29, page 35 for Powerton, page 51 for Will County, and page 63 for Waukegan. The Board then discusses and makes its legal findings regarding the alleged violations starting 77. After summarizing its conclusions at page 92, the Board issues its order page 92.

TABLE OF CONTENTS

I. PROCEDURAL HISTORY

i. Complaint

The Environmental Groups filed a seven-count complaint on October 3, 2012 (Comp.). The complaint alleges that MWG caused open dumping and water pollution, violating Sections 12(a), 12(d) and Section 21(a) of the Act (415 ILCS 5/12(a), 12(d), 21(a) (2016)), as well as Sections 620.115, 620.301(a), 620.405 of the Board's regulations (35 Ill. Adm. Code 620.115, 620.301(a), 620.405). Counts 1-3 also alleged violations of United States Environmental Protection Agency's regulations (40 C.F.R. §§ 257.1 and 257.3-4) implementing the federal Resource Conservation and Recovery Act (RCRA) (42 U.S.C. §§ 6901 *et seq*.). The complaint alleges that through coal ash disposal ponds at its four stations, MWG has caused or contributed to contamination of groundwater, discarded contaminants into the environment and caused water pollution and exceedances of Illinois' Class I and II Groundwater Quality Standards (GQS). The Environmental Groups ask that the Board order MWG to cease and desist from the violations, modify its coal ash disposal practices, and remediate contaminated groundwater. The complaint also calls for civil penalties on MWG.

ii. Motion to Dismiss

On November 5, 2012, MWG filed a motion to dismiss the complaint (Mot. Dis.). In the motion, MWG argues that the complaint is duplicative and frivolous because, among other things, in 2012, MWG entered into compliance commitment agreements (CCAs) with the Illinois Environmental Protection Agency (IEPA or Agency) regarding the ash ponds at each of the four Stations. Mot. Dis. at 5. MWG contended that because there is no disagreement with IEPA, the complaint fails to meet requirements of Section 31(d) of the Act (415 ILCS 5/32(d) (2016)). *Id*. MWG also moved to strike parts of counts 1-3 alleging violations of federal regulations.

iii. Stay of the Proceedings

On December 28, 2012, the Environmental Groups and MWG separately notified the Board that, due to the December 17, 2012 filing of a bankruptcy petition, this enforcement proceeding was automatically stayed under Section 362(a) of the Bankruptcy Code (11 U.S.C. § 362(a)). On February 7, 2013, the Board issued an order that acknowledged the automatic stay and granted the Environmental Groups' motion for extension of time to reply to MWG's dismissal motion. Sierra Club, PCB 13-15, slip op. at 1, 4 (Feb. 7, 2013). The Board directed parties to notify the Board within 30 days of the stay's expiration. *Id*. at 4. On May 22, 2013, the Environmental Groups filed a notice stating that on April 22, 2013, the Bankruptcy Court partially lifted the automatic stay solely to permit the Board to rule on MWG's motion to dismiss.

On October 3, 2013, the Board partially denied and partially granted MWG's motion to dismiss. Specifically, the Board partially granted the motion by striking those portions of counts 1-3 alleging violations of federal regulations. Sierra Club, PCB 13-15, slip op. at 23-25 (Oct. 3, 2013). In partially denying the motion to dismiss, the Board found that the existence of CCAs does not render the complaint frivolous or duplicative. *Id*. at 18-23, 27 (Oct. 3, 2013). The Board stated that it "never treated as an additional requirement for citizen's suits the existence of a disagreement between the Agency and the person complained against" and that "the existence of a CCA does not preclude the filing by the People or any citizen of an enforcement action." *Id*. at 18. The Board also noted that "because a CCA resolves and is an inextricable part of a non-adjudicatory process, it is not akin to a settlement agreement in an actual enforcement proceeding." *Id*. at 22. The Board also refused to dismiss the open dumping counts as insufficiently pled. The Board rejected MWG's arguments that ash ponds cannot be open dumps because they are properly "permitted and regulated as water pollution treatment units" under MWG's NPDES permit. *Id*. at 8. The Board concluded that "Section 21(a) [of the Act] may apply to permitted or otherwise lawful facilities that improperly fail to contain waste." *Id*. at 25-27.

On January 10, 2014, the Environmental Groups filed a copy of the Bankruptcy Court's order of December 11, 2013, lifting the automatic stay as to this enforcement proceeding but prohibiting enforcement of any monetary penalty award. On January 23, 2014, the Board accepted the complaint for hearing, finding the complaint, as modified by the order striking parts of counts 1-3, neither duplicative nor frivolous. Sierra Club, PCB 13-15, slip op. at 3 (Jan. 23, 2014).

On February 19, 2014, MWG filed a motion to stay the enforcement proceeding for at least one year. MWG argued that a stay was necessary to: (1) avoid potential conflicts from the coal ash rulemaking initiated by USEPA as well as the IEPA's proposed coal ash rules; (2) allow the pending acquisition of MWG by NRG Energy, Inc. to proceed; and (3) allow continued groundwater monitoring to assess the effect of MWG's actions taken under the CCAs. MWG further asserted that no ongoing environmental harm is occurring, and a stay would not prejudice the Environmental Groups. The Environmental Groups opposed the motion. On April 17, 2014, the Board denied the stay.

On May 5, 2014, MWG filed its answer and defenses to the complaint. On May 27, 2014, the Environmental Groups filed a reply to MWG's defenses.

iv. Amended Complaint

On December 15, 2014, the Environmental Groups moved to amend the complaint, attaching a first amended complaint. The Environmental Groups stated that, during discovery, they "have become aware of additional coal ash storage, disposal, and/or fill areas at each site that may be contributing to the coal ash-related contamination alleged in the Complaint." Sierra Club, PCB 13-15, slip op. at 5 (Feb. 19, 2017). After the Environmental Groups withdrew that motion, they filed another motion to amend, and a second amended complaint on January 30, 2015. On February 19, 2015, the Board granted the Environmental Groups' motion to file the second amended complaint. *Id.* at 6. For brevity, today's order refers to the second amended complaint, as the "amended complaint" (Am. Comp.). On April 20, 2015, MWG filed its answer and defenses to the second amended complaint (MWG 2nd Ans. Def.).

v. Summary Judgment

On June 1, 2016, the Environmental Groups filed a motion for partial summary judgment regarding coal ash areas outside of the ash ponds, referred to as "Historic Ash Areas." Sierra Club, PCB 13-15, slip op. at 4 (Jan. 19, 2017). MWG responded on July 19, 2016. The Board denied the motion on January 19, 2017. At that time, the Board found genuine issues of material facts precluding summary judgment: whether the evidence confirms the presence of coal ash in the historic ash areas; whether coal ash constituents are present at all four Stations; and whether historic ash areas are the source of contamination. The Board added that weighing competing evidence to resolve a dispute over material facts was appropriate not at summary judgment but after hearing. Sierra Club, PCB 13-15, slip op. at 5 (Jan. 19, 2017).

vi. Hearings and Testimony

The Board held two sets of hearings before Board Hearing Officer Bradley Halloran, the first from October 23 through October 27, 2017 (10/23/17 Tr. - 10/27/17 Tr.), and the second from January 29 through February 2, 2018 (1/30/18 Tr. - 2/2/18 Tr.). Hearing Officer Halloran listed all hearing exhibits admitted into evidence in his April 25, 2018 order.[2]

The Environmental Groups presented a July 2015 expert report of James R. Kunkel, Ph.D., P.E. (EG Exhs. 401, 407, 408), who testified at the hearings. Dr. Kunkel is a licensed professional civil engineer (not in Illinois) and a retired registered professional hydrologist. *See* EG Exh. 400; 10/26/17 p.m. Tr. 24-144; 10/27/17 Tr. at 87 (Kunkel Test.). He holds a Ph.D. in Hydrology and Water Resources from the University of Arizona, an M.S. in Civil Engineering from the University of Connecticut, and a B.S.C.E in Civil Engineering from St. Martin’s University. *Id*. Dr. Kunkel has about 40 years of relevant professional experience. *Id*.

MWG presented an expert report on the condition of the four Stations by John Seymour (MWG Exh. 903, 901), who testified at the hearings. *See e.g*. 2/1/18 Tr. at 213-214 (Seymour Test.); MWG Statement of Facts (SOF) at 1-2 ¶¶ 8-11. Mr. Seymour is a Senior Principal at Geosyntec Consultants and a geotechnical engineering and remediation practices specialist, with about 40 years of relevant experience. MWG Exh. 900. He holds an M.S. in Geotechnical Engineering from the University of Michigan and a B.S. in Civil Engineering from Michigan Technological University. *Id*.

The following expert witnesses also testified at the hearings:

- Maria Race, MWG’s Director of Federal Environmental Programs, former manager of general environmental compliance for the Stations, and former Asset Manager. 10/23/17 Tr. at 29-211; 10/24/17 Tr. at 8-32 (Race Test.); SOF at ¶ 2.
- Mark Kelly, MWG’s Chemical Specialist at the Powerton Station since 1992, responsible for water related matters. 1/31/18 Tr. at 67-68 (Kelly Test.); SOF at ¶ 6.
- Richard Gnat, Principal at MWG’s consultant KPRG & Associates (KPRG), which performed relevant projects at the four Stations. 10/25/17 Tr. at 39-234; 10/26/17 a.m. Tr. at 5-84; 10/26/17 p.m. Tr. at 4-22; 2/1/18 Tr. at 82-83 (Gnat Test.); SOF at ¶ 5.
- Christopher Lux, MWG’s Engineering Manager at the Waukegan Station, who has worked at the Station since 1992, before MWG began operating the Station in 1999. 10/24/17 Tr. 33-172 (Lux Test.); SOF at ¶ 3.

[2] All admitted hearing exhibits are available in the Board’s website (pcb.illinois.gov) in the sub-docket “PCB 2013-015Exh”.

- Rebecca Maddox, former MWG Environmental Specialist at the Will County Station between 2008 and April 2015. 10/24/17 Tr. 173-315; 10/25/17 Tr. at 10-38 (Maddox Test.); SOF at ¶ 4.
- Fredrick Veenbaas, MWG's Senior Compliance Specialist at the Waukegan Station since 2012; he had been the Chemistry Systems Specialist at the Will County Station since 1999. 1/31/18 Tr. at 221-222 (Veenbaas Test.); SOF at ¶ 7.

vii. Evidentiary Appeals

After the first set of hearings, the Environmental Groups and MWG objected to certain hearing officer's evidentiary rulings. On January 25, 2018, the Board granted the parties' respective motions for interlocutory appeal and affirmed the hearing officer's rulings to exclude Environmental Groups' Exhibit 37 from the evidence and to admit the Environmental Groups' Exhibits 5.5, 6, 7, 16, 204G–209G, 210H–215H, 222J–228J, and 236L–241L. In the same order, the Board reversed the hearing officer's ruling to admit the Environmental Groups' Exhibit 261 and excluded it from the record. *See* Sierra Club, PCB 13-15, slip op. at 5 (Jan. 25, 2018).

The parties also appealed certain hearing officer's evidentiary rulings made during the second set of hearings. On April 26, 2018, the Board affirmed the hearing officer's rulings to admit MWG's Exhibit 649 and to exclude MWG's Exhibit 662. *See* Sierra Club, PCB 13-15, slip op. at 2-4 (Apr. 26, 2018).

During the hearings, the hearing officer allowed 1998 Phase I and Phase II Environmental Site Assessment reports, prepared by ENSR for the previous owner of the Stations, into evidence over MWG's objections. At the same time, the hearing officer limited the use of the exhibits to the questions asked of, and the responses elicited from, the witness. 10/23/17 Tr. at 126-127; Hearing Officer Order, PCB 13-15 (Jan. 11, 2018); EG Exhs. 17D (1998 Phase II report for the Powerton Station), 18D (Phase II Will County), 19D (Phase II Waukegan) 20D (Phase II Joliet 29), 21 (Phase I Joliet 29), and 38 (Phase I Waukegan); MWG Exhs. 632 (Phase I Powerton), and 652 (Phase I Will County).

On February 26, 2018, the Environmental Groups filed a motion, amended on March 21, 2018, asking the Board to strike parts of the expert report and related testimony and demonstrative exhibit of Mr. Seymour, MWG's expert. On March 20, 2018, MWG filed a motion for sanctions, arguing that the Environmental Groups' motion to strike was untimely and their appeal of a hearing officer ruling was meritless. On May 10, 2018, the Board denied both motions. The Board found the evidence presented by Mr. Seymour to be reliable, given his professional qualifications. The Board also found that MWG had not demonstrated any unreasonable failure by the Environmental Groups to comply with a Board procedural rule or a hearing officer order. On October 2, 2017, the parties filed joint stipulations of facts (Joint Stip.).

viii. Post-Hearing Briefs

On July 20, 2018, the Environmental Groups and MWG filed their respective post-hearing briefs (EG Br. and MWG Br.). On August 30, 2018, the parties filed their respective response briefs (Env. Gr. Rep. Br. and MWG Rep. Br.). MWG' post hearing brief includes, as an Appendix A, MWG's "Statement of Facts" (SOF), setting forth what MWG believes are the facts established at hearing.

ix. Table of Abbreviations Used in this Opinion

"Act"	Illinois Environmental Protection Act
"Agency"	Illinois Environmental Protection Agency
"Am. Comp."	The Environmental Groups' second amended complaint, filed with the January 30, 2015 motion for leave to reply
"ASTM"	ASTM International
"CCAs"	2012 compliance commitment agreements between MWG and IEPA for each of the four Stations
"CCB"	"Coal combustion by-product" as defined in the Act (415 ILCS 5/3.135 (2016))
"CCR Rules"	USEPA's Coal Combustion Residual Rule at 40 C.F.R. Part 257 Subpart D
"C.F.R."	Code of Federal Regulations
"Proposed CCR regulations"	IEPA's rulemaking proposal in <u>Coal Combustion Waste (CCW) Ash Ponds and Surface Impoundments at Power Generating Facilities: Proposed New 35 Ill. Adm. Code 841</u>, R14-10
"EG. Br."	The Environmental Groups' initial post-hearing brief
"EG. Rep. Br."	The Environmental Groups' post-hearing response brief
"ELUC"	Environmental Land Use Control
"Exh."	Hearing Exhibit; due to a large variety and inconsistency of page numbering though the documents in the record, page numbers of the exhibits refer to the consecutive page number as displayed in electronic document opened in PDF; page numbers starting with "#" refer to the document bates numbers, if available.
"GMZ"	Groundwater Management Zone
"GQS"	Groundwater Quality Standards
'IDOT"	Illinois Department of Transportation
"IEPA"	Illinois Environmental Protection Agency

"Joint Stip."	The parties' October 2, 2017 Joint Agreed Stipulations
"MWG Br."	MWG's initial post-hearing brief
"MWG Rep. Br."	MWG's post-hearing response brief
"NLET"	Neutral Leaching Extraction Test
"SOF"	MWG's "Statement of Facts" attached as Appendix A to MWG's initial post-hearing brief
"Tr."	Transcript
"VN"	Violation Notice
USEPA	United States Environmental Protection Agency

II. LEGAL FRAMEWORK

1. Standard of Review

In an enforcement proceeding before the Board, the complainant must prove by a preponderance of evidence that the respondent violated the Act, Board rules, or permits. People v. Packaging Personified, Inc., PCB 04-16, slip op. at 11 (Sept. 8, 2011); People v. General Waste Services, Inc., PCB 07-45, slip. op. at 12 (Apr. 7, 2011); Nelson v. Kane County Forest Preserve, PCB 94-244, slip op. at 5 (July 18, 1996); Lefton Iron & Metal Company, Inc. v. City of East St. Louis, PCB 89-53 slip op. at 3 (Apr. 12, 1990); Industrial Salvage Inc. v. County of Marion, PCB 83-173 slip op. at 3-4, (Aug. 2, 1984) *citing* Arlington v. Water E. Heller International Corp., 30 Ill. App. 3d 631, 640, 333 N.E.2d 50, 58 (1st Dist. 1975). A proposition is proved by a preponderance of evidence when it is more probably true than not. Nelson v. Kane County Forest Preserve, PCB 94-244, slip op. at 5 (July 18, 1996); Village of South Elgin v. Waste Management of Illinois, PCB 03-106, slip op. at 2 (Feb. 20, 2003); Industrial Salvage at 4, 59, 233, 236, *citing* Estate of Ragen, 79 Ill. App. 3d 8, 13, 198 N.E.2d 198, 203 (1st Dist. 1979). Once the complainant presents sufficient evidence to make a *prima facie* case, the burden of going forward shifts to the respondent to disprove the propositions. People v. Packaging Personified, Inc., PCB 04-16, slip op. at 11 (Sept. 8, 2011).

2. Applicable Law

In this case, the Environmental Groups allege violations of Sections 12(a). 12(d), and 21(a) of the Act (415 ILCS 5/12(a), (d), 21(a) (2016)). To establish these violations, the Board and the courts set specific elements that the Environmental Groups must prove. Below are the legal standards at issue in this proceeding.

A. Water pollution

Sections 12(a) and (d) of the Act state no person shall:

(a) Cause or threaten or allow the discharge of any contaminants into the environment in any State so as to cause or tend to cause *water pollution* in Illinois, either alone or in combination with matter from other sources, or so as to *violate regulations or standards* adopted by the Pollution Control Board under this Act.

* * *

(d) Deposit any contaminants upon the land in such place and manner so as to create a *water pollution* hazard. 415 ILCS 5/12(a), (d) (2016) (emphasis added).

"**Contaminant**" is defined as "any solid, liquid, or gaseous matter, any odor, or any form of energy, from whatever source." 415 ILCS 5/3.165 (2016); 35 Ill. Adm. Code 620.110. "**Waters**" are defined as "all accumulations of water, surface and underground, natural, and artificial, public and private, or parts thereof, which are wholly or partially within, flow through, or border upon this State." 415 ILCS 5/3.550 (2016). "**Water pollution**" is defined as:

> such alteration of the physical, thermal, chemical, biological or radioactive properties of any *waters* of the State, or such discharge of any contaminant into any waters of the State, as will or is likely to create a *nuisance* or render such waters *harmful* or *detrimental* or *injurious* to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate uses, or to livestock, wild animals, birds, fish, or other aquatic life. 415 ILCS 5/3.545 (2016) (emphasis added).

To find a violation of Section 12(a) of the Act, the Board must find that a contaminant was discharged, or threatened to be discharged that is likely to render waters harmful, detrimental, or injurious to public health. People v. CSX, PCB 7-16, slip op at 16 (July 12, 2007). A violation of the Board's GQS constitutes violation of Section 12(a) of the Act. International Union, at all v. Caterpillar, PCB 94-420 slip op. at 33-34 (Aug. 1, 1996).

To establish a violation of Section 12(d), evidence must demonstrate that contaminants deposited upon land are in "particular quantity and concentration . . . likely to create a nuisance or to render the waters harmful, detrimental, or injurious." Jerry Russell Bliss, Inc. v. IEPA.**,** 138 Ill. App. 3d 699, 704 (5th Dist. 1985).

To find a violation of Section 12(d) of the Act (415 ILCS 5/12(d) (2016)), the Board must find that a contaminant is placed on land in such a place and manner as to create a water pollution hazard. CSX, PCB 7-16, slip op. at 17. If a site's hydrology and geology would allow migration of the contaminants left in the soil to groundwater, a violation of Section 12(d) is found. *Id*.

Section 620.115 of the Board's rules (35 Ill. Adm. Code 620.115) states:

> No person shall cause, threaten or allow a violation of the Act, the [Illinois Groundwater Protection Act] or regulations adopted by the Board thereunder, including but not limited to this Part. 35 Ill. Adm. Code 620.115.

Section 620.301(a) of the Board's rules (35 Ill. Adm. Code 620.301(a)) states:

a) No person shall cause, threaten or allow the release of any contaminant to a resource groundwater such that:

1) Treatment or additional treatment is necessary to continue an existing use or to assure a potential use of such groundwater; or

2) An existing or potential use of such groundwater is precluded. 35 Ill. Adm. Code 620.301(a).

Section 620.405 of the Board's rules (35 Ill. Adm. Code 620.405) states:

No person shall cause, threaten or allow the release of any contaminant to groundwater so as to cause a groundwater quality standard set forth in this Subpart to be exceeded. 35 Ill. Adm. Code 620.405.

The Act and Board rules define "**groundwater**" as "underground water which occurs within the saturated zone and geologic materials where the fluid pressure in the pore space is equal to or greater than atmospheric pressure." 415 ILCS 5/3.210; 35 Ill. Adm. Code 620.110. "**Resource groundwater"** is defined as "groundwater that is presently being, or in the future is capable of being, put to beneficial use by reason of being of suitable quality." 415 ILCS 5/3.430; 35 Ill. Adm. Code 620.110.

For the pollutants alleged in the complaints, Section 620.410 sets the following standards:

a) Inorganic Chemical Constituents
Except due to natural causes or as provided in Section 620.450, concentrations of the following chemical constituents must not be exceeded in Class I groundwater:

Constituent	Units	Standard
Antimony	mg/L	0.006
Arsenic*	mg/L	0.010
…		
Boron	mg/L	2.0
…		
Chloride	mg/L	200.0
…		
Iron	mg/L	5.0
Lead	mg/L	0.0075
Manganese	mg/L	0.15
Mercury	mg/L	0.002
…		
Nitrate as N	mg/L	10.0
…		
Selenium	mg/L	0.05
…		

Sulfate	mg/L	400.0
Thallium	mg/L	0.002
Total Dissolved Solids (TDS)	mg/L	1,200
…		

*Denotes a carcinogen. 35 Ill. Adm. Code 620.410(a).

Class I Potable Resource Groundwater include "[g]roundwater located 10 feet or more below the land surface" that meets requirements of Section 620.210. 35 Ill. Adm. Code 620.210. Class I Potable Resource Groundwater excludes groundwater specified in Sections 620.230 (Class III Special Resource Groundwater), Section 620.240 (Class IV Other Groundwater), or Section 620.250 (Groundwater Management Zone). *Id*.

Section 620.250(a) of the Board's rules specifies that:

a) Within any class of groundwater, a groundwater management zone may be established as a three-dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site:

1) That is subject to a corrective action process approved by the Agency; or

2) For which the owner or operator undertakes an adequate corrective action in *a timely and appropriate manner* and provides a written confirmation to the Agency. Such confirmation must be provided in a form as prescribed by the Agency. 35 Ill. Adm. Code 620.250(a).

Section 620.250(b) states that a GMZ is established when conditions of subsection (a) are met and "for a period of time consistent with the action described in that subsection." 35 Ill. Adm. Code 620.250(b).

Section 620.250(c) further states:

> A groundwater management zone *expires* upon the Agency's receipt of appropriate documentation which confirms the completion of the action taken pursuant to subsection (a) and which confirms the attainment of applicable standards as set forth in Subpart D. The Agency shall review the on-going adequacy of controls and continued management at the site if concentrations of chemical constituents, as specified in Section 620.450(a)(4)(B), remain in groundwater at the site following completion of such action. The review must take place no less often than every 5 years and the results shall be presented to the Agency in a written report. 35 Ill. Adm. Code 620.250(c).

Section 620.450(a) establishes quality standards for groundwater within a GMZ. Section 620.450(a) states:

1) Any chemical constituent in groundwater within a groundwater management zone is subject to this Section.

2) Except as provided in subsections (a)(3) or (a)(4), the standards as specified in Sections 620.410, 620.420, 620.430, and 620.440 apply to any chemical constituent in groundwater within a groundwater management zone. 35 Ill. Adm. Code 620.450(a)(1)-(2).

Section 620.450(a)(3) and (4) further define standards that apply to groundwater in a GMZ before and after completion of the corrective action:

3) Prior to completion of a corrective action described in Section 620.250(a), the standards as specified in Sections 620.410, 620.420, 620.430, and 620.440 are not applicable to such released chemical constituent, provided that the initiated action proceeds in a timely and appropriate manner.

4) After completion of a corrective action as described in Section 620.250(a), the standard for such released chemical constituent is:

   A) The standard as set forth in Section 620.410, 620.420, 620.430, or 620.440, if the concentration as determined by groundwater monitoring of such constituent is less than or equal to the standard for the appropriate class set forth in those Sections; or

   B) The concentration as determined by groundwater monitoring, if such concentration exceeds the standard for the appropriate class set forth in Section 620.410, 620.420, 620.430, or 620.440 for such constituent, and:

      i) To the extent practicable, the exceedance has been minimized and beneficial use, as appropriate for the class of groundwater, has been returned; and

      ii) Any threat to public health or the environment has been minimized. 35 Ill. Adm. Code 620.450(a)(3)-(4).

Section 620.450(a)(5) specifies the actions the IEPA must take with respect to standards applicable under subsection (a)(4)(B):

> The Agency shall develop and maintain a listing of concentrations derived pursuant to subsection (a)(4)(B). This list shall be made available to the public and be updated periodically, but no less frequently than semi-annually. This listing shall be published in the Environmental Register. 35 Ill. Adm. Code 620.450(a)(5).

B. <u>Open dumping</u>

Section 21(a) of the Act states "no person shall: cause or allow the open dumping of any waste." 415 ILCS 5/21(a) (2016).

The Act defines "**open dumping**" as "the consolidation of refuse from one or more sources at a disposal site that does not fulfill the requirements of a sanitary landfill." 415 ILCS 5/3.305 (2016). "**Refuse"** is defined as "waste" (415 ILCS 5/3.385 (2016)) and "**waste**" is defined as:

> 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 3.135*, 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. 415 ILCS 5/3.535 (2016).

"**Coal combustion by-product**" (CCB) is defined as "coal combustion waste when used beneficially in any of the [ways listed in this section]." 415 ILCS 5/3.135 (2016). The Act also defines "**Coal combustion waste**" as "any fly ash, bottom ash, slag, or flue gas or fluid bed boiler desulfurization by-products generated as a result of the combustion of … coal, or … coal in combination with [other material]." 415 ILCS 5/3.140 (2016).

"**Disposal**" means "discharge, deposit, injection, dumping, spilling, leaking or placing of any waste or hazardous waste into or on any land or water or into any well so that such waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters." 415 ILCS 5/3.185 (2016).

"**Sanitary landfill**" means "a facility permitted by the Agency for the disposal of waste on land meeting the requirements of the Resource Conservation and Recovery Act, P.L. 94-580, and regulations thereunder, and without creating nuisances or hazards to public health or safety, by confining the refuse to the smallest practical volume and covering it with a layer of earth at the conclusion of each day's operation, or by such other methods and intervals as the Board may provide by regulation. 415 ILCS 5/3.445 (2016).

For a violation of Section 21(a), although knowledge is not an element of a violation, the Environmental Groups "must show that the alleged polluter has the capability of control over the pollution or that the alleged polluter was in control of the premises where the pollution occurred." Gonzalez v. Pollution Control Bd., 2011 IL App (1st) 093021, ¶ 33; People v. A.J. Davinroy Contractors, 249 Ill. App. 3d 788, 793, 618 N.E.2d 1282, 1286 (5th Dist. 1993). Property owners are responsible for the pollution on their land unless the facts establish that the owners either "lacked the capability to control the source" or "had undertaken extensive precautions to prevent vandalism or other intervening causes." *Id*; Perkinson v. Pollution Control Bd., 187 Ill. App. 3d 689, 695, 543 N.E.2d 901, 904 (3rd Dist. 1989).

III. PARTIES' ALLEGATIONS

1. Environmental Groups' Allegations

The Environmental Groups allege that MWG violated Sections 12(a), 12(d), and 21(a) of the Act (415 ILCS 5/12(a), 12(d), 21(a) (2016)) and Sections 620.115, 620.301(a) and 620.405 of the Board's groundwater quality rules (35 Ill. Adm. Code 620.115, 620.301(a) and 620.405). Am. Comp. at 17, ¶ 51; EG Br. at 4. The Environmental Groups allege that MWG discharged contaminants into the environment "through coal ash disposal ponds, landfills, unconsolidated coal ash fills, and/or other coal ash and coal combustion waste repositories" at all four Stations. Am. Comp. at 17, ¶ 51.

The Environmental Groups allege that at "all MWG Plants coal ash can be found in onsite impoundments (or 'ash ponds') and in ash landfills and other coal ash fill areas outside of the ash ponds." EG Br. at 4. The Environmental Groups allege that MWG has owned and operated the Stations since 1999, has known about coal ash both in and outside ash ponds, and has not exercised adequate control to prevent groundwater contamination. *Id*.

Historical sites. The Environmental Groups allege that all four Stations include large onsite historical coal ash storage areas, or landfills. In support of this allegation, the Environmental Groups rely on the 1998 Phase I and Phase II reports and Dr. Kunkel's testimony and reports to establish historic locations at the four Stations. EG Br. at 26, 29, 31; EG Resp. Br. at 37; EG Exh. 20D at Fig. 2 (#23339); EG Exh. 21 at 12 (#25150); 10/26/17 p.m. Tr. at 34-36, 39, 83 (Kunkel Test.); 10/27/17 Tr. at 12, 25-26 (Kunkel Test.); 1/29/18 Tr. at 73 (Kunkel Test.); EG Exh. 401 at 2. The Environmental Groups assert that MWG employees and consultants were well aware of these areas. 10/25/17 Tr. at 81-82, 95 (Gnat Test.); 10/23/17 Tr. at 100, 103-104, 110-114, 121-122, 134-137, 226 (Race Test.); 1/29/18 Tr. at 183; 2/1/18 Tr. at 193-194; 2/2/18 Tr. at 142, 158-160, 172, 184, 192 (Seymour Test.), MWG Exh. 903 at 43.

The Environmental Groups also allege that contaminants are leaking from the berms of the ash ponds, and, that certain Stations were constructed in part with coal ash and contain ash as deep as 10-120 feet as evidenced by soil borings. EG Br. at 59 *citing* EG Exh. 14C at 19 (#7166-7174); EG Exh. 401 at 24-25, Tab. 7; 27/10/17 Tr. 24:9-26:3.

The Environmental Groups argue that historic ash caused some or all of the groundwater contamination. EG Br. at 33. They argue that MWG expert Mr. Seymour confirmed that MWG is aware of the coal-ash related constituents in the monitoring wells, noting in his testimony that "[i]t's a power plant and so there's ash-related constituents at the site. It's just that we haven't identified a specific source." 2/2/18 Tr. at 46, 158; EG Br. at 33-34. "The power plant is over 50 years old and there are many historic uses at the site that may have caused the impacts that we're seeing, and they have caused the impacts that we're seeing, and they may be related to coal ash from historic uses." *Id*. at 158-160; EG Br. at 34. The Environmental Groups also note that MWG's experts cannot rule out historic coal ash landfills as the cause of contamination because MWG has not taken samples or borings from many of these sites, did not conduct leachate testing there, and did not monitor groundwater close to those areas. EG Br. at 34; 2/2/18 Tr. at 21, 160-165; 1/30/18 Tr. at 258-260; 10/23/17 Tr. at 77.

Coal Ash Constituents. The Environmental Groups maintain that many of the pollutants exceeding GQS are "constituents" of coal ash. Am. Comp. at 4, ¶ 11; EG Br. at 4. Boron and sulfate are primary indicators of potential coal ash. *Id*. These pollutants make groundwater unusable when "at the concentrations found in MWG's wells." Am. Comp. at 4. The Environmental Groups argue that concentrations of these pollutants present human health risk or endanger aquatic ecosystems. Am. Comp. at 4-8, ¶¶ 13-27. The Environmental Groups argue this poses a significant concern because contaminated groundwater is migrating into adjacent surface water bodies. *Id*.

Class I GQS Exceedances. The Environmental Groups assert that groundwater at the four Stations has exceeded Illinois Class I GQS for coal ash constituents since monitoring began in 2010:

1) 69 times at Joliet 29, including eight exceedances in 2016 and four exceedances in the first half of 2017 (EG Br. at 29);

2) 406 times at Powerton, including 81 exceedances in 2016 and 45 exceedances in the first half of 2017 (EG Br. at 39);

3) 443 times at Will County, including 70 exceedances in 2016 and 37 exceedances in the first half of 2017 (EG Br. at 63, App. A);

4) 396 times at Waukegan, including 87 exceedances in 2016 and 55 exceedances in the first half of 2017 (EG Br. at 52, App. A).

Background Exceedances. Additionally, the Environmental Groups contend that onsite concentrations of coal ash constituents are higher than IEPA's state wide background values (both statewide median[3] and 90th percentile) from the IEPA ambient monitoring network and are not naturally occurring. EG Br. at 29. The Environmental Groups' expert, Dr. Kunkel, explained that "there are specific Illinois ground-water quality data which are representative of background on a state-wide level for the three indicator pollutants." EG Exh. 401 at 8. Dr. Kunkel compared median concentrations of coal ash constituents in each well at Joliet 29, Will County, and Waukegan to the statewide background values developed by IEPA. Env. Br. at 21. At Powerton, Dr. Kunkel employed MW-16 as the background well. EG Exh. 401 at 8. The Environmental Groups rely on IEPA's Technical Support Document filed in R14-10 in 2013 to establish statewide median and upper-bound 90th percentile values for boron, sulfate, and other pollutants. EG Br. at 21; EG Exh. 405 at 5 (#19071).

[3] Median is determined by arranging all the data in the background dataset from highest value to lowest and taking the center value of that dataset. 2/1/18 Tr. at 103 (Gnat Test.); EG Exh. 405 at 5-9 (#19071-75). 90th percentile is a statistical representation of monitoring data expected by the Illinois EPA that indicates the level of confidence above which a value can be considered above background. If a number is above the 90th percentile level, then it can be said with 90 percent confidence that the value is above background. 2/2/18 TR. at 32-33 (Seymour Test.)

The Environmental Groups allege that, at Joliet 29, boron and sulfate concentrations exceed the median background values in all 11 monitoring wells, as well as upper-bound 90th percentile background value for boron in MW-11 and sulfate in MW-09. EG Br. at 30. At Powerton, the concentrations of boron and sulfate were exceeded in 15 downgradient wells (MW-1 through MW-15) and the upper-bound 90th percentile background values were exceeded for sulfate in nine wells (MW-4, 5, 8, 9, and 11 through 15) and boron in seven wells (MW-6, 8, and 11 through 15). EG Br. at 40-41. At Will County, boron concentrations exceed the upper-bound 90th percentile background values in all ten wells. *Id.* at 64. Although monitoring well MW-04 is the only well's whose sulfate concentration exceeded the upper-bound 90th percentile value, the sulfate concentrations in all ten wells are three to five times higher than the statewide median value. *Id.* At Waukegan, the boron and sulfate concentrations in most of the wells are higher than the statewide upper-bound 90th percentile background value and not naturally occurring. EG Br. at 53.

Dr. Kunkel noted that all four Stations' sites overlay sand and gravel or shallow bedrock aquifers that are the same aquifers from which the IEPA's background community water supply wells (CWS) are drawing water. EG Exh. 401 at 8. Dr. Kunkel further notes that the actual background median for sulfate at Powerton's background well (MW-16), which is completed in the sand and gravel aquifer, was within a few milligrams per liter of the median statewide sulfate value. Thus, Dr. Kunkel argued that the statewide median background values may be used to evaluate groundwater monitoring results even though the statewide CWS wells were not located in counties with MWG plants. 1/29/18 Tr. 83-84; EG Exh. 401 at 8.

The Environmental Groups note that MWG's expert concurred that, if the groundwater concentration is greater than the 90th percentile of the statewide background values, then the value is above the background value. EG Br. at 21 *citing* 2/2/18 Tr. at 32-33 (Seymour Test.).

GMZs and CCAs. The Environmental Groups also noted that although MWG established Groundwater Management Zones (GMZ) at the three Stations, groundwater monitoring recorded exceedances of GQS in violation of Sections 620.301(a) and 620.405, on many occasions before the GMZs were established. EG Br. at 5. No GMZ was established at the Waukegan Station. The Environments Groups also argued that MWG's four Compliance Commitment Agreements (CCAs) failed to address all possible sources of coal ash contamination because they did not address coal ash outside of the coal ash ponds. The CCAs also failed, according to the Environmental Groups, to provide for any controls to prevent contamination from any historic coal ash landfills or fill areas. EG Br. at 25-26.

2. MWG Response

MWG denied the Environmental Groups' allegations and believed that alleged exceedances are random, inconsistent, and do not show a connection to the ash ponds. MWG 2nd Ans. Def. at 23; MWG Br. at 4. MWG stated that all ash ponds are permitted under its NPDES permits as part of its wastewater treatment systems and are lined with HDPE liners. MWG 2nd Ans. Def. at 1-2; SOF ¶ 91.

Historical Sites. MWG asserted that any historical sites at the four Stations that may contain historical coal combustion debris were not created, filled, or used for storage or disposal by MWG. MWG 2nd Ans. Def. at 22. MWG experts testified that the Phase II Reports were prepared for the previous owner of the Stations, before MWG began operating them. MWG Exh. 901 at 23 (Seymour); EG Exhs. 17D-20D; SOF at 12 ¶ 119; MWG Br. at 11. When MWG acquired the Stations, MWG assessed these historic areas and concluded, based on the Phase I and Phase II Reports, that no further remediation was necessary. MWG Resp. Br at 28; SOF ¶¶ 78-85, 121, 122, 162-165, 272, 368-370; 1/29/18 Tr. at 185, 205-207 (Race Test.). Neither USEPA nor IEPA asked MWG to investigate these areas. *Id*. MWG also noted that, between 2004 and 2015, MWG investigated and tested historic ash in fill materials at Joliet 29, Powerton, Will County, and Waukegan Stations to confirm that the historic ash met the Act's requirements for beneficial reuse. MWG Br. at 7. The results showed that the historic ash met the "CCB criteria and can be used for beneficial reuse" under 415 ILCS 5/3.135. *Id*. at 7-8.

Class I GQS Exceedances. MWG believed that no concentrations of constituents related to coal ash above the groundwater standards exist at the Joliet 29 or Powerton Stations. MWG Br. at 12. According to MWG, Seymour established that the groundwater conditions at the Stations do not pose a risk to public health or water receptors in the neighboring surface waters. MWG Br. at 29. Seymour concluded that ash ponds are not the source of the Part 620 standards exceedances. In fact, Seymour suggested that exceedances may be due to the historic contamination that remains at the site. 2/2/18 Tr. at 80.

MWG stated that, since sampling groundwater began in 2010, boron has been detected above the Class I GQS at Joliet 29 in one of the eleven wells in 2011 once and never since. MWG Br. at 9. Moreover, MWG maintained that groundwater monitoring around the known former ash area at Powerton shows no coal ash constituents above the Class I GQS. MWG Res Br. at 2. MWG's expert Seymour also stated that, based on the groundwater concentrations in the monitoring wells, no groundwater plume exists at any of the Stations, evidenced by a lack of spatial trend in the indicator constituents' concentrations in the direction of the groundwater flow. Accordingly, MWG contended that no evidence exists to indicate that the source area remaining at the site can be remediated. MWG Exh. 903 at 15, 18, 21, 23. MWG's expert, Seymour, however, admitted that key indicator constituents intermittently exceeded Class I groundwater standards. MWG Exh. 903 at 18. MWG's consultants performed Neutral Leaching Extraction Test (NLET) analyses of the bottom ash from ponds at Powerton (2007), Waukegan (2004) and Will County (2010). *Id.* at 41; MWG Exh. 901 at 8. According to Seymour, the results of the NLET analyses indicate whether the leachate in the ponds has the potential to cause groundwater impacts above the Class I groundwater standards. MWG Exh. 903 at 41. Based on the NLET results, he concluded that the leachate in ponds at all four stations does not have the potential to impact groundwater above the Class I standard. *Id*.

Mr. Seymour compared the groundwater monitoring results from 2014 with the results of the NLET analyses of the bottom ash leachate. He noted a low percentage of constituents in the monitoring wells that match leachate indicator constituents (including barium, boron, sulfate, TDS and several metals): 11-37% at Joliet 29; 5-37% at Powerton; 16-26% at Waukegan; and 21-37% at Will County. Exh. 903 at 42-43. Mr. Seymour claimed that low matching percentages show substantial and widespread mismatch between the characteristics of recent groundwater analyzed near the ash ponds and the characteristics of leachate from ash currently stored in the ash basins. *Id.* at 43. Thus, he contended that the likely sources of groundwater impacts are not the ash stored in the ash basins but, rather, historical uses of the sites and surrounding industrial sites . *Id*.

Background Exceedances. MWG also disagreed with the Environmental Groups use of statewide median background values. MWG's expert Mr. Seymour asserted that the background levels employed by the Environmental Groups are based upon monitoring data from community water supply wells that are not representative of site-specific groundwater quality. 2/2/18 Tr. at 31-32 (Seymour Test.). He maintained that it is inaccurate to consider statewide background as representative of background at the sites where upgradient monitoring data is available. Mr. Seymour maintained that background concentrations must be evaluated based upon site specific data from monitoring wells installed at upgradient site boundaries in locations without the presence of ash materials in fill. MWG Exh. 903 at 60.

Mr. Seymour also noted that the IEPA's proposed CCR regulations explain the procedure for establishing background on site specific basis. The IEPA's proposal in R14-10 specifies that the groundwater monitoring system must include wells to represent the quality of groundwater at the site not affected by activities and units (background) and sets forth requirements for establishing background. EG Exh. 405 at 25-28. Additionally, MWG's consultant, Gnat, explained why a direct comparison of the median values from a monitoring well with the statewide median value is inappropriate. He noted that a monitoring well median above the statewide median means the well median value is above the median of community water supply wells' background values and not above background itself because the statewide median has a range of median values. 2/1/18 Tr. at 105-106. Mr. Seymour agreed that the comparison, according to the IEPA, must be based upon a statistical evaluation that employs a 90 percent confidence level, (i.e. a value above the 90 percent confidence level is considered above background levels with 90 percent assurance). 2/2/18 Tr. at 32-33 (Seymour Test.).

GMZ, ELUC, and CCA Compliance. MWG argued that Illinois law does not establish strict liability for water pollution and "simply being an owner or operator of a facility is not enough to find liability in this case." MWG Br. at 4. MWG noted that it took extensive precautions, including extensive corrective actions required by the CCAs: relined ash ponds, established GMZs and ELUCs, and performed regular inspections and repairs to the ash ponds' lining. MWG Br. at 3, 4. MWG believed that the law "is clear that a party does not cause or allow contamination if it took extensive precautions, as MWG did." MWG Br. at 4. MWG established ELUCs under 35 Ill. Adm. Code 742.1010 at Powerton, Will County, and Waukegan. MWG Br. at 29; SOF 646. An ELUC "is another institutional control tool in which a designated parcel of land has certain use restrictions, such as not allowing the placement of any potable water wells within the area." MWG Br. at 29; SOF 647.

MWG, further, argued that, because it performed all measures required by the IEPA, even if the Board finds violations of the Act, "no penalty or other response is warranted, and no further proceedings are warranted." MWG Br. at 5. MWG maintained that the Board may not grant relief requested by the Environmental Groups to modify MWG coal ash disposal practices and to remediate contamination because it has no enforcement powers and cannot grant injunctive relief. MWG 2nd Ans. Def. at 23.

MWG also asserted the following affirmative defenses:

I. MWG did not violate Board's Class I GQS[4] standards and Sections 620.301(a) and 620.405 because the groundwater at the Stations is within the GMZ which, under Section 620.450(a)(3), is exempt from those standards; and

II. There is no nuisance, harm or injury to public health, safety or welfare at or around the Stations because of low level of constituents in the groundwater and absence of human and environmental receptors. MWG 2nd Ans. Def. at 24-26 ¶¶ 82-97; 2/1/18 Tr. at 107.

IV. FACTS

1. General Facts Applicable to all Stations

x. Coal Ash and Constituents

The parties agreed that coal combustion for electricity generation creates two types of coal ash - fly ash and bottom ash. Joint Stip. at 4; MWG Br. at 6; 10/26/18 Tr. p.m. at 31 (Kunkel Test.). While fly ash consists of lightweight particles that go up the stack, the bottom ash consists of heavy particles that fall to the bottom of the furnace. Bottom ash is mixed with water, then removed by transporting out of the plant through a pipe to the ash ponds or a settling basin. MWG Br. at 6; EG Br. at 18; 2/1/18 Tr. at 7 (Veenbaas Test.); 10/26/18 Tr. p.m. at 31 (Kunkel Test.); *see also* EG Exh. 43; 10/24/17 Tr. at 38. "Slag" is a form of bottom ash that is a bi-product of coal combustion. 10/23/17 Tr. at 128 (Race Test.); 10/24/17 Tr. at 38, 179 (Lux Test.). The terms "coal ash" and "slag" are used interchangeably in the record by the parties and experts to refer to bottom ash.

Constituents found in the bottom ash depend on the source of coal and the combustion process. 10/23/17 Tr. at 13. The parties agreed that all four MWG Stations burned the same coal in a similar manner, thus the resulting coal ash from each Station possessed similar constituents. Joint Stip. at 4; MWG Br. at 6; 10/27/18 Tr. at 177 (Kunkel Test., noting that he heard that "there may have been some Illinois coal mixed in with the coal from one of the plants"); 2/1/18 Tr. at 266 (Seymour Test.); MWG Exh. 903 at 41 (Seymour Test.).

The parties agreed that boron and sulfate are typical indicators of coal ash and are constituents typically found in bottom ash. Env. Gr. Br at 4, 17, 28 and MWG Br. at 6. Coal ash indicators may also include other contaminants recognized by the USEPA in 40 CFR 257, App. III, such as, calcium, chloride, fluoride, pH, and total dissolved solids (TDS). Env. Gr. Br at 17, 20 and MWG Br. at 6. Environmental Groups note that 40 CFR 257, Appendix IV, also lists antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, lead, lithium, mercury, molybdenum, selenium, thallium, and radium.

The Environmental Group's expert Dr. Kunkel noted that coal ash leachate is characterized by one or more of the following constituents: boron, molybdenum, lithium, sulfate, bromide, potassium, sodium, fluoride, chloride, or calcium. EG Exh. 401 at 7. However, boron,

[4] MWG refers to 35 Ill. Adm. Code 620.410, 620.420, 620.430 and 620.440. *See* MWG 2nd Ans. Def. at 25 ¶ 86.

manganese, sulfate, and TDS were chosen as indicators of GW contamination from coal ash ponds. *Id*. Dr. Kunkel stated that it is highly unlikely that the combination of boron, sulfate, and manganese in concentrations above groundwater standards or background water quality concentrations beneath or down-gradient from ash ponds would be caused by any source other than coal ash. *Id.* MWG's expert concurred that indicator constituents for coal ash in MWG's ash ponds, at a minimum, include barium, boron, and sulfate; and may also include antimony, arsenic, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, and zinc. MWG Exh. 901 at 21-25.

xi. <u>Hydrogeological Assessment and 2012 Violation Notices</u>

In 2010 MWG agreed to the IEPA's request to perform hydrogeological assessments around the ash ponds at the four Stations, even though MWG believed it "was under no legal obligation to do so." EG Exh. 8B at 1; MWG Answer and Defenses 5/5/14 at 21; MWG Br. at 3; EG Exhs. 12C, 13C, 14C, and 15C.

Upon completion of the assessments, on June 11, 2012, the IEPA issued Violation Notices (VN) to MWG under Section 31(a)(1) of the Act (415 ILCS 5/31(a)(1) (2016)), alleging violation of groundwater quality standards at all four Stations. MWG 2nd Ans. Def. at 4, 22; Joint Stip. at 4. The VNs alleged violations of Section 12 of the Act (415 ILCS 5/12 (2016)) and Sections 620.115, 620.301, 620.401, 620.405 and 620.410 of the Board's regulations (35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, 620.410). EG Exhs. 3A, 4A. VNs alleged that "operations at ash impoundments have resulted in violations of Groundwater Quality Standards" between 2010 - 2012. *Id*.

xii. <u>CCAs for All Four Stations</u>

On July 27, 2012, MWG responded to the IEPA by requesting a meeting to discuss the VNs and included a proposed Compliance Commitment Agreements (CCA) for each of the four Stations. EG Exhs. 8B and 9B. MWG did not admit to any alleged violations and disagreed with the VNs. MWG argued that the VNs provided no information as to why the IEPA concluded that the ash ponds caused alleged groundwater impacts. EG Exhs. 8B at 2 and 9B at 2. "[A]lleged violations in the VN are based solely on the results of the hydrologic assessment" which "do not show that the coal ash ponds at the [Stations] are impacting the groundwater and do not provide the necessary evidence to support the alleged violations." *Id*. On August 14, 2012, the IEPA met with MWG to discuss the VNs. MWG Exh. 622 at 1. In August and September 2012, the IEPA received MWG's supplemental response to the VNs at the four Stations; MWG's supplemental response proposed revised terms for four CCAs based upon the August 14th discussions. MWG Exhs. 626 at 3; 624 at 2; 625 at 1; 622 at 1; 623 at 1.

On October 24, 2012, MWG entered into separate CCAs with IEPA with respect to the four Stations. MWG 2nd Ans. Def. at 24. The CCAs stated that, "pursuant to [VNs] the Illinois IEPA contends that Respondent has violated" Section 12 of the Act (415 ILCS 5/12 (2016)) and Sections 620.115, 620.301, 620.401, 620.405, and 620.410 (35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, 620.410). MWG Exhs. 626 at 2 ¶ 3; 636 at 2 ¶ 3; 656 at 2 ¶ 3; 647 at 2 ¶ 3.

xiii. <u>Groundwater Monitoring</u>

In 2010 MWG installed groundwater monitoring wells around the ash ponds at the four Stations. The wells were screened to ensure collection of representative groundwater samples from the uppermost aquifer. EG Exh. 12C at 4. Beginning in the fourth quarter of 2010, MWG undertook a quarterly sampling program. MWG Exh. 809. The groundwater samples were analyzed for 35 parameters. *Id*. These parameters included the indicator constituents associated with coal ash. MWG Br. at 6. The quarterly monitoring reports, included in the record, for all four Stations provide results from December 2010 through April 2017 for 35 parameters, including antimony, arsenic, boron, manganese, and other indicator constituents associated with coal ash. MWG Exh. 809-812; s*ee also* EG Br. at 17 and App. A; MWG Br. App. A/SOF ¶¶508, 509, 520-523, 526, 528.

2. Joliet 29

A. Uncontested Facts

xiv. The Station

MWG leases and operates Joliet 29 Electric Generating Station, located in Joliet, Will County (Joliet 29). Joint Stip. at 1; MWG 2nd Ans. Def. at 1; 1/29/18 Tr. at 178-179 (Race Test.). The Station is located in a primarily industrial area, bordered on the west by a former Caterpillar, Inc. manufacturing facility. 1/29/18 Tr. at 179 (Race Test.). The north side of Joliet 29 is bordered by Channahon Road (East James St), beyond which are Illinois and Michigan Canal Trail, industrial facilities, and neighborhoods of Rockdale. 1/29/18 Tr. at 179-180 (Race Test.). The east side is bordered by Brandon Road, and the south side is bordered by the Des Plaines River. 1/29/18 Tr. 179-180 (Race test); MWG Exh. 667 at 2; EG Exh. 20D at 28 (Fig.1); MWG Exh. 246M at 4 (Fig.1); SOF at 8 ¶ 68, 69, 73; 10/26/17 Tr. A.m. at 36-37 (Gnat Test.).

The Station has operated since the mid-1960s. EG Exh. 201 at 2-4 (#24265-24267); EG Exh. 242 at 7; MWG Exh. 663 at 1; MWG Exh. 901 at 14; 1/29/18 Tr. at 182 (Race Test.). MWG operated the Station as a coal-fired plant from 1999 until March 18, 2016, when it ceased burning coal. Joint Stip. at 1-2; SOF ¶ 67; 1/29/18 Tr. at 186 (Race Test.). On May 26, 2016, Joliet 29 began generating electricity with natural gas. Joint Stip. at 2; MWG Br. at 11; SOF at ¶ 67; 1/29/18 Tr. at 186 (Race Test.). Joliet 29 Station burned subbituminous coal from Wyoming's Power River Basin until it ceased burning coal for electricity generation. Joint Stip. at 4.

xv. Ash Ponds

Three active coal ash ponds exist at Joliet 29: Pond 1, 2, and 3, all constructed in 1978 with a poz-o-pac liner. Joint. Stip. at 1; MWG 2nd Ans. Def. at 1; SOF ¶ 86; MWG Exh. 901 at 16; MWG Exh. 667 at 4. All three ponds were relined with a 60 mil. high density polyethylene (HDPE) liner: Pond 1 in 2007, pond 2 in 2008, and pond 3 in 2013. Joint Stip. at 1. All three ash ponds are included in the MWG's NDPES Permit #IL0064254, issued September 30, 2014, (effective November 1, 2014,) as part of the wastewater treatment system. MWG Exh. 603 at 1, (Joliet 29 NPDES Permit); MWG 2nd Ans. Def. at 1-2; SOF ¶ 91.

At the time MWG began operating Joliet 29, and until 2016, the majority of the bottom ash was conveyed automatically by an enclosed pipe system across the Des Plaines River to a permanent permitted landfill operated by Lincoln Stone Quarry. 1/29/18 Tr. at 192-194 (Race Test.). When the enclosed pipe system was not operating, on rare occasions bottom ash from Joliet 29 was pumped to either Ash Pond 1 or Ash Pond 2. *Id*. at 194.

Ash Ponds 1 and 2 were operated one at a time and were emptied in succession, every two to four years, with the removed ash taken to a permitted landfill. MWG Exh. 901 at 16 (Seymour test); MWG Exh. 903 at 15-16, 30; MWG Exh. 500 at 30-31; 1/29/18 Tr. at 194. Ponds 1 and 2 were dredged regularly, approximately every year or every other year. Joint Stip. at 1. The ponds' lining includes (described bottom up): 12" poz-o-pac on the bottom, a bottom geotextile cushion, the 60 mil HDPE liner, a top geotextile cushion, a sand cushion and a limestone warning layer. MWG Exh. 901 at 17. The ponds' bottom elevation is at 516 ft; the average groundwater elevation is at 505.5 – 506 feet (about 10 feet below the pond's bottom). *Id*. By October 12, 2015, MWG removed Pond 1 from service with all coal ash removed from it. Joint Stip. at 2; 1/29/18 Tr. at 198 (Race Test.). Ash pond 2 closed as well, and, at the time of the January 29 hearing, MWG was in the process of removing the remaining ash was in the process of being removed to the Lincoln Stone Quarry landfill, scheduled to complete in 2018. 1/29/18 Tr. at 198-199 (Race Test.).

Ash Pond 3 was used as a finishing pond and received only a *de minimis* amount of ash. Because no ash accumulated in the pond, Pond 3 never needed to be emptied between 1978, when it was placed into operation, and 2013, when it was emptied and relined. 1/29/18 Tr. at 188-191 (Race Test.); 1/30/18 Tr. at 39-40 (Race Test.). The pond's lining is the same as Ash Ponds 1 and 2 and includes (described bottom up): 12" poz-o-pac on the bottom, a bottom geotextile cushion, the 60 mil HDPE liner, a top geotextile cushion, a sand cushion and a limestone warning layer. MWG Exh. 901 at 18. The pond's bottom elevation is at 517.5 ft; the average groundwater elevation is at 505.5 feet (about 12.5 feet below the pond's bottom). *Id*. The effluent entering Ash Pond 3 from Ash Pond 2 was sampled in 2015 for total suspended solids. The samples showed only 20 mg/L of total suspended soils in the water, which means that "influent looked like a clear water." 1/29/18 Tr. at 190-191 (Race Test.); MWG Exh. 602 at 6 (bates #49747). MWG removed coal ash from Pond 3 for the first time in 2013 when it was relined. Joint Stip. at 2; EG Br at 29; 1/29/19 Tr. at 191-192 (Race Test.).

xvi. <u>Joliet 29 Violation Notice</u>

The, IEPA issued Violation Notice W-2012-00059for Joliet 29 Station (Joliet 29 VN) which alleged that "operations at ash impoundments have resulted in violations of Groundwater Quality Standards" during 2010 - 2012 at monitoring wells MW-2 through MW-11, including for Chloride (all monitoring wells), Antimony (MW-2), manganese (MW-4, 7, 9), and boron (MW-11). EG Exh. 3A at 3-6. MW-9 also included sulfate, iron, and TSD. *Id*. at 5-6.

xvii. <u>Joliet 29 CCA</u>

The Joliet 29 CCA (MWG Exh. 626) states that:

> Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring wells MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10 and MW-11. MWG Exh. 626 at 2 ¶ 3.

The Joliet 29 CCA notes that "respondent agrees to undertake the following actions, which the Illinois EPA has determined are necessary to attain compliance" with the Act and Board rules. MWG Exh. 626 at 3 ¶ 5. Subsections (a) through (h) of paragraph 5 list activities MWG must undertake, that include:

5(a)	prohibiting the use of ash ponds as permanent disposal sites, but only as treatment ponds to precipitate ash, and to continue periodic removal of ash;
5(b)	maintaining and operating ponds in a manner that protects integrity of their liners;
5(c)	conducting visual inspections of the ponds during ash removal to identify breach of liners integrity and to promptly inform IEPA and repair (implement corrective action plan approved by IEPA) if signs of breach are found;
5(d)	continuing quarterly monitoring of the 11 monitoring wells "for constituents in 35 Ill. Adm. Code 620.410(a)" and record and report elevations to IEPA;
5(e)	apply to IEPA for a construction permit to reline Ash Pond 3 with HDPE liner;
5(f), (g)	submitting an application to IEPA to establish and establish a GMZ under section 620.250 within one year from the date of CCA; and
5(h)	within one year of the date of CCA, and upon realigning Ash Pond 3 and establishing GMZ, submit a certification of compliance. MWG Exh. 626 at 3 ¶ 5.

On October 9, 2013, MWG filed a certification with the IEPA that all Joliet 29 CCA measures were completed. Joint Stip. at 4; MWG Exh. 630.

xviii. <u>Joliet 29 GMZ</u>

As required by the Section 5 of the Joliet 29 CCA, on January 18, 2013, MWG submitted an application to establish a GMZ (Joliet 29 GMZ Application, EG Exh. 242), that would include the area around the ash ponds. EG Exh. 242 at 1; MWG Exh. 901 at 23 (Seymour Pres.). The IEPA approved the application on August 8, 2013. Joint Stip. at 4; MWG Exh. 627; MWG 2nd Ans. Def. at 25. The application describes the GMZ borders:

> groundwater flow in the vicinity of the subject ash ponds is in southerly direction with discharge to the adjourning station water intake channel of the Des Plaines River. The southern (downgradient) extent of the proposed GMZ corresponds with this hydraulic boundary. The northern (upgradient) boundary is defined by the placement of the three upgradient monitoring wells (MW-8, MW-10 and MW-11). The east and west sides of the proposed GMZ are based on the flow system and location of the three ash ponds. EG Exh. 242 at 1.

The application noted that "Class I" is the groundwater classification "the facility will be subject to at the completion of the remediation." *Id*. Att. 2 Part I, ¶ 10. The GMZ application noted that:

> The agreed upon remedy is specified in Item 5(a) through (h) of the executed [CCA]… The remedy includes lining of Ash Pond 3 with HDPE. This [GMZ] application fulfills requirements set forth under Item 5(f) of the CCA. EG Exh. 242 Att. 2, Part III ¶ 1.

The application also noted that "[at] the completion of the corrective process, a final report is to be filed which includes the confirmation statement included in Part IV." *Id*. Att. 2 at 1, Note 1.

B. Contested Facts

i. *Ash Ponds Dredging and Liner Ruptures*

The record shows that three ash ponds at Joliet 29 have been lined and regularly dredged as needed. The liners are prone to damage in certain conditions. MWG took actions to identify and repair any damages to the liners, or to avoid rapturing the liners while dredging the ponds.

The three ash ponds at Joliet 29 were all constructed in 1978 with a poz-o-pac liner before they were relined with the HDPE (high-density polyethylene) liner in 2007 - 2013 (Ash Pond 1 in 2007, Ash Pond 2 in 2008, and Ash Pond 3 in 2013). Joint. Stip. at 1; MWG 2nd Ans. Def. at 1; SOF ¶ 86; MWG Exh. 901 at 16; MWG Exh. 667 at 4.

Poz-o-pac is a material that can crack in certain weather conditions or leak. 2/2/18 Tr. at 148; *see also e.g*. EG Exh. 303, 286 at 2; 10/24/18 at 215; 10/26/17 p.m. Tr. at 34-35 (Kunkel Test.). MWG relined the ponds on the assumption that they were in a "poor" condition. EG Exh. 34 at (#23614); MWG Exh. 606 at (#23647); *see also* 10/23/17 Tr, at 16; 10/24/17 Tr. at 12-13. In 2005 and 2006 MWG consultant, NRT, investigated the liners at Joliet 29 ponds and rated the condition of all three ponds as "poor." EG Exh. 34 at (#23614); MWG Exh. 606 at #23644. The report also rated these ponds as "high" for "contamination potential." *Id*. The same report rated a poz-o-pac liner in the "Environmental Criteria" as "1" on the scale of 0-10, with "0" being no liner (worth more than asphalt in unknown condition, which has "2" rating). MWG Exh. 606 at (#23631); EG Exh. 34 at (#23608). It also noted that "Poz-O-Pac liner systems were constructed more than 25 years ago and are reportedly in poor condition." *Id*. Race testified, however, that when the ponds were relined, the original 1978 poz-o-pac liner was found to be in a "good condition." 10/24/17 Tr. at 12-14 (Race Test.); 1/29/18 Tr. at 236 (Race Test.). When relining ponds in 2007, NRT suggested leaving bottom ash between poz-o-pac and HDPE liner at Joliet 29, noting that "this will make an excellent bedding layer for the geomembrane". EG Exh. 22. Maria Race agreed to that, noting "[i]t is fine to leave the ash there—it is poz o pac and is stable enough-and I agree with your assessment of risk/benefits." *Id*.

An HDPE liner is designed to prevent releases to soil and groundwater and is "the least permeable type of liner, resistant to chemicals, and is the same liner used for hazardous waste landfills." 1/29/18 Tr. at 224-226 (Race Test.); 2/1/18 Tr. at 243, 256 (Seymour Test.); MWG 2nd Ans. Def. at 1-2; SOF ¶¶ 26, 91. An HDPE liner, however, can be damaged during the pond dredging process by the heavy equipment. *See e.g.* EG Exh. 306, 307; 10/26/17 p.m. Tr. at 35 (Kunkel Test.). Ash Ponds 1 and 2 were dredged approximately every one to two years. Joint Stip. at 1. The record indicates that MWG consultants took actions to avoid, identify, and repair any damage to the liners during ash removal and during the relining process. MWG Exh. at 903 at 38-39 (Seymour Test.).

After a careful review of the facts, the Board finds that the Environmental Groups established that both poz-o-pac and HDPE liners at Joliet 29 can and do crack or become damaged on occasions. Based upon the preponderance of the evidence in the instant record, including the quarterly groundwater monitoring results, MWG practices in pond relining and dredging, the Board concludes that it is more likely than not that the ash ponds did leach contaminants into the groundwater.

ii. <u>Historical Coal Ash Sites</u>

Three historical unlined areas exist at Joliet 29 where coal ash was deposited before MWG began operating: 1) the Northeast Area; 2) the Southwest Area; and 3) Northwest Area. 1/30/18 Tr. at 259-264, 272-273 (Race Test.); 2/1/18 Tr. at 193-198 (Gnat Test.); EG Exh. 21 at 12 (#25150) (noting that "the site was used for coal ash disposal by Joliet #9 Station prior to the construction of Joliet #29 in 1964-65. Coal ash was primarily disposed in a landfill on the eastern portion of the site. A second abandoned ash disposal landfill lies on the southwest portion of the site between the coal pile and Caterpillar, Inc. site.").

Unlined areas that contain coal ash pose a risk of groundwater contamination due to the water moving through the coal ash, thereby increasing the risk of leaching and contamination. EG Br. at 19; 10/24/17 Tr. at 39 (Lux Test.); 10/26/17 Tr. p.m. at 34-35, 83-84 (Kunkel test); 1/29/18 Tr. at 208 (Race Test.); 1/30/18 at 29 (Race Test.); MWG Exh. 636 at 4 (#555) (sec. 5(m) of the Joliet 29 CCA, stating that MWG "shall not use any unlined areas for permanent or temporary ash storage or ash handling."). No monitoring wells are installed around any of these areas. 2/1/18 Tr. at 196-198 (Gnat Test.); MWG Exh. 901 at 19; MWG Exh. 667 at 3. MWG possesses only partial knowledge of the content of these areas or their potential to contaminate the groundwater.

<u>The Northeast Area</u> is part of the Station's NPDES stormwater permit. MWG Br. at 11; MWG Exh. 603 at 1, 9, and 15; 1/29/18 Tr. at 183 (Race Test.). MWG admits, and the record indicates, that this area contains historic coal ash. MWG Br. at 11; 2/2/18 Tr. at 323 (Seymour Test.); EG Exh. 248N at 1 (#19442); EG Exh. 20D at (#23342; 23357); EG Exh. 401 at 11. MWG's experts testified that, as required by the NPDES permit, MWG consistently inspected the area, the soils, and seeding grasses growing in the area, to make sure it is properly covered. 1/29/18 Tr. at 185 (Race Test); 1/30/18 Tr. at 258 (Race test); MWG Br. at 11; SOF at 12-13. MWG's consultants conduct annual visual walk-over inspections of the area to identify "erosional features" and repair any issues within a few weeks of each inspection. *Id*., SOF at 13 ¶ 127; EG Exhs. 248-251 (2009-2012 Joliet 29 Northeast Area Inspections); MWG Exh. 803-805 (2012 - 2014 Joliet 29 Northeast Area Repair Documentations); 2/1/18 Tr. at 115-123 (Gnat Test.). The record shows that, in 2009 - 2012 these inspections on various occasions identified erosional features that required repairs (e.g. five areas identified in 2009 "where either sheet wash erosion or rilling has exposed the underlying ash slag and may transport the material to the Des Plaines River" (10/25/17 Tr. at Tr. 116; EG Exh. 248N) and suggested repairs were performed. No issues requiring repairs were identified and no repairs were performed in 2013 - 2016. *See e.g*. SOF at 13 ¶¶ 129-135; 2/1/18 Tr. at 115-124, 204-205; 10/25/17 Tr. at 116 (Gnat Test.); 10/26/17 A.m. Tr. at 31-32 (Gnat Test.); 1/30/18 Tr. at 259; MWG Exh. 800-805; EG Exh. 248N-251N. No monitoring wells exist in this area. 2/2/18 Tr. at 21 (Seymour test); 10/23/17 Tr. at 77; EG Br. at 37. The closest monitoring well is MW-1 or MW-08 but considering the groundwater flow and the distance to this historic area, MW-01 or 08 are unlikely to show conclusive results of any contaminants emanating from this historical area. MWG Exh. 901 at 19 and 23. Other than visual inspections, MWG did not investigate the area or the soil cover to determine if it was impermeable. Moreover, MWG did not cap it with an impermeable cap did not investigate if it had a liner, and did not install a liner. 1/30/18 Tr. at 259-260; 272-273 (Race Test.); 2/1/18 Tr. at 193-195 (Gnat Test.). MWG also never took samples from this area. 1/29/18 Tr. at 184 (Race Test.); 1/30/18 Tr. at 259-260 (Race Test.).

<u>The Southwest Area</u> is adjacent to the former "Caterpillar/Center Point" site and is covered by the ELUC established by the Caterpillar's property owners. SOF 136-140. MWG Exh. at 611. MWG Br. at 12. MWG admits, and the records indicates, that this area contains historic coal ash. MWG Br. at 11; 2/2/18 Tr. at 293:3-294:24, 323:12-20 (Seymour Test.); EG Exh 248N at 1 (#19442); EG Exh. 20D at (#23342; 23357); EG Exh. 401 at 11. Several investigations have indicated that soils at the former Caterpillar site are contaminated with various heavy metals, including barium, chromium, selenium, and thallium. Further modeling has shown the potential for metals contamination to leach into groundwater and migrate to Joliet Station. MWG Exh. 611 at 1. Center Point established the ELUC on August 5, 2010. The ELUC restricts MWG from using any soil and groundwater from the ELUC area. *Id*. at 2; 1/30/18 Tr. at 6-12 (Race Test.); MWG Exh. 612 at 1-2; MWG Exh. 667 at 6; MWG Exh. 901 at 23. No monitoring wells exist in this area. 2/2/18 Tr. at 21 (Seymour Test.); 10/23/17 Tr. at 77. The closest monitoring well is MW-7, but considering the groundwater flow and the distance to this historic area, it is unlikely that MW-07 can show conclusive results of any contaminants emanating from this historical area. MWG Exh. 901 at 19, 20. In 2005, as part of the geotechnical testing at the four Stations, KPRG took six soil borings at Joliet 29, one of which was from this historical area. EG Exh. 201 at 1, 27 (#24264, 90); 2/2/18 Tr. at 161: 11-14, 164:22-24 and 293:5, 294:17-24 (Seymour Test.). The soil borings indicated a layer of coal ash mixed with gravel at the level zero to one foot below surface (GT-6). EG Exh. 201 at 27, 34 (#24290, 97). MWG did not take leach tests, did not evaluate the volume of ash in this area, did not cap it, and did not install a liner. 1/30/18 Tr. at 260-261, 273-274 (Race Test.).[5] MWG has not fully evaluated the content of the area and its potential to contaminate the groundwater. 1/30/18 Tr. at 260-61; 273 (Race Test.); 2/1/18 Tr. at 196-198 (Gnat Test.). Although the ELUC includes measures aimed to protect against exposure to contaminated soil and groundwater at the former Caterpillar site, the ELUC does not include measures to prevent contamination and migration of coal ash constituents from MWG's property. MWG Exh. 611 at 4-5.

[5] In parts of his testimony during the hearings, Mr. Seymour stated that KPRG conducted tests at the north (2/2/18 Tr. at 163:7) or southwest (Id. at 293:3-9) areas. It appears from his own reports and presentations that he misspoke, or referred to geotechnical testing referred above, because he relies upon KPRG's 2005 report in all his conclusions EG Exh. 293. This indicates that the only CCB samples taken at Joliet 29 were from the Northwest area. *See* EG Exh. 293 #19585; MWG Exh. 901 at 23; EG Exh. 201.

<u>The Northwest Area</u> is another area at Joliet 29 that contains coal ash fill material, as admitted by MWG and supported by the record. MWG Br. at 11; 2/2/18 Tr. at 323 (Seymour Test.); EG Exh. 20D at (#23342; 23357); MWG Exh. at 401 at 11. In 2005, MWG had the fill material analyzed by its consultant to determine if it meets the requirements of CCB and could be used beneficially. EG Exh. 293 at 1 (#19576). The testing report indicates that the area is appropriately 13.2 acres in size and contains interlayered fly ash and bottom ash and slag from the bottom of the coal combustion process. The borings indicate a coal ash layer as deep as 17 feet below the surface, lowest layers of which indicated as "moist" on some borings. *Id*. at 1-2, 7, 16-34 (#19576-77, 582, 591-609). The report indicates, and MWG experts testified, that most of the evaluated samples showed that the materials met the Act's criteria for beneficial use, had levels of boron, manganese and barium below Class I GQS and leached less metals than allowed by the Act. 10/26/17 A.m. Tr. at 39-40 (Gnat Test.); 1/29/18 Tr. at 184-185, 210-213 (Race Test.); 2/1/18 Tr. at 275-276 (Seymour Test.); MWG Exh. 901 at 9 (Seymour Test.); MWG Exh. 293 at 7, 10 (#19582, 85). The report, however, also states that NLET metal data from certain sample locations (GP-14A) "displayed elevated levels of lead and coper at concentrations at least two times higher than the Class I groundwater standards. The ash from this portion of the site should not be considered for potential beneficial reuse." MWG Exh. 293 at 7 (#19582). The record does not include information as to whether MWG separated or removed this part of the material from the sampled area. No monitoring wells exist in this area. 2/2/18 Tr. at 21 (Seymour Test.); 10/23/17 Tr. at 77 (Race Test.). The closest monitoring well is MW-11 or 07 but, considering the groundwater flow and the distance to this historic area, it is unlikely that MW-011 or 07 can show conclusive results of any contaminants coming from this historical area. MWG Exh. 901 at 19, 20; MWG Exh. 667 at 3.

<u>Coal Ash in Fill Areas Outside Ash Ponds</u>. During the 2005 geotechnical testing, KPRG also took five soil borings around the coal ash ponds. EG Exh. 201 at 1, 27 (#24264, 90); 2/2/18 Tr. at 164:23 and 293:5, 294:17-24. The soil borings indicated a layer of coal ash mixed with gravel at the level zero to one foot below surface in the areas near MW-11 and between MW-09 and 10 (GT-1, GT-3). EG Exh. 201 at 27, 29, 31 (#24290, 92, 94).

The Board finds that the evidence establishes that it is more probable than not that these historical coal ash storage and fill areas are contributing to the groundwater contamination. It is also more likely than not, however, that the exceedances appearing in the monitoring wells are not representing contamination from the historic coal ash storage areas, but, do show contaminants leaking from historic fill areas outside of the ash ponds and historic storage areas.

iii. <u>Monitoring Wells</u>

MWG installed 11 groundwater monitoring wells around the three ash ponds at Joliet 29 (MW-1 through MW-11) in 2010 and monitored groundwater quality since the final quarter of 2010. Env. MWG 2nd Ans. Def. at 2. Gr. Br. at 16-17, 29; MWG Br. at 3; MWG Exh. 667 at 2; 2/1/18 Tr at 86-87, 110 (Gnat Test.); MWG Exh. 809. Quarterly monitoring reports for Joliet 29 monitoring wells MW-1 through MW-11 from December 2010 through April 2017 tested for 35 parameters, including antimony, arsenic, boron, manganese, and other indicator constituents associated with coal ash. These quarterly reports are in the record. MWG Exh. 809; s*ee also* EG Br. at 17; EG Br., Att. A at 76-116; SOF ¶¶ 508, 509, 520-523, 526, 528.

Monitoring wells MW-8, 10 and 11 are located upgradient (north) of the ash ponds with respect to direction of groundwater flow and, thusly, are considered “upgradient” or “background” wells. MWG Exh. 901 at 19; 2/1/18 Tr. at 19 (Gnat Test.). These wells indicate potential chemicals that might migrate with the groundwater from outside of MWG’s property. *See e.g.* 1/29/18 Tr. at 30-31 (Kunkel Test.); 2/1/18 Tr. at 109 (Gnat Test.); 2/2/18 Tr. at 8 (Seymour Test.);EG Exh. 12C at 3 and MWG Exh. 667 at 3. The other wells – MW-02, 03, 04, 05, 06, 07 and 09 - are located downgradient of the ponds. These wells measure the impact of the ash ponds on the groundwater quality. *Id*.; 10/23/17 Tr. at 220. No potable water wells are downgradient of Joliet 29. 10/27/17 Tr. at 181 (Kunkel Test.).

The record indicates that groundwater in the area has a potential to reverse the direction of groundwater flow, which can alter the monitoring wells treated as upgradient. The record, however, does not support the argument that a groundwater flow directional reversal occurred during the time-frame at issue in this proceeding. MWG’s hydrogeological assessment determined that the direction of flow of groundwater in the shallow aquifer at the Joliet #29 Station is in the southerly direction towards the Des Plaines River. MWG Exh. 621 at 4-5 (#296297) (2009 Hydrogeological Assessment of MWG Electric Generating Stations); 1/29/18 Tr. at 253 (Race Test.); EG Exh 12C at 2; 2/1/18 Tr. at 97-98, 109-110 (Gnat Test.) and 2/2/18 Tr. at 13 (Seymour Test.). Dr. Kunkel testified that groundwater at the Joliet #29 site is strongly influenced by changes in Des Plaines River surface water elevations as well as potentially leaking ash ponds. EG Exh. 401 at 12. He stated that the Des Plaines River water-surface elevations strongly influences the groundwater elevations and groundwater gradients at site, causing seasonal flow from the River into the unconsolidated materials beneath the ash ponds. *Id.* at 13; 1/29/18 at 30-31 (Kunkel Test.); Exh. 411.

MWG witness Mr. Gnat testified that although reversal of flow described by Dr. Kunkel is a well-known phenomenon, more than 27 quarterly rounds of groundwater measurements do not indicate a reversal of groundwater flow beneath the ash ponds at Joliet Station. He noted that the flow directions, from quarter to quarter, is consistent from the north to the south towards the Des Plaines River. 2/1/18 Tr. at 109-110, 124-127 (Gnat Test.). The groundwater monitoring results support his position. MWG Exh. 809. The Board finds, therefore, that the record does not support consideration of the upgradient monitoring wells as downgradient wells, and vise versa, when interpreting the groundwater monitoring results.

iv. <u>Exceedances of Part 620 Standards</u>

Groundwater monitoring results in the record indicate 69 exceedances of the Board’s Part 620 GQS for coal ash constituents at Joliet 29. MWG Exh. 809. The 69 exceedances are based upon the monitoring results from December 6, 2010, to April 25, 2017. *Id*. The constituents above the Class I GQS are as follows with number of exceedances shown in parenthesis: sulfate (29), TDS (32), antimony (4), boron (2), lead (1) and cadmium (1). The monitoring results indicate that, during the seven-year period, 53 of the 69 exceedances (78%) occurred in MW-09, while the remaining 16 exceedances occurring in MW-2, 3, 4, 8 and 11.

Among the 16 exceedances in the wells other than MW-09, nine were in the upgradient (background) wells MW-08 and MW-11. These wells exceeded standards for boron, cadmium, lead, sulfate and TDS once or twice during the seven-year monitoring period. During the same period, the downgradient wells MW-02, 03, and 04 exceeded antimony 7 times and TDS once.

Thus, monitoring well MW-09 is the only downgradient well that shows levels of sulfate and TDS consistently above the groundwater standards during the seven years of monitoring data considered by the Environmental Groups. A summary of the groundwater monitoring data exceeding Part 620 GQS standards for Joliet 29 is presented below in Table 1. EG Br. App. A; MWG Exh. 809; MWG Exh 901 at 20.

Table 1. Joliet 29 Groundwater Monitoring Results Summary

Monitoring Wells	Closest Ash Pond (AP)	Location	Constituents	Number of Exceedances of Part 620 Standards	Year(s)
MW-02	AP 3	Downgradient	Antimony	1	2010
MW-03	AP 2	Downgradient	Antimony	3	2011-2012
			TDS	1	2013
MW-04	AP 2	Downgradient	Antimony	2	2013
MW-08	AP 3	Upgradient	Sulfate	2	2014, 2015
			TDS	2	2014, 2015
MW-09	Between AP 3 and 2	Downgradient	Sulfate	26	2010 - 2017
			TDS	27	2010 -2017
MW-11	AP 1	Upgradient	Boron	2	2011
			Cadmium	1	2015
			Lead	1	2015
			TDS	1	2015

Table 1.B: Joliet 29 Groundwater Monitoring Results Summary (by year)

Year	Monitoring Wells	MW-2	MW-3	MW-4	MW-8	MW-9	MW-11
	Constituent						
2010	Antimony	1					
	Sulfate					1	
	TDS					1	
2011	Antimony		2	1			
	Boron						2
	Sulfate					3	
	TDS					4	
2012	Antimony		1				
	Sulfate					4	
	TDS					4	
2013	Antimony			1			
	Sulfate					4	
	TDS		1			4	
	Sulfate				1	4	

2014	TDS				1	4	
2015	Cadmium						1
	Lead						1
	Sulfate				1	4	
	TDS				1	4	1
2016	Sulfate					4	
	TDS					4	
2017	Sulfate					2	
	TDS					2	
Total		1	4	2	4	53	5

Table 1.C: Joliet 29 Groundwater Monitoring Results Summary (by wells)

Chemical Constituent	**Antimony**	**Boron**	**Cadmium**	**Lead**	**Sulfate**	**TDS**	**Total**
Monitoring Wells	**Number of Exceedances**						
MW-2	1						1
MW-3	3					1	4
MW-4	2						2
MW-8					2	2	4
MW-9					26	27	53
MW-11		2	1	1		1	5
Total	6	2	1	1	28	31	69

Antimony. As noted above six exceedances of the antimony standard occurred in downgradient wells MW-02, 03, and 04, during the early monitoring period of 2010 - 13. MWG Exh. 809. Since 2013, no exceedance of the antimony standard has occurred in any of the downgradient wells. *Id*. Dr. Kunkel stated that antimony may be present in coal ash leachate. EG Exh. 401 at 7. Both the Environmental Groups and Mr. Seymour identified antimony as one of the indicators for leachate from MWG's ash ponds. MWG Exh. 903 at 42. Also, all three ash ponds were operational during the period of observed exceedances, i.e., 2010 - 2013. The long-term monitoring data, however, shows that, during the seven-year monitoring period, all three wells had no exceedances of other coal ash indicator constituents such as boron, sulfate, or manganese. Also, because no exceedances of antimony were recorded after 2013, relining Ash Pond 3 and other measures required by the CCA might have eliminated antimony contamination. However, the monitoring results show that antimony was not detected in the upgradient wells, which indicates that upgradient off-site sources did not contribute to the exceedances of the antimony standard. Accordingly, the Board finds that the Environmental Groups have not proven that it is more likely than not that the coal ash stored at the site in the ash ponds or outside of the ash ponds is causing or contributing to the exceedances of antimony standard in Joliet 29's downgradient wells MW-02, 03, and 04 during 2010 - 13.

Cadmium and Lead. The monitoring results indicate a single exceedance of cadmium and lead standards in the upgradient monitoring well MW-11 in 2015. These metals were not detected in any of the other monitoring wells. MWG Exh. 809. Although Dr. Kunkel included these metals in his list of coal ash associated chemical constituents, Seymour includes both metals in his “maximum” criteria of the second tier list of coal ash leachate constituents. MWG Exh. 901 at 42. Accordingly, there is a likelihood that an exceedance of cadmium and lead may be associated with coal ash leachate. Given that a single exceedance of both metals occurred during the seven-year monitoring period and both occurred in one upgradient well, the Board finds that the Environmental Groups have not proven that it is more likely than not that the coal ash stored at the site in the ash ponds or outside the ash ponds caused or contributed to the exceedances of cadmium and lead standards in monitoring well MW-11 at Joliet 29.

Boron. Both the Environmental Groups and MWG agree that boron is an indicator of coal ash contamination. *Id;* MWG SOF 57. The monitoring results indicate two exceedances of the Part 620 boron standard during the seven-year monitoring period, both occurring in the upgradient well MW-11 in 2011. Since then, the monitoring results do not indicate any exceedance of boron standard in any of the monitoring wells. Although the Environmental Groups asserted that Joliet 29 exceeded the boron standard, their expert, Dr. Kunkel, admitted that it would be difficult to draw conclusions for the overall site based upon the results from one well. 1/29/18 Tr. at 65.

MWG asserted that boron is below Class I standards at all monitoring wells around the Joliet 29 ponds. MWG Rep Br. at 6. Further, MWG’s expert Seymour stated, based upon the analytical results of bottom ash taken from the ash ponds, the leachate from MWG ash ponds does not have the potential to cause groundwater impact above the GQS because the leachate levels were below such standard. MWG Exh. 903 at 41. Given that the seven-year monitoring results show only two exceedances of the boron standard in one upgradient monitoring well and no exceedances in any of the other wells, the Board finds that the Environmental Groups have not proven that it is more likely than not that the coal ash stored at the site in the ash ponds or outside the ash ponds caused or contributed to the exceedances of the boron standard in the upgradient well at Joliet 29.

Sulfate and TDS. As noted earlier, except for five exceedances in the upgradient wells MW-08 and 11 and one exceedance in MW-03 (in 2013), all exceedances of sulfate and TSD standards occurred in one downgradient well, MW-09 (2010-2017). MW-09 is located between Ash Pond 2 and Ash Pond 3 at the southwest edge of Ash Pond 3. Additionally, MW-09 exceeded sulfate and TDS standards every quarter of the seven-year groundwater monitoring period. Regarding the elevated levels of sulfate and TDS in monitoring well MW-09, the Environmental Groups’ expert, Dr. Kunkel, stated that the groundwater elevation data from third quarter 2012 indicated that Ash Pond 3 must have been leaking because of groundwater mounding.[6] He noted that the ground-water elevation in MW-9 was higher (505.66 feet) than in MW-8 (505.22 feet) which is generally upgradient from MW-9. EG Exh. 401 at 12-13. He further asserted an alternative explanation that coal ash deposits outside of the ash pond may be affecting the groundwater. *Id.*

[6] “Ground-water mounding” is a phenomenon usually created by the recharge to groundwater from a manmade structure, such as a surface impoundment, into a permeable geologic material, resulting in outward and upward expansion of the free water table. EG Exh. 401 at 5.

MWG's expert Seymour argued that Dr. Kunkel's assertion regarding groundwater elevation is based on selection of the single highest water level in MW-09, even though years of data show the average level in MW-09 is lower than in MW-08. MWG Exh. 903 at 8. Seymour noted that the groundwater elevation in MW-08 was higher than MW-09 in the 11 of the 16 quarterly monitoring events. *Id.* at 59. Additionally, Seymour maintained that any groundwater mounding would be too subtle to detect because of the accuracy of the elevation readings combined with small differences and variations of groundwater elevations at the site. *Id.*; 2/2/18 Tr. at 12-13 (Seymour Test.).

The monitoring results continue to show exceedances of sulfate and TDS standards even after relining Ash Pond 3 in 2013, as well as after MWG removed Ash Pond 1 from operation in 2015. MWG experts testified that no ash was found in Ash Pond 3 when it was drained for relining in 2013 and that the poz-o-pac liner was intact. 1/30/18 Tr. at 39 (Race Test.). MWG experts admitted that they considered leaving coal ash between layers when relining some of the ponds at some of the Stations. *See e.g.* EG Exh. 32; 10/23/17 Tr. at 156:18-162:21 (Race Test.). The consistent exceedance of Class I GQS as it appears in the groundwater monitoring results for MW-9 suggest that some active source of contamination persists. This persistent source of contamination may be coal ash remaining in Ash Pond 3, between its layers, or coal ash deposited outside the ash ponds. The sulfate and TDS also exceeded Class I GQS in 2014 and 2015 in monitoring well MW-08, which, although generally upgradient, is located near the northern side of Ash Pond 3.

Sulfate and TDS are indicators of coal ash contamination in groundwater. The monitoring results show consistent exceedances of the GQS of both constituents during the seven-year monitoring period at MW-09. Also, the record does not indicate that contamination has been caused by an off-site source because upgradient monitoring wells show no exceedances of the groundwater standards. Therefore, the Board finds that it is more probable than not that the source of the exceedances of sulfate and TDS in well MW-09 at Joliet 29 is either coal ash stored in Ash Pond 3 or any coal ash deposited in fill areas outside of but close to that pond.

v. <u>Exceedance of Background Concentrations</u>

The Environmental Groups asserted that the median[7] concentrations of boron and sulfate in all eleven monitoring wells exceed the statewide median background values developed by the IEPA. EG Br. at 30-31. Additionally, the median concentration of sulfate in MW-09, and boron in MW-11 exceeded the upper-bound 90th percentile background values. *Id.* at 31.

Regarding the use of IEPA's statewide background, Dr. Kunkel noted that the Joliet 29 site overlays the sand and gravel/shallow bedrock aquifers, which are the same aquifers from which the IEPA's background community water supply wells are drawing water. EG Exh. 401 at 8. Moreover, he noted that the actual background median for sulfate from a background well at the Powerton Station was within a few milligrams per liter of the median statewide sulfate value. Thus, Dr. Kunkel argued that the statewide median background values may be used to evaluate groundwater monitoring results at Joliet 29 even though the statewide CWS wells were not located in counties with MWG plants. 1/29/18 Tr. at 83-84 (Kunkel Test.).

[7] Median is determined by arranging all the data in the background dataset from highest value to lowest and taking the center value of that dataset. 2/1/18 Tr. at 103.

Additionally, Dr. Kunkel asserted that statewide median background values can be utilized to assess the severity of groundwater contamination because there are no background wells at Joliet 29. EG Exh. 401 at 8-9. He explained the upgradient wells (MW-8, 10 and 11) at Joliet 29 are not "background" wells because not only are the wells too close to the ash ponds, but they are also completed in areas where screened interval showed ash from construction of the dikes. 1/29/18 Tr. at 82 (Kunkel Test.). He asserted that the close proximity of the wells to the ponds makes them vulnerable to impact from the ponds, especially if the gradient reverses due to rise in Des Plaines River. *Id.* Kunkel asserts that the wells in question "are not background, but during certain times, maybe the majority of the time, they are upgradient but they're clearly not background." *Id.* at 83.

MWG's consultant, Seymour, disagreed. He argued that the IEPA's statewide background values are based on monitoring data from CWS wells and, therefore, are not representative of the site-specific groundwater quality because few CWS are sited wells near the Joliet 29 site. 2/2/18 Tr. at 31-32 (Seymour Test.). He maintained that it is inaccurate to consider statewide background as representative of background values at the sites where upgradient monitoring data is available. Additionally, MWG's consultant, Gnat, explained why a direct comparison of the median values from a monitoring well with the statewide median value is inappropriate. He noted that a monitoring well median above the statewide median means that the well median value is above the median of CWS wells' background values and not above background itself because the statewide median has a range of median values. 2/1/18 Tr. at 105-106 (Gnat Test.). Seymour explained that the comparison, according to the IEPA, must be based upon statistical evaluation using a 90 percent confidence level, i.e. a value above the 90 percent confidence level, which is considered above background with 90 percent assurance. 2/2/18 Tr. at 32-33 (Seymour Test.).

Seymour stated, however, that at MWG sites, background concentrations must be evaluated based upon site-specific data from monitoring wells installed at upgradient site boundaries in locations without the presence of ash materials in fill. MWG Exh. 903 at 60. Here, Seymour noted that the IEPA's proposed CCR regulations explain the procedure for establishing background on site-specific basis. The IEPA proposal specifies that the groundwater monitoring system must include wells to represent the quality of groundwater at the site not impacted by activities and units (background) and sets forth requirements for establishing background. EG Exh. 405 at 25-28.

Seymour maintained that the procedure followed by MWG at Joliet 29 is consistent with the IEPA's proposal in R14-10. 2/2/18 Tr. at 34-35 (Seymour Test.). Hence, the background at the site is the concentration in the upgradient wells MW-8, 10, and 11. *Id.* at 35. He asserted that the background concentrations at Joliet reflect sources other than the ponds and historical ash fill affected groundwater because the monitoring wells near the upgradient site boundary exceed Class I groundwater standards prior to migrating below the ponds. MWG Exh. 903 at 61. Seymour also clarified that all three upgradient wells are not installed in ash fill, as noted by Dr. Kunkel. *Id.*; 2/2/18 Tr. at 36-37 (Seymour Test.).

Although Dr. Kunkel raised concerns regarding the validity of background values from the upgradient wells, as noted by Seymour, the long-term groundwater elevation measurements do not indicate a reversal of groundwater flow. MWG Exh. 903 at 101 (Table 4.1). Thus, given the availability of site-specific upgradient groundwater monitoring data, the evaluation of any potential groundwater contamination at the site would have benefitted from the use of such data rather than statewide background levels, which may not represent the groundwater at the site. Here, the Board notes that neither the Environmental Groups nor MWG experts can establish background values on a site-specific basis by using the groundwater monitoring results from upgradient wells MW-8, 9, and 11.

Because the Environmental Groups claim exceedance of the statewide background, such exceedance must be evaluated by using appropriate statistical measure. MWG's consultants, Gnat and Seymour, stated that the comparison must be done using the upper bound 90th percentile background value. Because the parties agreed that the appropriate comparison for background values is the upper bound 90th percentile value, the Board limits the groundwater monitoring results comparison to the 90th percentile statewide values.

The Environmental Groups provided a comparison of the median values of boron and sulfate in the monitoring wells with the 90th percentile statewide values from the statewide database. This comparison indicated exceedances of 90th percentile statewide value of: boron in well MW-11; and sulfate in well MW-09. EG Br. at 31. All other wells have no exceedances of either boron or sulfate above the 90th percentile values.

The exceedances of the statewide background are consistent with the exceedances of groundwater standards of sulfate and boron in MW-09 and MW-11, respectively. As noted above, seven years of monitoring showed two exceedances of the boron standard in the upgradient well MW-11 in 2011 and none thereafter in any of the monitoring wells. The median value of boron of 1.20 mg/L is below the groundwater standard of 2.0 mg/L. The Board finds that, given that MW-11 is an upgradient well and no exceedances of 90th percentile statewide value for boron occurred in any other well, the coal ash stored in ash ponds or coal ash deposits outside of the ash ponds at the Joliet 29 site are not the likely sources causing boron exceedances in MW-11.

Regarding sulfate, as noted above, the monitoring results show consistent exceedances of the groundwater standard during the seven-year monitoring period in well MW-09. Although two sulfate exceedances occurred in the upgradient well MW-08 (one in 2014 and one in 2015), a comparison of the sulfate levels in MW-08 (460 -600 mg/L) to MW-09 (560-1900 mg/L) clearly shows that the contamination in MW-09 is not caused by an off-site source. Therefore, the Board finds it more probable than not that the exceedances in MW-09 at Joliet 29 of the 90th percentile Statewide value for sulfate is either coal ash stored in Ash Pond 3 or any coal ash deposited in fill areas outside the pond.

3. Powerton

A. Uncontested Facts

i. The Station

MWG leases and operates Powerton Electric Generating Station, located in Pekin, Tazewell County, Illinois since 1999. Joint Stip. at 2; MWG Answer and Defenses 5/5/14 at 2. The plant began operations in the 1920s with four coal-fired units, which were replaced in the early 1970s by the currently operating Units 5 and 6. Joint Stip. No. 18, MWG Exh. 664 at 1, 1/30/18 Tr. at 51:21-52 (Race Test.); MWG Exh. 635 at 1 (#11305).

The plant is bordered on the north by the Illinois River. MWG Exh. 901 at 33. The Powerton Lake and Wild Life Area surround the Station on the west. *Id.* Industrial and residential areas border the Station on the east, and agricultural land borders the Station on the south. EG Exh. 13C at 1; MWG Exh. 901 at 27, 33; 1/31/18 Tr. at 68:5-8 (Kelly Test.); MWG Exh. 667 at 10.

The fly ash at the station is collected through a dry system by electrostatic precipitators and then collected at silos and hauled off-site to Buckheart Mines for mine reclamation. The fly ash is never directed to the ash ponds. 1 /31/18 Tr. at 69:18-70:7 (Kelly Test.). The bottom ash from the bottom of the boilers and slag tanks is quenched with water and sluiced out to dewatering bins. The bottom ash is then decanted and sent to the ash surge basin. *Id*. at 70:8-14. The water from the Ash Surge Basin is either recycled back to the cooling pond or is discharged into the Illinois River through the NPDES permitted outfalls. *Id*. at 70:18-71:2. The ash is collected in the basin and periodically removed to the mines for mines reclamation. *Id*. at 71:3-11. The ash sent to the mines is periodically sampled. *Id*. at 71:9-73; MWG Exh. 700 at (#10965). The February 27, 2007, samples from the Ash Surge Basin identified barium at 0.027. 1/31/18 Tr. at 73:21-74:11; MWG Exh. 700 at (#10951).

ii. <u>Ash Ponds</u>

Powerton Station has four ash ponds, all under the Station's NPDES permit (#IL0002232): 1) the Ash Surge Basin, 2) the Ash Bypass Basin; 3) the Secondary Ash Settling Basin and 3) the Metal Cleaning Basin. Joint Stip. at 2; MWG Answer and Defenses 5/5/14 at 2; MWG Exh. 901 at 27, and SOF 166. The Station also has a Limestone Runoff Basin. MWG Exh. 901 at 27.

All four ponds were constructed in 1978; the Surge Basin, Bypass Basin, and the Metal Cleaning Basin with a poz-o-pac liner on the bottom and a Hypalon liner on the sides: the Secondary Settling Basin only was lined with a Hypalon liner. Joint Stip. at 2; MWG Exh. 901 at 28. All ponds were relined with HDPE liners in 2010 - 2013: the Bypass Basin and Metal Cleansing Basin in 2010, and the other two ponds in 2013. Joint Stip. at 2; MWG Exh. 901 at 28.

The Ash ***<u>Surge Basin's</u>*** is a primary ash basin, used to collect and settle bottom ash and hold it until removal. 1/30/18 Tr. at 58. The pond's lining includes (described bottom up): 12" poz-o-pac on the bottom, a bottom geotextile cushion, a 60 mil HDPE liner, a top geotextile cushion, a sand cushion and a limestone warning layer. MWG Exh. 901 at 30. The pond's bottom elevation is at 452 ft; average groundwater elevation is at 447 feet (about 5 feet below the pond's bottom). *Id*.

The ***<u>Bypass Basin</u>*** receives ash when the Station empties the Surge Basin. Joint Stip. at 2. The pond's lining includes (described bottom up): 12" poz-o-pac on the bottom, a bottom geotextile cushion, a 60 mil HDPE liner, a top geotextile cushion, a sand cushion and a limestone warning layer. MWG Exh. 901 at 31. The pond's bottom elevation is at 459 ft; average groundwater elevation is at 450.5 feet (about 8.5 feet below the pond's bottom). *Id*. MWG removes the ash in the Surge Basin and Bypass Basin when the basins are full, every 6 to 8 years. MWG Exh. 901 at 28; SOF 174, 179; Joint Stip. at 2; 1/30/18 Tr. at 58:22-59:6 (Race Test.).; 1/31/18 Tr. at 78:2-3 (Kelly Test.). MWG last removed coal ash from the Surge Basin in 2013 before relining. MWG Exh. 901 at 28.

The ***Secondary Settling Basin*** is used as a finishing pond and receives *de minimis* ash from the Surge Basin. 1/31/18 Tr. at 126-127; Joint Stip. at 2. The pond's lining includes (described bottom up): a geotextile separator fabric, gravel underdrain system 18-24" thick, another geotextile separator fabric, a sand cushion layer, a bottom geotextile cushion, and a 60 mil HDPE liner. The sides also have prepared subgrade rip-rap on the very bottom. MWG Exh. 901 at 32. The pond's bottom elevation is at 440 ft; average groundwater elevation is at 441.5 feet (about 1.5f t above the pond's bottom). *Id*. It was only emptied for relining; when emptied, MWG found "less than a foot of material and it really want ash." 1/31/18 Tr. at 127:17-128:2 (Kelly Test.). MWG Exh. 901 at 28; 1/31/18 Tr. at 127:17-128:2 (Kelly Test.); 1/30/18 Tr. at 60:15-19 (Race Test.). It has never been dredged because no dredging was needed. 1/31/18 Tr. at 128:8-15 (Kelly Test.).

The ***Metal Cleaning Basin*** is not a part of the ash sluice system and is used during temporary outages to temporarily laydown ash removed from boiler tubes. 1/31/18 Tr. at 115; MWG Exh. 901 at 28. The pond's lining includes (described bottom up): 12" poz-o-pac on the bottom, a bottom geotextile cushion, a 60 mil HDPE liner, a top geotextile cushion, and a sand cushion and limestone warning layer. MWG Exh. 901 at 29. The pond's bottom elevation is at 457.5 ft; average groundwater elevation is at 445 feet (about 12.5 feet below the pond's bottom). *Id*. Ash is removed from the Metal Cleaning Basin approximately annually. Joint Stip. at 2.

iii. Powerton VN

The IEPA issued Violation Notice #W-2012-00057 (Powerton VN) for the Powerton Station (EG Exh. 4A) that alleged that "operations at ash impoundments have resulted in violations of Groundwater Quality Standards" during 2010-2012 at monitoring wells MW-1 through MW-15, including for Chloride (MW-6, 8, 12, 14, 15), Antimony (MW-2), manganese (MW-4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15), boron (MW-1, 9, 11, 13), arsenic (MW-7), iron (MW-7, 11, 12), sulfate (MW-13, 14, 15), TDS (MW-7, 13, 14, 15), and selenium (MW-7, 9, 13, 14), as well as pH, mercury, thallium, and nitrate. EG Exh. 4A at 3-11.

iv. Powerton CCA

The Powerton CCA (MWG Exh. 636) states that:

> Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring wells MW-1, MW-2, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14 and MW-15. MWG Exh. 636 at 2 (#553) ¶ 3.

The CCA notes that "respondent agrees to undertake the following actions, which the Illinois EPA has determined are necessary to attain compliance" with the statute and Board rules. MWG Exh. 636 at 3 (#554) ¶ 5. Subsections (a) through (m) of paragraph 5 list activities MWG must undertake, subsections (a) though (d) are identical to Joliet 29 CCA. The other subsections require:

5(e)	apply to IEPA for a construction permit to reline Ash Surge Basin and the Secondary Ash Settling Basin with HDPE liner;
5(f)	installing additional monitoring well south of MW-9 in a location approved by IEPA to better define upgradient groundwater quality;
5(g), (j)	submitting an application to IEPA to establish and establishing a GMZ under section 620.250 within one year from the date of CCA; and
5(h), (i)	entering into an Environmental Land Use Control (ELUC) to cover area underlying GMZ, submit proposed ELUC to IEPA and record ELUC upon its approval;
5(k)	submitting a certification of compliance upon completing CCA requirements within one year of the date of CCA;
5(l)	not allowing East Yard Run-off to be part of the ash sluicing flow system and submitting monitoring results, for constituents in sec. 620.410(a)-(d), from water contained in it close to the outfall monitoring point 003 within 60 days from the date of CCA and for at least four monitoring quarters;
5(m)	not using any unlined areas for permanent or temporary ash storage or ash handling. MWG Exh. 636 at 3-4 (#554-5) ¶ 5.

On October 17, 2013, MWG filed a certification with the IEPA that all CCA measure were completed. Joint Stip. at 4; MWG Exh. 637.

v. <u>Powerton GMZ and ELUC</u>

As required by the CCA, on January 18, 2013, MWG filed applications with the IEPA to establish a GMZ (MWG Exh. 254) and also an ELUC (MWG Exh. 253) at the Powerton Station. Joint Stip. at 4; MWG Answer and Defenses 5/5/14 at 23; MWG Exhs. 253 and 254. IEPA approved the ELUC on August 26, 2013 and the GMZ on October 3, 2013. MWG Exhs. 638 and 639.

Both the GMZ and the ELUC cover the same area that includes all of the ash ponds. EG Exh. 253 at 1, 12; EG Exh. 254 at 1; MWG Exh. 901 at 39-40; MWG Exhs. 638 and 639. The borders of the GMZ and the ELUC are defined as follows:

> the western (downgradient) extent corresponds with the hydraulic boundary formed by the intake channel. The northern extent corresponds with the hydraulic boundary formed by the Illinois River. The southern and eastern boundaries are defined by the property boundary. The vertical extent of the GMZ is defined by the top of the Carbondale Formation which is approximately 70 feet below ground surface. EG Exh. 254 at 1; MWG Exh. 639.

The GMZ is established under 35 Ill. Adm. Code 620.250(a). EG Exh. 254 Att. 2 at 1, Note 1. The application notes that "Class I" is the groundwater classification "the facility will be subject to at the completion of the remediation". EG Exh. 254, Att. 2 ,Part I ¶ 10. The GMZ application notes the following:

> The agreed upon remedy is specified in Item 5(a) through (m) of the executed [CCA]… The remedy includes lining of the Ash Surge Basin and Ash Settling Basin with HDPE. This [GMZ] application fulfills requirements set forth under Item 5(g) of the CCA. EG Exh. 254 Att 2, Part III ¶ 1.

The application also notes that "[at] the completion of the corrective process, a final report is to be filed which includes the confirmation statement included in Part IV." *Id*. Att. 2 at 1, Note 1.

B. Contested Facts

i. Ash Ponds Dredging, Liner Ruptures and Flooding

Both poz-o-pac and HDPE liners are prone to damage in certain conditions, i.e. severe weather or rupture by heavy equipment during dredging. In 2005 and 2006 MWG consultant investigated the liners at Powerton ponds and rated the condition of the Ash Surge and Metal Cleaning Basin as "poor", the Secondary Ash Settling Basin as "no liner" and Bypass Basin as "unknown." Comp Exh. 34 at #23615; MWG Exh. 606 at 23646. MWD took precautions to ensure that dredging the Ash Surge Basin, Bypass Basin or the Metal Cleaning Basin was performed by trained MWG personnel instructed on the liners' safety procedures. 1/31/18 Tr. at 99:23-100:2, 116:15-22 (Kelly Test.). However, there were occasional issues with the liners, or the liners weren't installed correctly. EG Exh. 109 at 1, 3 ("several areas if liner to the north of the weir wall pulled the backing strips away and the liner is loose."); EG Exh. 108 ("couple of issues have emerged while de-watering the Secondary Basin . . . the liner on the east wall of the basin may not have been constructed as designed or it may have been damaged in the past or altered…."); *see also* EG Exh. 107. MWG's witness, Mr. Kelly, Powerton's Chemical Specialist, testified that the tears in the pond liners did happen, although not very often. 1/31/18 Tr. 146:12-21 (Kelly Test.). He noted that they mostly happened at the very top of the basin and above the water line. *Id*. Station operators inspected ponds regularly and reported any issues to Mr. Kelly. Any issues with the liners were repaired within one to two weeks. 1/31/18 Tr. at 80:9-12, 80:22-81:1, 101:11-13, 146:4-145:5 (Kelly Test.). Some coal ash might have been left between the layers when relining the Former Ash Basin. EG Exh. 32; 10/23/17 Tr. at 156:18-162:21 (Race Test.).

In addition, MWG employees recalled ash ponds and historical ash storage flooded on several occasions, with water rising 30 feet above the bottom of the Secondary Ash Settling Basin, and the Illinois River flowing in and out of the Former Ash Basin. EG Exh. 33; 10/23/17 Tr. at 164:18-21; 1/31/18 Tr. at 211:10-21 (Race Test.); 1/31/18 Tr. at 211:10-21 (Kelly Test.); 10/24/18 Tr. at 95:24-96:3 (Lux Test.); EG Exh. 107 10/24/17 Tr. at 94:0-11, 93:7. MWG confirmed that the area of the Secondary Ash Basin has high groundwater levels. MWG Br. at 15; SOF 606-609. To address this issue, MWG installed an underdrain system around the Secondary Ash Basin, composed of stones, drain tiles and riprap on the sides, "to move any water that may seep near the pond, away from the pond liner." MWG Br. at 15; SOF 606-609. MWG also noted that since the relining of the Secondary Ash Basin "there have not been any issues related to the river water impacting or moving the liner." MWG Br. at 15; SOF 616-617.

After a careful review of the facts, the Board finds that the Environmental Groups established that both poz-o-pac and HDPE liners at Powerton can and do crack or experience damage on occasions. Based on preponderance of all the evidence in the record, including the groundwater monitoring results, MWG practices in ponds relining and dredging, and flooding at the area, the Board concludes that it is more likely than not that the ash ponds did leach contaminants into the groundwater.

ii. Historical Coal Ash Sites

The record indicates three historical coal ash storage areas at Powerton: 1) East Yard Run-off Basin; 2) Limestone Runoff Basin; and 3) Former Ash Basin. Only the Limestone Runoff Basin is lined, and had its content tested for CCB. The record, however, shows no evidence that material from the Limestone Runoff Basin that was successfully tested for CCB, was ever beneficially used in compliance with 415 ILCS 5/3.135.

East Yard Run-off Basin is located southwest of the Ash Surge Basin and west of the Ash Bypass Basin and is neither part of the ash sluicing flow system, nor used by MWG to store or receive ash. MWG Exh. 254 at 4; 1/31/18 Tr. at 138:5-22 (Kelly Test.); MWG Exh. 667 at 12. It is used for stormwater run-off from east half of the Station. 1/31/18 Tr. 138:12-14 (Kelly Test.). The closest monitoring wells are MW-12 and MW-13. The record does not provide information about the content or condition of this basin. However, the consistent exceedances of the Class I GQS for coal ash indicators in the wells MW-12 and MW-13 that are downgradient to this area indicate that this basin may contain coal ash that is leaking into groundwater.

Limestone Runoff Basin is located east of the Ash Surge Basin. MWG Exh. 901 at 27. It is lined with poz-o-pac on the bottom and Hypalon liner on the sides. Joint Stip. at 2. There is no evidence in the record showing the condition of this liner. The closest downgradient monitoring well is MW-18; MW-10 might act as an upgradient well for this basin. MWG Exh. 901 at 33, 38. The basin has been used historically to temporarily store fly ash during equipment changes at the station. 1/30/18 Tr. at 70:2-7 (Race Test.);1/31/18 Tr. at 144:2-6, 144:13-24, 183:13-24 (Kelly Test.). It has been used twice to temporarily store coal ash during equipment changes, last time in 2013. MWG Br. at 17; SOF 237-238. In 2004, there was coal ash in the basin from when equipment was taken off service. 1/30/18 Tr. at 70:2-71:4 (Race Test.);1/31/18 Tr. at 144:2-6, 144:13-24 (Kelly Test.); MWG Exh. 635. The basin was empty since 2013. 1/31/18 Tr. 144:7-145:1 (Kelly Test.). In 2004, Anders Engineering analyzed samples from the test pits in the nine locations in the basin using the NLET method to confirm that the historic ash met the criteria for beneficial reuse as CCB. MWG Br. at 7-8; MWG Exh. 901 at 9; MWG Exh. 635 at 1 (#11305); 1/30/18 Tr. at 74:7-76:14 (Race Test.). The report identified that the basin contains 8,250 cubic yards of material. MWG Exh. 635 at 8 (#11312). The report concluded that MWG should either remove the material to a landfill or enroll the Basin in the IEPA's Site Remediation Program. *Id*. at 8 (#11312). Tested samples indicated boron levels ranging from 0.1 to 1.5 mg/L. MWG Exh. 635 at App. B Table 1 (#11341). Barium and zinc were also detected in the samples; selenium and chromium were detected above Class I GQS in two of the test pits (TP-03 and TP-15). 1/30/18 Tr. at 74:11-19 (Race Test.); MWG Exh. 635 at 10 (#11314), App. B Table 2 (#11342). The report noted that "material in the grid sections containing test pits TP-03 and TP-15 would need to be disposed at a permitted landfill." MWG Exh. 635 at 10 (#11314). If MWG wanted to use material as CCB, it had to separate it from the non-CCW material found in three pits (TP-16, 25 and 29)[8] and from the material found in two pits that did not meet Class I GQS (Tp-03 and 15). *Id*. The record does not provide evidence that MWG separated it. The record also does not provide evidence that MWG used material from this basin as CCB under 415 ILCS 5/3.135. It appears from the record that due to easily cracked poz-o-pac liner, material from this basin may be leaking contaminants into groundwater.

Former Ash Basin is located northeast of the ash ponds and is part of the Station's NPDES permit as emergency overflow for Ash Surge Basin. MWG Exh. 901 at 38. 1/30/18 Tr. at 142:14-18 (Race Test.). It was previously used as ash impoundment. 1/30/18 Tr. at 61:14-22 (Race Test.); 1/31/18 Tr. at 142:14-18 (Kelly Test.); EG Br. at 39. Ms. Race testified that on rare occasions water from Ash Surge Basin may flow to this former basin, which happened once in 2015 and at the end of 2017. 10/23/17 Tr. at 164:18-21; 1/31/18 Tr. at 158:23-160:3; see also 1/31/18 Tr. at 143:19-144:2 (Kelly Test.). MWG has not sent coal ash to this basin since taking over the Station in 1999. 1/31/18 Tr. 142:10-13 (Kelly Test.). The closest downgradient monitoring well is MW-2 through 5, and MW-1 is side-gradient to this basin. MW-18 is also located close to the east side of the basin. MWG Exh. 667 at 11; MWG Exh. 901 at 33, 38 (Seymour); 10/27/18 Tr. at 205:20-206:9 (Kunkel Test.). MWG Exh. 901 at 38. Groundwater samples taken downgradient of this basin showed no coal ash constituents. SOF 248-251; MWG Br. at 17; 10/27/17 Tr. at 206:12-210:22; 2/1/18 Tr. at 277:1-13; 2/2/18 Tr. at 70:17-71:22. Thus, the board find that the Environmental Groups did not prove that it is more likely than not that this basin is a source of contamination at the Station.

Coal Ash Fill through the site. Environmental Groups also allege that numerous soil borings taken at Powerton at different times show extensive presence of coal ash in fill at elevation that allows up to nine feet of buried ash to be saturated with groundwater. EG Br. at 44. The record supports this. EG Exh. 401 at 48-49 (Table 6). Powerton's Phase II Environmental Site Assessment show that nine borings taken in 1998 showed coal ash "in fill that extends from the surface to as deep as sixteen feet below surface." MWG Exh. 17D at 57-72 (#3309-3324). Another five borings taken in 2005 by KPRG during the geotechnical testing showed coal ash fill starting at around two feet below surface and going as deep as 14 feet, mainly in areas around Secondary Basin, Ash Surge Basin and Ash Bypass Basin. The deepest coal ash fill coming from the area between the Ash Surge Basin and Ash Bypass Basin. MWG Exh. 201 at 37, 41, 43-46 (#24300, #24304, 06-09, -24310) (*see* GT-7 (2-12 feet deep), GT-8 (2.5-12 feet deep), GT-9 (3-14 feet deep)). Soil borings from December 2010, when MWG installed monitoring wells, particularly borings for wells MW-9, 11 and 12, show cinders "in fill that extends from the surface to as much as 24.5 feet below the surface." EG Br. at 44; EG Exh. 13C at 22-41 (#7102-7121); EG Exh. 30.5E; EG Exh. 24E at 16-19 (#40059-40062); 10/23/17 Tr. at 77:20-86:1. Also, Environmental Groups argue that coal ash is buried as low as 443 feet above mean seas level (MSL), which allows it to be saturated with groundwater at times up to nine feet, based on groundwater elevation fluctuations at the site between 430 to 452 feet above MSL. EG Exh. 13C at 33 (#7113); MWG Exh. 903 at 17 (Table 403); EG Br. at 44. Thus, the Board finds that the Environmental Groups proved that it is more likely than not that the coal ash is spread out across the Stations in the fill and is contributing to the exceedances in the Stations' monitoring wells.

[8] The report finds that material in TP-16, 25 and 29 was not a coal combustion waste (CCW).

Ash Cinders Stored on Land. MWG's employee, Mr. Kelly, testified that coal ash cinders at some point were temporarily stored on the ground in an open area directly south of the Bypass Basin for two to three months during the winter before 2012, because a contractor, Reed Mineral, could not get them offsite. 1/31/18 Tr. 184:20-185:21 (Kelly Test.); MWG Exh. 667 at 12; EG Br. at 45. When the cinders were removed, they went to Reed Mineral to be used in shingles and as sandblasting material. *Id.* at 187:23-188:3 (Kelly Test.). The closest downgradient monitoring wells to the area identified by Kelly at that time frame are MW-13, 12 and 14. An intermediate or side gradient well is MW-9. MWG Exh. 903 at 33; MWG Exh. 667 at 11-12. The groundwater monitoring results for these wells show exceedances of arsenic, sulfate, boron, TDS in 2011 - 2012. MWG Exh. 810. The Board, thus finds, that temporary storage of the cinders contributed to contamination at the Station.

Weighing the facts presented, the Board finds that Environmental Groups have proven that it is more likely than not that the historic areas and fill containing coal ash are causing or contributing to GQS exceedances at the Station.

iii. Monitoring Wells

Powerton Station's groundwater monitoring system consists of 19 monitoring wells (MW-1 through 19). MWG Exh. 901 at 33. MWG installed initial 15 groundwater monitoring wells (MW-1 through MW-15) in 2010. MWG Answer and Defenses 5/5/14 at 2. MWG installed MW-16 in a location south of MW-9, to comply with section 5(f) of the Powerton CCA, which requires the well "in a location approved by IEPA to better define upgradient groundwater quality." MWG Exh. 636 at 3 ¶ 5(f). Additional wells, MW-17, 18 and 19, were installed later to comply with proposed CCR rules. 2/1/18 Tr. at 135:6-9.

The groundwater monitoring through the initial 15 monitoring wells (MW-1 though MW-15) was conducted from the last quarter of 2010 through second quarter of 2017. 2/1/18 Tr. at 85:24-86:14, 110:2-20; MWG Exh. 810. The monitoring in MW-16 began in last quarter of 2012. MWG Exh. 810 at 31. Monitoring at wells MW-17 and MW-18 started in November 2015, and at MW-19 in November 2016. *Id.*; 2/1/18 Tr. at 135.

While wells MW-6, 8, 12, 14 and 15 are screened in the shallow silt/clay unit, the other wells are screened in the deeper sand/gravel unit. EG Exh. 401 at 17, 2/1/18 Tr at 130. The monitoring wells MW-1 through MW-10 wells were also used to characterize the site hydrogeology. These wells were spaced approximately 400 feet apart around the perimeter of ash ponds and screened approximately 10 feet past the intersection of the groundwater table to ensure collection of representative groundwater samples. EG Exh. 13C at 3.

Monitoring well MW-16, which is located outside of the area of groundwater impact associated with ash handling activities, is identified as an "**upgradient well**" with respect to direction of groundwater flow, or a "background" well, showing potential impact from off-site sources. EG Exh. 255 at 2. EG Br. at 40, 1/30/18 Tr. at 83. Monitoring wells MW-1, MW-9 and M-10 that are located upgradient of specific ash basins but are considered "intermediate" or "side gradient" wells because they are within area of impacted groundwater from historical ash related activities. MWG Exh. 639 at 1 ("Illinois EPA does not agree that MW-1, MW-9 and MW-10 are readily up gradient of historical ash related activities that may impact groundwater quality proximate to these wells…would characterize [them] as side gradient or intermediate wells");

EG Br. at 40, EG Exh. 255 at 2. All other wells (MW-2 through MW-8, MW-11 though MW15, and MW-17 through MW-19) are considered "downgradient" wells, showing the impact of MWG's operations on the groundwater quality. EG Exh. 255 at 2. A potable water well survey indicates six wells within 2,500-foot radius of the ash pond, but none of the wells are located downgradient from the ash ponds. MWG Exh. 621 at 14.

Starting from December 2010, quarterly groundwater samples from monitoring wells MW-1 through MW-16 were analyzed for 35 parameters. MWG Exh. 810. Monitoring wells MW-17 through 19 were analyzed for 22 parameters, including coal ash indicator constituents. 2/1/18 Tr. at 33-35. The monitored parameters from all 19 wells included coal ash indicator constituents – boron, chloride, sulfate, and TDS. MWG Br. at 6.

The site hydrogeologic conditions at the Powerton station were determined by Patrick Engineering using the soil boring logs of ten groundwater monitoring wells installed around the perimeter of the ash pond. EG Exh. 13C at 3. The site is predominantly fine sand fill underlain by sand and gravel with a silt seam running through a portion of the site. *Id.* at 7. There are two groundwater flow units at the Powerton Station that are distinct and hydraulically connected. 2/1/18 Tr. at 129-130, MWG Exh. 901 at 34. The first is on a discontinuous silty-clay unit with groundwater flowing from east to west. *Id*. The second is a sandy gravel unit at depths ranging from 18 to 28 feet below surface, with groundwater flow north towards the Illinois River. *Id.*; 2/1/18 Tr. at 133. The Board finds that hydrogeologic investigation performed by MWG consultants adequately represents the groundwater flow conditions at the Powerton Station and support designation of the wells as upgradient and downgradient.

iv. <u>Exceedances of Part 620 Standards</u>

The groundwater monitoring results at Powerton indicate 403 exceedances of the Board's Part 620 groundwater quality standards for coal ash constituents between December 2010 and April 2017 in 14 of the 19 monitoring wells. MWG Exh. 810. These include wells MW-2, MW-6 through MW-15, and MW-17 through MW-19. The groundwater monitoring results show no comparative exceedances of the standards in the upgradient monitoring well MW-16, as well as MW-1 (intermediate well) or wells MW-3, MW-4 and MW-5 (that show whether contamination may be moving north of the Former Ash Basin). Further, the results indicate the number of exceedances ranging from:

a) 1 to 3 in wells MW-2, MW-10, MW-18 and MW-19; and
b) 12 to 101 in wells MW-6 through MW-9, MW-11 through MW-15, MW-17 and MW-18.

The constituents above the Class I standard are as follows with number of exceedances shown in parenthesis: antimony (1), arsenic (83), boron (64), lead (2), selenium (4), sulfate (104), thallium (26) and TDS (119). A summary of the exceedances is presented in Tables 2.A-2.C, below. MWG Exh. 810; MWG Exh. 901 at 33.

Table 2.A: Powerton Groundwater Monitoring Results Summary

Monitoring Wells	Closest Ash Pond, hist storage	Location	Constituents	Number of Exceedances of Part 620 Standards	Year(s)
MW-02	ASB, FAB	Downgradient	Antimony	1	2013
MW-06	SSB	Downgradient	Arsenic	1	2014
			TDS	7	2012-2016
			Sulfate	9	2012-2017
MW-07	SSB	Downgradient	Arsenic	26	2010-2017
			TDS	12	2011-2016
			Lead	1	2010
MW-08	ASB	Downgradient	Sulfate	3	2012-2015
			TDS	9	2013-2017
MW-09	ABB	Intermediate	Boron	21	2010-2017
MW-10	ASB, LRB	Intermediate	Boron	2	2014
			Lead	1	2013
MW-11	ASB, LRB	Downgradient	Arsenic	15	2012-2016
			Boron	2	2012
			Sulfate	1	2017
			TDS	1	2017
MW-12	ASB, ABB, EYRB	Downgradient	Arsenic	7	2011-2016
			Boron	1	2013
			Sulfate	14	2012-2017
			TDS	10	2014-2016
MW-13	ASB, MCB, EYRB	Downgradient	Arsenic	22	2010-2017
			Boron	26	2014-2017
			Sulfate	27	2010-2017
			TDS	26	2010-2017
MW-14	MCB	Downgradient	Arsenic	3	2010-2011
			Boron	7	2014-2017
			Selenium	2	2011-2013
			Sulfate	26	2010-2017
			Thallium	20	2011-2017
			TDS	27	2010-2017
MW-15	ASB, MCB	Downgradient	Arsenic	2	2011-2012
			Boron	1	2016
			Selenium	2	2015
			Sulfate	16	2011-2017

			TDS	18	2011-2017
MW-17	ASB, MCB	Downgradient	Arsenic	7	2016-2017
			Sulfate	8	2015-2017
			Thallium	6	2016-2017
			TDS	8	2015-2017
MW-18	ASB, FAB	Downgradient	TDS	1	2016
MW-19	ABB, EYRB	Downgradient	Boron	3	2017

Table 2.B: Powerton Groundwater Monitoring Results Summary (by year)

Year	Monitoring Wells	MW -2	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11
	Constituent	# of Exceedances Above Part 620 Class I Groundwater Standards						
2010	Arsenic			1				
	Boron					1		
	Lead			1				
2011	Arsenic			4				
	Boron					2		
	TDS			3				
2012	Arsenic			4				1
	Boron					4		2
	Sulfate		2		1			
	TDS		1	3				
2013	Antimony	1						
	Arsenic			4				4
	Boron	1				3		
	Lead						1	
	Sulfate		2		1			
	TDS		1	1	3			
2014	Arsenic		1	3				4
	Boron					2	2	
	Sulfate		2					
	TDS		2	2	2			
2015	Arsenic			4				4
	Boron					4		
	Sulfate		1		1			
	TDS		2	1				
2016	Arsenic			4				2
	Boron					3		
	Sulfate		1					
	TDS		1	2	2			
2017	Arsenic			2				
	Boron					2		
	Sulfate		1					1
	TDS				2			1

Total	2	17	39	12	21	3	19

Table 2.B: S Powerton Groundwater Monitoring Results Summary (by year) (contd)

Year	Monitoring Wells	MW-12	MW-13	MW-14	MW-15	MW-17	MW-18	MW-19
	Constituent	**# of Exceedances Above Part 620 Class I Groundwater Standards**						
2010	Arsenic		1	1				
	Boron		1					
	Sulfate		1	1				
	TDS		1	1				
2011	Arsenic	1	1	2	1			
	Boron		6					
	Selenium			1				
	Sulfate		6	6	1			
	Thallium			3				
	TDS		5	6	1			
2012	Arsenic	3	2		1			
	Boron		2					
	Sulfate	1	2	2				
	Thallium			2				
	TDS		2	2				
2013	Arsenic	2	4					
	Boron	1	3					
	Selenium			1				
	Sulfate	2	4	3	3			
	Thallium			4				
	TDS		4	4	3			
2014	Arsenic		4					
	Boron		4	1				
	Sulfate	3	4	4	2			
	Thallium			3				
	TDS	2	4	4	4			
2015	Arsenic		4					
	Boron		4	2				
	Selenium				2			
	Sulfate	3	4	4	4	1		
	Thallium			3				
	TDS	4	4	4	4	1		
2016	Arsenic	1	4			4		
	Boron		4	2	1			
	Sulfate	3	4	4	4	4		
	Thallium			4		3		
	TDS	4	4	4	4	4	1	

2017	Arsenic		2			3		
	Boron		2	2				3
	Sulfate	2	2	2	2	3		
	Thallium			1		3		
	TDS		2	2	2	3		
Total Exceedances		32	101	85	39	29	1	3

Table 2.C: Powerton Groundwater Monitoring Results Summary (by wells)

Chemical Constituent	**Antimony**	**Arsenic**	**Boron**	**Lead**	**Selenium**	**Sulfate**	**Thallium**	**TDS**	**Total**
Class I GWQS (mg/L)	**0.006**	**0.01**	**2**	**0.0075**	**0.05**	**400**	**0.002**	**1200**	
Monitoring Well	**Number of Exceedances**								
MW-2	1		1						2
MW-6		1				9		7	17
MW-7		26		1				12	39
MW-8						3		9	12
MW-9			21						21
MW-10			2	1					3
MW-11		15	2			1		1	19
MW-12		7	1			14		10	32
MW-13		22	26			27		26	101
MW-14		3	7		2	26	20	27	85
MW-15		2	1		2	16		18	39
MW-17		7				8	6	8	29
MW-18								1	1
MW-19			3						3
Total exceedances	1	83	64	2	4	104	26	119	403

Antimony. Over the entire seven-year monitoring period, only one exceedance of antimony Class I GQS was registered in all monitoring wells: in MW-2, during the second quarter of 2013. MWG Exh 810. Except for this event, the antimony level in MW-2 was below detection level at all other sampling periods. MWG Exh 810. Environmental Groups' expert, Dr. Kunkel, states that antimony may be present in coal ash leachate. EG Exh. 401 at 7. Further, MWG's expert Seymour identifies antimony as one of the indicators for leachate from MWG's ash ponds. MWG Exh. 903 at 42. However, MWG's bottom ash NLET results indicate that the level of antimony in the ash leachate was below the Part 620 Class I standard of 0.006 mg/L. MWG 903 (Table 5-3). Other than the one exceedance in MW-2, there were none observed in any of the remaining 18 monitoring wells. Thus, the single exceedance maybe attributable to sampling or analytical error rather than by coal ash storage or handling activities at the site. Also, given that MW-2 is located at the north/northeast edge of the northern most former ash basin and had only two exceedances of Part 620 standards (1 antimony and 1 boron) during the seven-year monitoring period, the well may not be in area of impacted groundwater. MWG Exh. 810; MWG Exh. 901 at 35. The Board finds that the Environmental Groups have not proven that it is more likely than not that this single exceedance is caused by MWG operations.

Arsenic. The monitoring results indicate 83 exceedances of the Part 620 Class I arsenic standard in 6 monitoring wells from 2010 through 2017. These wells include (the number of exceedances shown in parenthesis): MW- 6 (1), MW-7 (26), MW-11 (15), MW-12 (7), MW-13 (22), MW-14 (3), MW-15 (2), and MW-17 (7). These wells are all located downgradient of the ash basins. While some of the wells (MW-6, 12, 14, and 15) had intermittent exceedances of the arsenic standard over the seven-year monitoring period, the results for wells MW-7, MW-11 and MW-13 indicate exceedances over a period of four to six years.

Like antimony, arsenic is listed by both Dr. Kunkel and Mr. Seymour as a constituent that may be present in coal ash leachate. EG Exh 401 at 7; EG Exh. 903 at 42. In this regard, MWG's bottom ash Neutral Leaching Extraction Test (NLET) result of 0.05 mg/L or less for arsenic suggests the presence of arsenic in the ash leachate at levels higher than the Part 620 Class I standard of 0.01 mg/L. MWG 903 (Table 5-3). While there were 83 exceedances in the downgradient wells, arsenic was not detected in the upgradient well MW-16 during the seven-year period. This indicates that upgradient off-site sources did not contribute to the exceedances of the arsenic standard. Given these observations, the Board finds that the Environmental Groups have proven that it is more probable than not that coal ash stored onsite, either in the ash ponds or outside of the ponds, is causing or contributing to exceedances of arsenic standard in wells MW-6, MW-7, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-17.

Boron. The groundwater monitoring results indicate 64 exceedances of the Part 620 boron standard during the seven-year monitoring period in nine monitoring wells. EG Br. at 77-110 (App A); MWG Exh 810, also see Table 2 above. Most of the exceedances (shown in parenthesis) were observed in three monitoring wells MW-9 (21), MW-13 (26), and MW-14 (7). The other six wells had one to three exceedances over the seven-year period. Also, the upgradient well MW-16 with boron levels ranging from 0.13 mg/L to 1.0 mg/L did not have any exceedances of the boron standard of 2.0 mg/L. However, the boron levels in monitoring wells MW- 9, 13 and 14 ranging between 1.5 mg/L to 4.3 mg/L were higher than the upgradient well. This indicates that onsite sources, rather than any offsite sources, are contributing to groundwater exceedances.

Both the Environmental Groups and MWG agree that boron is an indicator of coal ash contamination. EG Exh 401 at 7, Exh. 903 at 42. Further, Seymour's comparison of the monitoring results from 2014 with indicator constituents in leachate shows that boron is an indicator of leachate from Powerton ash ponds. MWG Exh 903 (Table 5-4). However, Seymour argues that the leachate from MWG ash ponds does not have the potential to cause groundwater impact above the GWQS because the leachate levels were below such standard. MWG Exh. 903 at 41. Here, MWG's bottom ash NLET results indicate that the level of boron ranged from less than 0.1 mg/L to 2.0 mg/L, which the Part 620 Class I standard. MWG 903, Table 5-3. Dr. Kunkel asserts that boron is present in concentrations above Class I standard in wells sampling lower sand and gravel unit (MW-2, 9, 10, 11, and 13), as well as the upper silt/clay unit (MW-12 and 14). EG Exh. 403 at 42. He maintains that exceedances remain even after relining four of the ash ponds in 2010 and 2013, suggesting contribution from a leak in the new liner or coal ash deposited historically outside the basins. *Id.*

As noted above, MW-9, MW-13, and MW-14 had boron exceedances over four or more years and accounted for 83% of the exceedances. While MW-9 is located upgradient of the ash ponds, it is not considered an "upgradient" well because it is within an area of impacted groundwater from historical ash related activities. EG Br. at 41; EG Exh. 255 at 2 (#11236). Other wells (e.g. MW-11, 12, 15, and 19) had few intermittent exceedances that correlated with exceedances of other constituents in other wells in the same area and time. With respect to boron, exceedances in other wells appear to be less representative. The MW-2 single exceedance in 2013, and two exceedances in MW-10 in 2014, appear to be more random and not correlating to any other comparative exceedances in the same time. Given that any offsite boron contribution was below the groundwater standards and significantly lower than the levels in the onsite wells, the Board finds that the Environmental Groups have proven that it is more probable than not that the coal ash stored at the site in the ash ponds or outside the ash ponds is causing or contributing to exceedances of boron standard in wells MW-9, MW-11, MW-12, MW-13, MW-14 and MW-19 at Powerton.

<u>Lead</u>. The monitoring results indicate two exceedances of the Part 620 lead standard during the seven-year monitoring period: first in 2010 in MW-7 located on the western edge of ash settling basin; and second in 2013 in MW-10 located east of ash surge basin. EG Br. App. A., MWG Exh 901 at 35. In all other monitoring wells lead was either below detection level or below the Part 620 standard. MWG Exh. 810. While lead is not included in Dr. Kunkel's list of coal ash constituents, Seymour includes it in his "maximum" or second tier list of coal ash leachate constituents. MWG Exh. 901 at 42. MWG's bottom ash NLET results indicate that the level of lead in the coal ash leachate was below the Part 620 Class I standard of 0.0075 mg/L. MWG 903 (Table 5-3). Thus, the Board finds that the Environmental Groups have not proven that it is more likely than not that the coal ash stored at the site in the ash ponds or outside the ash ponds is causing or contributing to the two exceedances of the lead standard at the Powerton Station.

<u>Selenium</u>. There were two exceedances of the Class I GQS selenium standard in MW-14 (in 2011 and 2013), and one in MW-15 (in 2015) during the seven-year monitoring period. Selenium levels were below the groundwater standard in all other monitoring wells. MWG's bottom ash NLET results indicate that the level of selenium was below the Part 620 Class I standard of 0.050 mg/L. MWG 903, Table 5-3. Also, selenium is not considered as a primary indicator of coal ash leachate. Therefore, the Board finds that the Environmental Groups have not proven that it is more likely than not that the coal ash stored at the site in the ash ponds or outside the ash ponds is causing or contributing to the few sporadic selenium exceedances at Powerton.

<u>Thallium</u>. The monitoring results show that there were 20 exceedances of the Class I thallium standard in MW-14 (2011 through 2017) and 6 in MW-17 (2016-17). Neither Environmental Groups' experts nor MWG's experts consider thallium as a coal ash leachate indicator. EG Exh. 401 at 7 and MWG Exh. 903 at 42. Further, MWG's bottom ash NLET results indicate that the level of thallium was below the Part 620 Class I standard of 0.0020 mg/L. MWG 903, Table 5-3. Thus, the Board finds that the Environmental Groups have not proven that it is more likely than not that the coal ash stored at the site in the ash ponds or outside the ash ponds is causing or contributing to the thallium exceedances at Powerton.

Sulfate and TDS. There were 104 exceedances of sulfate standard and 119 exceedances of TDS standard during the seven-year monitoring period. MWG Exh. 810. All exceedances occurred in downgradient wells, with sulfate in nine wells (MW-6, 8, 11 through 15 and 17) and TDS in 10 wells (same as sulfate wells plus MW-7 and 18). While some wells had intermittent exceedances, wells MW-12, 13, 14, and 15 had sulfate and/or TDS exceedances over a period of four or more years. *Id.* There were no exceedance of sulfate or TDS in the upgradient monitoring well MW-16 during the seven-year monitoring period.

Both Environmental Groups and MWG list sulfate as an indicator constituent of coal ash, and Dr. Kunkel notes that higher concentration of sulfate may be accompanied by high concentrations of TDS. EG Exh. 401 at 7; MWG Exh. 903 at 40. Further, Seymour's comparison of the monitoring results from 2014 with indicator constituents in leachate shows that sulfate is an indicator of leachate from Powerton ash ponds. MWG Exh 903, Table 5-4. However, Seymour argues that the leachate from MWG ash ponds does not have the potential to cause groundwater impact above the sulfate and TDS standards because the leachate levels are below the standards. He relies on MWG's Will County Station bottom ash NLET results of sulfate at 49 mg/L and TDS at 200 mg/L. MWG Exh. 903 at 41 and MWG Exh. 901 at 8.

Sulfate and TDS are indicators of coal ash contamination in groundwater. Further, the monitoring results show consistent exceedance of the Class I standard for both constituents during the seven-year monitoring period at multiple downgradient monitoring wells. Also, there is no indication of contamination being caused by an off-site source since upgradient monitoring well show no exceedances of either sulfate and TDS groundwater standards. The Board, therefore, finds that the Environmental Groups have proven that it is more likely than not that the coal ash stored at the site in the ash ponds or outside the ash ponds is causing or contributing to the 104 sulfate (wells MW-6, 8, 11, 12, 13,14, 15 and 17) and 119 TDS (MW-6, 7, 8, 11, 12, 13, 14, 15, 17 and 18) exceedances at Powerton Station.

v. <u>Background Concentrations Exceedance</u>

Environmental Groups allege that at Powerton, the median concentrations of boron and sulfate in fifteen downgradient wells (MW-1 through MW-15) exceeded the median concentration of those constituents in the upgradient well (MW-16). EG Exh. 405 at 7. They also assert that the median concentration of sulfate in nine wells (MW-4, 5, 8, 9, 11, 12, 13, 14, and 15), and boron in seven wells (MW-6, 8, 11, 12, 13, 14, and 15) exceed the upper-bound 90th percentile background values from the IEPA's statewide background data. *Id.* at 40-41. Dr. Kunkel also notes that Powerton site overlays the sand and gravel/shallow bedrock aquifers, which are the same aquifers from which the IEPA's background community water supply wells are drawing water. EG Exh. 401 at 8. Further, he notes that the actual background median for sulfate from the background well (MW-16) at the Powerton Station was within a few milligrams of the median statewide sulfate value. Thus, Dr. Kunkel argues that the statewide median background values may be used to evaluate groundwater monitoring results even though the statewide community water supply wells were not located in counties with MWG plants. 1/29/18 Tr. 83-84.

Dr. Kunkel asserts that the groundwater monitoring data at Powerton allows the comparison of the downgradient well concentrations of indicator constituents, boron and sulfate, with both the statewide area background and site-specific background (MW-16). EG Exh. 405 at 7. While the median values of sulfate and boron in all fifteen downgradient wells are above the median values of those constituents in the upgradient well, neither the Environmental Groups' nor MWG's experts established the 90th percentile upper bound background value for well MW-16. The parties agree that the appropriate comparison for background values would the upper bound 90th percentile value. Thus, the Board limits the groundwater monitoring results comparison to the 90th percentile statewide values. The Board finds that, as asserted by the Environmental Groups, a comparison of the median values of boron and sulfate in the downgradient wells with the 90th percentile statewide values indicate exceedances in 10 wells: boron (MW-04, 05, 08, 09, 11, 12, 13,14 and 15) and sulfate (MW-06, 08, 11, 12, 13, 14, and 15). The Board finds that these exceedances of the statewide background and site-specific upgradient median appear to be consistent with the exceedances of groundwater standards of sulfate and boron in many of the downgradient wells.

Given that there is no indication of contamination being caused by an off-site source, the Board finds that the Environmental Groups have proven that it is more probable than not that the coal ash stored at the site in the ash ponds or outside the ash ponds is causing or contributing to the exceedances of the upper-bound 90th percentile background values of boron (in wells MW-4, 5, 8, 9, 11, 12, 13, 14 and 15) and sulfate (in wells MW-6, 8, 11, 12, 13, 14 and 15) at Powerton Station.

4. Will County

A. Uncontested Facts

i. The Station

The Will County Station began operations in 1955 with four coal-fired electric generating units, Units 1-3 were deactivated between 2010 and 2015. Only one active unit, Unit 4, constructed in 1963, operates now. Joint Stip. No. 40, MWG Exh. 666 at 1, 1/30/18 Tr. at 188:20-22, 189:19 (Race Test.); MWG Exh. 903 at 21. MWG has been operating the plant since 1999. Joint. Stip. No. 41.

The Station is located on a peninsula, between the Chicago Sanitary and Ship Canal (CSSC) on the east and the Des Plaines River on the west, with surface water on either side. 2/2/18 Tr. at 172:5-20; MWG Exhs. 901 59 and 903 at 21. The Station is bordered on the north by Romeo Road and on the south Hanson Materials (f/k/a Material Services Corp.). EG Exh. 15C , SOF 358. There is also ComEd switchyard further west across the Des Plaines River. MWG Exh. 903 at 21, 901 at 59; MWG Exh. 652 at 2-1 (#29509).

At Will County, fly ash is collected using electrostatic precipitators and transported off-site for beneficial use. 1/29/18 Tr. at 177-178; MWG Exh. 903 at 21 (Seymour citing Phase I Wil County Environmental Site Assessment report at #28 (#29516)). Bottom ash that falls to the bottom of the furnace is mixed with water to form a slurry and is pumped to Ash Ponds 2S and 3S for settling. MWG Exh. 903 at 21-22 (Seymour report, citing Phase I Will County Environmental Site Assessment report at #28 (#29516)); 1/29/18 Tr. at 192. Bottom ash is then collected from the ponds and transported off-site for beneficial reuse. The slurry water is recycled back to the Station for treatment. MWG Exh. 903 at 22 (Seymour report).

ii. Ash Ponds

Will County has four ash ponds: 1N, 1S, 2S and 3S. All ponds were constructed in 1977 with 36" thick Poz-o-Pac liners. MWG Exh. 901 at 5; MWG Exh. 500 at #5-9; 1/30/18 Tr. at 191:9-19 (Race Test.). Ponds 2S and 3S also had bituminous seal coat. *Id*. The ponds are regulated under NPDES permit #IL0064254. MWG Exhs. 652; 653, 655; 1/30/18 Tr. at 202:3-20 (Race Test.).

Ponds 1N and 1S were removed from service in 2010. MWG Exh. 901 at 60; 903 at 22. These ponds are further discussed in the Contested Facts section below.

Ponds 2S and 3S remain in operation and have been relined, 2S in 2013 and 3S in 2009. MWG Exh. 901 at 60; MWG Exh. 510 (2S line replacement documentation). Seymour described the ponds lining as (described bottom up): 36+" poz-o-pac, a bottom geotextile cushion, a 60 mil HDPE liner, a top geotextile cushion, and a sand cushion and limestone warning layer on the bottom 2S also has geocell liner on the sides. MWG Exh. 901 at 61; MWG Exh. 903 at 34-35. The ponds' bottom elevation is at 582 ft; average groundwater elevation at 3S is at 581 (about 1.5 feet below the ponds' bottom) and at 2S at 282.5 feet (about the same level as the pond's bottom). *Id*. The two active ash ponds are used interchangeably, only on in service at a time, while the other is designated for cleaning. MWG Exh. 903 at 35. These ponds are dredged approximately on an annual basis. In 2010 MWG performed the ASTM D3987-85 analysis of bottom ash taken from Will County ash pond 3S, the results of which indicate presence of boron, sulfate and TDS. MWG Exh. 901 at 8.

iii. Will County VN

The IEPA issued Violation Notice #W-2012-00058 (Will County VN) for the Will County Station (EG Exh. 2A) alleging that "operations at ash impoundments have resulted in violations of Groundwater Quality Standards" during 2010-2012 at monitoring wells MW-1 through MW-10, including for chloride (MW-1, 2, 3, 6, 7, and 8), antimony (MW-1, 2), manganese (MW-1, 3, 4, 7, 8, and 10), boron (MW-2, 4, 5, 6, 7, 8, 9, and 10), arsenic (MW-7), sulfate (MW-1, 2, 4, 5, 6, 7, 8, 9, and 10), TDS (MW-4, 5, 7 and 8), as well as pH (MW-5, 6). EG Exh. 2A at 3-9.

iv. Will County CCA

The Will County CCA (MWG Exh. 656) states that:

> Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, and MW-10. MWG Exh. 656 at 2 ¶ 3.

The CCA notes that "respondent agrees to undertake the following actions, which the Illinois EPA has determined are necessary to attain compliance" with the statute and Board rules. MWG Exh. 636 at 3 ¶ 5. Subsections (a) through (m) of paragraph 5 list activities MWG must undertake, subsections (a) though (d) are identical as in the Joliet 29 and Powerton CCAs. The other subsections require:

5(e)	removing ponds 1 North (1N) and 1 South (1S) from service and diverting all water from these ponds to the existing ponds 2 South (2S) and 3 South (3S); and developing and implementing a dewatering system which will not allow water to exceed a depth of one foot above the bottom of ponds 1N and 1S;
5(f)	apply to IEPA for a construction permit to reline 2S with HDPE liner;
5(g), (i)	submitting application to IEPA to establish and establishing a GMZ under section 620.250 within one year from the date of CCA;
5(h), (i)	entering into ELUC to cover area underlying GMZ, except for ComEd owned area, submit proposed and final ELUC to IEPA; and
5(j)	submitting certification of compliance upon completing CCA requirements within one year of the date of CCA. MWG Exh. 656 at 3-4 ¶ 5.

On October 17, 2013, MWG filed a certification with the IEPA that all CCA measure were completed. Joint Stip. at 4; MWG Exh. 661.

v. <u>Will County GMZ and ELUC</u>

As required by Items 5(g), (h) and (i) of the Will County CCA,MWG on January 18, 2013, filed applications with the IEPA to establish a GMZ (MWG Exh. 276) and also a proposed an ELUC (MWG Exh. 659). Joint Stip. at 4; MWG Answer and Defenses 5/5/14 at 23; MWG Exhs. 276 and 659.

Both the GMZ and the ELUC cover the same area, including ash ponds and the eastern part of the site, with the following borders:

> Groundwater flow in the vicinity of the subject ash ponds is in a westerly direction with discharge to the adjoining Des Plaines River. The western (downgradient) extent of the proposed corresponds with this hydraulic boundary. The eastern boundary is defined by the Chicago Sanitary and Ship Canal (CSSC) which forms a hydraulic boundary on the east side of the facility. The north and south sides of the proposed ELUC are based on the flow system and location of the four ash ponds. The vertical extent of the ELUC would be the first underlying aquitard identified as the Maquoketa Shale, approximately 140 feet below ground surface. The ELUC would therefore vertically include the unconsolidated overburden and the Silurian dolomite, both of which are hydraulically connected and overlie the Maquoketa Shale. EG Exh. 276 at 1 and MWG Exh. 659 at 1-2.

On July 2, 2013, IEPA replied, approving GMZ with several modifications and requesting that MWG submit the revised ELUC. MWG Exh. 658 at 1. IEPA modifications required excluding of the non-community wells from the ELUC area and ensuring that any unused non-community wells are properly. *Id*.

On September 4, 2013 KPRG (Mr. Gnat) on behalf of MWG submitted requested modifications to the ELUC and GMZ boundary map and on September 26, 2013 IEPA approved the modification. MWG Exh. 660.

The GMZ is established under 35 Ill. Adm. Code 620.250(a). EG Exh. 276 Att. 2, at 1 Note 1. The application notes that "Class I" is the groundwater classification "the facility will be subject to at the completion of the remediation". EG Exh. 276, Att. 2, Part I ¶ 10 (#630). The GMZ application notes the following selected remedy:

> The agreed upon remedy is specified in Item 5(a) through (j) of the executed [CCA]… The remedy includes lining of the Ash Pond 2S with HDPE, removing Ash Ponds 1S and IN from service and installing a dewatering system within those ponds to keep liquid levels to within no more than one foot of the bottoms of those units. This [GMZ] application fulfills requirements set forth under Item 5(g) of the CCA. EG Exh. 276 Att. 2, Part III ¶ 1 (#637).

The application also notes that "[at] the completion of the corrective process, a final report is to be filed which includes the confirmation statement included in Part IV." *Id*. Att. 2, at 1 Note 1.

B. <u>Contested Facts</u>

i. <u>Ash Ponds Dredging, Liner Ruptures and Flooding</u>

Dr. Kunkel asserts that boron is present at Will County in concentrations above Class I standard because of past and current leaks in the liners of the four ash ponds and past and ongoing leachate from ash utilized for fill or construction materials outside of the ponds. EG Exh. 401 at 32. He also argues that "there has been ground-water table mounding beneath the ash ponds, as shown on ground-water table contour maps in the MWG quarterly monitoring reports, and all ground-water monitoring wells at the site should be considered down-gradient." *Id.* He maintains that exceedances remain even after relining the four ash ponds between 2010 and 2013, suggesting a leak in a new liner or contribution from coal ash deposited historically outside the basins. *Id*.

As noted with all other Stations, both poz-o-pac and HDPE liners are prone to damage in certain conditions, i.e. severe weather or rupture by heavy equipment during dredging. MWG relined the ponds at Will County on the assumption they were in a "poor" condition. MWG Exh. 607; EG Exh. 34 at 7 (#23614); MWG Exh. 606 at 18 (#23647); *see also* 10/23/17 Tr, at 16; 10/24/17 Tr. at 12-13. In 2005 and 2006 MWG consultant, NRT, investigated the liners at Will County ponds and rated condition of all four ponds as "poor." EG Exh. 34 at #23614; MWG Exh. 606 at 23647. The reports also rated these ponds as "high" for "contamination potential". *Id*. When the ponds were relined, however, the original poz-o-pac liners in 2S and 3S were found to be in a "good condition." 10/24/17 Tr. at 304:7-10 (Maddox Test.); SOF at ¶ 621. When relining the 2S pond, MWG employees discovered that "existing poz-o-pac floor is different than the sites drawing" and commissioned NRT to take borings. EG Exh. 300. Boring taken at 2S in 2013 during relining showed that the bottom poz-o-pac layer goes deeper than 36". MWG Exh. 510 at 4 (#34271); 1/30/18 Tr. at 200:2-201:1 (Race Test.). Further, the record also suggests that some coal ash may have been left between the poz-o-pac and HDPE layers when relining the ponds, since that was a practice approved by MWG employees at that time. *See e.g.* EG Exhs. 22, 32; 10/23/17 Tr. at 156:18-162:21 (Race Test.).

MWG employees were also concerned that even after relining with HDPE, the liners will be easily damaged by equipment during dredging. Rebecca Maddox noted in 2008 to Christopher Lux that LaFarge employees have "serious apprehension about working on this liner" and that MWG employees had to "reiterate over and over to be careful." She further noted that "[n]o matter how much we would reiterate to them to be careful, the possibility of the liner being punctured is much greater now than w/ just a poz-o-pac type "liner." We really feel this liner, even w/ the cushion and warning layers, will not be able to withstand the constant heavy equipment traffic that will continue." EG Exh. 306 at 1. The record shows that the liner in at least one of the ponds had cracked. An inspection of 3S in October 2009 during the liner replacement indicated that the liner cracked, and the water was seeping in. EG Exh. 303 at 1; 10/24/17 Tr. at 214:5-215:12. In 2012 KPRG did permeability testing and found hairline cracks in the poz-o-pac liner of one of the ponds. EG Exh. 286 at 2 (#14745); 10/25/17 Tr. at 221:6-223:2. In July 2010, Maddox noted that repairs were needed on 2S weir because there were "numerous breaks within the weir that is compromising the effectiveness of it." EG Exh. at 311. In June 2012, Ms. Maddox found the south section of the HDPE liner in the 3S pond "extremely damaged," with the felt lining and the HDPE "completely torn up" and "buried under some of the ash for a bit." MWG Exh 307 at 1. She attributed the damage to the cleaning performed by LaFarge "many months ago". *Id*.

Will County also had at least one instance of ash sluice water getting out of the ponds and into the nearby waterbody. In 2008 MWG also notified IEPA and Illinois Emergency Management Agency that on November 3, 2008, water was "flowing over the concrete barrier of the Unit 1 & 2 ash pond and traveling into a ravine that leads to the Des Plaines River" on the northwest part of the property. EG Exh. 309.

The record also indicates dewatering coal ash in areas outside of the ponds. In July 2010, Pond 3S got very close to overflowing on the east side, with "water and material … running to the east." EG Exh. 311 at 2. The contractor suggested that MWG "take the material from Pond 2S and pile it on our property until it dewaters." *Id*. at 1. MWG's Rebecca Maddox instead suggested to put the material from Pond 2S "in the area south of the contractor parking lot," noting that "[w]e used that area last year to dewater the material from 3S." She further noted that the water from that runoff "should make its way eventually to the south area runoff," noting that the "material will be there for a while until it dewaters - like it was last year." *Id*.

After a careful review of the facts, the Board finds that the Environmental Groups established that both poz-o-pac and HDPE liners at Will County can and do crack or get damaged on occasions. Based on preponderance of all the evidence in the record, including the groundwater monitoring results, MWG practices in ponds relining and dredging, storing coal ash from the ponds outside of the ponds, the Board concludes that it is more likely than not that the ash ponds and the material from those ash ponds did leach contaminants into the groundwater.

ii. <u>Historical Coal Ash Sites</u>

The record shows that there are several areas that have been historically used to store coal ash: 1) ponds 1N and 1S; 2) fill areas outside of the ponds; and 3) alleged Slag and Bottom Ash Placement Area.

Ponds 1N and 1S still contain one inch of water. MWG Exh. 901 at 58. The water level in the ponds is not allowed to exceed one foot above the base. MWG Exh. 903 at 22. Mr. Seymour notes that no additional ash was deposited in these ponds since they were removed from operation in 2010. *Id*. They also still contain ash and are not capped. 10/23/17 Tr. at 169:18-21, 170:1-19; 10/24/17 Tr. at 14:2-15:19. The ponds have 36-inch-thick poz-o-pac liners with bituminous carrying coat. MWG Exh. 500 at 5, 7; 1/30/18 Tr. at 193:11-23 (Race Test.). MWG admitted that ponds liners are in poor condition being 40 year old poz-o-pac. EG Exh. 34 at (#23614); MWG Exh. 606 at (#23647); EG Exh. 15C at 22-27 (#7251-7256); 1/30/18 Tr. at 191:20-23; EG Exh. 201 at 19-24 (#24282-24287). In June and August of 2015 KPRG took 20 soil borings of “historical ash samples” at an area right outside the east side of 1N to test for compliance with CCB. EG Exh. 284 at 1; MWG Exh. 901 at 59; MWG Exh. 903 at 48. The report indicates that the ash deposits consist of bottom ash and slag from the coal combustion process. The study area was four by seven squares, with each square equaling 25 feet. EG Exh. 284 at 4 (#49568). The samples were analyzed using the NLET method (ASTM D3987-85) for metals. EG Exh. 284 at 1-2 (#49565-66). The test concluded that ash deposits consist of bottom ash or slag from coal combustion process and the 20 samples taken meet the criteria of Section 3.135 of the Act to be considered CCB for beneficial use and there were no outlier samples. *Id.*; EG Exh. 284 at 4 (#49568).

Ponds 1N and 1S are at least one foot below average groundwater elevations. 2/2/18 Tr. at 309:21-310:19, 143:5-148:4. Because the bottom of these ponds is sitting below the water table, the cracks in the poz-o-pac liners allow groundwater to seep into the ponds and for ash constituents to leak out into the groundwater. 2/2/18 Tr. at 149:15-18. Groundwater leaked through poz-o-pac at 1N and 1S ponds. EG Exh. 302; 10/24/17 Tr. at 211:18-213:20, 213:1-6 (contractors were requested to “cut holes in liner to pump out groundwater” and “then patch the holes”).

Coal ash buried around the ash ponds. The coal ash has been buried here since at least 2005. EG Exh. 34 at 7 (#23614); MWG Exh. 606 at 18 (#23647); EG Exh. 15C at 22-27 (#7251-7256); 1/30/18 Tr. at 191:20-23; EG Exh. 201. In 2005, MWG consultant KPRG, took five soil borings around the ash ponds and the samples identified “slag/bottom ash/coal” in four of the borings, at depths ranging from zero to two feet through eight to nine and a half feet deep beneath the surface. EG Exh. 201 at 4, 29-24 (#24267, 24282-24287). In 2010 and 2011, when installing groundwater monitoring wells MW-01 through 10 around the ash ponds, Patrick Engineering took the borings for the wells, that also showed a thick layers of coal ash buried along the eastern edge of the four ponds to a depth of 12 feet. EG Exh. 15C at 5, 22-25, 27 (#7234, 7251-54, 7256). Layers of fill, going down to six to twelve feet, containing ash cinders were found in borings for MW-1, 2, 3, 4 and 6, all along the eastern edge of the ash ponds. EG Exh. 15C at 22-25, 2727 (#7251-54, 7256). Borings for MW-02 showed black coal cinders a depth of up to 12 feet as “wet.” *Id*. at 27 (#7256).

Former Slag and Bottom Ash Placement Area is located on the southeast corner of the Station. MWG Exh. 901 at 59; 2/2/18 Tr. at 119:21-120:1 (Seymour Test.). This area was identified in the 1998 Phase II Environmental Site Assessment report as ash disposal area. EG

Exh. 18D at 6, Fig. 5 (#5708, 5742). Borings taken from this area in 1998 (B-1 through B-4) show coal ash mixed with gravel as deep as three feet below surface. EG Exh. 18D at 6, Fig. 5, App. A B-1- B-4 (#5708, 5747-50). Although, there was a monitoring well (MW-1) in this area in 1998, there are no current monitoring wells in this area. EG Exh. 18D at 6, Fig. 5 (#5708, 5742). is the area is not covered by ELUC or GMZ. *Id.* at 67 and 68.

Weighing the facts presented, the Board finds that Environmental Groups have proven that it is more likely than not that the historic areas and coal ash in the fill areas at the Station are causing or contributing to GQS exceedances at the Station.

iii. Monitoring Wells

The groundwater monitoring network at Will County consist of 12 monitoring wells. Ten monitoring wells (MW-01 through MW-10) were installed in 2010. They are located around the perimeter of the four ash ponds. EG Exh. 15C at 2, 19 (#7234, 7248). These wells were spaced approximately 150 – 300 feet apart and screened approximately 10 feet past the intersection of the groundwater table to ensure collection of representative groundwater samples. EG Exh. 15C at 3 (#7234). Two additional monitoring wells (MW-11 and 12), referred to as CCR wells, were installed in 2015 to address the new USEPA's Coal Combustion Residual (CCR) rule. 2/1/18 Tr. at 89:13-90:7, 165:17-166:4. Starting from December 2010, quarterly groundwater samples from monitoring wells MW-1 through MW-10 were analyzed for 35 constituents. MWG Exh. 812. The additional CCR wells, MW-11 and 12, were sampled quarterly from November 2015. *Id.* at 21-23. These samples were analyzed for 15 constituents, and did not include boron, sulfate and TDS. *Id.* at 21.

The site hydrogeologic conditions at the Will County station were determined in 2011 by Patrick Engineering using the soil boring logs of ten groundwater monitoring wells installed around the perimeter around all four the ash ponds. EG Exh. 15C at 3 (#7234). The site geology consists of approximately 1 to 5 feet of unconsolidated deposits or fill, underlain by Silurian Dolomite to approximately 140 feet below ground surface, underlain by the Maquoketa shale, which is generally considered to be an aquitard that separates the shallow groundwater in the unconsolidated units and the Silurian dolomite from the underlying aquifers. EG Exh. 15C at 2 (#7233). While the groundwater flow in the shallow aquifer is controlled by the Des Plaines River and the CSSC with groundwater likely flowing towards either of the rivers, the flow direction in the deep aquifer is towards the southeast. *Id.* However, the groundwater contour map prepared by KPRG in 2016 indicates flow towards the Des Plaines river. EG Br. App. F, MWG Exh. 901 at 63, 2/1/18 Tr. at 163:20-164:22. Seymour noted, "groundwater generally flows west to the Des Plaines River on the western portion of the site and is understood to flow east to the Chicago Sanitary and Ship Canal on the eastern portion of the site." MWG Exh. 903 at 23. Will County GMZ and ELUC also note that "[g]roundwater flow in the vicinity of the subject ash ponds is in a westerly direction with discharge to the adjoining Des Plaines River." MWG Exh. 659 at 1 (ELUC proposal); EG Exh. 276 at 1 (GMZ application).

While the Will County hydrogeologic report notes that the well locations were selected to represent both upgradient and downgradient with respect to direction of groundwater flow, the report does not identify specific wells as being up gradient or downgradient. EG Exh. 15C at (#7234). However, Mr. Gnat states that since the groundwater flow is to the west towards the Des Plaines River, the upgradient wells are MW-01 through MW-06. MWG Exh. 901 at 63, 2/1/18 Tr. at 164:18-22. The other six wells are considered downgradient wells (MW-07, 8, 9, 10, 11, and 12). 2/1/18 Tr. at 164:14-17. Seymour indicates that the highest groundwater elevation during each quarterly monitoring event varied between wells MW-01, 02, 03, 05 and 09; the lowest was in MW-10. MWG Exh. 903 at 23. Environmental Groups' expert Dr. Kunkel argues that "there has been ground-water table mounding beneath the ash ponds, as shown on ground-water table contour maps in the MWG quarterly monitoring reports, and all ground-water monitoring wells at the site should be considered down-gradient." EG Exh. 401 at 32.

Groundwater flow to the east on the eastern portion of the site towards CSSC, as well as the large number of exceedances of coal ash constituents (boron, sulfate and TDS) in the wells Mr. Gnat designates as upgradient (MW-1 through MW-6), indicate that these wells are in the area where groundwater is affected by either the ash ponds or historic ash disposal activities. *See. e.g.* EG Exh. 15C at 2, MWG Exh. 903 at 23. The Board, thus, finds that the Environmental Groups have proven that it is more likely than not that the wells MW-1 through MW-6 should not be treated as upgradient for the Station.

iv. <u>Exceedances of Part 620 Standards</u>

The groundwater monitoring results at Will County indicate 441 exceedances of the Board's Part 620 Class I GQS for coal ash constituents in all 10 initial monitoring wells (MW-1 through 10) installed in 2010. MWG Exh. 812. There were 281 exceedances in the wells (MW-1 through MW-6) and 159 exceedances in the down gradient wells (MW-7 through MW-10). No exceedances were observed in the two newly installed CCR wells (MW-11 and 12). *Id*. While MW-9 had the least number of exceedances (7), MW-4 had the most (81). The number of exceedances in the other 8 wells ranged from 15 to 66. *See* Tables 3.A. – 3.C below. The constituents above the Class I standards are: antimony (3 exceedances), arsenic (18), boron (207), selenium (1), sulfate (131), and TDS (80). As noted above, given the large number of exceedances of coal ash constituents (boron, sulfate and TDS) in the wells MW-1 through MW-6, the Board does not consider these wells as background wells.

Based on review of groundwater data, Seymour noted that historic use of property was causing the impacts. 2/2/18 Tr. at 122. The Board notes, however, that ash ponds may also be contributing to the impacts because the record indicates the groundwater flow in the shallow aquifer underlying the site is controlled by the Des Plaines River and the CSSC with groundwater flowing likely flowing towards the rivers. *See. e.g.* EG Exh. 15 C at 2 (#7233).

A summary of the groundwater monitoring data exceeding Part 620 standards for Will County is presented in Tables 3.A-3.C, below. EG Br. at 77-110 (App. A); MWG Exh. 812.

Table 3.A: Will County Groundwater Monitoring Results Summary

Monitoring Wells	Closest Ash Pond, historical storage	Location	Constituents	Number of Exceedances of Part 620 Standards	Year(s)
MW-01	AP1-N	Upgradient	Antimony	1	2011
			Boron	6	2012-2014
			Sulfate	5	2012-2013
			TDS	3	2013-2014
MW-02	AP1-N	Upgradient	Arsenic	5	2014-2016
			Antimony	2	2011
			Boron	19	2011-2017
			Sulfate	11	2010-2017
			TDS	7	2015-2017
MW-03	AP1-S	Upgradient	Boron	27	2010-2017
			Sulfate	12	2012-2017
			TDS	1	2012
MW-04	AP1-S	Upgradient	Boron	27	2010-2017
			Sulfate	27	2010-2017
			TDS	27	2010-2017
MW-05	AP2-S	Upgradient	Boron	27	2010-2017
			Selenium	1	2013
			Sulfate	23	2010-2017
			TDS	15	2013-2017
MW-6	AP3-S	Upgradient	Arsenic	1	2017
			Boron	27	2010-2017
			Sulfate	8	2010-2014
MW-7	AP1-N	Downgradient	Boron	27	2010-2017
			Sulfate	22	2010-2017
			TDS	14	2010-2017
MW-8	AP1-S	Downgradient	Arsenic	6	2011-2014
			Boron	17	2011-2017
			Sulfate	19	2010-2017
			TDS	13	2011-2017
MW-9	AP2-S	Downgradient	Boron	4	2010-2016
			Sulfate	3	2010-2014
MW-10	AP3-S	Downgradient	Arsenic	7	2013-2017
			Boron	26	2010-2017

			Sulfate	1	2011

Table 3.B: Will County Groundwater Monitoring Results Summary (by year)

Year	Monitoring Wells	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
	Constituent	**# of Exceedances Above Part 620 Class I Groundwater Standards**									
2010	Boron			1	1	1	1	1		1	1
	Sulfate	1	1		1	1	1	1	1	1	
	TDS				1			1			
2011	Antimony	1	2								
	Arsenic								2		
	Boron		2	4	4	4	4	4	1		3
	Sulfate				4	4	4	4	3	1	1
	TDS				4	3		4	1		
2012	Arsenic								2		
	Boron	1	1	4	4	4	4	4	2		4
	Sulfate	1		3	4	2	2	4	1		
	TDS			1	4			2			
2013	Arsenic								1		1
	Boron	3	2	4	4	4	4	4	2	1	4
	Selenium					1					
	Sulfate	3		3	4	3		2	2		
	TDS	2			4	2			1		
2014	Arsenic		1						1		
	Boron	2	4	4	4	4	4	4	3		4
	Sulfate		1	4	4	4	1	3	3	1	
	TDS	1			4	4		4	3		
2015	Arsenic		2								3
	Boron		4	4	4	4	4	4	4	1	4
	Sulfate		3	1	4	4		3	4		
	TDS		1		4	3			3		
2016	Arsenic		2								2
	Boron		4	4	4	4	4	4	4	1	4
	Sulfate		4		4	3		3	4		
	TDS		4		4	2		1	4		
2017	Arsenic						1				1
	Boron		2	2	2	2	2	2	1		2
	Sulfate		2	1	2	2		2	1		
	TDS		2		2	1		2	1		
	Total	15	44	40	81	66	36	63	55	7	34

Table 3.C: Will County Groundwater Monitoring Results Summary (by wells)

Chemical	Antimony	Arsenic	Boron	Selenium	Sulfate	TDS	Total

Constituent							
Monitoring Well	**Number of Exceedances**						
MW-1	1		6		5	3	15
MW-2	2	5	19		11	7	44
MW-3			27		12	1	40
MW-4			27		27	27	81
MW-5			27	1	23	15	66
MW-6		1	27		8		36
MW-7			27		22	14	63
MW-8		6	17		19	13	55
MW-9			4		3		7
MW-10		7	26		1		34
Total	3	19	207	1	131	80	441

Antimony. The Board notes that here were three exceedances of the antimony standard over the entire seven-year monitoring period, one in MW-1 and two in MW-2. All three exceedances were observed in 2011. Both Environmental Groups' expert, Dr. Kunkel, and MWG's expert Seymour agree that antimony is one of the indicators for leachate from MWG's ash ponds. EG Exh. 401 at 7; MWG Exh. 903 at 42. However, MWG's bottom ash Neutral Leaching Extraction Test (NLET) results indicate that the level of antimony in the ash leachate was below the Part 620 Class I standard of 0.006 mg/L. MWG Exh. 903 at 117 (Table 5-3). The single exceedance in MW-1 at a level of 0.0063 mg/L when rounded is at the same level as the standard. Thus, the groundwater data indicates two exceedances in MW-2 over two consecutive quarters in 2011. Given that MW-2 had 42 exceedances of other coal ash indicator constituents, the antimony exceedance may be due to coal ash storage or handling activities at the site. The Board, thus, finds that the Environmental Groups have proven that it is more likely than not that coal ash stored onsite, either in the ash ponds or outside of the ponds, is causing or contributing to the three antimony exceedances in MW-2 at the Will County Station in 2011.

Arsenic. The monitoring results indicate 18 exceedances of the Part 620 Class I arsenic standard of 0.01 mg/L in three monitoring wells from 2011 through 2017: MW- 2 (5), MW-8 (6) and MW-10 (7). While the arsenic levels in the upgradient well MW-2 ranged from 0.013 to 0.018 mg/L, the levels in downgradient wells MW-8 and 10 ranged from 0.012 to 0.025 mg/L. MWG Exh. 812, *see* Tables 3.A-3.C above. Also, the results indicate the exceedances in the four wells were intermittent during a period of one to four years. Both Dr. Kunkel and Mr. Seymour list arsenic as a constituent that may be present in coal ash leachate. EG Exh 401 at 7; MWG Exh. 903 at 42. MWG's bottom ash NLET result of 0.05 mg/L or less for arsenic suggests the presence of arsenic in the ash leachate at levels higher than the Part 620 Class I standard of 0.01 mg/L. MWG 903 at 117 (Table 5-3). All three arsenic-impacted wells also had exceedances of other coal ash constituents, including boron, sulfate and TDS. The Board, thus, finds that the Environmental Groups have proven that it is more likely than not that coal ash stored onsite, either in the ash ponds or outside of the ponds, is causing or contributing to 18 arsenic exceedances in MW-02, 8 and 10 at Will County.

Boron. The monitoring results indicate 207 exceedances of the Part 620 Class I boron standard during the seven-year monitoring period in all ten initial monitoring wells: MW-1 (6),

MW- 2 (19), MW-3 (27), MW-4 (27), MW-5 (27), MW-6 (27), MW-7 (27), MW-8 (17), MW-9 (4) and MW-10 (26). EG Br. at 77-110 (App. A); MWG Exh. 812; *see* Tables 3.A-3.C above. Most of the wells had continuing exceedances over the seven-year monitoring period. Both parties agree that boron is an indicator of coal ash contamination. EG Exh. 401 at 7; MWG Exh. 903 at 42. Further, Seymour's comparison of the monitoring results from 2014 with indicator constituents in leachate shows that boron is an indicator of leachate from Will County ash ponds. MWG Exh. 903 at 118 (Table 5-4). However, Seymour argues that the leachate from MWG ash ponds does not have the potential to cause groundwater impact above the GQS because the leachate levels were below such standard. MWG Exh. 903 at 41. Here, MWG's bottom ash NLET results indicate that the level of boron ranged from less than 0.1 mg/L to 2.0 mg/L, which is at the same level as the Part 620 Class I standard. MWG Exh. 903 at 117, (Table 5-3). The Board finds that monitoring results indicate continuing exceedance of Class I boron standard in most of the wells. As noted above, the record indicates that groundwater flow at the site in both directions, toward the Des Plaines River and CSSC. This discounts the position that some of these wells are upgradient and show off-site impacts. Also, the peninsular location of the Will County Station suggests that contamination is not caused by an off-site source. Considering that boron is an indicator constituent of coal ash, the Board, thus, finds that the Environmental Groups have proven that it is more likely than not that coal ash stored onsite, either in the ash ponds or outside of the ponds, is causing or contributing to the 207 boron exceedances in all ten monitoring wells at Will County.

Selenium. There was one exceedance of the Class I selenium standard in well MW-5 (2013) during the seven-year monitoring period. MWG Exh. 812 at 9-10. Selenium levels were below the groundwater standard in all other monitoring wells. MWG's bottom ash NLET results indicate that the level of selenium was below the Part 620 Class I standard of 0.050 mg/L. MWG Exh. 903 at 117 (Table 5-3). Also, selenium is not considered as a primary indicator of coal ash leachate. Therefore, the Board finds that the Environmental Groups have not proven that it is more likely than not that coal ash stored onsite, either in the ash ponds or outside of the ponds, is causing or contributing to the single selenium exceedance at Will County.

Sulfate and TDS. There were 131 exceedances of the Class I sulfate standard and 80 exceedances of the Class I TDS standard during the seven-year monitoring period. MWG Exh. 812. While sulfate exceedances occurred in all ten initial monitoring wells (MW-01 through 10), TDS exceedances were observed in seven (MW-01, 02, 03, 04, 05, 07, and 08). While some wells had intermittent exceedances, wells MW-02, 04, 05, 07 and 08 had sulfate or TDS exceedances over a period of five or more years. *Id.*

Both parties list sulfate as an indicator constituent of coal ash leachate. Dr. Kunkel notes that higher concentration of sulfate may also be accompanied by higher concentrations of TDS. EG Exh. 401 at 7 and MWG Exh. 903 at 40. Further, Seymour's comparison of the monitoring results from 2014 with indicator constituents in leachate shows that sulfate is an indicator of leachate from Will County ash ponds. MWG Exh. 903 (Table 5-4). However, Seymour argues that the leachate from MWG ash ponds does not have the potential to cause groundwater impact above the sulfate and TDS standards because the leachate levels are below the standards. He relies on MWG's Will County Station bottom ash NLET results showing sulfate at 49 mg/L and TDS at 200 mg/L. MWG Exh. 903 at 41; MWG Exh. 901 at 8. Dr. Kunkel argues that except at MW-4 and MW-5, the sulfate concentrations in the monitoring wells have remained steady but higher than Class I, thus, indicating that the ash pond liners continue to leak, or coal ash deposits located outside the ash ponds are leaching. EG Exh. 401 at 34.

The Board finds that sulfate and TDS are indicators of coal ash contamination in groundwater. The monitoring results show consistent exceedance of the Class I standard of both constituents during the seven-year monitoring period at multiple wells and, given the peninsular location of the Will County Station, there is no indication of contamination being caused by an off-site source. Therefore, the Board, finds that the Environmental Groups have proven that it is more likely than not that coal ash stored onsite, either in the ash ponds or outside of the ponds, is causing or contributing to the 131 sulfate and 80 TDS exceedances in Will County monitoring wells (MW-6 through 8, 11 through 15, 17 and 18).

v. <u>Background Concentrations Exceedance</u>

The Environmental Groups assert that onsite groundwater concentrations of the coal ash indicators boron and sulfate are higher than background values developed by IEPA, and not naturally occurring. EG Br. at 64. The median concentrations of boron exceed the upper-bound 90th percentile background values all ten wells. *Id.* at 40. The Environmental Groups also note that while only monitoring well MW-04 median sulfate concentration exceeded the upper-bound 90th percentile value, the median concentrations of sulfate in all ten wells are three to five times more than the statewide median value. *Id.*

The Board finds that because upgradient wells at the Will County Station are in areas of impacted groundwater, the groundwater monitoring results of indicator constituents, boron and sulfate may be compared with the statewide area background. EG Exh. 405 at 7. Thus, the Board finds that a comparison of the median values of boron and sulfate in the down gradient wells with the 90th percentile statewide values indicate exceedances of boron above background in all 10 wells and sulfate in one well (MW-4). Further, the median values of sulfate and boron in all ten wells are above the statewide median values of those constituents in the upgradient well. MWG Exh. 812. These exceedances of the statewide background are consistent with the exceedances of Class I groundwater standards of sulfate and boron in most monitoring wells.

Given that there is no indication of contamination being caused by an off-site source, the Board finds that the Environmental Groups have proven that it is more likely than not that coal ash stored onsite, either in the ash ponds or outside of the ponds, is causing or contributing to boron and sulfate statewide background exceedances at Will County.

5. <u>Waukegan</u>

A. <u>Uncontested Facts</u>

i. <u>The Station</u>

The Waukegan Station began operations in 1920s with five coal-fired electric generating units and later expanded to 8 generating units. MWG Exh. 901 at 44; 1/30/18 Tr. at 121:11-15 (Race Test.). However, at present the station has two active units which began operation in 1958 and 1962. MWG Exh. 665 at 1-2; 1/30/18 Tr. at 121:16-122:8. MWG has owned and operated the Station since 1999. Joint. Stip. No. 32, 33.

The area around the Station has been primarily industrial from 1930s. The Station uses salt on the roads in winter for safety. 1/31/18 Tr. at 240:16-241:12 (Veenbaas Test.). Mr. Veenbaas testified that this "is probably one of the highest density urban sites in the country right now." 1/31/18 Tr. at 223:20-21 (Veenbaas Test.). On the north, the Station is bordered by Johns Manville Company's property that is now a Superfund site, with cleanup operations ongoing but no industrial operations. 1/31/18 Tr. at 223:10-14 (Veenbaas Test.); 1/30/17 Tr. at 123:11-124:2 (Race Test.). To the south of the Station is the North Shore Sanitary District; further south is the Johnson Marine Plant, another active Superfund, and also liquified gas Superfund sites. 1/31/18 Tr. at 223:10-21 (Veenbaas Test.). On the east side of the Station is the Lake Michigan. MWG Exh. 667 at 25; 1/31/18 Tr. at 223:10-21 (Kelly Test.); 2/1/18 Tr. at 162:13-163:8 (Gnat Test.); MWG Exh. 667 at 27; MWG Exh. 807.

Fly ash at the Stations is collected using electrostatic precipitators and transported off-site for beneficial use. 1/31/18 Tr. at 224-225. The heavier bottom ash that falls to the bottom of the furnace is generally mixed with water and sluiced to the ash. *Id.* at 225. The results of the ASTM D3987-85 analysis of bottom ash taken from Waukegan ash pond 2010 indicate presence of barium and boron, however, samples were not analyzed for sulfate and TDS. MWG Exh. 901 at 8.

ii. <u>Ash Ponds</u>

Waukegan has two ash ponds: 1) East Pond and 2) West Pond. Both were constructed in 1977 with Hypalon liners. MWG Exh. 901 at 44. The ponds are in the southern portion of the site. EG Exh. 19D at 6, EG Br. (App. E). Both ponds were relined, the East Pond in 2003 and West Pond in 2004, with a 60 mil HDPE. MWG Exh. 901 at 46-47; 903 at 34. The East and West Ponds lining includes (described bottom up) a sand cushion and limestone warning layer on the bottom. MWG Exh. 901 at 47. The ponds'' bottom elevation is at 585 ft; average groundwater elevation is at 582-583 feet (about 2-3 feet below the ponds' bottom). *Id*. The ash ponds are regulated under an NPDES permit (#IL0002259). MWG Exh. 642. One pond is used at a time while the other is being dredged to remove the settled coal ash. 1/31/18 Tr. 230-231. Ash removal from the pond is scheduled every three to four years. *Id.*; MWG Exh. 901 at 46.

iii. <u>Waukegan VN</u>

The IEPA issued Violation Notice #W-2012-00056 (Waukegan VN) for the Waukegan Station (EG Exh. 1A) alleging that "operations at ash impoundments have resulted in violations of Groundwater Quality Standards" from 2010 to2012 at monitoring wells MW-1 through 5, including for chloride (MW-5), antimony (MW-1), manganese (MW-4 and 5), boron (MW-1 through 5), arsenic (MW-1), iron (MW-5), sulfate (MW-5), TDS (MW-5), as well as pH (MW-1, 2, and 3). EG Exh. 1A at 3-5.

iv. <u>Waukegan CCA</u>

The Waukegan CCA (MWG Exh. 647) states that:

> Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring wells MW-1, MW-2, MW-4, and MW-5. MWG Exh. 647 at 2 ¶ 3.

The CCA notes that "respondent agrees to undertake the following actions, which the Illinois EPA has determined are necessary to attain compliance" with the statute and Board rules. MWG Exh. 647 at 3 ¶5. Subsections (a) through (i) of paragraph 5 list activities MWG must undertake, subsections (a) though (c) are identical to all other CCAs. The other subsections require:

5(d)	installing two additional monitoring wells at locations approved by IEPA;
5(e)	continuing quarterly monitoring of the existing five and the newly installed additional two monitoring wells "for constituents in 35 Ill. Adm. Code 620.410(a)" and record and report elevations to IEPA;
5(f), (g)	entering into an Environmental Land Use Control (ELUC) to cover remaining area at the Station to the east not covered by existing ComEd Former Tannery Site ELUC, submit proposed ELUC to IEPA and record ELUC upon its approval;
5(i)	submitting a certification of compliance upon completing CCA requirements within one year of the date of CCA. MWG Exh. 647 at 3-4 ¶ 5.

On October 22, 2013, MWG filed a certification with the IEPA that all CCA measure were completed. Joint Stip. at 4; MWG Exh. 651.

v. <u>Waukegan ELUC</u>

On June 23, 2003, MWG recorded ELUC covering western part of the Waukegan Station, including the railway tracks north west of the ash ponds, "to protect against exposure to contaminated soil or groundwater, or both, that may be present on the property as a result of past industrial activities on adjacent property known as the Griess-Pfleger Tannery site." MWG Exh. 646 at 1, 7 and 9. On January 18, 2013, MWG submitted to IEPA proposed extension of ELUC to cover eastern part of the Station including the ash ponds, as required by Item 5(f) of the CCA. MWG Exh. 263. On August 26, 2013, IEPA approved MWG's request for ELUC extension, directly adjacent to the 2003 Griess-Pfleger Tannery ELUC. MWG Exh. 650; MWG Exh. 901 at 52; EG Exh. 263 at 8-12. The ELUC extension borders are:

> The western boundary of the ELUC extension abuts the boundary of the existing ELUC. The south boundary is defined by the existing property line. The east boundary is Lake Michigan and the north boundary is defined by the northern extent of the ash pond system. The proposed vertical extent of the ELUC is the unconsolidated overburden deposits overlying the Silurian dolomite bedrock beneath the site. The estimated vertical thickness of the unconsolidated deposits is 100 feet below ground surface based on information provided in the Hydrogeologic Assessment Report dated February 2011 that was submitted to the EPA. MWG Exh. 263 at 1.

The record indicates that MWG did not establish a GMZ at Waukegan. MWG Exh. 649.

B. <u>Contested Facts</u>

i. <u>Ash Ponds Dredging, Liner Ruptures and Migrating Contaminants</u>

As with all other Stations, the liners at Waukegan are prone to damage in certain conditions, particularly by the heavy equipment during dredging. In 2005 and 2006 MWG consultant, NRT, investigated the liners at Waukegan ponds and rated condition of West and East Ponds as "excellent" and the "Coal Pit Runoff Basin" as "unknown" with "high" for "contamination potential." EG Exh. 34 at 9 (#23616); MWG Exh. 606 at (#23645). MWG experts and employees testified that each pond was historically dredged approximately every other year; but only every 3-4 years lately, because less bottom ash has been generated recently. MWG Exh. 901 at 46; 10/24/17 Tr. at 162:10-163:4 (Lux Test.); 1/30/18 Tr. at 118:19-24 (Race Test.); 1/31/18 Tr. at 230:15-231:4 (Veenbaas Test.). Waukegan ponds are inspected at least once per day as part of operator's rounds, with any damage reported to supervisors and promptly repaired. 10/24/17 Tr. at 126:20-128:21, 143:11-144:1 (Lux Test.); 1/31/18 Tr. at 228:23-239:8 (Veenbaas Test.). MWG employees also testified to a system in place during the ponds dredging to ensure that heavy equipment operators do not damages the liners. The ponds have 20-foot tall warning posts at the edge of the bottom of the ponds to identify the bottom of the slope for the equipment operators. 10/24/17 Tr. at 131:23-132:11 (Lux Test.); 1/31/18 Tr. at 236:11-15 (Veenbaas Test.). Upon completion of dredging, Waukegan manager walks though the pond to ensure that contractors did not damage the liners or protective layers. Ponds are released for operations upon confirmation that the liners are intact. 10/24/17 Tr. at 131:17-132:11, 167:3-14 (Lux Test.); 1/31/18 Tr. at 235:20-237:11-17 (Veenbaas Test.).

The record, however, shows that liners in Waukegan ponds did have tears occasionally. About five to six tears were found since 2003, all above the water line in the ponds. All of the tears were typically repaired within one to two weeks. 10/24/17 Tr. at 144:2-145:17 (Lux Test.); 1/31/18 Tr. at 239:9-11 (Veenbaas Test.). In 2005, KPRG performed inspection of the liners in both ponds and found one tear on the south side of the East Ash Pond, which was shortly repaired. 10/25/18 Tr. at 193:10-15 (Gnat Test.); 10/26/18 A.m. Tr. at 52:9-53:24 (Gnat Test.); EG Exh. 274 at 6 (#12832).

After a careful review of the facts, the Board finds that the Environmental Groups established that the liners at Waukegan can and do crack or get damaged on occasions. Based on the preponderance of the evidence in the record, including the groundwater monitoring results, MWG practices in ponds relining and dredging, the Board concludes that it is more likely than not that the ash ponds did leach contaminants into the groundwater.

ii. <u>Historical Coal Ash Sites</u>

The record indicates at least one area where coal ash has been historically stored at the Waukegan station. The record also indicates the presence of coal ash in the fill areas outside of ash ponds and historic area.

<u>Former Slag/Fly Ash Storage (or FSFS).</u> The area immediately west of the West Pond is an unlined area that may contain historic slag, slag and fly ash. EG Exh. 19D at 36 (#45814); 10/23/17 Tr. 99:14-100:17; EG Exh. 38 at 15, 10 (#12017, 12012); 10/23/17 Tr. at 137:1-138:1.

The historic coal ash was placed in this area before 1998. 2/2/18 Tr. at 323:12-20 (Seymour Test.); EG Exh. 19D at 6, Fig. 2 and 5 (#45788, 45813, 45817). Borings from this area from the 1998 Phase II Environmental Site Assessment report shows a coal ash layer of up to a depth of one foot below the surface (B-22). EG Exh. 19D at 6, Fig. 5, App. A B-22 (#45788, 45817, 45841). The Environmental Groups claim this area to be the primary onsite source of groundwater contamination at the Stations. EG Br. at 54. Part of this area is covered by the 2003 Griess-Pfleger Tannery ELUC. MWG Exh. 646 at 1, 7, and 9. The other part is covered by the 2013 ELUC extension. MWG Exh. 263 at 8-12. The former Tannery owner semiannually samples groundwater in wells installed within the Tannery ELUC area on both the tannery site and Waukegan Station site. 1/30/18 Tr. at 146:9-23 (Race Test.); EG Exh. 39F, 40F, 42F, 42.5F. MWG concluded from the ELUC groundwater monitoring results that arsenic, iron, manganese, and TDS concentrations in the ELUC wells on the Waukegan Station site were higher than the concentrations predicted in the modeling to establish the ELUC and that contamination is migrating from the Tannery site onto the Waukegan Station. EG Exh. 41F at 5-8 (#46117-46118); 1/30/18 Tr. at 148:13-149:23 (Race Test.); MWG Exh. 901 at 56-57; EG Exh. 42.5F.

Coal Ash in Fill Areas. The record also shows the presence of coal ash buried around the ponds going as deep as 22 feet below ground surface. In 2005, when MWG's consultant KPRG performed geotechnical testing, it took five soil borings, three of which were taken around the ash ponds (GT 3-5). EG Exh. 201 at 10-16 (#24273-79). The results show bottom ash in those borings at depths below the surface ranging from 1 to 19 feet in GT-4 (taken west of the West Pond), and 1 to 22 feet in GT-5 (taken south of the East Pond). EG Exh. 201 at 15-16 (#24267, 24278-24279). Further, the boring logs indicate the condition of the samples at depths of 10 to 20 feet as "wet" or "slightly moist". *Id*. When MW-5 was installed in 2011 on the east side of the FSFS, in a location close to the GT-5 boring taken in 2005, the MW-5 boring also identified 16 feet of "black coal cinders" mixed with other material. EG Br. at 54; EG Exh. 14C at 19, 28 (#7166, 7175). MWG employees testified that they knew this area as a former ash storage area. 2/1/18 Tr. at 9:3-10:18, 62:16-18, (Veenbaas Test.); 1/30/18 Tr. 162:4-16, 264:9-13 (Race Test.); EG Exh. 16 at 14167; 10/23/17 Tr. at 86:23-87:18. The 2014 drillings for installation of monitoring wells MW-8 and MW-9 also indicated that ash and slag were buried along the northern and western edges of the FSFS area. EG Exh. 203 at 1-2 (#45648-45649); 10/25/17 Tr. at 53:5-54:17. Environmental Groups argue that MWG has done nothing to investigate or remediate this storage area. MWG has taken no borings from the center to determine how much ash is located there, and has not tested leachate to determine whether the area is leaching contaminants. EG Br. at 56. MWG employees confirm that no liners were installed here and that they do not have information of any liners present here. 10/23/17 Tr. at 137:20-138:1; 2/1/18 Tr. at 11:3-5. They also confirmed that no borings or samples were taken. 2/2/18 Tr. at 192:20-193:14 (Seymour Test.). MWG employees also testified that they were not aware of an impermeable cap over this area. 1/30/18 Tr. at 264:14-265:24; 2/1/18 Tr. at 9:3-11:15. MWG employees testified that they were not aware of ash having been ever removed from this area. 2/1/198 Tr. at 10:16-18. Groundwater elevation at Waukegan fluctuates between 579 and 582 feet above mean sea level, groundwater monitoring from wells around FSFS indicate potential ash buried around 582 feet, leaving about 3 feet of overlap. MWG Exh. 903 at 106 (Table 4-5); EG Exh. 203 at 1-2 (#45648-45649).

Weighing the facts presented, the Board finds that Environmental Groups have proven that it is more likely than not that the historic areas and coal ash in the fill areas at the Station are causing or contributing to GQS exceedances at the Station.

iii. Monitoring Wells

The groundwater monitoring network at Waukegan consisted of 16 monitoring wells. MWG Exh. 901 at 48. Patrick Engineering installed five wells (MW-1 through MW-5) as a part of the hydrogeologic investigation, and wells MW- 6 and 7 were added as upgradient wells at the request of IEPA in 2010. Wells MW-8 and 9 were added in 2014. Five additional wells (MW-10, 11, 12, 14 and MW-15) located west of the ash ponds have been monitored since August 2014 to assess the groundwater impacted by the former Griess-Pfleger Tannery and General Boiler properties. EG Exh. 14C at 2, 19 (#7152-7153, 7166), EG Exh. 401 at 23-24, MWG Exh. 811. These wells are called ELUC wells as they were installed as part of the Tannery ELUC. 2/1/18 Tr. at 148-149. MWG's expert, Mr. Gnat, also mentioned the installation of a new well MW-16 as part of CCR rules. *Id.* at 148.

The Waukegan hydrogeologic report identified well MW-5 as upgradient and wells MW-1 through 4 as downgradient. EG Exh. 14C at 3 (#7152); MWG Exh. 901 at 49. However, Mr. Gnat clarified that wells MW- 6, 8, 9, 10, 11, 12, 14 and 15 are also upgradient of the ash ponds and MW-7 is slightly side-gradient. 2/1/18 Tr. at 154. Monitoring wells were sampled on a quarterly basis: MW-1 through 7 from October 2010; MW-8 and 9 from May 2014; MW-10 through 15 from August 2014; and MW-16 from November 2015. MWG Exh. 811. The groundwater samples from all monitoring wells, except MW-16, were analyzed for 35 constituents, including boron, sulfate and TDS. *Id.* The samples from MW-16 were analyzed for 15 constituents, mostly metals. *Id.*

The Environmental Groups argue that because the groundwater flows through the Former Slag and Fly Ash Storage site from west/northwest to east/southeast, the upgradient groundwater quality for the FSFS is found in MW-11 through MW-14 and MW-6. EG Br. at 55. The Environmental Groups contend that MW-8 and 9 should not be considered upgradient for this area because they are screened in the FSFS. *Id.* at 57. The Environmental Groups note that boron levels (1 - 4 mg/L) in upgradient wells (MW–6, 11 through 14) increase more than tenfold (30 - 40 mg/L) after crossing the slag/fly ash storage area in wells MW-5 and 7 and the sulfate levels also show a similar pattern. *Id.* at 57-58.

The site hydrogeologic conditions at the Waukegan Station were determined in 2011 by Patrick Engineering using the soil boring logs of five groundwater monitoring wells installed approximately 150 to 300 feet around the perimeter of the ash ponds. These wells were screened approximately 10 feet past the intersection of the groundwater table to ensure collection of representative groundwater samples. EG Exh. 14C at 3 (#7152). The well locations were chosen to represent upgradient and downgradient wells with respect to expected groundwater flow direction to the east towards the Lake Michigan. *Id.* at 2-3 (#7151-7152). The well borings were advanced to depths ranging from 30 to 32 feet below ground surface (bgs). Borings were terminated after the field geologist determined that the borings were installed approximately 10 feet past the first intersection of the groundwater table. *Id.* at 3 (#7152).

The site geology, based on regional geologic information, consists of 100 feet of sand deposits, underlain by Silurian Dolomite to approximately 360 feet below ground surface, underlain by the Maquoketa shale. EG Exh. 14C at 2 (#7151). The hydrogeologic site investigation indicated predominantly fine sand and silt underlain by sand and gravel. *Id.* at 7 (#7156). Further, the uppermost groundwater unit underlying the site is found at 22.4 to 23 feet bgs with groundwater flow to the east/southeast towards Lake Michigan. Mr. Gnat agreed that the groundwater flow in the ash pond area is to the east, southeast. 2/1/18 Tr. at 154-155. However, he also noted that a component of groundwater flow goes north, northwest towards Lake Michigan intake channel. *Id.* at 155; MWG Exh. 901 at 49.

The Board notes that, given that the groundwater flow direction at the Waukegan Station generally flows the west/northwest to the east/southeast, wells MW-10 through 14 are showing the upgradient groundwater quality for the Station. These wells are also upgradient of the Former Slag and Fly Ash Storage area, as well as the ash ponds. EG Br. at 21 (Ap. E); MWG Exh. 901 at 49; MWG Exh. 813. These wells also are located downgradient of the Tannery site, showing constituents that might be migrating to the Station from the Tannery site.

Also, there are eight potable/industrial use wells within 2,500-foot radius of the ash ponds, all to the north or west of the ponds.

iv. <u>Exceedances of Part 620 Standards</u>

The groundwater monitoring results at Waukegan indicate 394 exceedances of the Board's Part 620 Class I GQS in all 15 monitoring wells (MW-1 through 16) during 2010-2017. MWG Exh. 811. While 102 of these exceedances are in wells downgradient of the ash ponds, the remaining 292 are in wells that are upgradient or side-gradient of the ash ponds. The constituents above the Class I standard are: antimony (2 exceedances), arsenic (97), boron (169), cadmium (1), chromium (2), selenium (2), sulfate (57), and TDS (63). *Id*. A summary of the groundwater monitoring data exceeding Part 620 standards for Waukegan is presented in Tables 4.A-4.C, below. EG Br. at 77-110 (App. A); MWG Exh. 811.

The Board also finds that while there are many exceedances (e.g. arsenic, boron, sulfate and TDS) in the wells upgradient of the ash ponds, as noted by the Environmental Groups, the location of these upgradient wells shed light on the potential source of contamination at the Waukegan site. Starting with the monitoring wells near the western property boundary and moving east/southeast along the groundwater flow direction, the number of exceedances were: 59 in wells MW-10 through 14 downgradient of former tannery and boiler sites and upgradient of the Former Slag and Fly Ash Storage area; 66 in wells MW-6, 8 and 9 along the western border (immediately upgradient) of the Former Slag and Fly Ash Storage area; 163 in wells MW-5, 7 and 15 which are downgradient of the Former Slag and Fly Ash Storage area and upgradient or side-gradient of the ash ponds; and 102 in wells MW-1 through 4 downgradient of the ash ponds. Even though the 59 exceedances in wells MW-10 through 14 suggest that contamination may be coming in from the former tannery and boiler sites, the 163 exceedances downgradient of the Former Slag and Fly Ash Storage area, along with higher concentrations of indicator constituents, show that the Former Slag and Fly Ash Storage area is contributing to the exceedances in wells MW-1 through 7.

Table 4.A: Waukegan Groundwater Monitoring Results Summary

Monitoring Wells	Closest Ash Pond, historical storage	Location	Constituents	Number of Exceedances of Part 620 Standards	Year(s)
MW-01	EP	Downgradient	Arsenic	26	2010-2017
			Boron	14	2010-2017
			Selenium	1	2013
MW-02	EP	Downgradient	Antimony	1	2010
			Arsenic	11	2010-2017
			Boron	21	2010-2017
MW-03	EP	Downgradient	Arsenic	1	2017
			Boron	10	2011-2017
			Selenium	1	2013
MW-04	EP	Downgradient	Arsenic	1	2017
			Boron	15	2011-2017
MW-05	WP	Upgradient	Arsenic	6	2012-2017
			Boron	27	2010-2017
			Sulfate	27	2010-2017
			TDS	27	2010-2017
MW-06	FSFA	Upgradient	Boron	12	2013-2017
MW-07	WP	Side-gradient	Arsenic	7	2013-2015
			Boron	19	2012-2017
			Sulfate	18	2012-2017
			TDS	19	2012-2017
MW-08	FSFA	Upgradient	Boron	13	2014-2017
			Cadmium	1	2017
			Sulfate	7	2014-2017
			TDS	5	2015-2016
MW-09	WP, FSFA	Upgradient	Boron	13	2014-2017
			Sulfate	5	2014-2017
			TDS	10	2014-2016
MW-10	FSFA, WP	Upgradient	Arsenic	11	2014-2017
MW-11	FSFA, WP	Upgradient	Arsenic	12	2014-2017
			Boron	11	2014-2017
MW-12	FSFA, WP	Upgradient	Arsenic	4	2015-2017
			Boron	5	2015-2017
			TDS	1	2015

MW-14	FSFA	Upgradient	Antimony	1	2017
			Arsenic	11	2014-2017
			Chromium	2	2017
			TDS	1	2014
MW-15	FSFA	Upgradient	Arsenic	4	2014-2017
			Boron	9	2014-2017
MW-16	EP and WP	Upgradient	Arsenic	3	2016-2017
			Thallium	1	2017

Table 4.B: Waukegan Groundwater Monitoring Results Summary (by year)

Year	**Monitoring Wells**	**MW-1**	**MW-2**	**MW-3**	**MW-4**	**MW-5**	**MW-6**	**MW-7**	**MW-8**	**MW-9**
	Constituent	**# of Exceedances Above Part 620 Class I Groundwater Standards**								
2010	Antimony		1							
	Arsenic	1	1							
	Boron	1	1			1				
	Sulfate					1				
	TDS					1				
2011	Antimony									
	Arsenic	4	2							
	Boron	3	1	2	2	4				
	Sulfate					4				
	TDS					4				
2012	Arsenic	4	2			2				
	Boron	1	2		4	4		1		
	Sulfate					4		1		
	TDS					4		1		
2013	Arsenic	3	1			1		3		
	Boron	4	3	1	4	4	4	4		
	Selenium	1		1						
	Sulfate					4		4		
	TDS					4		4		
2014	Arsenic	4						1		
	Boron	1	4	2	2	4	3	4	3	3
	Sulfate					4		3	1	1
	TDS					4		4		3
2015	Arsenic	4	2			1		3		
	Boron		4			4	1	4	4	4
	Sulfate					4		4	2	1
	TDS					4		4	1	4
2016	Arsenic	4	1			1				
	Boron	2	4	3	1	4	3	4	4	4
	Sulfate					4		4	3	2

	TDS					4		4	4	3
2017	Arsenic	2	2	1	1	1				
	Boron	2	2	2	2	2	1	2	2	2
	Cadmium								1	
	Sulfate					2		2	1	1
	TDS					2		2		
Total		41	33	12	16	87	12	63	26	28

Table 4.B: Waukegan Groundwater Monitoring Results Summary (by year) (cont)

Year	**Monitoring Wells**	**MW-10**	**MW-11**	**MW-12**	**MW-14**	**MW-15**	**MW-16**
	Constituent	**# of Exceedances Above Part 620 Class I Groundwater Standards**					
2014	Arsenic	2	2		2	1	
	Boron		2			2	
	Sulfate						
	TDS				1		
2015	Arsenic	3	4	2	3	1	
	Boron		4	1		1	
	Sulfate						
	TDS			1			
2016	Arsenic	4	4		4		1
	Boron		4	3		4	
	Sulfate						
	TDS						
2017	Antimony				1		
	Arsenic	2	2	2	2	2	2
	Boron		1	1		2	
	Chromium				2		
	Sulfate						
	Thallium						1
	TDS						
Total		11	23	10	15	13	4

4.C: Waukegan Groundwater Monitoring Results Summary (by wells)

Chemical Constituent	Antimony	Arsenic	Boron	Cadmium	Chromium	Selenium	Sulfate	Thallium	TDS	Total
Monitoring Well	**Number of Exceedances**									
MW-1		26	14			1				41
MW-2	1	11	21							33
MW-3		1	10			1				12
MW-4		1	15							16
MW-5		6	27				27		27	87
MW-6			12							12
MW-7		7	19				18		19	63
MW-8			13	1			7		5	26
MW-9			13				5		10	28
MW-10		11								11
MW-11		12	11							23
MW-12		4	5						1	10
MW-14	1	11			2				1	15
MW-15		4	9							13
MW-16[9]		3						1		4
Total	2	97	169	1	2	2	57	1	63	394

Antimony. There were only two exceedances of the antimony standard over the entire seven-year monitoring period, one in 2010 in MW-2 (downgradient of the ash ponds) and one in 2017 in MW-14 (upgradient near the western property line). Both parties agree that antimony is one of the indicators for leachate from MWG's ash ponds. EG Exh. 401 at 7; MWG Exh. 903 at 42. However, MWG's bottom ash Neutral Leaching Extraction Test (NLET) results indicate that the level of antimony in the ash leachate from Waukegan was below the Part 620 Class I standard of 0.006 mg/L. MWG Exh. 901 at 8; MWG Exh 903 at117 (Table 5-3). Because the antimony concentration in the bottom ash was below the Class I standard and there were only two exceedances over the seven-year monitoring period, the Board finds that the Environmental Groups have not proven that it is more likely than not that coal ash stored onsite, either in the ash ponds or outside of the ponds, is causing or contributing to these exceedances.

Arsenic. The monitoring results indicate 97 exceedances of the Part 620 Class I arsenic standard in 12 of the 15 monitoring wells, upgradient and downgradient of both Former Slag and Fly Ash Storage site and ash ponds from 2010 through 2017. EG Br. at 77-110 (App. A); MWG Exh. 811, *also see* Table 4.A-4.C above. The number of exceedances include: MW-1 (26 exceedances), MW- 2 (11), MW-3 (1), MW-4 (1) MW-5 (6), MW-7 (7), MW-10 (11), MW-11 (12) MW-12 (4), MW- 14 (11), MW-15 (4), and MW-16 (3). Both parties list arsenic as a constituent present in coal ash leachate. EG Exh. 401 at 7; Exh. 903 at 42. MWG's bottom ash NLET result of 0.05 mg/L or less for arsenic suggests the presence of arsenic in the ash leachate

[9] While groundwater monitoring results for MW-16 for 2016-17 are included in MWG Exh. 811, the location of the monitoring well is not shown on any of the Waukegan maps.

at levels higher than the Part 620 Class I standard of 0.01 mg/L. MWG Exh. 903 at 117 (Table 5-3).

Seymour also notes that analytical results of the groundwater from the former Tannery site indicate that certain inorganic constituents, including arsenic, have migrated onto the Waukegan property. MWG Exh. 903 at 19. MWG asserts that the groundwater contamination at Waukegan site, particularly arsenic, is migrating from two industrial properties on the west of the Station, the former Griess-Pfleger Tannery and the former General Boiler. MWG Br. at 18. MWG notes that the General Boiler property contained arsenic above remediation benchmarks and the property included a fly ash fill area. *Id.* Both sites appear to be now closed and part of IEPA's Site Remediation Programs. *Id.* at 124:16-125:3 (Race Test.); MWG Exh. 667, at 25; MWG Exh. 901 at 56-57. Investigation at the General Boiler site in 1998-1999 also found arsenic concentrations above Class I GQS in a fly ash fill area. MWG Exh. 623 at 472. Soil boring at the Tannery found coal and angular slag. MWG Exh. 643 at 105-08 (#47180-4718); 1/30/18 Tr. at 131:6-134:2 (Race Test.). Groundwater investigation at the Tannery also found arsenic, chromium, cadmium, mercury, lead, manganese, iron and total dissolved solids contamination. MWG Exh. 644 at 31, 33-34 (#46627, 46629-46630); 1/30/18 Tr. at 135:23-139:3 (Race Test.). The former Tannery owner removed impacted soil and in 2003 established ELUC on the west side of Waukegan Station to prevent any use of the groundwater. Joint Stip. No.38, 39; MWG Exh. 645 at 55-56 (#46255-46256); 1/30/18 Tr. at 141:23-144:4 (Race Test.); MWG Exhs. 646; 667 at 22.

The Board notes that wells MW-10 through 14 are downgradient of the former Tannery site and upgradient of the Station, including the Former Slag and Fly Ash Storage area and the ash ponds. EG Br.at 120 (App. E); MWG Exh. 901 at 48-49; MWG Exh. 813. The Board, thus, finds that the exceedances in the wells MW-10 through 14 support Seymour's assertion that contamination is moving into the Waukegan site from the former Tannery site. The arsenic levels in the upgradient wells MW-10 through 14 were consistently higher, in the range of 0.06 to 1.3 mg/L, compared to the levels ranging from 0.013 to 0.21 in the wells downgradient of the Former Sag and Fly Ash Storage site, as well as the ash ponds. Thus, the Board finds that the it is more likely than not that the arsenic levels in groundwater at the Waukegan site are impacted by upgradient offsite contamination coming to the Tannery site. The Board, thus, finds that the Environmental Groups have not proven that it is more likely than not that coal ash stored on-site, either in the ash ponds or outside of the ponds, is causing or contributing to these exceedances.

Boron. The monitoring results indicate 169 exceedances of the Part 620 Class I boron standard in 12 of the 15 monitoring wells upgradient and downgradient of both Former Slag and Fly Ash Storage site and ash ponds from 2010 through 2017. EG Br. App. A; MWG Exh 810; *see also* Table 4.A-4.C above. These wells show the following exceedances: MW-1 (14), MW-2 (21), MW-3 (10), MW-4 (15) MW-5 (27), MW-6 (12), MW-7 (19), MW-8 (13), MW-9 (13), MW-11 (11) MW-12 (5), and MW-15 (9). Most of the wells had continuing exceedances over the four to seven-year monitoring period.

Both parties agree that boron is an indicator of coal ash contamination. EG Exh. 401 at 7; Exh. 903 at 42. Further, Seymour's comparison of the monitoring results from 2014 with indicator constituents in leachate shows that boron is an indicator of leachate from Waukegan Station ash ponds. MWG Exh. 903 at 118, 122 (Table 5-4). However, Seymour argues that the leachate from MWG ash ponds does not have the potential to cause groundwater impact above the Class I standard because the leachate levels were below such standard. MWG Exh. 903 at 41. Here, MWG's bottom ash NLET results indicate that the level of boron ranged from less than 0.1 mg/L to 2.0 mg/L, which is the same as the Part 620 Class I standard. MWG Exh. 903 at 117 (Table 5-3). Seymour maintains that analytical results of the groundwater from the tannery site indicate that certain inorganic constituents, including boron have migrated onto the Waukegan site. MWG Exh. 903 at 19. Environmental Groups argue that the most likely source of coal ash contamination at the Waukegan site is the Former Slag and Fly Ash Storage area located west of the ash ponds.

The Board finds that given the groundwater flow direction at the Waukegan site wells MW-10 through 14 are downgradient of the Tannery site, showing contaminants that migrate from the Tannery site. These wells are also upgradient of the Former Slag and Fly Ash Storage area, as well as the ash ponds. EG Br. at 120 (App. E); MWG Exh. 901 at 49; MWG Exh 813. Well MW-6 is downgradient of the boiler site but also upgradient of the Former Slag and Fly Ash Storage area. The Board also finds that monitoring wells MW-8 and MW-9 are likely impacted by the Former Slag and Fly Ash Storage area as they are located in the ash at the edge of this area. The median values of boron in upgradient wells (MW-6, 10 through 14) range from 1 to 3.25 mg/L as compared to median boron value of 32-39 mg/L in wells MW-5 and 7 downgradient of the Former Slag and Fly Ash Storage site and 2 to 2.5 mg/L in wells MW-1 through 4 downgradient of the ash ponds. This comparison of the median boron values of the wells upgradient of the Former Slag and Fly Ash Storage area with those downgradient indicates that the Former Slag and Fly Ash Storage is area is contributing to the exceedances in the downgradient wells. The Board finds that the groundwater monitoring results indicate the Former Slag and Fly Ash Storage area is the likely source of boron exceedances at Waukegan Station in the wells downgradient of the area as well as the ash ponds. The Board, thus, finds that the Environmental Groups have proven that it is more likely than not that coal ash stored onsite, either in the ash ponds or outside of the ponds, is causing or contributing to these exceedances.

Metals. The monitoring results indicate six exceedances of metallic constituents over the seven-year monitoring period: cadmium (1 in MW-8), chromium (2 in MW-14), selenium (2 in MW-1 and MW-3) and thallium (1 in MW-16). While some of these metals may be present in coal ash leachate, they are not considered as primary indicators of coal ash contamination. MWG's bottom ash NLET results indicate that the level of all four metals were below Part 620 Class I standards. MWG 903 (Table 5-3). The Board finds that given the very few sporadic exceedances of the metallic constituents and their low levels in the bottom ash leachate, the Environmental Groups have not proven that it is more likely than not that coal ash stored onsite, either in the ash ponds or outside of the ponds, is causing or contributing to these exceedances.

Sulfate and TDS. There were 57 exceedances of the Class I sulfate standard and 63 exceedances of the Class I TDS standard during the seven-year monitoring period. MWG Exh. 811. Most of the exceedances occurred in two wells (MW-5 and 7) downgradient of the Former Slag and Fly Ash Storage area. There were only two exceedances of TDS in the upgradient wells (MW-12 and 14) and none in wells downgradient of the ash ponds (MW-1 through 4).

Both parties list sulfate as an indicator constituent of coal ash leachate. Dr. Kunkel notes that higher concentration of sulfate may also be accompanied by high concentrations of TDS. EG Exh 401 at 7; MWG Exh. 903 at 40. Further, Seymour's comparison of the monitoring results from 2014 with indicator constituents in leachate shows that sulfate is an indicator of leachate from Waukegan ash ponds. MWG Exh. 903 at 118-22 (Table 5-4). However, Seymour argues that the leachate from MWG ash ponds does not have the potential to cause groundwater impact above the sulfate and TDS standards because the leachate levels are below the standards. He relies on MWG's bottom ash NLET results of sulfate at 49 mg/L and TDS at 200 mg/L. MWG Exh. 903 at 41; MWG Exh. 901 at 8. Environmental Groups note that sulfate follows the same pattern as boron with median sulfate concentrations approximately 100-200 mg/L upgradient of the Former Slag and Fly Ash Storage area, but 700-800 mg/L in wells MW-5 and MW-7 downgradient of that area. The Environmental Groups argue that this pattern shows that the Former Slag and Fly Ash Storage area is contributing coal ash constituents in the groundwater.

The Board notes that sulfate and TDS are indicators of coal ash contamination in groundwater. Further, the monitoring results show almost no exceedances of sulfate and TDS standards in the upgradient wells indicating there is no migration from offsite sources. Further, as noted by the Environmental Groups, the large percentage of exceedances of sulfate (79%) and TDS (73%) in wells (MW-5 and 7) downgradient of the Former Slag and Fly ash storage area indicate that the storage area is contributing to the exceedances. There were also some exceedances in monitoring wells MW-8 and MW-9, which are likely impacted by the Former Slag and Fly Ash Storage area as they are located in ash at the edge of the area. Therefore, the Board finds that the likely source of the 57 exceedances of sulfate and 63 exceedances of TDS in the downgradient monitoring wells MW- 5, 7, 8 and 9 at Waukegan is the Former Slag and Fly Ash Storage area located west of the ash ponds. The Board, thus, finds that the Environmental Groups have proven that it is more likely than not that coal ash stored onsite, either in the ash ponds or outside of the ponds, is causing or contributing to these exceedances.

v. Background Concentrations Exceedance

Environmental Groups contend that the median concentrations of indicator constituents, boron and sulfate, in most of the wells are higher than the statewide upper-bound 90th percentile background value and not naturally occurring. EG Br. at 64. Seymour asserts that the background levels used by Environmental Groups are based on monitoring data from CWS wells that are not representative of site-specific groundwater quality. 2/2/18 Tr. at 32. Seymour argues that comparing monitoring results with the median background value is not meaningful. He maintains that a valid comparison would be based on a statistical evaluation using an upper bound confidence level of 90 percent. *Id.* at 32-33.

The Board finds that while background values established using site-specific monitoring data is always preferable, in the absence of such data, statewide background values may be used to evaluate groundwater impacts. Because site-specific background values have not been established at the Waukegan site, the Board finds that median values of boron and sulfate in monitoring wells can be compared with the 90th percentile statewide values. This comparison indicates that median concentrations of boron (MW-1 through MW-15) and sulfate (MW-1, 2, 4 through 9, 12 and 15) exceed the 90th percentile statewide values. These exceedances of the statewide background also appear to be consistent with the exceedances of Class I groundwater standards of boron and sulfate in most monitoring wells at Waukegan. Regarding boron, except for upgradient wells MW-10 and 14, the wells exceeding the 90th percentile value also exceeded the Class I boron standard. As to sulfate, wells exceeding the 90th percentile value also exceeded the Class I standard in downgradient wells MW-5, 7, 8 and 9. The Board, thus finds that the Environmental Groups have proven that it is more likely than not that coal ash stored on-site, either in the ash ponds or outside of the ponds, is causing or contributing to the exceedances of the 90th percentile statewide values for boron and sulfate at Waukegan.

V. BOARD DISCUSSION

The Environmental Groups allege that MWG violated Sections 12(a), 12(d), and 21(a) of the Act (415 ILCS 5/12(a), 12(d), 21(a) (2016)) and Sections 620.115, 620.301(a) and 620.405 of the Board's groundwater quality rules (35 Ill. Adm. Code 620.115, 620.301(a) and 620.405). Am. Comp. at 17 ¶ 51; EG Br. at 4. The Environmental Groups allege that MWG discharged contaminants into the environment "through coal ash disposal ponds, landfills, unconsolidated coal ash fill, and/or other coal ash and coal combustion waste repositories" at the four Stations. Am. Comp. at 17 ¶ 51.

A. Section 12(a) of the Act, Water Pollution

Section 12(a) of the Act prohibits any person from causing, allowing, or threatening a *discharge* of any contaminants into the environment so as to *cause or tend to cause water pollution* or to *violate regulations or standards* adopted by the Board. 415 ILCS 5/12(a) (2016). As discussed below, the Board finds that the record indicates that MWG caused or allowed a discharge of contaminants so as to cause water pollution and to violate the Board's Class I GQS.

The Act defines "water pollution" to include a discharge of any contaminant into any waters of the State that will or is likely to render such waters harmful or detrimental or injurious to public health, safety or welfare or to domestic, commercial, industrial, agricultural, recreational, or other legitimate uses, or to livestock, wild animals, birds, fish, or other aquatic life. *See* 415 ILCS 5/3.545 (2016). The statutory definition of "waters" of the State includes groundwater. *See* 415 ILCS 5/3.550 (2016).

To find that a respondent violated Section 12(a) of the Act, the Board must find that a respondent discharged or threatened to discharge a contaminant that is likely to render waters harmful, detrimental, or injurious to public health. CSX, PCB 7-16, slip op at 16 (July 12, 2007). The Board has also found that a discharge of a contaminant that violated the Board's GQS violates Section 12(a) of the Act. International Union, PCB 94-420 at 33-34 (Aug. 1, 1996). In another case, the Board concluded that "[c]ompliance with a permitted GMZ would provide . . . immunity from violating the Part 620 standards" but not Section 12(a). People v. Texaco Refining and Marketing, Inc., PCB 2-03, slip op. at 9-10 (Nov. 6, 2003). The Board noted that "Section 12(a) of the Act provides no exemption from liability for parties that comply with another regulatory program" and that compliance with GMZ "is not an affirmative defense but rather a factor that may, if anything, mitigate any imposed penalty." *Id*.

The groundwater monitoring data, as discussed in Part IV *supra*, indicates the presence of contaminants in groundwater between December 2010 and April 2017 in concentrations that exceed Class I GQS at all four Stations.

At Joliet 29 Station, monitoring recorded 53 exceedances in monitoring well MW-9, which is a downgradient well located between Ash Pond 2 and Ash Pond 3 at the southwest edge of Ash Pond 3. Exceedances of sulfate occurred in 26 of 53, every quarter of the seven-year groundwater monitoring period of 2010-2017. The TDS standard was exceeded 27 of 53. The other three downgradient wells (MW-02, 03, and 04) also showed exceedances of Class I GQS for antimony seven times (from 2010 to2013) and for TDS once in 2013.

At Powerton Station, the Part 620 Class I arsenic standard was exceeded 83 times in eight downgradient monitoring wells (MW-6, 7, 11, 12, 13, 14, 15, and 17). While some of these exceedances were intermittent (in wells MW-6, 12, 14, and 15), others were consistent exceedances over a period of four to six years (in MW-7, 11, and 13). Monitoring showed 64 exceedances of the Part 620 boron standard in nine downgradient monitoring wells, 83% of which were observed in wells MW-9 (21 exceedances), MW-13 (26) and MW-14 (7). Monitoring also showed less consistent exceedances in MW-11, MW-12, and MW-19. There were 104 exceedances of sulfate standard in nine wells (MW-6, 8, 11, through 15 and 17) and 119 exceedances of TDS standard in the same eight wells and MW-7 and 18. While some wells had intermittent exceedances, MW-12, 13, 14, and 15 had consistent exceedances of sulfate or TDS or both over a period of four or more years.

At Will County, the groundwater monitoring results show 207 boron exceedances in 10 monitoring wells (MW-1 through 10) consistently from 2010 to 2017. The results also show three antimony exceedances in MW-2 in 2011 and 19 arsenic exceedances in MW-02, 6, 8, and 10 in 2011-2017. Between 2010 and 2017, there were consistent exceedance of the sulfate standard (131 exceedances in MW-01 through 10) and the TDS (80 standard in MW-01 through 08).

At Waukegan, monitoring showed 169 exceedances of the boron standard between 2010 and 2017 in 12 of the 15 monitoring wells in (MW-1 through 09, 11, 12, and 15). The Board also found 57 exceedances of the Class I sulfate standard and 63 exceedances of the TDS standard (MW-05, 07, 08, and 09) through the entire monitoring period of 2010-2017.

As discussed in detail in Part IV of this opinion, the Board finds that the preponderance of evidence establishes that it is more probable than not that these exceedances are caused by the MWG operations at the Station.

i. <u>MWG "caused" or "allowed" Release of Contaminants.</u>

Contaminants found in the monitoring wells in all four Stations are recognized by both parties as known constituents of coal ash. *See supra* Part IV (Facts). The record shows that MWG operations produce in coal ash, which MWG processes at its property, and stores temporarily on short or long-term basis before it is removed to permanent landfills. The record also shows that coal ash is present in multiple historical coal ash storage or fill areas, most of which are unlined and not monitored for leaching. Only some of those areas have been tested for beneficial reuse. The rest are just visually inspected. The groundwater monitoring results of the upgradient monitoring wells show that upgradient off-site sources did not contribute to the exceedances. The record provides no persuasive evidence that any of the indicator constituents recorded in these monitoring wells could have originated outside of MWG's property and migrated to the Stations, except for the arsenic at Waukegan. The record shows no other likely sources of contamination. Thus, the Board finds that contaminants are leaking from MWG's property and that MWG's active coal ash ponds or historical coal ash storage sites of fill areas are the source of that contamination. Thus, the Board concludes that it is more probable than not that MWG caused contamination coming from the ash ponds and allowed contamination from the historic sites and ash fill areas. IEPA v. Rawe, AC 92-5, slip op. at 4 (Oct. 16, 1992); People ex.rel. Ryan v. McFalls, 313 Ill. App. 3d 223, 226-27, 798, 728 N.E.2d 1152, 1155 (3rd Dist. 2000).

It is immaterial whether any specific ash pond or any specific historic ash fill area can be pinpointed as a source to find MWG liable. The groundwater monitoring results narrow the contamination to defined areas within each of MWG Stations delineated by the monitoring wells. Davinroy at 796. As the owner or operator of these Stations, MWG has control over both its active ash ponds and historical coals ash storage areas. People v. Inverse Investments, LLC, PCB 11-79 slip op. at 9 (Feb. 16, 2012); Michel Grain, PCB 96-143, slip op. at 3-4 (Aug. 22, 2002); Meadowlark Farms, Inc. v. PCB, 17 Ill. App. 3d 851, 860, 308 N.E.2d at 836-37 (5th Dist. 1974); People v. Lincoln, 2016 IL App 143487 ¶¶ 48049, 70 N.E.3d 661, 678,; People v. State Oil Co., PCB 97-103, slip op. at 24-25 (Mar 20, 2003); Allaert Rendering, Inc. v. PCB, 91 Ill. App. 3d 153, 155-156, 414 N.E.2d 492, 494-95 (3rd Dist. 1980).

The monitoring results show that contamination persists after MWG concluded corrective actions required by its CCAs and GMZs. MWG is aware of these results but is not undertaking any further actions to stop or even identify the specific source: no further investigation of historic areas is taking place; no additional monitoring wells are installed; and, no further inspection of ash ponds or land around the ash ponds in the locations that show persistent exceedances is taking place. The Board is, thus, not persuaded that MWG took "extensive precautions" to prevent the releases. Davinroy, 249 Ill. App. 3d at 794; Perkinson v. PCB, 187 Ill. App. 3d 689 (3rd Dist. 1989); People v. William Charles, PCB 10-108, slip op. at 25-27 (Mar.17, 2011); City of Chicago v. Speedy Gonzales Landscaping, Inc, AC 06-39, AC 06-40, AC 04-41, AC 07-25, (Mar. 19, 2009); County of Jackson v. Taylor, AC 89-258, (Jan. 10, 1991); Phillips Petro. Co. v. PCB, 72 Ill. App. 3d 217 (2nd Dis. 1979); IEPA v. Coleman, AC04-46, at 7 (Nov. 4, 2004). Other than establishing an ELUC at Powerton, Waukegan, and Will County that restricts use of the area, for example for installing potable wells, MWG also did not take active actions to ensure that the contamination does not spread beyond its property. MWG knew that contaminants that include coal ash constituents are leaking from its property but did not fully investigate specific source or prevent further release, claiming that IEPA did not ask it to do so. MWG, however, cannot use IEPA's actions to excuse for MWG's violations of the Act or the Board rules.

While the VNs for the four Stations also alleged exceedances of Class I GQS for additional contaminants at other wells, the Board notes that the record shows other potential sources from outside of MWG property, that can be linked to those contaminants, as discussed in detail in Part IV of this opinion. The Board, therefore, concludes that the Environmental Groups failed to establish that it is more probable than not that MWG cause or allowed those other exceedances.

Based on the above, the Board finds that the preponderance of evidence indicates that during 2010-2017, MWG caused or allowed discharge of contaminants into the waters of the State with respect to the noted exceedances in monitoring wells at all four Stations.

Next the Board must determine if the discharge violated Board's GQS, or caused or tended to cause water pollution in violation of Section 12(a) of the Act. 415 ILCS 5/12(a) (2016).

ii. Violation of Board Rules

MWG asserts the establishment of GMZs at Joliet 29, Powerton, and Will County as one of its affirmative defenses. MWG 2nd Ans. Def. at 24-26 ¶¶ 82-97. MWG alleges that it did not violate the Board's GQS (35 Ill. Adm. Code 620.410, 620.420, 620.430, and 620.440) because the groundwaters within the GMZ are exempted from those standards by Section 620.450(a)(3). *Id*. at 25 ¶ 86; 2/1/18 Tr. at 107 (Gnat Test.). Because MWG did not violate the Board's GQS, MWG states, it is not in violation of Sections 620.301(a) and 620.405. *Id*. at ¶ 88. The Board disagrees.

The Board notes that, once a GMZ is established, groundwater underlying the GMZ is not subject to Board's Part 620 groundwater standards. *See* 35 Ill. Adm. Code 620.450. MWG relies on the GMZ as a defense from Part 620, even though the record establishes violation of the GQS prior to the development of the GMZ.

The Board finds that MWG is liable for any exceedances of the Part 620 standards that occurred at Waukegan, where no GMZ was established, and any exceedances before the GMZs were established at Joliet 29, Powerton, and Will County. While the establishment of a GMZ does obviate the need to meet standards of Part 620, the Board notes that a GMZ is not a permanent solution and expires upon completion of corrective action as specified in Sections 620.250(a) and 620.450(a). 35 Ill. Adm. Code 620.250(a) and 620.450(a). Based on the Board's rules, the Board finds that MWG failed to establish that the GQS are inapplicable in those GMZs at Joliet 29, Powerton, and Will County Stations because the record does not establish ongoing corrective action as specified in Section 620.450(a) at these sites. 35 Ill. Adm. Code 620.450(a).

a) Part 620 Exceedances at Waukegan

MWG did not establish a GMZ at Waukegan. Therefore, MWG's affirmative defense does not apply to exceedances of the Class I GQS at Waukegan. The record shows that at Waukegan, boron Class I GQS standard was consistently exceeded between 2010 and 2017, 169 times in 12 of the 15 monitoring wells in (MW-1 through 09, 11, 12 and 15). The record also shows 57 exceedances of the Class I sulfate standard and 63 exceedances of the TDS standard (MW-05, 07, 08, and 09) between 2010 and 2017. The preponderance of evidence indicates that these exceedances were caused or allowed by MWG operations at the Station. Thus, the Board concludes that MWG violated Board's Class I GQS in Section 620.410(a) and Sections 620.301(a) and 620.405 with respect to these exceedances.

b) Part 620 Exceedances at Joliet 29, Powerton, and Will County

Pre-GMZ Exceedances

MWG established GMZs at Joliet 29 on August 8, 2013, at Powerton on October 3, 2013, and at Will County on July 2, 2013. MWG Exh. 627 at 1; EG Exh. 638 at 1; MWG Exh. 658 at

1; MWG Exh. 660. The GMZs area is "a three-dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site". EG Exh. 242 at 6; EG Exh. 254 at 6; EG Exh. 276 at 6; Joint Stip. at 4; MWG 2nd Ans. Def. at 25; *see also* 35 Ill Adm. Code 620.250(a). Before each GMZ was established, groundwater resources at all three Stations fell into Class I category. EG Exh. 242 at 9; EG Exh. 254 at 9; EG Exh. 276 at 9.

The Board finds that any exceedances of Class I GQS that occurred before a GMZ was established, violate the Board's standards in Section 620.410, and thus Sections 620.301(a) and 620.405. The groundwater monitoring results show exceedance of Class I GQS at Joliet 29, Powerton, or Will County before the GMZs were established. At Joliet 29 these include: antimony (6 exceedances in MW-02, 03, and 04); sulfate (11 exceedances in MW-09); and TDS (13 exceedances in MW-03 and 09). At Powerton these include a total of: 1 exceedance of antimony standard in MW-02; 32 exceedances of arsenic standard in MW-07, MW-11 through 15; 15 exceedances of boron standard in MW-09, MW-11 through 13; 1 exceedance of selenium standard in MW-14; 15 exceedances of sulfate standard in MW-06, MW-08, MW-12 through 15; and 19 exceedances of TDS standard in MW-06, 07, 08, 13, 14, and 15. At Will County these include a total of: 3 exceedances of antimony standard in MW-01 and 02; 4 exceedances of arsenic standard in MW-08; 74 exceedances of boron standard in MW-01 through 10; 50 exceedances of sulfate standard in MW-01 through 9; and 24 exceedances of TDS standard in MW-03, 04, 05, 07, and 08. As noted in Part IV of this opinion, the Board finds that a preponderance of the evidence indicates that these exceedances were caused or allowed by MWG operation at the Stations.

The Board, therefore, finds that MWG did violate Board's Class I GQS in 620.410(a) and Sections 620.301(a) and 620.405 with respect to the exceedances that took place between 2010 and 2013 before the three GMZs were established at Joliet 29, Powerton, and Will County.

Exceedances During Corrective Actions

Groundwater within a GMZ is subject to standards specified in Section 620.450(a). 35 Ill. Adm. Code 620.450(a)(1). Section 620.450(a)(2) indicates that Sections 620.410, 620.420, 620.430, and 620.440 *do apply* to any chemical constituent in groundwater within a GMZ "[e]xcept as provided in subsections (a)(3) or (a)(4)." 35 Ill. Adm. Code 620.450(a)(2). Section 620.450(a)(3) indicates that Sections 620.410, 620.420, 620.430, and 620.440 do not apply to waters within GMZ prior to completion of a corrective action. 35 Ill. Adm. Code 620.450(a)(3).

The Board finds that under 35 Ill. Adm. Code 620.450(a)(3) any exceedances of Class I GQS during the period when MWG was performing corrective actions under the GMZs between August 8, 2013, and October 9, 2013, at Joliet 29; between October 3, 2013, and October 17, 2013, at Powerton; and between July 2, 2013, and October 17, 2013, at Will County and are exempt from the Board's Part 620 GQS in Section 620.410. The Board, thus, finds no violation of Sections 620.410, 620.420, 620.430, and 620.440 with respect to such exceedances. However, the Board finds that this record establishes serious questions regarding whether or not GMZs continue in effect at Joliet 29, Powerton, and Will County.

At Joliet 29, the GMZ application indicates the following remedy selected for the GMZ: "[t]he agreed upon remedy is specified in Item 5(a) through (h) of the executed [CCA]. . . The remedy includes lining of Ash Pond 3 with HDPE. This [GMZ] application fulfills requirements set forth under Item 5(f) of the CCA." EG Exh. 242 Att. 2, Part III ¶ 1.

At Powerton, the GMZ application specifies a similar remedy: "[t]he agreed upon remedy is specified in Item 5(a) through (m) of the executed [CCA]. . . The remedy includes lining of the Ash Surge Basin and Ash Settling Basin with HDPE. This [GMZ] application fulfills requirements set forth under Item 5(g) of the CCA." EG Exh. 254 Att. 2, Part III ¶ 1.

And the similar remedy is in the GMZ application for Will County: "[t]he agreed upon remedy is specified in Item 5(a) through (j) of the executed [CCA] . . . The remedy includes lining of the Ash Pond 2S with HDPE, removing Ash Ponds 1S and IN from service and installing a dewatering system within those ponds to keep liquid levels to within no more than one foot of the bottoms of those units. This [GMZ] application fulfills requirements set forth under Item 5(g) of the CCA." EG Exh. 276 Att. 2, Part III ¶ 1.

All three GMZ applications also note that "[at] the completion of the corrective process, a final report is to be filed which includes the confirmation statement included in Part IV." EG Exhs. 242, 254, and 276 at Att. 2, at 1 Note 1. The record does not indicate whether MWG submitted such forms. On October 9, 2013, however, MWG filed a certification with the IEPA stating that all Joliet 29 CCA measures were completed. Joint Stip. at 4; MWG Exh. 630. On October 17, 2013, MWG filed a similar certification with respect to the Powerton CCA and Will County CCA. Joint Stip. at 4; MWG Exhs. 637, 661. MWG's certifications indicate that all CCA actions were completed by the dates of the respective certifications. MWG Exhs. 630, 637, 661. The record shows no other corrective action taking place or planned by MWG under any of the three GMZs after these dates.

The record shows that groundwater monitoring and visual inspections of the active ash ponds required by the CCAs are to continue permanently at Joliet 29, Powerton, and Will County. The CCAs require that "MWG shall continue quarterly monitoring of . . .groundwater monitoring wells for constituents in 35 Ill. Adm. Code 620.410(a) . . .and report its findings to the [IEPA]." MWG Exhs. 626, 636, 656, and 647 all at 3. This requirement comes from the CCAs rather than as a condition to establish a GMZ. Moreover, the same requirement is also present in Waukegan CCA, where no GMZ was required. MWG Exh. 647 at 3-4 ¶ 5; *see also* MWG Exh. 649 at 1 ("[t]he CCA that IEPA approved for Waukegan, didn't include a corrective action (hence no GMZ)"). The CCAs at all four Stations indicate that these actions are intended to avoid and detect any further contamination, or monitor effectiveness of a corrective action, rather than remedy any contamination or remove the contamination source. CCAs at Powerton, Will County, and Waukegan also require MWG to establish ELUC. The Board acknowledges that both ELUC and continuous groundwater monitoring can be effective corrective action tools. However, the record fails to establish that the continuous monitoring, by MWG at the Stations is in fact a corrective action.

While neither the Board rules nor the Act define "corrective action," the "corrective action process" is defined as "those procedures and practices that may be imposed by a regulatory agency when a determination has been made that contamination of groundwater has taken place, and are necessary to address a potential or existing violation of the standards set forth in Subsection D." 35 Ill. Adm Code 620.110. In this case, all three GMZs were established to remedy the violations alleged in the VNs and bring the groundwater at the Stations into compliance with Class I GQS. EG Exh. 242 at 9 ¶ 10; EG Exh. 254 at 9 ¶ 10; EG Exh. 276 at 9 ¶ 10. Section 620.250(a) states that a GMZ may be established "if an owner or operator provides a written confirmation to the Agency that an adequate corrective action, equivalent to a corrective action process approved by the Agency is being undertaken in a *timely* and *appropriate* manner." EG Exh. 242 at 6; EG Exh. 254 at 6; EG Exh. 276 at 6; *see* 35 Ill. Adm. Code 620.250(a) (emphasis added). Thus, a corrective action process under a GMZ must be "necessary to address a potential or existing violation" of Part 620 standards and must be undertaken in a "timely and appropriate manner."

The continuous monitoring required by CCAs at Joliet 29, Powerton, and Will County does not show how that monitoring may be construed as "timely" or "appropriate" to remedy groundwater quality, or that it will "address a potential or existing violation" of the Class I GQS absent some other actions by MWG. There is no evidence in the record to expect that groundwater quality at Joliet 29, Powerton, and Will County will return to Class I standards naturally, considering the continuous exceedances at these stations that persist even after the relining of the ash ponds. There is also no indication under any of the GMZs that MWG will be taking any actions based on the results of the monitoring, or that it will trigger any actions by the Agency. The Board notes that all four CCAs have almost identical language in Item 5 requiring continuous monitoring of existing and newly installed wells. Items 5(a) though (c) are also almost identical in all the CCAs requiring operation of the ash ponds only as temporary disposal sites and in a manner that protects the liners integrity. MWG Exhs. 626, 636, 656 and 647 all at 3-4 ¶ 5. But, Waukegan's CCA does not require establishing a GMZ or relining the ash ponds. MWG Exh. 647 at 3-4 ¶ 5.

The Board also does not consider the ELUCs established by MWG at Powerton and Will County as part of a "corrective action". The Act and Board rules provide for ELUCs as "an institutional control in order to impose land use limitation or requirements related to environmental contamination so that persons conducting remediation can obtain a No Further Remediation determination." EG Exh. 253 at 3; MWG Exh. 659 at 3; 415 ILCS 5/58.17; 35 Ill. Adm. Code 742. An ELUC establishes limitations that are designed to protect "against exposure to contaminated groundwater," rather than to remedy the contamination. *Id*. Again, Waukegan's CCA did require establishing an ELUC, while it did not require a GMZ. MWG Exh. 647 at 3-4 ¶5.

A GMZ is established "for a period of time" necessary to "mitigate impairment caused by the release of contaminants" and the owner or operator must undertake "an adequate corrective action in a timely and appropriate manner." *See* 35 Ill. Adm. Code 620.250(a)(2), (b); 620.450(a)(3); *see* 35 Ill. Adm. Code 620.250(a). Section 620.250(c) provides that a GMZ "*expires* upon the Agency's receipt of appropriate documentation which confirms the completion of the action taken pursuant to subsection (a) and which confirms the attainment of applicable standards as set forth in Subpart D." 35 Ill. Adm. Code 620.250(c) (emphasis added). Appendix D of Part 620 contains the form entitled "Confirmation of an Adequate Corrective Action Pursuant to 35 Ill. Adm. Code 620.250(a)(2)," which confirms that remediation is completed. 35 Ill. Adm. Code 620.APPENDIX D.

Continuing the GMZ in the absence of pending corrective action appears to be contrary to the purpose of Part 620 and, in particular, Section 620.250(a). The Board promulgated GQS under Section 8 of the Illinois Groundwater Protection Act (IGPA) to protect groundwater from "those contaminants which have been found in the groundwaters of the State and which are known to cause, or are suspected of causing, cancer, birth defects, or any other adverse effect on human health according to nationally accepted guidelines." IGPA, 415 ILCS 55/8(a) (2016); Groundwater Quality Standards (35 Ill. Adm. Code 620), R89-14(B), slip op. at 3 (Nov. 7, 1991). "[R]educed health risks through decreased exposure to contaminants in groundwater" is the primary benefit of promulgated GQS. *Id*. at 23. IGPA declares that "it is the policy of the State of Illinois to restore, protect, and enhance the groundwaters of the State, as a natural and public resource." 415 ILCS 55/2(b) (2016). It is further the policy of the State "that the groundwater resources of the State be utilized for beneficial and legitimate purposes; that waste and degradation of the resources be prevented; and that the underground water resource be managed to allow for maximum benefit of the people of the State of Illinois." *Id*; *see also* R89-14(B) at 6. Class I groundwaters are recognized as the most valuable groundwater resources, requiring the highest degree of protection, "any successful program of groundwater management must give special focus to potable groundwater". *Id*. at 10. When adopting the GMZ regulations, the Board noted that "in any management zone the goal is remediation, if practicable, of the groundwater to the level of the standards applicable to that class of groundwater." *Id*. at 66.

In this case, the GMZs were established to remedy violations alleged in VNs. However, the groundwater monitoring results indicate that exceedance of Class I GQS persisted at some of the monitoring wells at Joliet 29, Powerton or Will County even upon completion of GMZ corrective actions. Since the record does not indicate when, if, or even how, exceedances found in groundwater monitoring will be addressed, the Board finds MWG did not meet its burden of proving that groundwater in Joliet 29, Powerton, and Will County are exempt from Class I GQS under section 620.450(a)(3). The Board therefore finds that continued violations of the Board's Class I GQS, occurring at Joliet 29, Powerton, and Will County after MWG certified completion of the requirements of the CCA, violate the Class I GQS. Thus, the Board finds that it is more probable than not that MWG violated the Class I GQS at Joliet 29, Powerton, and Will County during those times, in violation of Section 620.410(a) of the Board rules.

c) Violation of Sections 620.115, 620.301(a) and 620.405.

The Board further finds that MWG also violated Sections 620.115, 620.301(a) and 620.405 of the Board rules with respect to exceedances noted above. Section 620.115 prohibits causing, threatening or allowing a violation of the Act or Board regulations, including Part 620. 35 Ill. Adm. Code 620.115. Section 620.405 also prohibits causing, threatening or allowing the release of any contaminant to groundwater so as to cause an exceedance of the Part 620 groundwater quality standards. 35 Ill. Adm. Code 620.405. By exceeding GQS in Section 620.410(a), MWG also violated Sections 620.115 and 620.405.

The Board also finds that MWG violated Section 620.301(a) of the Board rules. 35 Ill. Adm. Code 620.301(a). Section 620.301(a)(2) prohibits causing, threatening or allowing the release of any contaminant to a resource groundwater such that "[a]n existing or potential use of such groundwater is precluded." 35 Ill. Adm. Code 620.301(a). As discussed above, groundwater at the four Stations is defined as Class I in VNs, CCAs, and GMZs. The Board rules define Class I groundwater as "potable resource groundwater." *See* 35 Ill. Adm. Code 620.210. Section 620.302(c) indicates that "if a contaminant exceeds a standard set forth in Section 620.410 . . . the appropriate remedy is corrective action . . .." 35 Ill. Adm. Code

620.302(c). Thus, if the groundwater designated as Class I is contaminated by constituents that exceed Class I GQS standards in Section 620.410(a), the existing and potential use of such groundwater as Class I groundwater is precluded. Therefore, the Board finds that the Environmental Groups established that it is more probable than not that the potential use of the groundwater is precluded, and MWG violated Section 620.301(a).

iii. Water pollution caused by exceedances of background levels

The Board also finds that exceedances of the statewide 90th percentile in some of the monitoring wells for some of the coal ash indicator constituents also constitute water pollution and violation of Article 12(a) of the Act.

As discussed in Part IV *supra*, the Board finds that the monitoring results show consistent exceedances of the sulfate background levels at the Joliet 29 monitoring well MW-09. At Powerton, the Board finds that groundwater monitoring results indicate exceedance of the 90th percentile statewide values for boron and sulfate in 10 downgradient wells. Sulfate and boron in all fifteen downgradient wells are above the median values of those constituents in the upgradient well. The Board finds that these exceedances of the statewide background and site-specific upgradient median appear to be consistent with the exceedances of groundwater standards of sulfate and boron in many of the downgradient wells. At Will County, the Board finds that a comparison of the median values of boron and sulfate in the down gradient wells with the 90th percentile statewide values indicate exceedances of boron above background in all 10 monitoring wells and sulfate in one well (MW-4). At Waukegan, the Board finds exceedances of the 90th percentile statewide values for boron and sulfate.

As noted earlier, sulfate and boron are typical indicators of coal ash. The record shows no off-site source that can be causing such exceedance because upgradient monitoring wells show no similar exceedances. Therefore, the likely source of the exceedance of 90th statewide percentile value for these constituents is coal ash stored in coal ash ponds or deposited outside the ponds.

The Board considers the 90th statewide percentile appropriate to consider water pollution violations because those levels are established to show exceedance of state-wide background levels that IEPA considers to "have potential to degrade water and threaten/preclude its use." EG Exh. 405 at 2 (#019068). The Board finds that exceedance of the 90th statewide percentile as adequate to show water pollution. *See* 415 ILCS 5/3.545 (2016); *see also e.g.*, People v. CSX, PCB 7-16, slip op. at 17 (July 12, 2007) (the Board found violation of Section 12(a) of the Act when discharge of contaminants is likely to render waters harmful, detrimental or injurious to public health in case of exceedance of the remediation objective levels); Central Illinois Public Service Co. v. PCB, 116 Ill. 2d 397, 408, 507 N.E.2d 819, 824 (1987) (the court concurred with Board's interpretation of water pollution to include "any contamination which prevents the State's water resources from being usable" because it allows "the Board to protect those resources from unnecessary diminishment").

The Board thus, finds that MWG violated Article 12(a), because it caused, threatened or allowed the discharge of contaminants into the groundwater at all four Stations, so as to cause or tend to cause water pollution in Illinois, either alone or in combination with matter from other sources. *See* 415 ILCS 5/12(a) (2016).

B. Section 12(d) of the Act, Water Pollution Hazard

The Environmental Groups' amended complaint also alleged violation of Section 12(d) of the Act, but the post-hearing briefs only fully brief Section 12(a). *See* EG Br. at 4, 5-10, 28, 37, 73; EG Resp. Br at 7, 8, 12, 13, 18, 22, 24-25, 33, 34.

Section 12(d) of the Act prohibits depositing any contaminants upon the land in such place and manner so as to create a water pollution hazard. 415 ILCS 5/12(d) (2016). Environmental Groups argue that even though a prior owner or operator of the MWG sites may have deposited the ash in the fill areas, MWG has allowed the ash to remain on the site, and is therefore liable under Sections 12(a) and 12(d) for its inaction to remedy the leaching of contamination into the groundwater. According to the Environmental Groups, MWG's "passive conduct amounts to acquiescence sufficient to find a violation." EG Resp. Br at 24 *citing* Rawe, AC92-5, slip op. at 6 (Oct. 16, 1992). Environmental Groups also rely on Tri-County Landfill Company v. PCB, 41 Ill. App. 3d, 353 N.E.2d 316 (2nd Dist. 1976) to argue that a party is required to show less to establish a 12(d) violation than a 12(a) violation and that a violation of 12(d) exists when "pollution does not yet rise to the level of severity for a 12(a) violation." EG Resp. Br at 22, citing Tri-County, 353 N.E.2d at 324.

The Board notes that, in order to establish a violation of Section 12(d), a party must demonstrate that contaminants were "deposited" on "land." 415 ILCS 5/12(d) (2016). Environmental Groups' reliance on Rawe is misplaced, because Rawe addresses an alleged violation of Section 21 of the Act which prohibits "causing or allowing" open dumping of waste. 415 ILCS 5/12(d) (2016).

At Powerton, the record shows that MWG did deposit contaminants on the land when leaving coal ash cinders directly on the ground, without liners or any other apparent protection from leaching. *See* Part IV.3.B.iii *supra*. The record establishes that storage of coal ash on unlined areas risks of groundwater contamination due to the movement of water through coal ash. EG Br. at 19; 10/24/17 Tr. at 39 (Lux Test.); 10/26/17 Tr. p.m. at 34-35, 83-84 (Kunkel test); 1/29/18 Tr. at 208 (Race Test.); 1/30/18 at 29 (Race Test.). The Powerton CCA specifically prohibits using any unlined areas for permanent or temporary ash storage or ash handling. MWG Exh. 636 at 4 (#555) Item 5(m). The groundwater monitoring results show exceedances of arsenic, sulfate, boron, and TDS standards in the downgradient monitoring wells when the cinders were stored on the ground.

The Board thus concludes that the preponderance of evidence shows that MWG deposited contaminants upon the land at Powerton in such place and manner so as to create a water pollution hazard in violation of Section 12(d) of the Act. 415 ILCS 5/12(d) (2016). The Board, however, finds that Environmental Groups did not establish violation of Section 12(d) of the Act at Joliet 29, Will County, or Waukegan Stations.

C. Section 21(a) of the Act, Open Dumping

Environmental Groups allege that MWG violated the open dumping prohibition of Section 21(a) of the Act (415 ILCS 5/21(a) (2016)). They allege that MWG did so through its "knowledge of and acquiescence to" coal ash deposited "at unlined repositories like ash landfills and ash fill areas" and "maintaining coal" at the disposal sites that do not fulfill the requirements of sanitary landfills. The Environmental Groups specifically contend that coal ash in the Former Ash Basin and widespread fill areas at Powerton, the coal ash landfills at Joliet 29, the Former Slag and Fly Ash Storage Area at Waukegan and Ponds 1N and 1S at Will County are "landfills, basins, or storage areas." They further contend that there is no evidence that the coal ash was placed there as structural fill." EG Resp. Br. at 31. They allege that water pollution resulted from these deposits. EG Br. at 5, 29, 51. The Environmental Groups maintain that MWG is liable even if they did not place the contaminants on the land or water. To support their argument, the Environmental Groups rely on Lincoln, 2016 IL App 143487 at ¶¶ 48-49; State Oil, PCB 97-103, slip op at 19; Rawe, AC 92-5slip op at 3-5 (Oct. 16, 1992); Coleman, AC 04-46, slip op. at 7 (Nov. 4, 2004). EG Br. at 51. They also contend that the Board must look at the exceedance of MCLs at 40 C.F.R. Part 257, Appendix I, to show violation of Section 21(a). EG Br. at 51. Environmental Groups state that since 2010, groundwater exceeded MCLs 62 times at Powerton, 25 times at Will County, and 106 times at Waukegan. EG Br. at 51, 62, 72.

MWG contends that the Environmental Groups did not prove a violation of Section 21(a). MWG alleges that coal ash at the stations is not abandoned and is reused beneficially. MWG Br. at 54-57; MWG Resp. Br at 30. MWG relies on IEPA v. Michael Gruen and Jon Eric Gruen, d/b/a John's Tree Service, AC 06-49, (Jan. 24, 2008). In that case the Board found that the wood stored on a property for more than two years was not "discarded" and, thus, not waste, because it was eventually removed for beneficial reuse. MWG Resp. Br. at 31. MWG alleges that there is market for the coal ash reuse, and MWG reuses bottom ash beneficially such as structural fill. MWG Resp. Br. at 31. MWG also contends that it did not "allow" open dumping because it took extensive precautions to prevent open dumping and "has not been passive in its response to the coal ash at its Stations." MWG states that it analyzed coal ash inside the ponds, which shows that ash is not a source of contamination. *Id*. It also relined the ponds and established GMZs and ELUCs. *Id*.; MWG Resp. Br. at 56-57.

First, the Board considers whether coal ash at the four Stations is "waste" as defined by the Act and Board rules. Next, the Board reviews at the evidence showing whether areas where coal ash is abandoned fulfill requirements of sanitary landfills. Finally, the Board concludes that MWG caused or allowed open dumping of the coal ash at its Stations.

i. Coal Ash at the Stations is "Waste"

The Act defines "open dumping" as "the consolidation of *refuse* from one or more sources at a disposal site that does not fulfill the requirements of a sanitary landfill." 415 ILCS 5/3.305 (2016). The Act defines "refuse" as "waste." 415 ILCS 5/3.385 (2016). "Waste" is defined, among other, as "*discarded material*, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining and agricultural operations . . .." 415 ILCS 5/3.535 (2016) (emphasis added). While the Act does not define "discarded material" or "discarded," the Act defines "disposal" as "discharge, deposit, injection, dumping, spilling, leaking or placing of any waste or hazardous waste into or on any land or water or into any well so that such waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters." 415 ILCS 5/3.185 (2016). The Act defines "waste disposal site" as a "site on which solid waste is disposed." 415 ILCS 5/3.540 (2016). The Board has found contaminants leaking into groundwater from temporarily stored material to be "discarded material" for the purposes of Section 21(a) of the Act. *See* State Oil, PCB 97-103, slip op. at 21 (Mar. 20, 2003) ("once petroleum has leaked from underground storage tanks, it becomes a waste.").

Although MWG argues that coal ash stored at the Stations is not "waste" because it is beneficially reused, the record does not support this position. While MWG may send some coal ash to be used beneficially by third parties (1/29/18 Tr. at 172:1-178:15; 1/31/18 Tr. at 224:21-225:4, 249:23-250:6; 10/24/17 Tr. at 15:4-8, 248:9-249:8), significant amounts remain in historic areas. The record also shows the presence of coal ash in areas outside of ash ponds at all four Stations.

"[A]ny fly ash, bottom ash, slag, or flue gas or fluid bed boiler desulfurization by-products generated as a result of the combustion of . . . coal, or . . . coal in combination with [other material]" constitutes "coal combustion *waste*" (or CCW). 415 ILCS 5/3.140 (2016) (emphasis added). Coal combustion waste is not excluded from definition of "waste" under the Act. *See* 415 ILCS 5/3.535 (2016). "Waste" does not include "coal combustion by-products as defined in Section 3.135." 415 ILCS 5/3.535 (2016). "Coal combustion by-product" or (CCB) is defined as "coal combustion waste when used beneficially in any of the following ways: . . ." 415 ILCS 5/3.135 (2016). Coal combustion waste, including coal ash, meets the definition of CCB, and is excluded from definition of "waste" if it is used as specified in Section 3.135. 415 ILCS 5/3.135 (2016).

Strict requirements apply to uses permitted under Section 3.135(a). To be used beneficially as structural fill, foundation backfill, antiskid material, soil stabilization, pavement, or mine subsidence, CCW must satisfy certain quality requirements:

a) it must not be mixed with hazardous materials (415 ILCS 5/3.135(a-5)(A) (2016));
b) it must not exceed Class I GQS for metals when tested using ASTM D3987-85 method (415 ILCS 5/3.135(a-5)(B) (2016));
c) a notification must be provided to IEPA for each project using CCB "documenting the quantity of CCB utilized and certification of compliance with conditions (A) and (B) of [subsection 3.135(a-5)]" (415 ILCS 5/3.135(a-5)(C) (2016));
d) CCB must not be accumulated speculatively (less than 75% of CCB weight or volume accumulated at the beginning of the period) (415 ILCS 5/3.135(a-5)(E) (2016));
e) CCB must include any prescribed mixture of fly ash, bottom ash, boiler slag, flue gas desulfurization scrubber sludge, fluidized bed combustion ash, and stoker boiler ash and shall be tested as intended for use (415 ILCS 5/3.135(a-5)(F) (2016)).

To be used as structural fill, CCB must be designed and constructed "according to ASTM standard E2277-03" or "Illinois Department of Transportation specifications." It also must be "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." 415 ILCS 5/3.135(a)(7) (2016).

Other uses do not qualify CCW as CCB, unless an applicant obtains a "beneficial use determination." To obtain a determination from IEPA, an applicant must demonstrate that coal-combustion waste satisfies all the following criteria:

- the use will not cause, threaten, or allow the discharge of any contaminant into the environment;
- the use will otherwise protect human health and safety and the environment; and
- the use constitutes a legitimate use of the coal-combustion waste as an ingredient or raw material that is an effective substitute for an analogous ingredient or raw material. 415 ILCS 5/3.135(b) (2016).

The record does not show that coal ash from the Stations met these requirements. First, the record shows that out of all identified historical areas and active ash ponds, coal ash was tested for compliance with CCB requirements under Section 3.135 only from three locations: 1) Northwest Area at Joliet 29; 2) Limestone Runoff Basin at Powerton; and 3) the area right outside the east side of 1N at Will County. *See* Part IV *supra* for details; EG Exh. 293; MWG Exh. 635; EG Exh. 284; MWG Exh. 901 at 9. The record provides no information on any CCB testing at Waukegan Station.

Second, MWG did not provide evidence showing that any of this material was used in compliance with the requirements of Section 3.135 of the Act. No evidence was provided to demonstrate that coal ash present in fill areas complies with IDOT specifications or ASTM standard E2277-03. Also, the record does not indicate whether or what material was removed from the Stations, sold or otherwise transferred to other entities for beneficial reuse. The existence of a market for a material that qualifies as CCB by itself does not qualify the material as CCB. To qualify as CCB, the material must comply with Section 3.135.

Accordingly, the Board concludes that a preponderance of evidence does not support MWG argument that coal ash from the Stations qualifies as CCB. The Board is not persuaded that coal ash from any of the historic coal ash storage locations or fill areas is "not discarded." MWG admits that "coal ash at various parts of the Stations was used at least 30 years ago or more as fill to support construction." MWG Resp. Br. at 55. The record also shows the widespread presence of coal ash outside of the ash ponds through the stations. Such as the widespread presence of coal ash in fill areas at Powerton and Will County, and coal ash left in historic storage areas at all four Stations. The evidence shows no plans to remove such coal ash from these areas for beneficial reuse or for any other purposes. The Board finds, thus, that coal ash at all four Stations left in areas outside of the ash ponds is "discarded" and constitutes "waste" for the purposes of Section 21(a) of the Act.

ii. <u>Coal ash stored in areas that are not sanitary landfills</u>

To establish an "open dumping," the evidence must show the presence of waste "at a disposal site that does not fulfill the requirements of a sanitary landfill." 415 ILCS 5/3.305 (2016). The Act defines "waste disposal site" as a "site on which solid waste is disposed" (415 ILCS 5/3.540 (2016) and "site" include "any location . . . used for purposes subject to regulation or control" by the Act or regulations under the Act (415 ILCS 5/3.460 (2016)). The Act defines "sanitary landfill" as "a facility permitted by the Agency for the disposal of waste on land" that meets specific requirements does not "create nuisances or hazards to public health or safety" and confining the refuse "to the smallest practical volume and covering it with a layer of earth at the conclusion of each day's operation, or by such other methods and intervals as the Board may provide by regulation." 415 ILCS 5/3.445 (2016).

The Board has concluded that "under these definitions, an area on which waste is deposited can be a "disposal site" if the waste deposition is conducted in a manner that allows waste material to enter the environment, including groundwater" even if it is a permitted or otherwise lawful facility. Sierra Club, PCB 13-15, slip op. at 25-27 (Oct. 3, 2013). The Board found that Section 21(a) may apply to ash ponds because it applies "to permitted or otherwise lawful facilities that improperly fail to contain waste." *Id*.

As indicated in Part IV, the instant record shows that historic ash landfills at all four Stations contain ash, as evidenced by testing for CCB compliance, boring results, MWG admissions and testimony, and groundwater monitoring results. At Joliet 29, MWG admitted that all three historic coal ash sites (Northwest, Northeast, and Southeast areas) contain historic ash; additionally, the 1998 Phase II Environmental Assessment and 2005 testing for CCB confirmed the existence of the historic ash. MWG Br. at 11; MWG Exh. 901 at 23; EG Exh. 20D; EG Exh. 293. Soil borings also identified the presence of coal ash in fill areas outside of the ash ponds (near MW-11, MW-09, and MW-10) and historic ash areas (north of the Southwest Ash Placement Area). EG Exh. 201 at 27, 29, 31, 34 (#24290, 92, 94, 97).

The Board finds that evidence from groundwater monitoring shows that some of MWG ash ponds and historic coal ash storage areas are leaking contaminants that cause exceedances of Class I GQS. At Joliet 29, the record shows Ash Pond 3 or coal ash deposited outside of but close to that ash pond is the cause of consistent exceedances of Class I GQS in MW-09. At Waukegan, the evidence shows that the source of sulfate and of TDS exceedances is the Former Slag and Fly Ash Storage area located west of the ash ponds. At Will County and Powerton, the groundwater monitoring results show that consistent exceedances of Class I GQS are also caused by MWG operations at the Stations and are not coming from outside.

The record also shows soil borings taken in 1998, 2005, and 2010 by different consultants for different purposes. All of these borings indicate the presence of coal ash in the fill buried directly into the ground around the ponds and other unlined areas at all for Stations, going as deep as 9-20 feet below the surface at Powerton, Will County, and Waukegan. EG Exhs. 12C-15C and 17D-20D; EG Exh. 201.

And finally, the results of the CCB testing at Joliet 29, Powerton, and Will County indicate the presence of the historic coal ash in the tested areas. EG Exh. 284, 293, and 635; MWG Exh. 901 at 9. The testing showed some of these areas contain coal combustion waste that does not meet the quality criteria of CCB because it contains coal ash constituents in concentrations above Class I GQS. *Id*.; *see* Part IV for details.

None of these areas fulfill the requirements of a sanitary landfill. None of them are facilities "permitted by the Agency for the disposal of waste on land." None of the ash ponds at the four Station are permitted "for the disposal of waste". The four CCAs specifically prohibit using any of the ash ponds as permanent disposal sites. MWG Exhs. 626 at 2 ¶ 3; 636 at 2 ¶ 3; 656 at 2 ¶ 3; 647 at 2 ¶ 3. None of the fill areas of the historic coal ash storage areas has any permits at all. None of them "confine the refuse" to ensure that no nuisances or hazards to public health or safety exists because, other than ash ponds, none of the other areas separate the coal ash from the ground or surface water infiltration and leaking into the groundwater. Other than the historical Northeast former coal ash placement area, record indicates no cover been placed over the area, either. The Board, thus, concludes, that the areas that contain coal ash at the four Stations do not fulfill requirements of sanitary landfill. 415 ILCS 5/3.445 (2016).

Next, the Board discusses whether MWG caused or allowed consolidation of coal ash in violation of Section 21(a) of the Act.

iii. MWG caused or allowed consolidation of coal ash at its Stations

To "cause or allow" open dumping, the alleged polluter must have the "capability of control over the pollution" or "control of the premises where the pollution occurred. Davinroy, 249 Ill. App. 3d at 793-96, *see also* Sierra Club, PCB 13-15, slip op. at 26 (Oct. 3, 2013). The record indicates that MWG, as the owner or operator at the four Stations had control over the areas that contain coal ash since 1999, when it began operating the Stations. Rawe, AC92-5, slip op. at 4 (Oct. 16, 1992); McFalls, 313 Ill. App. 3d at 226-27, Inverse Investments, PCB 11-79 at 9; Michel Grain, PCB 96-143, at 3-4, (Aug. 22, 2002); Meadowlark Farms, 17 Ill. App. 3d at 860, Lincoln, 70 N.E.3d at 678, State Oil, PCB 97-103, slip op at 24-25; Allaert Rendering, 414 N.E.2d at 494-95 .

MWG was aware of presence of coal ash buried at the four stations before it began operations. The 2005 and 2010 borings confirmed the presence of coal ash. Groundwater monitoring results showed the locations where contaminants were seeping into the groundwater at each of the Stations. MWG also recognizes that contaminants present in the groundwater monitoring results are known constituents of coal ash. The groundwater monitoring results do not indicate off-site sources as the cause of contamination with respect for constituents indicated in Part IV (Facts) of this opinion. Thus, the Board concludes that the record does not support MWG "took extensive precautions to prevent open dumping" and "has not been passive in its response to the coal ash at its Stations." Davinroy, 249 Ill. App. 3d 788; Perkinson, 187 Ill. App. 3d 689; People v. William Charles, PCB 10-108, slip op. at 25-27 (Mar.17, 2011); Gonzales, AC 06-39, AC 06-40, AC 04-41, AC0 7-25; County of Jackson v. Taylor, AC 89-258, (Jan. 10, 1991); Phillips Petro. Co. v. PCB, 72 Ill. App. 3d 217 (2nd Dis. 1979); IEPA v. Coleman, AC04-46, at 7 (Nov. 4, 2004).

The Board concluded that respondents "allowed" the waste to be consolidated on the site when they failed to conduct any soil removal. *See* State Oil, PCB 97-103, slip op. at 21-22 (Mar. 20, 2003). The record in this case shows the presence of coal ash in the fill areas and historic storage sites that have no liners, covers or any other protection from the surface of groundwaters. The record shows no actions by MWG to remove the coal ash from those areas or prevent leaking of contaminants from those areas in any other way. Thus, the Board finds that MWG did allow consolidation of coal ash by failing to remove it from the fill areas and historical coal ash storage areas, and by allowing contaminants to leak into the environment.

Accordingly, the Board finds that MWG violated Section 21(a) of the Act by allowing the coal ash to be consolidated in the fill areas around ash ponds and in historical coal ash storage areas at all four Stations.

VI. CONCLUSIONS

The Board finds that the Environmental Groups met their burden in establishing that it is more probable than not that MWG violated the Act and Board regulations as alleged in the amended complaint. Specifically, the Board finds that MWG violated Section 12(a) of the Act at all four Stations. 415 ILCS 5/12(a) (2016). The Board finds that MWG caused or allowed discharge of coal ash constituents into groundwater at all four Stations, thereby causing exceedances of the Board's Class I antimony (Joliet 29, Will County), arsenic (Powerton, Will County), boron (Powerton, Will County, and Waukegan), sulfate (Joliet 29, Powerton, Will County, and Waukegan) and TDS (Joliet 29, Powerton, Will County, and Waukegan) GQS during 2010-2017, violating Sections 620.115, 620.301(a), and 620.405 of the Board's regulations (35 Ill. Adm. Code 620.115, 620.301(a), 620.405). 415 ILCS 5/12(a) (2016).).

The Board also finds that MWG violated Section 12(a) of the Act at all four Stations by causing or allowing discharge of contaminants into groundwater causing water pollution. Specifically, the Board finds that MWG exceeded the statewide 90th percentile levels for sulfate and boron at all four Stations between 2010 and 2017. 415 ILCS 5/12(a)(2016). The Board, however, finds no violation of Section 12(a) of the Act at Joliet 29, Powerton, and Will County during the performance of corrective actions in October 2013 under the GMZs established at those three Stations.

The Board finds that MWG also violated Section 12(d) of the Act at Powerton Station by depositing coal ash cinders directly upon the land, thereby creating a water pollution hazard. 415 ILCS 5/12(d) (2016). The Board, however, finds that Environmental Groups did not establish violations of Section 12(d) of the Act at Joliet 29, Will County, or Waukegan Stations.

Lastly, the Board finds that MWG violated Section 21(a) of the Act at all four Stations by allowing coal ash to consolidate in the fill areas around the ash ponds and in historical coal ash storage areas. The Board finds that MWG did not take measures to remove it or prevent its leaking of contaminants into the groundwaters.

The Board finds the record is insufficient to determine the appropriate relief in this proceeding. Therefore, the Board directs the hearing officer to hold additional hearings to determine the appropriate relief.

ORDER

1. The Board finds that respondent Midwest Generation, LLC (MWG) violated Section 12(a) of the Environmental Protection Act (Act) (415 ILCS 5/12(a) (2016)).

2. The Board finds that MWG violated Section 12(d) of the Act (415 ILCS 5/12(d) (2016)).

3. The Board finds that MWG violated Section 21(a) of the Act (415 ILC21(a) (2016)).

4. The Board finds that MWG violated Sections 620.115, 620.301(a), and 620.405 of the Board regulations (35 Ill. Adm. Code 620.115, 620.301(a), 620.405).

5. The Board finds the record lacks sufficient information to determine the appropriate remedy. Therefore, the Board directs the hearing officer to hold additional hearings to determine the appropriate relief and any remedy, considering Sections 33(c) and 42(h) of the Act (415 ILCS 5/33(c) and 42 (h) (2016)).

IT IS SO ORDERED.

Board Member Brenda Carter abstained.

I, Don A. Brown, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above order on June 20, 2019, by a vote of 4-0.

Don A. Brown

Don A. Brown Clerk
Illinois Pollution Control Board

Exhibit C

W1997810 0011
cat: 06I

HYDROGEOLOGIC ASSESSMENT REPORT
WILL COUNTY GENERATING STATION
ROMEOVILLE, ILLINOIS

SUBMITTED BY:
MIDWEST GENERATION, LLC
235 REMINGTON BLVD, SUITE A
BOLINGBROOK, ILLINOIS 60440

SUBMITTED TO:
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 N GRAND AVENUE EAST
SPRINGFIELD, ILLINOIS 62702

PREPARED BY:
PATRICK ENGINEERING INC.
4970 VARSITY DRIVE
LISLE, ILLINOIS 60532

PATRICK PROJECT NO. 21053.070

FEBRUARY 2011

PATRICK
ENGINEERING

MIDWEST GENERATION EME, LLC
An EDISON INTERNATIONAL® Company

Maria Race
Environmental Program
Director

February 28, 2011

Mr. Bill Buscher
Illinois Environmental Protection Agency
Water Pollution Control
1021 North Grand Avenue East
Springfield, IL 62702

Federal Express

Subject: Hydrogeological Assessment Reports
Joliet 29 Generating Station, Crawford Generating Station, Will County Generating Station, Waukegan Generating Station, Powerton Generating Station

Dear Mr. Buscher:

Enclosed you will find the Hydrogeological Assessment Reports for the above-mentioned generating stations.

Should you have any questions or require additional information, please contact me at 630-771-7862.

Sincerely,

Maria Race

Enclosure

cc: Richard Frendt, Patrick Engineering

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235 Remington Blvd.
Suite A
Bolingbrook, Il 60440
Tel: 630 771 7862
Fax: 312 788 5526
mrace@mwgen.com

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PATRICK
ENGINEERING

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MIDWEST GENERATION
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1.0 INTRODUCTION

1.1 Background

Pursuant to the request of the Illinois Environmental Protection Agency (Illinois EPA), this document presents the Hydrogeologic Assessment Report for the on-site ash pond areas at the Midwest Generation, LLC (MWG) Will County in Romeoville, Illinois. This hydrogeologic assessment was performed in accordance with the Hydrogeologic Assessment Plan, approved by the Illinois EPA, dated September 3, 2010.

As defined by the Hydrogeologic Assessment Plan, the purpose of this investigation was to: (i) evaluate the potential, if any, for migration of ash-related constituents from the on-site ash ponds and to conduct monitoring for groundwater constituents regulated by the Illinois Part 620 groundwater standards, as requested by the Illinois EPA; (ii) characterize the subsurface hydrogeology; and (iii) identify potable well use within 2,500 feet of the ash ponds. The results of this investigation are described in this Hydrogeologic Assessment Report.

1.2 Site Location and Description

The Will County facility (the Site) is located in Section 2, Township 36 North, Range 10 East, in the City of Romeoville, Will County, Illinois. Figure 1 provides a Site Location Map.

The Site includes four active ash ponds. The ponds are lined with 36" of geo-composite material; the total area of the four ash ponds is approximately 8 acres. Figure 2 shows the locations of the four ash ponds.

1.3 Regional Setting

The Site is located between the Chicago Sanitary and Ship Canal and the Des Plaines River east of the city of Romeoville. The surrounding land use consists of undeveloped land to the north, the Chicago Sanitary and Ship Canal to the east, a quarry to the south, and the Des Plaines River to the west.

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Patrick Engineering Inc. (Patrick) conducted a review of publically available geological information from the Illinois State Geological Survey website. Based upon water well logs from the area, the geology beneath the Site consists of approximately 1 to 5 feet of unconsolidated deposits or fill, underlain by Silurian Dolomite to approximately 140 feet below ground surface, underlain by the Maquoketa shale. The Maquoketa shale is generally considered to be an aquitard that separates the shallow groundwater in the unconsolidated units and the Silurian dolomite from the underlying aquifers.

Groundwater flow in the shallow aquifer should be largely controlled by the Des Plaines River and the Chicago Sanitary and Ship Canal with groundwater likely flowing towards either of the rivers during most periods of the year. Groundwater flow in the deeper aquifers is controlled by the regional hydraulic gradient in these aquifers, which is to the southeast. The Site lies within the Joliet Depression, which is a cone of depression of the groundwater surface caused by the large withdrawals of the groundwater from the deeper aquifers due to industrial and municipal use in the area.

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2.0 HYDROGEOLOGIC ASSESSMENT METHODOLOGY

The following sections present the methodologies used to evaluate the potential for migration of ash-related constituents from the ash ponds and to monitor for all Part 620-regulated constituents, to characterize the subsurface hydrogeology, and to identify potable well use within 2,500 feet of the Site.

2.1 Evaluation of Ash-Related Constituents Migration Potential

The Illinois EPA requested that an evaluation of the potential for migration of ash-related constituents from the ash ponds and that monitoring for all Part 620-regulated constituents be performed in accordance with the groundwater standards included in 35 Illinois Administrative Code (IAC) Part 620, Subparts C and D. Accordingly, groundwater monitoring wells were installed at the Site in locations both upgradient and downgradient of the four ash ponds.

2.1.1 Installation of Groundwater Monitoring Wells

Patrick installed ten (10) groundwater monitoring wells spaced approximately 150 to 300 feet apart around the perimeter of the ash ponds. The well locations were selected so that both upgradient and downgradient wells were represented, based upon available data regarding the expected groundwater flow direction. The spacing of the well locations at the Site along the downgradient edge of the ash ponds was calculated so as to detect a groundwater plume emanating from a point source beneath the ash ponds. Figure 3 shows the location of the ten monitoring wells.

The well borings were advanced using hollow-stem augers to depths ranging from 10 to 20 feet below ground surface (bgs). Borings were terminated after the field geologist determined that the boring was installed approximately 10 feet past the first intersection of the groundwater table in order to ensure that a representative groundwater sample could be obtained. Upon termination of each boring, a 2-inch diameter, PVC well was installed in order to collect samples of the groundwater in the uppermost aquifer. The monitoring wells were completed to approximately 3 feet above grade, with PVC casing, and were covered with a stick-up, steel well protector with a locking cap. Soil lithology was inspected and logged by an experienced geologist during the boring process. Boring logs with well construction information are included as Appendix A.

2.1.2 Initial Groundwater Sampling and Analytical Testing

The groundwater sampling event for the Site took place on December 13, 2010. The groundwater elevation in each of the ten wells was measured prior to sampling. Groundwater samples were collected from each well with a peristaltic pump, using established low-flow sampling techniques. Temperature, pH, and conductivity measurements were taken using a portable meter in all wells; refer to Table 1 for these field parameter results. All groundwater samples were filtered in the field using a disposable, 0.45μm, in-line filter to allow for the analytical testing of dissolved compounds. The samples were immediately placed on ice in a cooler and kept at a temperature of no higher than 4° F. The samples were transported to TestAmerica, an Illinois-EPA accredited analytical laboratory, in accordance with chain-of-custody procedures to maintain the integrity of the samples.

The analytical laboratory tested groundwater samples from each of the wells for the compounds listed in Table 2. Analytes tested include the inorganic compounds listed in 35 IAC 620.410(a), excluding both radium and the poly-aromatic hydrocarbons (PAHs) listed in 35 IAC 620.410(b).

2.2 Characterization of Subsurface Hydrogeology

The subsurface hydrogeology beneath the ash ponds was characterized by determining Site lithology and the groundwater flow patterns in the vicinity of the ash ponds as described below.

2.2.1 Site Lithology

The Site lithology was determined by logging soil samples collected from the soil borings created during the installation of the groundwater monitoring wells. The soil borings were installed under the direction of an experienced geologist. Each boring was sampled at 2-foot intervals using a 2-inch O.D. split-spoon sampler (ASTM D 1586). Each soil sample was inspected and logged by the geologist during the boring process. Boring logs with well construction information are provided as Appendix A.

2.2.2 Topographic and Water Elevation Surveys

A survey crew measured both the top-of-casing and ground surface elevations of all installed monitoring wells and the groundwater elevations within each of the monitoring wells on December 13, 2010. The survey crew concurrently measured the water elevation in each of the ash ponds, the Chicago Sanitary and Ship Canal, and the Des Plaines River; Ash Pond 2 was inaccessible the day of the survey.

2.2.3 Hydraulic Testing of Selected Wells

Patrick conducted five *in situ* hydraulic conductivity tests on wells MW-1, MW-4, MW-6, MW-7, and MW-9 on December 22, 2010. The testing consisted of one rising-head and one falling-head slug test performed at each well. Using a data-logging pressure transducer, Patrick measured the rate of groundwater level recovery in the wells after either inserting a slug into, or removing a slug from, each monitoring well.

2.3 Identification of Potable Well Use

Natural Resource Technology, Inc. (NRT) has previously completed an investigation of potable water well use within 2,500 feet of the Will County ash ponds. MWG submitted the results of this investigation to the Illinois EPA by letter dated July 15, 2009. These results are summarized in Appendix B.

The following databases and sources of information were used in order to identify local community water sources and water well locations in the vicinity of the Site:

- Illinois State Geological Survey (ISGS) -Water Well Database Query;

- Illinois State Water Survey (ISWS) Private Well Database and water well construction report request; and
- Illinois Division of Public Water Supply web-based Geographic System (GIS) files.

3.0 HYDROGEOLOGIC ASSESSMENT RESULTS

3.1 Evaluation of Ash-Related Constituents Migration Potential

The analytical laboratory results for the hydrogeologic assessment are presented in Table 2. Full laboratory data packages from TestAmerica are provided as Appendix C. Manganese, boron, sulfate, and total dissolved solids (TDS) were detected in one or more monitoring wells at concentrations exceeding the Part 620 Class I Groundwater Quality Standards. In some cases, the highest concentrations of a given compound were found in the upgradient wells. Antimony, beryllium, cadmium, chromium, copper, cyanide, lead, mercury, silver, thallium, zinc, and nitrogen/nitrite were not detected in any of the groundwater samples.

A determination of the potential for the individual ash ponds to be contributing to the distribution of analytes in the underlying groundwater and the extent, if any, of such contribution cannot be made from the results of this single sampling event alone. To develop a true, statistically-significant upgradient background concentration for the various compounds will require a number of sequential sampling events over time. Based on a statistically developed background value, downgradient concentrations can be compared to the background value over time to determine the likelihood and extent of any constituent migration from the on-site ash ponds. A plan to develop such an analytical database through additional sampling is presented in the last section of this report.

3.2 Characterization of Subsurface Hydrogeology

The lithology of the Site is predominantly fine sand with fine to coarse gravel underlain by limestone bedrock at approximately 10 to 15 feet below ground surface. Refer to Figure 4 for a geologic cross-section of the Site.

The results of the topographic and water elevation surveys are presented in Table 3.

The uppermost groundwater unit at the Site is found at depths ranging from 8 to 11 feet bgs. The direction of groundwater flow appears to be variable; in the northern part of the ash pond area, groundwater appears to flow to the southeast, in the southern part of the ash pond area, groundwater appears to flow to the southwest. Patrick was unable to calculate a hydraulic gradient for the Site, due to the apparent complexity of the shallow flow system. The variability in the groundwater elevation data could be due to the fractured nature of the bedrock surface. The collected groundwater elevation data do not allow for a clear understanding of the potentiometric surface in the uppermost aquifer, therefore a groundwater elevation map is provided as Figure 5.

Patrick used the hydraulic testing data to calculate the hydraulic conductivity of the uppermost aquifer using the Bouwer and Rice method. Hydraulic conductivity calculations are provided in Appendix D. The hydraulic conductivity of Site soils ranged from 6.38×10^{-5} to 2.07×10^{-4} ft/second. The average hydraulic conductivity was 4.32×10^{-4} ft/second. Patrick was unable to calculate the groundwater velocity because a reliable hydraulic gradient could not be calculated (see previous paragraph).

3.3 Identification of Potable Well Use

As stated above, NRT has previously completed an investigation of potable water well use within 2,500 feet of the Site's ash ponds. MWG submitted the results of this investigation to the Illinois EPA by letter dated July 15, 2009. According to this letter, the only identified potable wells, with associated structures, are located between the Des Plaines River and the Chicago Sanitary and Ship Canal. These wells are more than 1,500 feet deep (see wells 8 and 9 in Appendix B.). Both of these wells are drilled more than 1,500 feet below ground surface and are screened below the Maquoketa shale, a significant aquitard separating shallower aquifers from the screened interval of the wells.

4.0 LONG-TERM MONITORING PLAN

In order to properly assess the groundwater monitoring data collected in this single sampling event, MWG will conduct a quarterly groundwater sampling program in which the same monitoring wells described in this report will be sampled for the identical analyte list employed during this investigation. MWG proposes to begin this quarterly monitoring program in March 2011, and will submit the results of the sampling program to the Illinois EPA on an ongoing, quarterly basis. MWG proposes to continue this program until sufficient statistically-significant data is available to properly assess the groundwater data. If the quarterly sampling results continue to show non-detect results for certain of the analytes, as was the case in this single sampling event, MWG may propose to Illinois EPA that these analytes be eliminated from future sampling events.

TABLES

Table 1
GROUNDWATER FIELD PARAMETER DATA
Will County Station, Romeoville, Illinois
Midwest Generation
21053.070
Feb. 28, 2011

Groundwater Field Paramter Data - Will County Station

Monitoring Well	Date	Time	Conductance (S/cm)	Temperature °C	pH
MW-01	12/13/2010	13:48	1.76	16.41	7.74
MW-01	12/13/2010	13:50	1.73	16.36	7.91
MW-01	12/13/2010	13:52	1.73	16.35	7.90
MW-01	12/13/2010	13:54	1.71	16.30	7.89
MW-01	12/13/2010	13:56	1.70	16.12	7.87
MW-01	12/13/2010	13:58	1.70	16.28	7.89
MW-02	12/13/2010	12:57	1.40	16.16	8.43
MW-02	12/13/2010	12:59	1.37	16.19	8.65
MW-02	12/13/2010	13:01	1.38	16.22	8.66
MW-02	12/13/2010	13:03	1.36	16.29	8.68
MW-02	12/13/2010	13:05	1.36	16.34	8.61
MW-02	12/13/2010	13:07	1.37	16.22	8.61
MW-02	12/13/2010	13:09	1.37	16.29	8.62
MW-03	12/13/2010	12:15	1.54	12.95	7.31
MW-03	12/13/2010	12:17	1.53	12.83	7.28
MW-03	12/13/2010	12:19	1.53	12.77	7.26
MW-03	12/13/2010	12:21	1.52	12.90	7.23
MW-03	12/13/2010	12:23	1.52	12.89	7.21
MW-03	12/13/2010	12:25	1.52	12.84	7.21
MW-04	12/13/2010	11:47	3.46	14.37	7.41
MW-04	12/13/2010	11:49	3.46	14.46	7.39
MW-04	12/13/2010	11:51	3.48	14.39	7.39
MW-04	12/13/2010	11:53	3.49	14.39	7.38
MW-04	12/13/2010	11:55	3.51	14.22	7.37
MW-05	12/13/2010	11:13	1.67	0.52	9.81
MW-05	12/13/2010	11:15	1.67	12.66	9.72
MW-05	12/13/2010	11:17	1.66	12.61	9.68
MW-05	12/13/2010	11:19	1.67	12.66	9.62
MW-05	12/13/2010	11:21	1.66	12.81	9.58
MW-05	12/13/2010	11:23	1.67	12.76	9.57
MW-05	12/13/2010	11:25	1.66	12.79	9.58
MW-06	12/31/2010	9:30	1.58	14.66	8.88
MW-06	12/13/2010	9:32	1.61	14.64	8.86
MW-06	12/13/2010	9:34	1.61	14.65	8.89
MW-06	12/13/2010	9:36	1.65	14.65	8.88

Table 1
GROUNDWATER FIELD PARAMETER DATA
Will County Station, Romeoville, Illinois
Midwest Generation
21053.070
Feb. 28, 2011

PATRICK ENGINEERING

Groundwater Field Paramter Data - Will County Station

Monitoring Well	Date	Time	Conductance (S/cm)	Temperature °C	pH
MW-06	12/13/2010	9:38	1.64	14.62	8.89
MW-06	12/13/2010	9:40	1.64	14.59	8.89
MW-07	12/13/2010	14:27	1.98	14.71	8.60
MW-07	12/13/2010	14:29	1.96	14.77	8.59
MW-07	12/13/2010	14:31	1.96	14.83	8.59
MW-07	12/13/2010	14:33	1.96	14.87	8.59
MW-07	12/13/2010	14:35	1.96	14.87	8.61
MW-07	12/13/2010	14:37	1.96	14.82	8.61
MW-07	12/13/2010	14:39	1.96	14.84	8.61
MW-08	12/13/2010	15:42	1.37	12.76	7.75
MW-08	12/13/2010	15:44	1.37	12.72	7.71
MW-08	12/13/2010	15:46	1.42	13.22	7.67
MW-08	12/13/2010	15:48	1.41	13.00	7.66
MW-08	12/13/2010	15:50	1.41	12.95	7.66
MW-08	12/13/2010	15:52	1.43	12.82	7.65
MW-09	12/13/2010	15:07	1.33	15.15	10.48
MW-09	12/13/2010	15:09	1.33	14.93	10.49
MW-09	12/13/2010	15:11	1.33	14.90	10.48
MW-09	12/13/2010	15:13	1.33	15.14	10.78
MW-09	12/13/2010	15:15	1.33	15.16	10.88
MW-09	12/13/2010	15:17	1.33	15.03	10.90
MW-09	12/13/2010	15:19	1.32	15.21	10.87
MW-09	12/13/2010	15:21	1.33	15.09	10.88
MW-10	12/13/2010	10:30	1.53	15.06	7.64
MW-10	12/13/2010	10:32	1.53	15.21	7.64
MW-10	12/13/2010	10:34	1.53	15.18	7.63
MW-10	12/13/2010	10:36	1.53	15.00	7.63
MW-10	12/13/2010	10:38	1.53	15.00	7.61
MW-10	12/13/2010	10:40	1.53	15.01	7.61

Notes:

* (S/cm) = Specific Conductivity measured in Seconds/Centimeters

Table 2
GROUNDWATER ANALYTICAL RESULTS
Will County, Illinois
Midwest Generation
21053.070
Feb. 28, 2011

PATRICK ENGINEERING Chemical Name	Sample Analysis Method	Groundwater Remediation Objective (mg/L) Class I	MW-1 mg/L 12/13/10	MW-2 mg/L 12/13/10	MW-3 mg/L 12/13/10	MW-4 mg/L 12/13/10	MW-5 mg/L 12/13/10	MW-6 mg/L 12/13/10	MW-7 mg/L 12/13/10
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	ND	0.0052	0.002	0.0027	0.0066	0.0018	0.004
Barium	Metals 6020	2.0	0.05	0.061	0.084	0.068	0.051	0.05	0.045
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	0.0011	ND	ND	0.0011	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	ND	0.37	0.83	ND	ND	0.23
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	**0.2**	0.032	0.34	**0.52**	0.0079	0.073	0.12
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.0046	ND	0.0054	0.0048	ND	ND	0.0029
Selenium	Metals 6020	0.05	ND	ND	ND	ND	0.017	0.0062	ND
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	1.8	1.8	**2.7**	**3.7**	**2.6**	**2.7**	**4.7**
Sulfate	Dissolved 9038	400	**530**	**430**	330	**1500**	**580**	**500**	**610**
Chloride	Dissolved 9251	200	110	110	54	120	110	120	160
Nitrogen/Nitrate	Nitrogen By calc	10	ND	ND	ND	ND	0.27	ND	ND
Total Dissolved Solids	Dissolved 2540C	1200	1100	870	940	**2500**	1000	990	**1300**
Fluoride	Dissolved 4500 FC	4	0.71	0.62	0.5	0.52	0.41	0.85	0.96
Nitrogen/Nitrite	Dissolved 4500 NO2	NA	ND	ND	ND	ND	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	NA	ND	ND	ND	ND	0.27	ND	ND

Notes:
Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
ND-non detect
mg/L = milligrams per liter
-Determination of the potential for the individual ash ponds to be contributing to the distribution of analytes in the underlying groundwater cannot be made from the results of this single sampling event alone. To develop a true, statistically-significant upgradient background concentration for the various compounds will require a number of sequential sampling events over time. After a statistically developed background value is available, the downgradient concentrations can be compared to this background value over time to determine the likelihood of contaminant migration from the on-site ash ponds. A plan to develop such an analytical database through additional sampling is discussed in the last section of this report.

Table 2

GROUNDWATER ANALYTICAL RESULTS

Will County, Illinois

Midwest Generation

21053.070

Feb. 28, 2011

PATRICK ENGINEERING Chemical Name	Sample Analysis Method	Groundwater Remediation Objective (mg/L) Class I	MW-8 mg/L 12/13/10	MW-9 mg/L 12/13/10	MW-10 mg/L 12/13/10
Antimony	Metals 6020	0.006	ND	ND	ND
Arsenic	Metals 6020	0.05	0.0067	0.0059	0.0041
Barium	Metals 6020	2.0	0.069	0.025	0.098
Beryllium	Metals 6020	0.004	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND
Iron	Metals 6020	5.0	0.48	ND	0.32
Lead	Metals 6020	0.0075	ND	ND	ND
Manganese	Metals 6020	0.15	**0.33**	ND	**0.25**
Mercury	Mercury 7470A	0.002	ND	ND	ND
Nickel	Metals 6020	0.1	ND	ND	ND
Selenium	Metals 6020	0.05	ND	0.0036	ND
Silver	Metals 6020	0.05	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND
Boron	Metals 6020	2	1.7	**2.2**	**2.1**
Sulfate	Dissolved 9038	400	**440**	**410**	370
Chloride	Dissolved 9251	200	93	100	92
Nitrogen/Nitrate	Nitrogen By calc	10	ND	ND	ND
Total Dissolved Solids	Dissolved 2540C	1200	930	800	990
Fluoride	Dissolved 4500 FC	4	0.61	0.33	0.66
Nitrogen/Nitrite	Dissolved 4500 NO2	NA	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	NA	ND	0.44	ND

Notes:

Class I Groundwater Standards from 35 IAC Part 620

Bold values show exceedences of 35 IAC Part 620

ND-non detect

mg/L = milligrams per liter

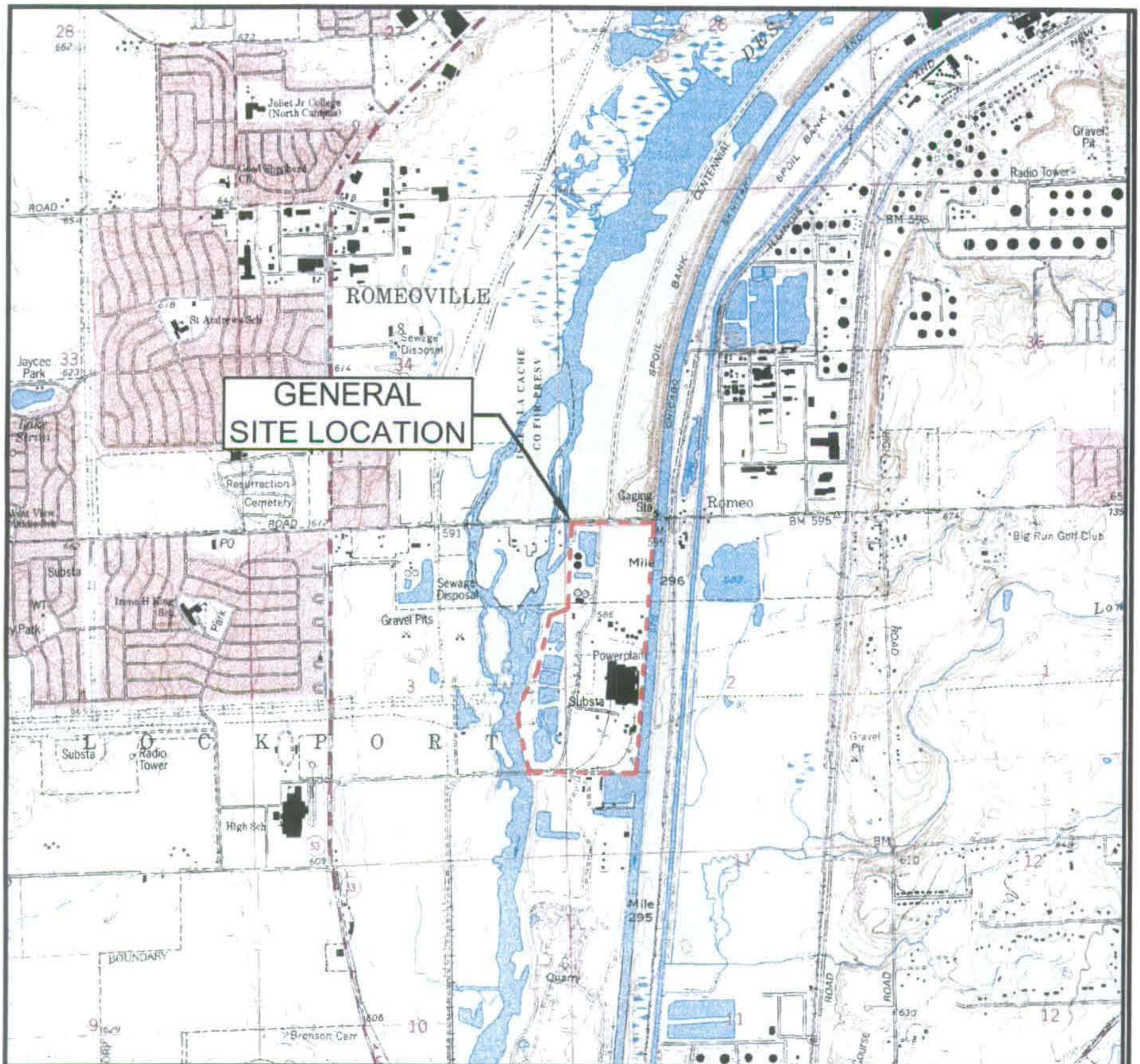
-Determination of the potential for the individual ash ponds to be contributing to the distribution of analytes in the underlying groundwater cannot be made from the results of this single sampling event alone. To develop a true, statistically-significant upgradient background concentration for the various compounds will require a number of sequential sampling events over time. After a statistically developed background value is available, the downgradient concentrations can be compared to this background value over time to determine the likelihood of contaminant migration from the on-site ash ponds. A plan to develop such an analytical database through additional sampling is discussed in the last section of this report.

Table 3
WATER ELEVATION SURVEY DATA
Will County Station, Romeoville, Illinois
Midwest Generation
21053.070
Feb. 28, 2011

PATRICK ENGINEERING	Water Elevation (feet)	Depth to Water (feet bgs)	Lid Elevation (feet)	Ground Elevation (feet)	Top of Riser Elevation (feet)
MONITORING WELLS					
MW-1	583.591	9.36	593.405	589.809	592.951
MW-2	583.702	10.29	594.416	590.621	593.992
MW-3	583.586	9.92	594.054	590.503	593.506
MW-4	583.599	10.65	594.765	591.215	594.249
MW-5	583.331	9.54	593.344	589.602	592.871
MW-6	582.018	10.95	593.521	589.772	592.968
MW-7	585.350	7.53	593.389	589.550	592.880
MW-8	582.483	10.23	593.173	589.641	592.713
MW-9	583.380	9.46	593.328	589.756	592.840
MW-10	580.352	10.63	591.266	591.314	590.982
ASH PONDS					
AP-1	589.842	NS	NS	NS	NS
AP-2	585.802	NS	NS	NS	NS
AP-3	589.428	NS	NS	NS	NS
AP-4	NS	NS	NS	NS	NS
AP-5	581.991	NS	NS	NS	NS
AP-6	582.195	NS	NS	NS	NS
AP-7	581.843	NS	NS	NS	NS
AP-8	NS	NS	NS	NS	NS
AP-9	5.433	NS	NS	NS	NS
River					
DuPage River	580.541	NS	NS	NS	NS

*Survey data taken on 12/6/10
NS = not surveyed
bgs = below ground surface

FIGURES



LEGEND

- - - - SITE BOUNDARY

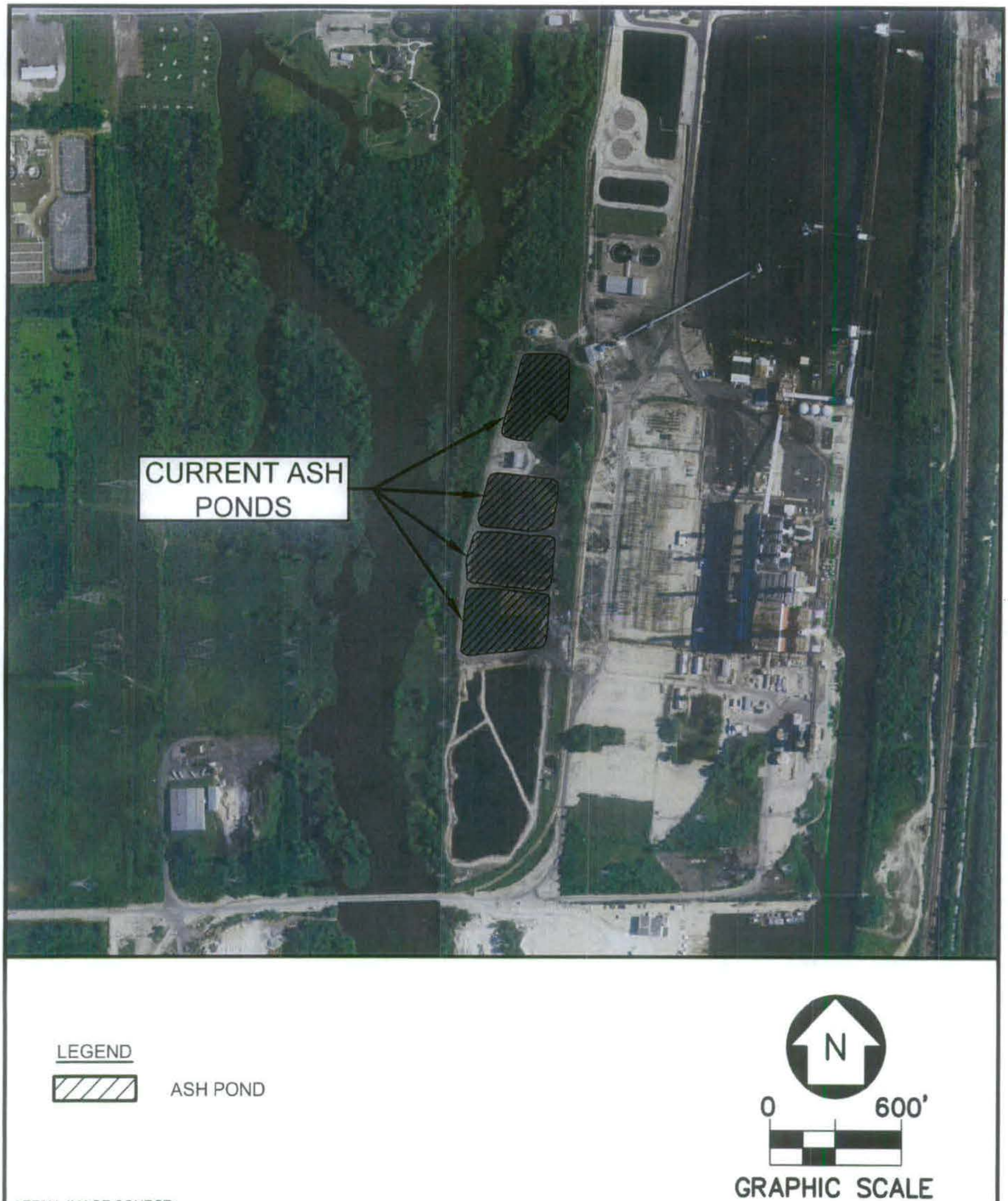
N

0 2,000'

GRAPHIC SCALE

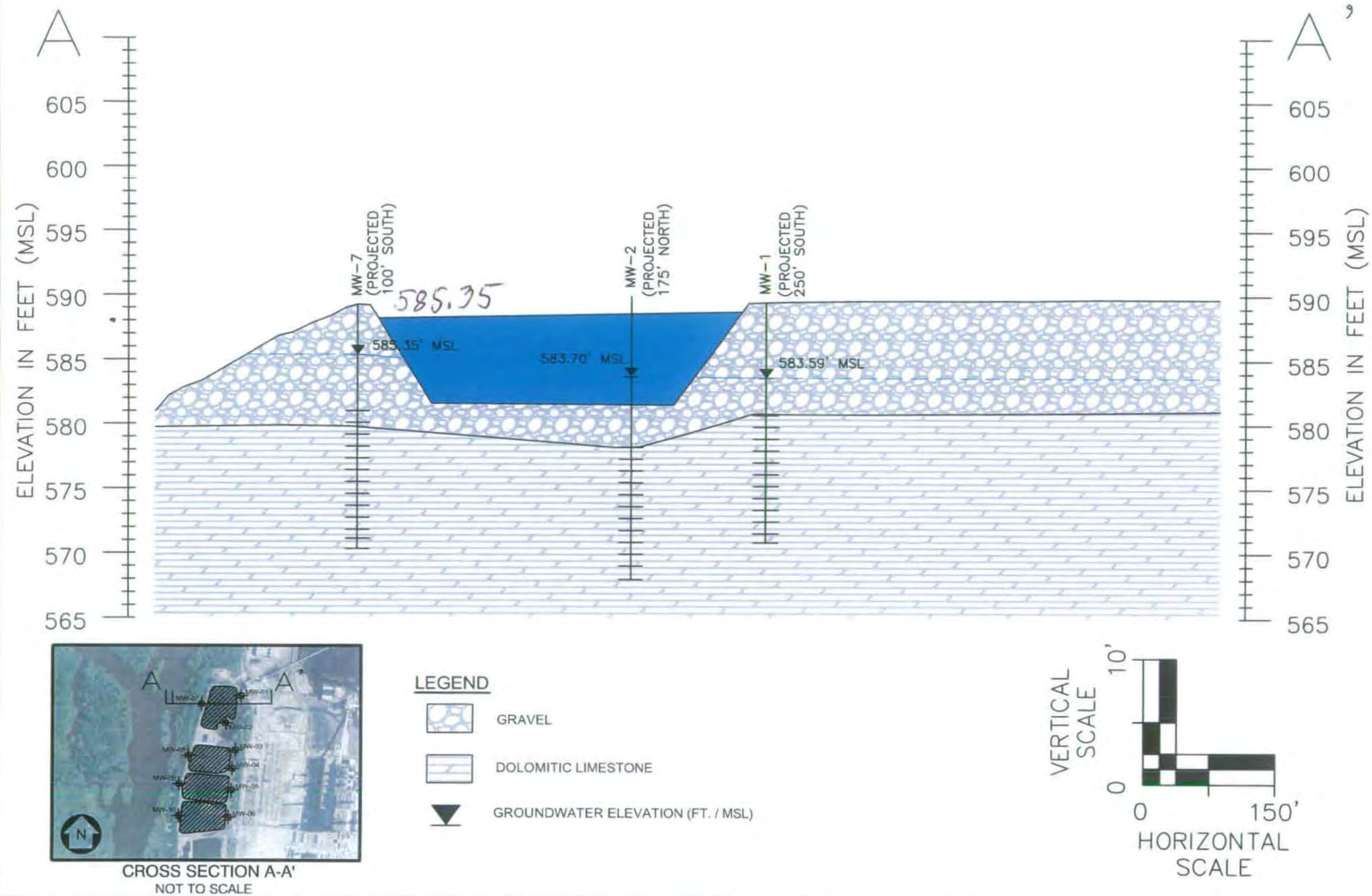
NOTE:
THIS DRAWING WAS PREPARED USING ILLINOIS' ROMEOVILLE (1993) AND JOLIET (1993) 7.5 MINUTE-SERIES TOPOGRAPHIC QUADRANGLE MAP.

Date: FEB. 2011	FIGURE 1 SITE LOCATION MAP	**PATRICK ENGINEERING INC.**
Proj No.: 21053.070	**WILL COUNTY STATION** **ROMEOVILLE, ILLINOIS**	4970 Varsity Drive Lisle, Illinois 60532-4101 TEL. (630) 795-7200 FAX (630) 724-1681 PROFESSIONAL DESIGN FIRM LICENSE NO. 184-000409
App. By: RMF		



AERIAL IMAGE SOURCE:
LANDISCOR AERIAL INFORMATION INC., JULY 2008

Date: **FEB. 2011**	FIGURE 2 ASH POND LOCATION MAP	**PATRICK ENGINEERING INC.**
Proj No.: 21053.070	**WILL COUNTY STATION** **ROMEOVILLE, ILLINOIS**	4970 Varsity Drive Lisle, Illinois 60532-4101 TEL. (630) 795-7200 FAX (630) 724-1681 PROFESSIONAL DESIGN FIRM LICENSE NO. 184-000409
App. By: **RMF**		



	PATRICK ENGINEERING INC. 4970 Varsity Drive, Lisle, Illinois 60532-4101 TEL (630) 795-7200 FAX (630) 724-1681 http://www.patrickengineering.com PROFESSIONAL DESIGN FIRM LICENSE NO. 184-000409	FIGURE 4 CROSS SECTION A-A' - SITE LITHOLOGY **WILL COUNTY STATION** **ROMEOVILLE, ILLINOIS**	**Date: FEB. 2011** **Proj No.: 21053.070** **App. By: RMF**

LEGEND

MW-01 MONITORING WELL LOCATION

N

0 600'

GRAPHIC SCALE

AERIAL IMAGE SOURCE:
LANDISCOR AERIAL INFORMATION INC., JULY 2008

Date: FEB. 2011	FIGURE 3 MONITORING WELL LOCATION PLAN	**PATRICK ENGINEERING INC.**
Proj No.: 21053.070	**WILL COUNTY STATION**	4970 Varsity Drive TEL. (630) 795-7200
App. By: RMF	**ROMEOVILLE, ILLINOIS**	Lisle, Illinois 60532-4101 FAX (630) 724-1681 PROFESSIONAL DESIGN FIRM LICENSE NO. 184-000409

LEGEND

MW-01 505.46' — MONITORING WELL LOCATION (NOVEMBER 2010) WITH GROUNDWATER ELEVATION (FT. / MSL)

GROUNDWATER FLOW DIRECTION

N

0 600'

GRAPHIC SCALE

AERIAL IMAGE SOURCE:
LANDISCOR AERIAL INFORMATION INC., JULY 2008

Date: FEB. 2011	FIGURE 5 GROUNDWATER ELEVATION MAP	PATRICK ENGINEERING INC.
Proj No.: 21053.070	**WILL COUNTY STATION** **ROMEOVILLE, ILLINOIS**	4970 Varsity Drive Lisle, Illinois 60532-4101 TEL. (630) 795-7200 FAX (630) 724-1681 PROFESSIONAL DESIGN FIRM LICENSE NO. 184-000409
App. By: RMF		

APPENDIX A

PATRICK ENGINEERING INC.

BORING NUMBER B-MW-1-WI SHEET 1 OF 1
CLIENT Midwest Generation
PROJECT & NO. 21053.070
LOCATION Will County Station

LOGGED BY MPG
GROUND ELEVATION 589.8

ELEVATION	DEPTH (FT)	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	NOTES & TEST RESULTS
589.8	0.0	Black coal cinders, fine gravel, cobbles, crushed rock FILL			
			SS-1 1.0-2.5 7"R	5 10 14	qu=NT
					Bentonite seal 2.0'-8.0'. Stickup protective cover installed.
			SS-2 3.5-5.0 10"R	4 9 15	qu=NT
584.8	5.0	Gravel, weathered limestone, silt			
583.8	6.0	Saturated	SS-3 6.0-7.5 12"R	7 21 19	qu=NT
					Sand pack 8.0'-19.0'
		Weathered limestone bedrock	SS-4 8.5-10.0	50/4"	Set screen (slot 0.010") 9.0'-19.0'
579.8	10.0	End of Boring at 10.0'			
570.8	19.0				

Water Content: PL, LL (10, 20, 30, 40, 50)
Unconfined Compressive Strength (TSF) (1, 2, 3, 4, 5)

DRILLING CONTRACTOR **Groff Testing**
DRILLING METHOD **4.25" I.D. HSA**
DRILLING EQUIPMENT **CME 550 ATV**
DRILLING STARTED **10/22/10** ENDED **10/25/10**

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
▽ 6.0

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-2-Wi** SHEET **1** OF **1**
CLIENT **Midwest Generation**
PROJECT & NO. **21053.070**
LOCATION **Will County Station**

LOGGED BY **MPG**
GROUND ELEVATION **590.6**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL LL / Unconfined Compressive Strength (TSF)	NOTES & TEST RESULTS
590.6	0.0		Black coal ash, brown gravely clay, sand, gray silty clay FILL	SS-1 1.0-2.5			Bentonite seal 2.0'-10.0'. Stickup protective cover installed.
				SS-2 3.5-5.0 6"R	9 13 10		qu=NT
			Rubble	SS-3 6.0-7.5 18"R	6 7 9		qu=NT
582.1	8.5		Black coal cinders, coal dust, clay fill	SS-4 8.5-10.0 16"R	5 7 7		qu=NT
580.6	10.0	▽	Wet				Sand pack 10.0'-22.0'
				SS-5 11.0-12.5	9 50/0"		qu=NT
578.6	12.0		Weathered limestone bedrock End of Boring at 12.0'				Set screen (slot 0.010") 12.0'-22.0' Cored bedrock to 22.0'
568.6	22.0						

DRILLING CONTRACTOR **Groff Testing**
DRILLING METHOD **4.25" I.D. HSA**
DRILLING EQUIPMENT **CME 550 ATV**
DRILLING STARTED **10/21/10** ENDED **10/22/10**

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
▽ 10.0
▽
▽

PATRICK ENGINEERING INC.

BORING NUMBER	B-MW-3-Wi
SHEET	1 OF 1
CLIENT	Midwest Generation
PROJECT & NO.	21053.070
LOCATION	Will County Station

LOGGED BY **MPG**

GROUND ELEVATION **590.5**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL □ 10 20 30 40 50 LL / Unconfined Compressive Strength (TSF) ✳ 1 2 3 4 5	NOTES & TEST RESULTS
590.5	0.0		Black coal ash, gravel, coarse sand, crushed rock, limestone, rubble FILL				
				SS-1 1.0-2.5 15"R	10 10 12		qu=NT
							Bentonite seal 2.0'-6.5'. Stickup protective cover installed.
			Dry	SS-2 3.5-5.0 13"R	6 10 18		qu=NT
				SS-3 6.0-7.5 14"R	7 15 21		qu=NT
583.5	7.0	⊻					Sand pack 6.5'-19.5'
583.0	7.5						Set screen (slot 0.010") 7.0'-17.0'
582.5	8.0	⊻	Gray gravel, silt GC Wet				
				SS-4 8.5-10.0 4"R	3 50/0"		qu=NT
580.5	10.0		Weathered limestone bedrock				
			End of Boring at 10.0'				Cored bedrock to 19.5'
571.0	19.5						

DRILLING CONTRACTOR	Groff Testing
DRILLING METHOD	4.25" I.D. HSA
DRILLING EQUIPMENT	CME 550 ATV
DRILLING STARTED	10/20/10 ENDED 10/24/10

REMARKS

Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)

⊻ 8.0

⊻ 7.0

⊻

PATRICK ENGINEERING INC.

BORING NUMBER	B-MW-4-WI	SHEET	1 OF 1
CLIENT	Midwest Generation		
PROJECT & NO.	21053.070		
LOCATION	Will County Station		

LOGGED BY MPG

GROUND ELEVATION 591.2

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content (PL 10 20 30 40 50 LL) / Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
591.2	0.0		Brown fine sand, black ash, crushed rock, fine to coarse gravel, ddry FILL				
				SS-1 1.0-2.5 14"R	9 14 17		qu=NT
							Bentonite seal 2.0'-8.5'. Stickup protective cover installed.
				SS-2 3.5-5.0 6"R	16 50/3"		qu=NT
585.2	6.0		Gray silt, weathered limestone, moist to wet	SS-3 6.0-7.5 16"R	4 23 27		qu=NT
582.2	9.0		Saturated	SS-4 8.5-10.0 1"R	50/2"		qu=NT Sand pack 8.5'-19.5'
			Limestone bedrock, weathered				Set screen (slot 0.010") 9.5'-19.5'
571.2	20.0		End of Boring at 20.0'				

DRILLING CONTRACTOR	Groff Testing
DRILLING METHOD	4.25" I.D. HSA
DRILLING EQUIPMENT	CME 550 ATV
DRILLING STARTED	10/18/10 ENDED 10/19/10

REMARKS

Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)

∇ 9.0

∇

∇

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-5-Wi** SHEET **1** OF **1**
CLIENT **Midwest Generation**
PROJECT & NO. **21053.070**
LOCATION **Will County Station**

LOGGED BY **MPG**
GROUND ELEVATION **589.6**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	PL Water Content LL (10 20 30 40 50) / Unconfined Compressive Strength (TSF) (1 2 3 4 5)	NOTES & TEST RESULTS
589.6	0.0		Brown silty clay, fine gravel, coarse gravel, crushed limestone FILL				
				SS-1 1.0-2.5 14"R	4 6 10		qu=NT
			Dry				Bentonite seal 2.0'-8.0'. Stickup protective cover installed.
				SS-2 3.5-5.0 14"R	7 10 21		qu=NT
				SS-3 6.0-7.5 10"R	10 11 15		qu=NT
581.6	8.0						
581.1	8.5		⊽ Brown gravel, clay, silt, wet GC				Sand pack 8.0'-19.0'
580.6	9.0		Weathered limestone bedrock	SS-4 8.5-10.0 4"R	8 50/0"		qu=NT Set screen (slot 0.010") 9.0'-19.0'
569.6	20.0		End of Boring at 20.0'				

DRILLING CONTRACTOR **Groff Testing**
DRILLING METHOD **4.25" I.D. HSA**
DRILLING EQUIPMENT **CME 550 ATV**
DRILLING STARTED **10/20/10** ENDED **10/20/10**

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
⊽ 8.5
⊽
⊽

PATRICK ENGINEERING INC.

BORING NUMBER B-MW-6-WI SHEET 1 OF 1
CLIENT Midwest Generation
PROJECT & NO. 21053.070
LOCATION Will County Station

LOGGED BY MPG
GROUND ELEVATION 589.8

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 50 LL / Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
589.8	0.0		Crushed stone, brown medium sand, black coal cinders, dry FILL				
				SS-1 1.0-2.5 10"R	7 11 8		qu=NT
				SS-2 3.5-5.0 10"R	6 14 13		Bentonite seal 3.0'-8.0'. Stickup protective cover installed. qu=NT
				SS-3 6.0-7.5 11"R	4 7 16		qu=NT
581.8	8.0		Gray silty clay, coarse to fine gravel, trace coarse sand, wet CL				Set screen (slot 0.010") 8.0'-18.0' Sand pack 8.0'-18.0' qu=NT
580.8	9.0		▽	SS-4 8.5-10.0 12"R	7 9 18		
579.3	10.5		Weathered limestone bedrock				Set up NX core barrel & cored bedrock to 18.0'
571.8	18.0		End of Boring at 18.0'				

DRILLING CONTRACTOR Groff Testing
DRILLING METHOD 4.25" I.D. HSA
DRILLING EQUIPMENT CME 550 ATV
DRILLING STARTED 10/12/10 ENDED 10/12/10

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
▽ 9.0
▽
▽

PATRICK ENGINEERING INC.

BORING NUMBER B-MW-7-WI SHEET 1 OF 1
CLIENT Midwest Generation
PROJECT & NO. 21053.070
LOCATION Will County Station

LOGGED BY MPG
GROUND ELEVATION 589.6

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL □ 10 20 30 40 50 LL / Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
589.6	0.0		Crushed stone, gravel, silt, sand FILL				
				SS-1 1.0-2.5 10"R	7 7 4		qu=NT
			Rock rubble, dry	SS-2 3.5-5.0 10"R	6 11 12		Bentonite seal 3.0'-6.0'. Stickup protective cover installed. qu=NT
				SS-3 6.0-7.5 6"R	11 5 5		qu=NT Sand pack 6.0'-18.0'
582.6	7.0		Brown gravel, silt, coarse sand, saturated GC				Set screen (slot 0.010") 7.5'-17.5'
581.6	8.0	⊻					
581.1	8.5		Weathered limestone bedrock	SS-4 8.5-10.0 0"R	50/2"		qu=NT Cored bedrock 9.0'-18.0'
571.6	18.0		End of Boring at 18.0'				

DRILLING CONTRACTOR Groff Testing
DRILLING METHOD 4.25" I.D. HSA
DRILLING EQUIPMENT CME 550 ATV
DRILLING STARTED 10/22/10 ENDED 10/22/10

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
⊻ 8.0
⊻
⊻

PATRICK ENGINEERING INC.

BORING NUMBER ~~B~~MW-~~8~~-Wi SHEET 1 OF 1
CLIENT Midwest Generation
PROJECT & NO. 21053.070
LOCATION Will County Station

LOGGED BY MPG
GROUND ELEVATION 589.6

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL □---○---△ LL (10 20 30 40 50) / Unconfined Compressive Strength (TSF) ✳ (1 2 3 4 5)	NOTES & TEST RESULTS
589.6 / 589.1	0.0 / 0.5		Dark brown clayey silt, dry — CL				
			Coarse gravel, crushed rock, dry — FILL	SS-1 1.0-2.5 6"R	4 7 9		qu=NT
				SS-2 3.5-5.0 10"R	5 13 10		Bentonite seal 3.0'-6.0'. Stickup protective cover installed. qu=NT
			Crushed rock, silty gravel	SS-3 6.0-7.5 10"R	7 19 22		qu=NT
582.6	7.0		Moist				Sand pack 7.0'-19.0'
			Weathered limestone bedrock	SS-4 8.5-10.0 4"R	10 50/1"		qu=NT Set screen (slot 0.010") 9.0'-19.0'
570.6	19.0		End of Boring at 19.0'				

DRILLING CONTRACTOR Groff Testing
DRILLING METHOD 4.25" I.D. HSA
DRILLING EQUIPMENT CME 550 ATV
DRILLING STARTED 10/19/10 ENDED 10/19/10

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
▽
▽
▽

PATRICK ENGINEERING INC.

BORING NUMBER B-MW-9/WI SHEET 1 OF 1
CLIENT Midwest Generation
PROJECT & NO. 21053.070
LOCATION Will County Station

LOGGED BY MPG
GROUND ELEVATION 589.8

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 50 LL / Unconfined Compressive Strength (TSF) 1 2 3 4 5	NOTES & TEST RESULTS
589.8	0.0		Crushed rock, coarse sand, some silt FILL				
				SS-1 1.0-2.5 14"R	4 7 9		qu=NT
				SS-2 3.5-5.0 16"R	3 11 6		Bentonite seal 3.0'-8.0'. Stickup protective cover installed. qu=NT
			Some brown silty clay				
583.8	6.0		Gray silty clay, fine and coarse gravel, some coarse sand GC	SS-3 6.0-7.5 16"R	4 11 13		qu=NT
							Sand pack 8.0'-19.0'
			Moist	SS-4 8.5-10.0 17"R	4 10 11		qu=NT Set screen (slot 0.010") 9.0'-19.0'
			Clayey gravel				
578.3	11.5		Weather limestone bedrock	SS-5 11.0-12.5 12"R	5 5 50/3"		qu=NT Cored bedrock to 22.0'
570.8	19.0		End of Boring at 19.0'				

DRILLING CONTRACTOR **Groff Testing**
DRILLING METHOD **4.25" I.D. HSA**
DRILLING EQUIPMENT **CME 550 ATV**
DRILLING STARTED **10/19/10** ENDED **10/19/10**

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
▽ 11.5'
▼
▽

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-10-Wi** SHEET **1** OF **1**
CLIENT **Midwest Generation**
PROJECT & NO. **21053.070**
LOCATION **Will County Station**

LOGGED BY **MPG**
GROUND ELEVATION **591.3**

ELEVATION	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL □ - - ○ - - △ LL (10 20 30 40 50) / Unconfined Compressive Strength (TSF) ✳ (1 2 3 4 5)	NOTES & TEST RESULTS
591.3	0.0		Crushed limestone, silt, gravel FILL				
				SS-1 1.0-2.5 4"R	7 10 12		Bentonite seal 2.0'-8.0'. Flush mount protective cover installed. qu=NT
				SS-2 3.5-5.0 14"R	13 18 8		
				SS-3 6.0-7.5 4"R	18 50/5"		qu=NT
				SS-4 8.5-10.0 4"R	13 17 50/1"		Sand pack 8.0'-20.0' qu=NT
581.3	10.0		Weathered limestone, clay, sand, gravel GC				Set screen (slot 0.010") (slot 0.010") 10.0'-20.0'
				SS-5 11.0-12.5 0"R	17 50/0"		qu=NT
579.3	12.0		Weathered limestone bedrock				-21.0'
571.3	20.0		End of Boring at 20.0'				

DRILLING CONTRACTOR **Groff Testing**
DRILLING METHOD **4.25" I.D. HSA**
DRILLING EQUIPMENT **CME 550 ATV**
DRILLING STARTED **10/21/10** ENDED **10/21/10**

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
▽ 10.0
▽
▽

APPENDIX B

Midwest Gen. Will County

FILE NO. IL 6002208

EXEMPT DOCUMENT NO. 001

THE AGENCY HAS DETERMINED THIS DOCUMENT IS EXEMPT FROM PUBLIC DISCLOSURE

EXEMPT

DOCUMENT

FILE CATEGORY ____________________

DOCUMENT DATE 5/13/09

IL 532-1679
LPC 274 Rev. 6/2000

APPENDIX C

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 500-29848-1

Job Description: Will County Ash Pond Assessments

For:
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Attention: Beckie Maddox

Approved for release.
Bonnie M Stadelmann
Project Manager II
12/28/2010 4:14 PM

Bonnie M Stadelmann
Project Manager II
bonnie.stadelmann@testamericainc.com
12/28/2010

cc: Andrew Gagnon
Ms. Maria Race

These test results meet all the requirements of NELAC for accredited parameters.

The Lab Certification ID#:
TestAmerica Chicago 100201

All questions regarding this test report should be directed to the TestAmerica Project Manager whose signature appears on this report. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

TestAmerica Laboratories, Inc.
TestAmerica Chicago 2417 Bond Street, University Park, IL 60484
Tel (708) 534-5200 Fax (708) 534-5211 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

Job Narrative
500-29848-1

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

Metals
Method(s) 6020: The continuing calibration verification (CCV) and continuing calibration blank (CCB) at lines 91 and 92 in AD batch 102214 recovered above the upper control limit for Sb. The samples associated with this CCV and CCB were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 500-29848-2 were outside control limits for Se. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

Field Service / Mobile Lab
No analytical or quality issues were noted.

General Chemistry
Method(s) SM 4500 NO3 F: The nitrate continuing calibration verification (CCV) for 102133 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. MW-10 (500-29848-10)

No other analytical or quality issues were noted.

EXECUTIVE SUMMARY - Detections

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
500-29848-1	**MW-01**				
Dissolved					
Barium		0.050	0.0025	mg/L	6020
Boron		1.8	0.25	mg/L	6020
Cobalt		0.0011	0.0010	mg/L	6020
Manganese		0.20	0.0025	mg/L	6020
Nickel		0.0046	0.0020	mg/L	6020
Sulfate-Dissolved		530	100	mg/L	9038
Chloride-Dissolved		110	10	mg/L	9251
Total Dissolved Solids-Dissolved		1100	10	mg/L	SM 2540C
Fluoride-Dissolved		0.71	0.10	mg/L	SM 4500 F C
500-29848-2	**MW-02**				
Dissolved					
Arsenic		0.0052	0.0010	mg/L	6020
Barium		0.061	0.0025	mg/L	6020
Boron		1.8	0.25	mg/L	6020
Manganese		0.032	0.0025	mg/L	6020
Sulfate-Dissolved		430	100	mg/L	9038
Chloride-Dissolved		110	10	mg/L	9251
Total Dissolved Solids-Dissolved		870	10	mg/L	SM 2540C
Fluoride-Dissolved		0.62	0.10	mg/L	SM 4500 F C
500-29848-3	**MW-03**				
Dissolved					
Arsenic		0.0020	0.0010	mg/L	6020
Barium		0.084	0.0025	mg/L	6020
Boron		2.7	0.25	mg/L	6020
Iron		0.37	0.10	mg/L	6020
Manganese		0.34	0.0025	mg/L	6020
Nickel		0.0054	0.0020	mg/L	6020
Sulfate-Dissolved		330	100	mg/L	9038
Chloride-Dissolved		54	2.0	mg/L	9251
Total Dissolved Solids-Dissolved		940	10	mg/L	SM 2540C
Fluoride-Dissolved		0.50	0.10	mg/L	SM 4500 F C

EXECUTIVE SUMMARY - Detections

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
500-29848-4	**MW-04**				
Dissolved					
Arsenic		0.0027	0.0010	mg/L	6020
Barium		0.068	0.0025	mg/L	6020
Boron		3.7	0.25	mg/L	6020
Cobalt		0.0011	0.0010	mg/L	6020
Iron		0.83	0.10	mg/L	6020
Manganese		0.52	0.0025	mg/L	6020
Nickel		0.0048	0.0020	mg/L	6020
Sulfate-Dissolved		1500	250	mg/L	9038
Chloride-Dissolved		120	10	mg/L	9251
Total Dissolved Solids-Dissolved		2500	10	mg/L	SM 2540C
Fluoride-Dissolved		0.52	0.10	mg/L	SM 4500 F C
500-29848-5	**MW-05**				
Dissolved					
Arsenic		0.0066	0.0010	mg/L	6020
Barium		0.051	0.0025	mg/L	6020
Boron		2.6	0.25	mg/L	6020
Manganese		0.0079	0.0025	mg/L	6020
Selenium		0.017	0.0025	mg/L	6020
Sulfate-Dissolved		580	100	mg/L	9038
Chloride-Dissolved		110	10	mg/L	9251
Nitrogen, Nitrate-Dissolved		0.27	0.10	mg/L	Nitrate by calc
Total Dissolved Solids-Dissolved		1000	10	mg/L	SM 2540C
Fluoride-Dissolved		0.41	0.10	mg/L	SM 4500 F C
Nitrogen, Nitrate Nitrite-Dissolved		0.27	0.10	mg/L	SM 4500 NO3 F
500-29848-6	**MW-06**				
Dissolved					
Arsenic		0.0018	0.0010	mg/L	6020
Barium		0.050	0.0025	mg/L	6020
Boron		2.7	0.25	mg/L	6020
Manganese		0.073	0.0025	mg/L	6020
Selenium		0.0062	0.0025	mg/L	6020
Sulfate-Dissolved		500	100	mg/L	9038
Chloride-Dissolved		120	10	mg/L	9251
Total Dissolved Solids-Dissolved		990	10	mg/L	SM 2540C
Fluoride-Dissolved		0.85	0.10	mg/L	SM 4500 F C

EXECUTIVE SUMMARY - Detections

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
500-29848-7	**MW-07**				
Dissolved					
Arsenic		0.0040	0.0010	mg/L	6020
Barium		0.045	0.0025	mg/L	6020
Boron		4.7	0.25	mg/L	6020
Iron		0.23	0.10	mg/L	6020
Manganese		0.12	0.0025	mg/L	6020
Nickel		0.0029	0.0020	mg/L	6020
Sulfate-Dissolved		610	100	mg/L	9038
Chloride-Dissolved		160	10	mg/L	9251
Total Dissolved Solids-Dissolved		1300	10	mg/L	SM 2540C
Fluoride-Dissolved		0.96	0.10	mg/L	SM 4500 F C
500-29848-8	**MW-08**				
Dissolved					
Arsenic		0.0067	0.0010	mg/L	6020
Barium		0.069	0.0025	mg/L	6020
Boron		1.7	0.25	mg/L	6020
Iron		0.48	0.10	mg/L	6020
Manganese		0.33	0.0025	mg/L	6020
Sulfate-Dissolved		440	100	mg/L	9038
Chloride-Dissolved		93	10	mg/L	9251
Total Dissolved Solids-Dissolved		930	10	mg/L	SM 2540C
Fluoride-Dissolved		0.61	0.10	mg/L	SM 4500 F C
500-29848-9	**MW-09**				
Dissolved					
Arsenic		0.0059	0.0010	mg/L	6020
Barium		0.025	0.0025	mg/L	6020
Boron		2.2	0.25	mg/L	6020
Selenium		0.0036	0.0025	mg/L	6020
Sulfate-Dissolved		410	100	mg/L	9038
Chloride-Dissolved		100	10	mg/L	9251
Total Dissolved Solids-Dissolved		800	10	mg/L	SM 2540C
Fluoride-Dissolved		0.33	0.10	mg/L	SM 4500 F C
Nitrogen, Nitrite-Dissolved		0.44	0.10	mg/L	SM 4500 NO2 B

EXECUTIVE SUMMARY - Detections

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
500-29848-10	**MW-10**				
Dissolved					
Arsenic		0.0041	0.0010	mg/L	6020
Barium		0.098	0.0025	mg/L	6020
Boron		2.1	0.25	mg/L	6020
Iron		0.32	0.10	mg/L	6020
Manganese		0.25	0.0025	mg/L	6020
Sulfate-Dissolved		370	100	mg/L	9038
Chloride-Dissolved		92	10	mg/L	9251
Total Dissolved Solids-Dissolved		990	10	mg/L	SM 2540C
Fluoride-Dissolved		0.66	0.10	mg/L	SM 4500 F C

METHOD SUMMARY

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Metals (ICP/MS)	TAL CHI	SW846 6020	
Preparation, Soluble	TAL CHI		Soluble Metals
Sample Filtration, Field			FIELD_FLTRD
Mercury (CVAA)	TAL CHI	SW846 7470A	
Preparation, Mercury	TAL CHI		SW846 7470A
Sample Filtration, Field			FIELD_FLTRD
Cyanide	TAL CHI	SW846 9014	
Cyanide, Distillation	TAL CHI		SW846 9010B
Sample Filtration, Field			FIELD_FLTRD
Sulfate, Turbidimetric	TAL CHI	SW846 9038	
Sample Filtration, Field			FIELD_FLTRD
Chloride	TAL CHI	SW846 9251	
Sample Filtration, Field			FIELD_FLTRD
Nitrogen, Nitrate-Nitrite	TAL CHI	SM Nitrate by calc	
Sample Filtration, Field			FIELD_FLTRD
Solids, Total Dissolved (TDS)	TAL CHI	SM SM 2540C	
Sample Filtration, Field			FIELD_FLTRD
Fluoride	TAL CHI	SM SM 4500 F C	
Sample Filtration, Field			FIELD_FLTRD
Nitrogen, Nitrite	TAL CHI	SM SM 4500 NO2 B	
Sample Filtration, Field			FIELD_FLTRD
Nitrogen, Nitrate	TAL CHI	SM SM 4500 NO3 F	
Sample Filtration, Field			FIELD_FLTRD

Lab References:

TAL CHI = TestAmerica Chicago

Method 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.

METHOD / ANALYST SUMMARY

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Method	Analyst	Analyst ID
SW846 6020	Kolarczyk, Paul F	PFK
SW846 7470A	Roach, Jessica	JR
SW846 9014	Moore, Colleen L	CLM
SW846 9038	Boyd, Cheryl L	CLB
SW846 9251	Deb, Khona	KD
SM Nitrate by calc	Ficarello, Peter M	PMF
SM SM 2540C	Boyd, Cheryl L	CLB
SM SM 4500 F C	Moore, Colleen L	CLM
SM SM 4500 NO2 B	Moore, Colleen L	CLM
SM SM 4500 NO3 F	Ficarello, Peter M	PMF

SAMPLE SUMMARY

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
500-29848-1	MW-01	Water	12/13/2010 1400	12/14/2010 1255
500-29848-2	MW-02	Water	12/13/2010 1315	12/14/2010 1255
500-29848-3	MW-03	Water	12/13/2010 1230	12/14/2010 1255
500-29848-4	MW-04	Water	12/13/2010 1200	12/14/2010 1255
500-29848-5	MW-05	Water	12/13/2010 1130	12/14/2010 1255
500-29848-6	MW-06	Water	12/13/2010 0945	12/14/2010 1255
500-29848-7	MW-07	Water	12/13/2010 1445	12/14/2010 1255
500-29848-8	MW-08	Water	12/13/2010 1555	12/14/2010 1255
500-29848-9	MW-09	Water	12/13/2010 1525	12/14/2010 1255
500-29848-10	MW-10	Water	12/13/2010 1045	12/14/2010 1255

SAMPLE RESULTS

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-01
Lab Sample ID: 500-29848-1

Date Sampled: 12/13/2010 1400
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	Dilution
Method: Dissolved-6020		Date Analyzed:	12/17/2010 1329	
Prep Method: Soluble Metals		Date Prepared:	12/17/2010 1051	
Beryllium	<0.0010	mg/L	0.0010	1.0
Method: Dissolved-6020		Date Analyzed:	12/17/2010 1805	
Prep Method: Soluble Metals		Date Prepared:	12/17/2010 1051	
Antimony	<0.0030 ^	mg/L	0.0030	1.0
Arsenic	<0.0010	mg/L	0.0010	1.0
Barium	0.050	mg/L	0.0025	1.0
Cadmium	<0.00050	mg/L	0.00050	1.0
Chromium	<0.0050	mg/L	0.0050	1.0
Cobalt	0.0011	mg/L	0.0010	1.0
Copper	<0.0020	mg/L	0.0020	1.0
Iron	<0.10	mg/L	0.10	1.0
Lead	<0.00050	mg/L	0.00050	1.0
Manganese	0.20	mg/L	0.0025	1.0
Nickel	0.0046	mg/L	0.0020	1.0
Selenium	<0.0025	mg/L	0.0025	1.0
Silver	<0.00050	mg/L	0.00050	1.0
Thallium	<0.0020	mg/L	0.0020	1.0
Zinc	<0.020	mg/L	0.020	1.0
Method: Dissolved-6020		Date Analyzed:	12/20/2010 1426	
Prep Method: Soluble Metals		Date Prepared:	12/17/2010 1051	
Boron	1.8	mg/L	0.25	5.0
Method: Dissolved-7470A		Date Analyzed:	12/15/2010 1339	
Prep Method: 7470A		Date Prepared:	12/15/2010 0735	
Mercury	<0.00020	mg/L	0.00020	1.0
Method: Dissolved-9014		Date Analyzed:	12/20/2010 1530	
Prep Method: 9010B		Date Prepared:	12/20/2010 1110	
Cyanide, Total	<0.010	mg/L	0.010	1.0
Method: Dissolved-9038		Date Analyzed:	12/19/2010 2028	
Sulfate	530	mg/L	100	20
Method: Dissolved-9251		Date Analyzed:	12/28/2010 1239	
Chloride	110	mg/L	10	5.0
Method: Dissolved-Nitrate by calc		Date Analyzed:	12/17/2010 1343	
Nitrogen, Nitrate	<0.10	mg/L	0.10	1.0
Method: Dissolved-SM 2540C		Date Analyzed:	12/14/2010 2244	

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-01
Lab Sample ID: 500-29848-1

Date Sampled: 12/13/2010 1400
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	Dilution
Total Dissolved Solids	1100	mg/L	10	1.0
Method: Dissolved-SM 4500 F C		Date Analyzed:	12/20/2010 1412	
Fluoride	0.71	mg/L	0.10	1.0
Method: Dissolved-SM 4500 NO2 B		Date Analyzed:	12/15/2010 0941	
Nitrogen, Nitrite	<0.020	mg/L	0.020	1.0
Method: Dissolved-SM 4500 NO3 F		Date Analyzed:	12/17/2010 1141	
Nitrogen, Nitrate Nitrite	<0.10	mg/L	0.10	1.0

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-02
Lab Sample ID: 500-29848-2

Date Sampled: 12/13/2010 1315
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: Dissolved-6020			Date Analyzed:	12/17/2010 1331	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Beryllium	<0.0010		mg/L	0.0010	1.0
Method: Dissolved-6020			Date Analyzed:	12/17/2010 1807	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Antimony	<0.0030	^	mg/L	0.0030	1.0
Arsenic	0.0052		mg/L	0.0010	1.0
Barium	0.061		mg/L	0.0025	1.0
Cadmium	<0.00050		mg/L	0.00050	1.0
Chromium	<0.0050		mg/L	0.0050	1.0
Cobalt	<0.0010		mg/L	0.0010	1.0
Copper	<0.0020		mg/L	0.0020	1.0
Iron	<0.10		mg/L	0.10	1.0
Lead	<0.00050		mg/L	0.00050	1.0
Manganese	0.032		mg/L	0.0025	1.0
Nickel	<0.0020		mg/L	0.0020	1.0
Selenium	<0.0025		mg/L	0.0025	1.0
Silver	<0.00050		mg/L	0.00050	1.0
Thallium	<0.0020		mg/L	0.0020	1.0
Zinc	<0.020		mg/L	0.020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1427	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Boron	1.8		mg/L	0.25	5.0
Method: Dissolved-7470A			Date Analyzed:	12/15/2010 1340	
Prep Method: 7470A			Date Prepared:	12/15/2010 0735	
Mercury	<0.00020		mg/L	0.00020	1.0
Method: Dissolved-9014			Date Analyzed:	12/20/2010 1530	
Prep Method: 9010B			Date Prepared:	12/20/2010 1110	
Cyanide, Total	<0.010		mg/L	0.010	1.0
Method: Dissolved-9038			Date Analyzed:	12/19/2010 2029	
Sulfate	430		mg/L	100	20
Method: Dissolved-9251			Date Analyzed:	12/28/2010 1239	
Chloride	110		mg/L	10	5.0
Method: Dissolved-Nitrate by calc			Date Analyzed:	12/17/2010 1343	
Nitrogen, Nitrate	<0.10		mg/L	0.10	1.0
Method: Dissolved-SM 2540C			Date Analyzed:	12/14/2010 2253	

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-02
Lab Sample ID: 500-29848-2

Date Sampled: 12/13/2010 1315
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	Dilution
Total Dissolved Solids	870	mg/L	10	1.0
Method: Dissolved-SM 4500 F C		Date Analyzed:	12/20/2010 1421	
Fluoride	0.62	mg/L	0.10	1.0
Method: Dissolved-SM 4500 NO2 B		Date Analyzed:	12/15/2010 0941	
Nitrogen, Nitrite	<0.020	mg/L	0.020	1.0
Method: Dissolved-SM 4500 NO3 F		Date Analyzed:	12/17/2010 1143	
Nitrogen, Nitrate Nitrite	<0.10	mg/L	0.10	1.0

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-03
Lab Sample ID: 500-29848-3

Date Sampled: 12/13/2010 1230
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: Dissolved-6020			Date Analyzed:	12/17/2010 1341	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Beryllium	<0.0010		mg/L	0.0010	1.0
Method: Dissolved-6020			Date Analyzed:	12/17/2010 1825	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Antimony	<0.0030	^	mg/L	0.0030	1.0
Arsenic	0.0020		mg/L	0.0010	1.0
Barium	0.084		mg/L	0.0025	1.0
Cadmium	<0.00050		mg/L	0.00050	1.0
Lead	<0.00050		mg/L	0.00050	1.0
Selenium	<0.0025		mg/L	0.0025	1.0
Silver	<0.00050		mg/L	0.00050	1.0
Thallium	<0.0020		mg/L	0.0020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1205	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Chromium	<0.0050		mg/L	0.0050	1.0
Cobalt	<0.0010		mg/L	0.0010	1.0
Copper	<0.0020		mg/L	0.0020	1.0
Iron	0.37		mg/L	0.10	1.0
Manganese	0.34		mg/L	0.0025	1.0
Nickel	0.0054		mg/L	0.0020	1.0
Zinc	<0.020		mg/L	0.020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1433	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Boron	2.7		mg/L	0.25	5.0
Method: Dissolved-7470A			Date Analyzed:	12/15/2010 1342	
Prep Method: 7470A			Date Prepared:	12/15/2010 0735	
Mercury	<0.00020		mg/L	0.00020	1.0
Method: Dissolved-9014			Date Analyzed:	12/20/2010 1530	
Prep Method: 9010B			Date Prepared:	12/20/2010 1110	
Cyanide, Total	<0.010		mg/L	0.010	1.0
Method: Dissolved-9038			Date Analyzed:	12/19/2010 2030	
Sulfate	330		mg/L	100	20
Method: Dissolved-9251			Date Analyzed:	12/28/2010 1240	
Chloride	54		mg/L	2.0	1.0
Method: Dissolved-Nitrate by calc			Date Analyzed:	12/17/2010 1343	

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-03
Lab Sample ID: 500-29848-3

Date Sampled: 12/13/2010 1230
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier	Unit		RL	Dilution
Nitrogen, Nitrate	<0.10	mg/L		0.10	1.0
Method: Dissolved-SM 2540C		Date Analyzed:	12/14/2010 2256		
Total Dissolved Solids	940	mg/L		10	1.0
Method: Dissolved-SM 4500 F C		Date Analyzed:	12/20/2010 1423		
Fluoride	0.50	mg/L		0.10	1.0
Method: Dissolved-SM 4500 NO2 B		Date Analyzed:	12/15/2010 0942		
Nitrogen, Nitrite	<0.020	mg/L		0.020	1.0
Method: Dissolved-SM 4500 NO3 F		Date Analyzed:	12/17/2010 1145		
Nitrogen, Nitrate Nitrite	<0.10	mg/L		0.10	1.0

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-04
Lab Sample ID: 500-29848-4

Date Sampled: 12/13/2010 1200
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: Dissolved-6020			Date Analyzed:	12/17/2010 1343	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Beryllium	<0.0010		mg/L	0.0010	1.0
Method: Dissolved-6020			Date Analyzed:	12/17/2010 1828	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Antimony	<0.0030	^	mg/L	0.0030	1.0
Arsenic	0.0027		mg/L	0.0010	1.0
Barium	0.068		mg/L	0.0025	1.0
Cadmium	<0.00050		mg/L	0.00050	1.0
Lead	<0.00050		mg/L	0.00050	1.0
Selenium	<0.0025		mg/L	0.0025	1.0
Silver	<0.00050		mg/L	0.00050	1.0
Thallium	<0.0020		mg/L	0.0020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1207	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Chromium	<0.0050		mg/L	0.0050	1.0
Cobalt	0.0011		mg/L	0.0010	1.0
Copper	<0.0020		mg/L	0.0020	1.0
Iron	0.83		mg/L	0.10	1.0
Manganese	0.52		mg/L	0.0025	1.0
Nickel	0.0048		mg/L	0.0020	1.0
Zinc	<0.020		mg/L	0.020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1434	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Boron	3.7		mg/L	0.25	5.0
Method: Dissolved-7470A			Date Analyzed:	12/15/2010 1344	
Prep Method: 7470A			Date Prepared:	12/15/2010 0735	
Mercury	<0.00020		mg/L	0.00020	1.0
Method: Dissolved-9014			Date Analyzed:	12/20/2010 1531	
Prep Method: 9010B			Date Prepared:	12/20/2010 1110	
Cyanide, Total	<0.010		mg/L	0.010	1.0
Method: Dissolved-9038			Date Analyzed:	12/19/2010 2031	
Sulfate	1500		mg/L	250	50
Method: Dissolved-9251			Date Analyzed:	12/28/2010 1240	
Chloride	120		mg/L	10	5.0
Method: Dissolved-Nitrate by calc			Date Analyzed:	12/17/2010 1343	

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-04
Lab Sample ID: 500-29848-4

Date Sampled: 12/13/2010 1200
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	Dilution
Nitrogen, Nitrate	<0.10	mg/L	0.10	1.0
Method: Dissolved-SM 2540C		Date Analyzed:	12/14/2010 2259	
Total Dissolved Solids	2500	mg/L	10	1.0
Method: Dissolved-SM 4500 F C		Date Analyzed:	12/20/2010 1426	
Fluoride	0.52	mg/L	0.10	1.0
Method: Dissolved-SM 4500 NO2 B		Date Analyzed:	12/15/2010 0942	
Nitrogen, Nitrite	<0.020	mg/L	0.020	1.0
Method: Dissolved-SM 4500 NO3 F		Date Analyzed:	12/17/2010 1147	
Nitrogen, Nitrate Nitrite	<0.10	mg/L	0.10	1.0

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-05
Lab Sample ID: 500-29848-5

Date Sampled: 12/13/2010 1130
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier		Unit		RL	Dilution
Method: Dissolved-6020				Date Analyzed:	12/17/2010 1345	
Prep Method: Soluble Metals				Date Prepared:	12/17/2010 1051	
Beryllium	<0.0010		mg/L		0.0010	1.0
Method: Dissolved-6020				Date Analyzed:	12/17/2010 1830	
Prep Method: Soluble Metals				Date Prepared:	12/17/2010 1051	
Antimony	<0.0030	^	mg/L		0.0030	1.0
Arsenic	0.0066		mg/L		0.0010	1.0
Barium	0.051		mg/L		0.0025	1.0
Cadmium	<0.00050		mg/L		0.00050	1.0
Lead	<0.00050		mg/L		0.00050	1.0
Selenium	0.017		mg/L		0.0025	1.0
Silver	<0.00050		mg/L		0.00050	1.0
Thallium	<0.0020		mg/L		0.0020	1.0
Method: Dissolved-6020				Date Analyzed:	12/20/2010 1209	
Prep Method: Soluble Metals				Date Prepared:	12/17/2010 1051	
Chromium	<0.0050		mg/L		0.0050	1.0
Cobalt	<0.0010		mg/L		0.0010	1.0
Copper	<0.0020		mg/L		0.0020	1.0
Iron	<0.10		mg/L		0.10	1.0
Manganese	0.0079		mg/L		0.0025	1.0
Nickel	<0.0020		mg/L		0.0020	1.0
Zinc	<0.020		mg/L		0.020	1.0
Method: Dissolved-6020				Date Analyzed:	12/20/2010 1435	
Prep Method: Soluble Metals				Date Prepared:	12/17/2010 1051	
Boron	2.6		mg/L		0.25	5.0
Method: Dissolved-7470A				Date Analyzed:	12/15/2010 1345	
Prep Method: 7470A				Date Prepared:	12/15/2010 0735	
Mercury	<0.00020		mg/L		0.00020	1.0
Method: Dissolved-9014				Date Analyzed:	12/20/2010 1531	
Prep Method: 9010B				Date Prepared:	12/20/2010 1110	
Cyanide, Total	<0.010		mg/L		0.010	1.0
Method: Dissolved-9038				Date Analyzed:	12/19/2010 2032	
Sulfate	580		mg/L		100	20
Method: Dissolved-9251				Date Analyzed:	12/28/2010 1241	
Chloride	110		mg/L		10	5.0
Method: Dissolved-Nitrate by calc				Date Analyzed:	12/17/2010 1343	

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-05
Lab Sample ID: 500-29848-5

Date Sampled: 12/13/2010 1130
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	Dilution
Nitrogen, Nitrate	0.27	mg/L	0.10	1.0
Method: Dissolved-SM 2540C		Date Analyzed:	12/14/2010 2302	
Total Dissolved Solids	1000	mg/L	10	1.0
Method: Dissolved-SM 4500 F C		Date Analyzed:	12/20/2010 1429	
Fluoride	0.41	mg/L	0.10	1.0
Method: Dissolved-SM 4500 NO2 B		Date Analyzed:	12/15/2010 0942	
Nitrogen, Nitrite	<0.020	mg/L	0.020	1.0
Method: Dissolved-SM 4500 NO3 F		Date Analyzed:	12/17/2010 1149	
Nitrogen, Nitrate Nitrite	0.27	mg/L	0.10	1.0

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-06
Lab Sample ID: 500-29848-6

Date Sampled: 12/13/2010 0945
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: Dissolved-6020			Date Analyzed:	12/17/2010 1833	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Antimony	<0.0030	^	mg/L	0.0030	1.0
Arsenic	0.0018		mg/L	0.0010	1.0
Barium	0.050		mg/L	0.0025	1.0
Cadmium	<0.00050		mg/L	0.00050	1.0
Lead	<0.00050		mg/L	0.00050	1.0
Selenium	0.0062		mg/L	0.0025	1.0
Silver	<0.00050		mg/L	0.00050	1.0
Thallium	<0.0020		mg/L	0.0020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1212	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Chromium	<0.0050		mg/L	0.0050	1.0
Cobalt	<0.0010		mg/L	0.0010	1.0
Copper	<0.0020		mg/L	0.0020	1.0
Iron	<0.10		mg/L	0.10	1.0
Manganese	0.073		mg/L	0.0025	1.0
Nickel	<0.0020		mg/L	0.0020	1.0
Zinc	<0.020		mg/L	0.020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1436	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Boron	2.7		mg/L	0.25	5.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1534	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Beryllium	<0.0010		mg/L	0.0010	1.0
Method: Dissolved-7470A			Date Analyzed:	12/15/2010 1350	
Prep Method: 7470A			Date Prepared:	12/15/2010 0735	
Mercury	<0.00020		mg/L	0.00020	1.0
Method: Dissolved-9014			Date Analyzed:	12/20/2010 1531	
Prep Method: 9010B			Date Prepared:	12/20/2010 1110	
Cyanide, Total	<0.010		mg/L	0.010	1.0
Method: Dissolved-9038			Date Analyzed:	12/19/2010 2033	
Sulfate	500		mg/L	100	20
Method: Dissolved-9251			Date Analyzed:	12/28/2010 1241	
Chloride	120		mg/L	10	5.0
Method: Dissolved-Nitrate by calc			Date Analyzed:	12/17/2010 1343	

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-06
Lab Sample ID: 500-29848-6

Date Sampled: 12/13/2010 0945
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	Dilution
Nitrogen, Nitrate	<0.10	mg/L	0.10	1.0
Method: Dissolved-SM 2540C		Date Analyzed:	12/14/2010 2306	
Total Dissolved Solids	990	mg/L	10	1.0
Method: Dissolved-SM 4500 F C		Date Analyzed:	12/20/2010 1432	
Fluoride	0.85	mg/L	0.10	1.0
Method: Dissolved-SM 4500 NO2 B		Date Analyzed:	12/15/2010 0942	
Nitrogen, Nitrite	<0.020	mg/L	0.020	1.0
Method: Dissolved-SM 4500 NO3 F		Date Analyzed:	12/17/2010 1151	
Nitrogen, Nitrate Nitrite	<0.10	mg/L	0.10	1.0

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-07
Lab Sample ID: 500-29848-7

Date Sampled: 12/13/2010 1445
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: Dissolved-6020			Date Analyzed:	12/17/2010 1835	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Antimony	<0.0030	^	mg/L	0.0030	1.0
Arsenic	0.0040		mg/L	0.0010	1.0
Barium	0.045		mg/L	0.0025	1.0
Cadmium	<0.00050		mg/L	0.00050	1.0
Lead	<0.00050		mg/L	0.00050	1.0
Selenium	<0.0025		mg/L	0.0025	1.0
Silver	<0.00050		mg/L	0.00050	1.0
Thallium	<0.0020		mg/L	0.0020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1214	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Chromium	<0.0050		mg/L	0.0050	1.0
Cobalt	<0.0010		mg/L	0.0010	1.0
Copper	<0.0020		mg/L	0.0020	1.0
Iron	0.23		mg/L	0.10	1.0
Manganese	0.12		mg/L	0.0025	1.0
Nickel	0.0029		mg/L	0.0020	1.0
Zinc	<0.020		mg/L	0.020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1436	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Boron	4.7		mg/L	0.25	5.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1535	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Beryllium	<0.0010		mg/L	0.0010	1.0
Method: Dissolved-7470A			Date Analyzed:	12/15/2010 1352	
Prep Method: 7470A			Date Prepared:	12/15/2010 0735	
Mercury	<0.00020		mg/L	0.00020	1.0
Method: Dissolved-9014			Date Analyzed:	12/20/2010 1532	
Prep Method: 9010B			Date Prepared:	12/20/2010 1110	
Cyanide, Total	<0.010		mg/L	0.010	1.0
Method: Dissolved-9038			Date Analyzed:	12/19/2010 2036	
Sulfate	610		mg/L	100	20
Method: Dissolved-9251			Date Analyzed:	12/28/2010 1242	
Chloride	160		mg/L	10	5.0
Method: Dissolved-Nitrate by calc			Date Analyzed:	12/17/2010 1343	

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-07
Lab Sample ID: 500-29848-7

Date Sampled: 12/13/2010 1445
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier	Unit	RL	Dilution
Nitrogen, Nitrate	<0.10	mg/L	0.10	1.0
Method: Dissolved-SM 2540C		Date Analyzed:	12/14/2010 2309	
Total Dissolved Solids	1300	mg/L	10	1.0
Method: Dissolved-SM 4500 F C		Date Analyzed:	12/20/2010 1435	
Fluoride	0.96	mg/L	0.10	1.0
Method: Dissolved-SM 4500 NO2 B		Date Analyzed:	12/15/2010 0943	
Nitrogen, Nitrite	<0.020	mg/L	0.020	1.0
Method: Dissolved-SM 4500 NO3 F		Date Analyzed:	12/17/2010 1154	
Nitrogen, Nitrate Nitrite	<0.10	mg/L	0.10	1.0

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-08
Lab Sample ID: 500-29848-8

Date Sampled: 12/13/2010 1555
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier		Unit		RL	Dilution
Method: Dissolved-6020			Date Analyzed:	12/17/2010 1838		
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051		
Antimony	<0.0030	^	mg/L		0.0030	1.0
Arsenic	0.0067		mg/L		0.0010	1.0
Barium	0.069		mg/L		0.0025	1.0
Cadmium	<0.00050		mg/L		0.00050	1.0
Lead	<0.00050		mg/L		0.00050	1.0
Selenium	<0.0025		mg/L		0.0025	1.0
Silver	<0.00050		mg/L		0.00050	1.0
Thallium	<0.0020		mg/L		0.0020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1220		
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051		
Chromium	<0.0050		mg/L		0.0050	1.0
Cobalt	<0.0010		mg/L		0.0010	1.0
Copper	<0.0020		mg/L		0.0020	1.0
Iron	0.48		mg/L		0.10	1.0
Manganese	0.33		mg/L		0.0025	1.0
Nickel	<0.0020		mg/L		0.0020	1.0
Zinc	<0.020		mg/L		0.020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1437		
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051		
Boron	1.7		mg/L		0.25	5.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1536		
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051		
Beryllium	<0.0010		mg/L		0.0010	1.0
Method: Dissolved-7470A			Date Analyzed:	12/15/2010 1354		
Prep Method: 7470A			Date Prepared:	12/15/2010 0735		
Mercury	<0.00020		mg/L		0.00020	1.0
Method: Dissolved-9014			Date Analyzed:	12/20/2010 1532		
Prep Method: 9010B			Date Prepared:	12/20/2010 1110		
Cyanide, Total	<0.010		mg/L		0.010	1.0
Method: Dissolved-9038			Date Analyzed:	12/19/2010 2037		
Sulfate	440		mg/L		100	20
Method: Dissolved-9251			Date Analyzed:	12/28/2010 1242		
Chloride	93		mg/L		10	5.0
Method: Dissolved-Nitrate by calc			Date Analyzed:	12/17/2010 1343		

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-08
Lab Sample ID: 500-29848-8

Date Sampled: 12/13/2010 1555
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier	Unit		RL	Dilution
Nitrogen, Nitrate	<0.10	mg/L		0.10	1.0
Method: Dissolved-SM 2540C		Date Analyzed:	12/14/2010 2312		
Total Dissolved Solids	930	mg/L		10	1.0
Method: Dissolved-SM 4500 F C		Date Analyzed:	12/20/2010 1438		
Fluoride	0.61	mg/L		0.10	1.0
Method: Dissolved-SM 4500 NO2 B		Date Analyzed:	12/15/2010 0943		
Nitrogen, Nitrite	<0.020	mg/L		0.020	1.0
Method: Dissolved-SM 4500 NO3 F		Date Analyzed:	12/17/2010 1156		
Nitrogen, Nitrate Nitrite	<0.10	mg/L		0.10	1.0

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-09
Lab Sample ID: 500-29848-9

Date Sampled: 12/13/2010 1525
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: Dissolved-6020			Date Analyzed:	12/17/2010 1840	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Antimony	<0.0030	^	mg/L	0.0030	1.0
Arsenic	0.0059		mg/L	0.0010	1.0
Barium	0.025		mg/L	0.0025	1.0
Cadmium	<0.00050		mg/L	0.00050	1.0
Lead	<0.00050		mg/L	0.00050	1.0
Selenium	0.0036		mg/L	0.0025	1.0
Silver	<0.00050		mg/L	0.00050	1.0
Thallium	<0.0020		mg/L	0.0020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1222	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Chromium	<0.0050		mg/L	0.0050	1.0
Cobalt	<0.0010		mg/L	0.0010	1.0
Copper	<0.0020		mg/L	0.0020	1.0
Iron	<0.10		mg/L	0.10	1.0
Manganese	<0.0025		mg/L	0.0025	1.0
Nickel	<0.0020		mg/L	0.0020	1.0
Zinc	<0.020		mg/L	0.020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1438	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Boron	2.2		mg/L	0.25	5.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1537	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Beryllium	<0.0010		mg/L	0.0010	1.0
Method: Dissolved-7470A			Date Analyzed:	12/15/2010 1355	
Prep Method: 7470A			Date Prepared:	12/15/2010 0735	
Mercury	<0.00020		mg/L	0.00020	1.0
Method: Dissolved-9014			Date Analyzed:	12/20/2010 1533	
Prep Method: 9010B			Date Prepared:	12/20/2010 1110	
Cyanide, Total	<0.010		mg/L	0.010	1.0
Method: Dissolved-9038			Date Analyzed:	12/19/2010 2038	
Sulfate	410		mg/L	100	20
Method: Dissolved-9251			Date Analyzed:	12/28/2010 1244	
Chloride	100		mg/L	10	5.0
Method: Dissolved-Nitrate by calc			Date Analyzed:	12/22/2010 1549	

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-09
Lab Sample ID: 500-29848-9

Date Sampled: 12/13/2010 1525
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier	Unit		RL	Dilution
Nitrogen, Nitrate	<0.10	mg/L		0.10	1.0
Method: Dissolved-SM 2540C		Date Analyzed:	12/14/2010 2315		
Total Dissolved Solids	800	mg/L		10	1.0
Method: Dissolved-SM 4500 F C		Date Analyzed:	12/20/2010 1451		
Fluoride	0.33	mg/L		0.10	1.0
Method: Dissolved-SM 4500 NO2 B		Date Analyzed:	12/15/2010 0944		
Nitrogen, Nitrite	0.44	mg/L		0.10	5.0
Method: Dissolved-SM 4500 NO3 F		Date Analyzed:	12/22/2010 1046		
Nitrogen, Nitrate Nitrite	<0.10	mg/L		0.10	1.0

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-10
Lab Sample ID: 500-29848-10

Date Sampled: 12/13/2010 1045
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier		Unit	RL	Dilution
Method: Dissolved-6020			Date Analyzed:	12/17/2010 1843	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Antimony	<0.0030	^	mg/L	0.0030	1.0
Arsenic	0.0041		mg/L	0.0010	1.0
Barium	0.098		mg/L	0.0025	1.0
Cadmium	<0.00050		mg/L	0.00050	1.0
Lead	<0.00050		mg/L	0.00050	1.0
Selenium	<0.0025		mg/L	0.0025	1.0
Silver	<0.00050		mg/L	0.00050	1.0
Thallium	<0.0020		mg/L	0.0020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1225	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Chromium	<0.0050		mg/L	0.0050	1.0
Cobalt	<0.0010		mg/L	0.0010	1.0
Copper	<0.0020		mg/L	0.0020	1.0
Iron	0.32		mg/L	0.10	1.0
Manganese	0.25		mg/L	0.0025	1.0
Nickel	<0.0020		mg/L	0.0020	1.0
Zinc	<0.020		mg/L	0.020	1.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1439	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Boron	2.1		mg/L	0.25	5.0
Method: Dissolved-6020			Date Analyzed:	12/20/2010 1538	
Prep Method: Soluble Metals			Date Prepared:	12/17/2010 1051	
Beryllium	<0.0010		mg/L	0.0010	1.0
Method: Dissolved-7470A			Date Analyzed:	12/15/2010 1357	
Prep Method: 7470A			Date Prepared:	12/15/2010 0735	
Mercury	<0.00020		mg/L	0.00020	1.0
Method: Dissolved-9014			Date Analyzed:	12/20/2010 1533	
Prep Method: 9010B			Date Prepared:	12/20/2010 1110	
Cyanide, Total	<0.010		mg/L	0.010	1.0
Method: Dissolved-9038			Date Analyzed:	12/19/2010 2039	
Sulfate	370		mg/L	100	20
Method: Dissolved-9251			Date Analyzed:	12/28/2010 1244	
Chloride	92		mg/L	10	5.0
Method: Dissolved-Nitrate by calc			Date Analyzed:	12/17/2010 1346	

Beckie Maddox
Midwest Generation EME LLC
529 E 135th Street
Romeoville, IL 60446-1538

Job Number: 500-29848-1

Client Sample ID: MW-10
Lab Sample ID: 500-29848-10

Date Sampled: 12/13/2010 1045
Date Received: 12/14/2010 1255
Client Matrix: Water

Analyte	Result/Qualifier		Unit		RL	Dilution
Nitrogen, Nitrate	<0.10		mg/L		0.10	1.0
Method: Dissolved-SM 2540C			Date Analyzed:	12/14/2010 2318		
Total Dissolved Solids	990		mg/L		10	1.0
Method: Dissolved-SM 4500 F C			Date Analyzed:	12/20/2010 1454		
Fluoride	0.66		mg/L		0.10	1.0
Method: Dissolved-SM 4500 NO2 B			Date Analyzed:	12/15/2010 0944		
Nitrogen, Nitrite	<0.020		mg/L		0.020	1.0
Method: Dissolved-SM 4500 NO3 F			Date Analyzed:	12/17/2010 1204		
Nitrogen, Nitrate Nitrite	<0.10	^	mg/L		0.10	1.0

DATA REPORTING QUALIFIERS

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Lab Section	Qualifier	Description
Metals		
	^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.
	F	MS or MSD exceeds the control limits
General Chemistry		
	^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

QUALITY CONTROL RESULTS

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 500-101907					
LCS 500-101907/8-A	Lab Control Sample	T	Water	7470A	
MB 500-101907/7-A	Method Blank	T	Water	7470A	
500-29848-1	MW-01	D	Water	7470A	
500-29848-2	MW-02	D	Water	7470A	
500-29848-3	MW-03	D	Water	7470A	
500-29848-4	MW-04	D	Water	7470A	
500-29848-5	MW-05	D	Water	7470A	
500-29848-6	MW-06	D	Water	7470A	
500-29848-7	MW-07	D	Water	7470A	
500-29848-8	MW-08	D	Water	7470A	
500-29848-9	MW-09	D	Water	7470A	
500-29848-10	MW-10	D	Water	7470A	
Analysis Batch:500-101962					
LCS 500-101907/8-A	Lab Control Sample	T	Water	7470A	500-101907
MB 500-101907/7-A	Method Blank	T	Water	7470A	500-101907
500-29848-1	MW-01	D	Water	7470A	500-101907
500-29848-2	MW-02	D	Water	7470A	500-101907
500-29848-3	MW-03	D	Water	7470A	500-101907
500-29848-4	MW-04	D	Water	7470A	500-101907
500-29848-5	MW-05	D	Water	7470A	500-101907
500-29848-6	MW-06	D	Water	7470A	500-101907
500-29848-7	MW-07	D	Water	7470A	500-101907
500-29848-8	MW-08	D	Water	7470A	500-101907
500-29848-9	MW-09	D	Water	7470A	500-101907
500-29848-10	MW-10	D	Water	7470A	500-101907
Prep Batch: 500-102116					
LCS 500-102116/2-A	Lab Control Sample	S	Water	Soluble Metals	
MB 500-102116/1-A	Method Blank	S	Water	Soluble Metals	
500-29848-1	MW-01	D	Water	Soluble Metals	
500-29848-2	MW-02	D	Water	Soluble Metals	
500-29848-2DU	Duplicate	D	Water	Soluble Metals	
500-29848-2MS	Matrix Spike	D	Water	Soluble Metals	
500-29848-2MSD	Matrix Spike Duplicate	D	Water	Soluble Metals	
500-29848-3	MW-03	D	Water	Soluble Metals	
500-29848-4	MW-04	D	Water	Soluble Metals	
500-29848-5	MW-05	D	Water	Soluble Metals	
500-29848-6	MW-06	D	Water	Soluble Metals	
500-29848-7	MW-07	D	Water	Soluble Metals	
500-29848-8	MW-08	D	Water	Soluble Metals	
500-29848-9	MW-09	D	Water	Soluble Metals	
500-29848-10	MW-10	D	Water	Soluble Metals	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:500-102144					
LCS 500-102116/2-A	Lab Control Sample	S	Water	6020	500-102116
MB 500-102116/1-A	Method Blank	S	Water	6020	500-102116
500-29848-1	MW-01	D	Water	6020	500-102116
500-29848-2	MW-02	D	Water	6020	500-102116
500-29848-2DU	Duplicate	D	Water	6020	500-102116
500-29848-2MS	Matrix Spike	D	Water	6020	500-102116
500-29848-2MSD	Matrix Spike Duplicate	D	Water	6020	500-102116
500-29848-3	MW-03	D	Water	6020	500-102116
500-29848-4	MW-04	D	Water	6020	500-102116
500-29848-5	MW-05	D	Water	6020	500-102116
Analysis Batch:500-102214					
LCS 500-102116/2-A	Lab Control Sample	S	Water	6020	500-102116
MB 500-102116/1-A	Method Blank	S	Water	6020	500-102116
500-29848-1	MW-01	D	Water	6020	500-102116
500-29848-2	MW-02	D	Water	6020	500-102116
500-29848-2DU	Duplicate	D	Water	6020	500-102116
500-29848-2MS	Matrix Spike	D	Water	6020	500-102116
500-29848-2MSD	Matrix Spike Duplicate	D	Water	6020	500-102116
500-29848-3	MW-03	D	Water	6020	500-102116
500-29848-4	MW-04	D	Water	6020	500-102116
500-29848-5	MW-05	D	Water	6020	500-102116
500-29848-6	MW-06	D	Water	6020	500-102116
500-29848-7	MW-07	D	Water	6020	500-102116
500-29848-8	MW-08	D	Water	6020	500-102116
500-29848-9	MW-09	D	Water	6020	500-102116
500-29848-10	MW-10	D	Water	6020	500-102116
Analysis Batch:500-102240					
500-29848-3	MW-03	D	Water	6020	500-102116
500-29848-4	MW-04	D	Water	6020	500-102116
500-29848-5	MW-05	D	Water	6020	500-102116
500-29848-6	MW-06	D	Water	6020	500-102116
500-29848-7	MW-07	D	Water	6020	500-102116
500-29848-8	MW-08	D	Water	6020	500-102116
500-29848-9	MW-09	D	Water	6020	500-102116
500-29848-10	MW-10	D	Water	6020	500-102116

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:500-102257					
LCS 500-102116/2-A	Lab Control Sample	S	Water	6020	500-102116
MB 500-102116/1-A	Method Blank	S	Water	6020	500-102116
500-29848-1	MW-01	D	Water	6020	500-102116
500-29848-2	MW-02	D	Water	6020	500-102116
500-29848-2DU	Duplicate	D	Water	6020	500-102116
500-29848-2MS	Matrix Spike	D	Water	6020	500-102116
500-29848-2MSD	Matrix Spike Duplicate	D	Water	6020	500-102116
500-29848-3	MW-03	D	Water	6020	500-102116
500-29848-4	MW-04	D	Water	6020	500-102116
500-29848-5	MW-05	D	Water	6020	500-102116
500-29848-6	MW-06	D	Water	6020	500-102116
500-29848-7	MW-07	D	Water	6020	500-102116
500-29848-8	MW-08	D	Water	6020	500-102116
500-29848-9	MW-09	D	Water	6020	500-102116
500-29848-10	MW-10	D	Water	6020	500-102116

Report Basis
D = Dissolved
S = Soluble
T = Total

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:500-101897					
LCS 500-101897/2	Lab Control Sample	T	Water	SM 2540C	
MB 500-101897/1	Method Blank	T	Water	SM 2540C	
500-29848-1	MW-01	D	Water	SM 2540C	
500-29848-1DU	Duplicate	D	Water	SM 2540C	
500-29848-1MS	Matrix Spike	D	Water	SM 2540C	
500-29848-2	MW-02	D	Water	SM 2540C	
500-29848-3	MW-03	D	Water	SM 2540C	
500-29848-4	MW-04	D	Water	SM 2540C	
500-29848-5	MW-05	D	Water	SM 2540C	
500-29848-6	MW-06	D	Water	SM 2540C	
500-29848-7	MW-07	D	Water	SM 2540C	
500-29848-8	MW-08	D	Water	SM 2540C	
500-29848-9	MW-09	D	Water	SM 2540C	
500-29848-10	MW-10	D	Water	SM 2540C	
Analysis Batch:500-102007					
LCS 500-102007/4	Lab Control Sample	T	Water	SM 4500 NO2 B	
MB 500-102007/3	Method Blank	T	Water	SM 4500 NO2 B	
500-29848-1	MW-01	D	Water	SM 4500 NO2 B	
500-29848-1MS	Matrix Spike	D	Water	SM 4500 NO2 B	
500-29848-1MSD	Matrix Spike Duplicate	D	Water	SM 4500 NO2 B	
500-29848-2	MW-02	D	Water	SM 4500 NO2 B	
500-29848-3	MW-03	D	Water	SM 4500 NO2 B	
500-29848-4	MW-04	D	Water	SM 4500 NO2 B	
500-29848-5	MW-05	D	Water	SM 4500 NO2 B	
500-29848-6	MW-06	D	Water	SM 4500 NO2 B	
500-29848-7	MW-07	D	Water	SM 4500 NO2 B	
500-29848-8	MW-08	D	Water	SM 4500 NO2 B	
500-29848-9	MW-09	D	Water	SM 4500 NO2 B	
500-29848-10	MW-10	D	Water	SM 4500 NO2 B	
Analysis Batch:500-102133					
LCS 500-102133/29	Lab Control Sample	T	Water	SM 4500 NO3 F	
MB 500-102133/28	Method Blank	T	Water	SM 4500 NO3 F	
500-29848-1	MW-01	D	Water	SM 4500 NO3 F	
500-29848-2	MW-02	D	Water	SM 4500 NO3 F	
500-29848-3	MW-03	D	Water	SM 4500 NO3 F	
500-29848-4	MW-04	D	Water	SM 4500 NO3 F	
500-29848-5	MW-05	D	Water	SM 4500 NO3 F	
500-29848-6	MW-06	D	Water	SM 4500 NO3 F	
500-29848-7	MW-07	D	Water	SM 4500 NO3 F	
500-29848-8	MW-08	D	Water	SM 4500 NO3 F	
500-29848-10	MW-10	D	Water	SM 4500 NO3 F	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:500-102140					
500-29848-1	MW-01	D	Water	Nitrate by calc	
500-29848-2	MW-02	D	Water	Nitrate by calc	
500-29848-3	MW-03	D	Water	Nitrate by calc	
500-29848-4	MW-04	D	Water	Nitrate by calc	
500-29848-5	MW-05	D	Water	Nitrate by calc	
500-29848-6	MW-06	D	Water	Nitrate by calc	
500-29848-7	MW-07	D	Water	Nitrate by calc	
500-29848-8	MW-08	D	Water	Nitrate by calc	
500-29848-10	MW-10	D	Water	Nitrate by calc	
Analysis Batch:500-102195					
LCS 500-102195/4	Lab Control Sample	T	Water	9038	
MB 500-102195/3	Method Blank	T	Water	9038	
500-29848-1	MW-01	D	Water	9038	
500-29848-2	MW-02	D	Water	9038	
500-29848-3	MW-03	D	Water	9038	
500-29848-4	MW-04	D	Water	9038	
500-29848-5	MW-05	D	Water	9038	
500-29848-6	MW-06	D	Water	9038	
500-29848-7	MW-07	D	Water	9038	
500-29848-8	MW-08	D	Water	9038	
500-29848-9	MW-09	D	Water	9038	
500-29848-10	MW-10	D	Water	9038	
Prep Batch: 500-102232					
HLCS 500-102232/3-A	High Level Control Sample	T	Water	9010B	
LCS 500-102232/2-A	Lab Control Sample	T	Water	9010B	
LLCS 500-102232/4-A	Low Level Control Sample	T	Water	9010B	
MB 500-102232/1-A	Method Blank	T	Water	9010B	
500-29848-1	MW-01	D	Water	9010B	
500-29848-2	MW-02	D	Water	9010B	
500-29848-3	MW-03	D	Water	9010B	
500-29848-4	MW-04	D	Water	9010B	
500-29848-5	MW-05	D	Water	9010B	
500-29848-6	MW-06	D	Water	9010B	
500-29848-7	MW-07	D	Water	9010B	
500-29848-8	MW-08	D	Water	9010B	
500-29848-9	MW-09	D	Water	9010B	
500-29848-10	MW-10	D	Water	9010B	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:500-102260					
LCS 500-102260/4	Lab Control Sample	T	Water	SM 4500 F C	
MB 500-102260/3	Method Blank	T	Water	SM 4500 F C	
500-29848-1	MW-01	D	Water	SM 4500 F C	
500-29848-1MS	Matrix Spike	D	Water	SM 4500 F C	
500-29848-1MSD	Matrix Spike Duplicate	D	Water	SM 4500 F C	
500-29848-2	MW-02	D	Water	SM 4500 F C	
500-29848-3	MW-03	D	Water	SM 4500 F C	
500-29848-4	MW-04	D	Water	SM 4500 F C	
500-29848-5	MW-05	D	Water	SM 4500 F C	
500-29848-6	MW-06	D	Water	SM 4500 F C	
500-29848-7	MW-07	D	Water	SM 4500 F C	
500-29848-8	MW-08	D	Water	SM 4500 F C	
500-29848-9	MW-09	D	Water	SM 4500 F C	
500-29848-10	MW-10	D	Water	SM 4500 F C	
Analysis Batch:500-102269					
HLCS 500-102232/3-A	High Level Control Sample	T	Water	9014	500-102232
LCS 500-102232/2-A	Lab Control Sample	T	Water	9014	500-102232
LLCS 500-102232/4-A	Low Level Control Sample	T	Water	9014	500-102232
MB 500-102232/1-A	Method Blank	T	Water	9014	500-102232
500-29848-1	MW-01	D	Water	9014	500-102232
500-29848-2	MW-02	D	Water	9014	500-102232
500-29848-3	MW-03	D	Water	9014	500-102232
500-29848-4	MW-04	D	Water	9014	500-102232
500-29848-5	MW-05	D	Water	9014	500-102232
500-29848-6	MW-06	D	Water	9014	500-102232
500-29848-7	MW-07	D	Water	9014	500-102232
500-29848-8	MW-08	D	Water	9014	500-102232
500-29848-9	MW-09	D	Water	9014	500-102232
500-29848-10	MW-10	D	Water	9014	500-102232
Analysis Batch:500-102427					
LCS 500-102427/23	Lab Control Sample	T	Water	SM 4500 NO3 F	
MB 500-102427/22	Method Blank	T	Water	SM 4500 NO3 F	
500-29848-9	MW-09	D	Water	SM 4500 NO3 F	
Analysis Batch:500-102452					
500-29848-9	MW-09	D	Water	Nitrate by calc	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:500-102659					
LCS 500-102659/12	Lab Control Sample	T	Water	9251	
MB 500-102659/11	Method Blank	T	Water	9251	
500-29848-1	MW-01	D	Water	9251	
500-29848-2	MW-02	D	Water	9251	
500-29848-3	MW-03	D	Water	9251	
500-29848-4	MW-04	D	Water	9251	
500-29848-5	MW-05	D	Water	9251	
500-29848-6	MW-06	D	Water	9251	
500-29848-7	MW-07	D	Water	9251	
500-29848-8	MW-08	D	Water	9251	
500-29848-9	MW-09	D	Water	9251	
500-29848-10	MW-10	D	Water	9251	

Report Basis
D = Dissolved
T = Total

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Method Blank - Batch: 500-102116

Method: 6020
Preparation: Soluble Metals Soluble

Lab Sample ID: MB 500-102116/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/17/2010 1313
Date Prepared: 12/17/2010 1051

Analysis Batch: 500-102144
Prep Batch: 500-102116
Units: mg/L

Instrument ID: ICPMS2
Lab File ID: MS2121710BB.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL
Beryllium	<0.0010		0.0010

Method Blank - Batch: 500-102116

Method: 6020
Preparation: Soluble Metals Soluble

Lab Sample ID: MB 500-102116/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/17/2010 1754
Date Prepared: 12/17/2010 1051

Analysis Batch: 500-102214
Prep Batch: 500-102116
Units: mg/L

Instrument ID: ICPMS2
Lab File ID: MS2121710C.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL
Antimony	<0.0030	^	0.0030
Arsenic	<0.0010		0.0010
Barium	<0.0025		0.0025
Cadmium	<0.00050		0.00050
Chromium	<0.0050		0.0050
Cobalt	<0.0010		0.0010
Copper	<0.0020		0.0020
Iron	<0.10		0.10
Lead	<0.00050		0.00050
Manganese	<0.0025		0.0025
Nickel	<0.0020		0.0020
Selenium	<0.0025		0.0025
Silver	<0.00050		0.00050
Thallium	<0.0020		0.0020
Zinc	<0.020		0.020

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Method Blank - Batch: 500-102116

Method: 6020
Preparation: Soluble Metals
Soluble

Lab Sample ID: MB 500-102116/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/20/2010 1422
Date Prepared: 12/17/2010 1051

Analysis Batch: 500-102257
Prep Batch: 500-102116
Units: mg/L

Instrument ID: ICPMS2
Lab File ID: MS2122010C.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL
Boron	<0.050		0.050

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Lab Control Sample - Batch: 500-102116

Method: 6020
Preparation: Soluble Metals Soluble

Lab Sample ID: LCS 500-102116/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/17/2010 1315
Date Prepared: 12/17/2010 1051

Analysis Batch: 500-102144
Prep Batch: 500-102116
Units: mg/L

Instrument ID: ICPMS2
Lab File ID: MS2121710BB.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Beryllium	0.0500	0.0469	94	80 - 120	

Lab Control Sample - Batch: 500-102116

Method: 6020
Preparation: Soluble Metals Soluble

Lab Sample ID: LCS 500-102116/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/17/2010 1757
Date Prepared: 12/17/2010 1051

Analysis Batch: 500-102214
Prep Batch: 500-102116
Units: mg/L

Instrument ID: ICPMS2
Lab File ID: MS2121710C.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	0.500	0.445	89	80 - 120	^
Arsenic	0.100	0.0996	100	80 - 120	
Barium	0.500	0.494	99	80 - 120	
Cadmium	0.0500	0.0505	101	80 - 120	
Chromium	0.200	0.197	98	80 - 120	
Cobalt	0.500	0.497	99	80 - 120	
Copper	0.250	0.260	104	80 - 120	
Iron	1.00	0.923	92	80 - 120	
Lead	0.100	0.102	102	80 - 120	
Manganese	0.500	0.513	103	80 - 120	
Nickel	0.500	0.513	103	80 - 120	
Selenium	0.100	0.104	104	80 - 120	
Silver	0.0500	0.0504	101	80 - 120	
Thallium	0.100	0.106	106	80 - 120	
Zinc	0.500	0.520	104	80 - 120	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Lab Control Sample - Batch: 500-102116

Method: 6020
Preparation: Soluble Metals Soluble

Lab Sample ID: LCS 500-102116/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/20/2010 1423
Date Prepared: 12/17/2010 1051

Analysis Batch: 500-102257
Prep Batch: 500-102116
Units: mg/L

Instrument ID: ICPMS2
Lab File ID: MS2122010C.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Boron	1.00	1.03	103	80 - 120	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 500-102116

Method: 6020
Preparation: Soluble Metals Dissolved

MS Lab Sample ID:	500-29848-2	Analysis Batch:	500-102144	Instrument ID:	ICPMS2
Client Matrix:	Water	Prep Batch:	500-102116	Lab File ID:	MS2121710BB.csv
Dilution:	1.0			Initial Weight/Volume:	1.0 mL
Date Analyzed:	12/17/2010 1337			Final Weight/Volume:	1.0 mL
Date Prepared:	12/17/2010 1051				

MSD Lab Sample ID:	500-29848-2	Analysis Batch:	500-102144	Instrument ID:	ICPMS2
Client Matrix:	Water	Prep Batch:	500-102116	Lab File ID:	MS2121710BB.csv
Dilution:	1.0			Initial Weight/Volume:	1.0 mL
Date Analyzed:	12/17/2010 1339			Final Weight/Volume:	1.0 mL
Date Prepared:	12/17/2010 1051				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Beryllium	103	105	75 - 125	2	20		

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 500-102116

Method: 6020
Preparation: Soluble Metals Dissolved

MS Lab Sample ID: 500-29848-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/17/2010 1815
Date Prepared: 12/17/2010 1051

Analysis Batch: 500-102214
Prep Batch: 500-102116

Instrument ID: ICPMS2
Lab File ID: MS2121710C.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

MSD Lab Sample ID: 500-29848-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/17/2010 1817
Date Prepared: 12/17/2010 1051

Analysis Batch: 500-102214
Prep Batch: 500-102116

Instrument ID: ICPMS2
Lab File ID: MS2121710C.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	83	91	75 - 125	10	20	^	^
Arsenic	113	112	75 - 125	1	20		
Barium	98	99	75 - 125	1	20		
Cadmium	99	101	75 - 125	1	20		
Chromium	95	95	75 - 125	0	20		
Cobalt	94	94	75 - 125	0	20		
Copper	96	96	75 - 125	0	20		
Iron	90	90	75 - 125	1	20		
Lead	102	102	75 - 125	1	20		
Manganese	101	100	75 - 125	0	20		
Nickel	96	96	75 - 125	0	20		
Selenium	127	127	75 - 125	1	20	F	F
Silver	86	84	75 - 125	3	20		
Thallium	107	107	75 - 125	1	20		
Zinc	104	103	75 - 125	0	20		

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 500-102116

Method: 6020
Preparation: Soluble Metals Dissolved

MS Lab Sample ID:	500-29848-2	Analysis Batch:	500-102257	Instrument ID:	ICPMS2
Client Matrix:	Water	Prep Batch:	500-102116	Lab File ID:	MS2122010C.csv
Dilution:	5.0			Initial Weight/Volume:	1.0 mL
Date Analyzed:	12/20/2010 1429			Final Weight/Volume:	1.0 mL
Date Prepared:	12/17/2010 1051				

MSD Lab Sample ID:	500-29848-2	Analysis Batch:	500-102257	Instrument ID:	ICPMS2
Client Matrix:	Water	Prep Batch:	500-102116	Lab File ID:	MS2122010C.csv
Dilution:	5.0			Initial Weight/Volume:	1.0 mL
Date Analyzed:	12/20/2010 1432			Final Weight/Volume:	1.0 mL
Date Prepared:	12/17/2010 1051				

Analyte	% Rec. MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Boron	110	104	75 - 125	2	20		

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Duplicate - Batch: 500-102116

Method: 6020
Preparation: Soluble Metals Dissolved

Lab Sample ID: 500-29848-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/17/2010 1335
Date Prepared: 12/17/2010 1051

Analysis Batch: 500-102144
Prep Batch: 500-102116
Units: mg/L

Instrument ID: ICPMS2
Lab File ID: MS2121710BB.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Beryllium	<0.0010	<0.0010	NC	20	

Duplicate - Batch: 500-102116

Method: 6020
Preparation: Soluble Metals Dissolved

Lab Sample ID: 500-29848-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/17/2010 1812
Date Prepared: 12/17/2010 1051

Analysis Batch: 500-102214
Prep Batch: 500-102116
Units: mg/L

Instrument ID: ICPMS2
Lab File ID: MS2121710C.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Antimony	<0.0030	<0.0030	NC	20	^
Arsenic	0.0052	0.00522	0.4	20	
Barium	0.061	0.0589	3	20	
Cadmium	<0.00050	<0.00050	NC	20	
Chromium	<0.0050	<0.0050	NC	20	
Cobalt	<0.0010	<0.0010	NC	20	
Copper	<0.0020	<0.0020	NC	20	
Iron	<0.10	<0.10	NC	20	
Lead	<0.00050	<0.00050	NC	20	
Manganese	0.032	0.0338	4	20	
Nickel	<0.0020	<0.0020	NC	20	
Selenium	<0.0025	<0.0025	NC	20	
Silver	<0.00050	<0.00050	NC	20	
Thallium	<0.0020	<0.0020	NC	20	
Zinc	<0.020	<0.020	NC	20	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Duplicate - Batch: 500-102116

Method: 6020
Preparation: Soluble Metals Dissolved

Lab Sample ID: 500-29848-2
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 12/20/2010 1428
Date Prepared: 12/17/2010 1051

Analysis Batch: 500-102257
Prep Batch: 500-102116
Units: mg/L

Instrument ID: ICPMS2
Lab File ID: MS2122010C.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Boron	1.8	1.81	0.2	20	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Method Blank - Batch: 500-101907

Method: 7470A
Preparation: 7470A

Lab Sample ID: MB 500-101907/7-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/15/2010 1323
Date Prepared: 12/15/2010 0735

Analysis Batch: 500-101962
Prep Batch: 500-101907
Units: mg/L

Instrument ID: HG6
Lab File ID: 121510R.CSV
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Mercury	<0.00020		0.00020

Lab Control Sample - Batch: 500-101907

Method: 7470A
Preparation: 7470A

Lab Sample ID: LCS 500-101907/8-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/15/2010 1325
Date Prepared: 12/15/2010 0735

Analysis Batch: 500-101962
Prep Batch: 500-101907
Units: mg/L

Instrument ID: HG6
Lab File ID: 121510R.CSV
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.00200	0.00208	104	80 - 120	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Method Blank - Batch: 500-102232

Method: 9014
Preparation: 9010B

Lab Sample ID: MB 500-102232/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/20/2010 1525
Date Prepared: 12/20/2010 1110

Analysis Batch: 500-102269
Prep Batch: 500-102232
Units: mg/L

Instrument ID: SPEC5
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Cyanide, Total-Dissolved	<0.010		0.010

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Lab Control Sample - Batch: 500-102232

Method: 9014
Preparation: 9010B

Lab Sample ID: LCS 500-102232/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/20/2010 1525
Date Prepared: 12/20/2010 1110

Analysis Batch: 500-102269
Prep Batch: 500-102232
Units: mg/L

Instrument ID: SPEC5
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Cyanide, Total-Dissolved	0.100	0.100	100	80 - 120	

High Level Control Sample - Batch: 500-102232

Method: 9014
Preparation: 9010B

Lab Sample ID: HLCS 500-102232/3-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/20/2010 1526
Date Prepared: 12/20/2010 1110

Analysis Batch: 500-102269
Prep Batch: 500-102232
Units: mg/L

Instrument ID: SPEC5
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Cyanide, Total-Dissolved	0.400	0.395	99	90 - 110	

Low Level Control Sample - Batch: 500-102232

Method: 9014
Preparation: 9010B

Lab Sample ID: LLCS 500-102232/4-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/20/2010 1526
Date Prepared: 12/20/2010 1110

Analysis Batch: 500-102269
Prep Batch: 500-102232
Units: mg/L

Instrument ID: SPEC5
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Cyanide, Total-Dissolved	0.0400	0.0416	104	75 - 125	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Method Blank - Batch: 500-102195

Method: 9038
Preparation: N/A

Lab Sample ID: MB 500-102195/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/19/2010 2024
Date Prepared: N/A

Analysis Batch: 500-102195
Prep Batch: N/A
Units: mg/L

Instrument ID: SPEC3
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL
Sulfate-Dissolved	<5.0		5.0

Lab Control Sample - Batch: 500-102195

Method: 9038
Preparation: N/A

Lab Sample ID: LCS 500-102195/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/19/2010 2025
Date Prepared: N/A

Analysis Batch: 500-102195
Prep Batch: N/A
Units: mg/L

Instrument ID: SPEC3
Lab File ID: N/A
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate-Dissolved	20.0	18.8	94	80 - 120	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Method Blank - Batch: 500-102659

Method: 9251
Preparation: N/A

Lab Sample ID: MB 500-102659/11
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/28/2010 1237
Date Prepared: N/A

Analysis Batch: 500-102659
Prep Batch: N/A
Units: mg/L

Instrument ID: AQ2
Lab File ID: 2010-12-28-13-5-1.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL
Chloride-Dissolved	<2.0		2.0

Lab Control Sample - Batch: 500-102659

Method: 9251
Preparation: N/A

Lab Sample ID: LCS 500-102659/12
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/28/2010 1238
Date Prepared: N/A

Analysis Batch: 500-102659
Prep Batch: N/A
Units: mg/L

Instrument ID: AQ2
Lab File ID: 2010-12-28-13-5-1.csv
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Dissolved	50.0	50.6	101	80 - 120	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Method Blank - Batch: 500-101897

Method: SM 2540C
Preparation: N/A

Lab Sample ID: MB 500-101897/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/14/2010 2238
Date Prepared: N/A

Analysis Batch: 500-101897
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Total Dissolved Solids-Dissolved	<10		10

Lab Control Sample - Batch: 500-101897

Method: SM 2540C
Preparation: N/A

Lab Sample ID: LCS 500-101897/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/14/2010 2241
Date Prepared: N/A

Analysis Batch: 500-101897
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids-Dissolved	250	236	94	80 - 120	

Matrix Spike - Batch: 500-101897

Method: SM 2540C
Preparation: N/A

Lab Sample ID: 500-29848-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/14/2010 2250
Date Prepared: N/A

Analysis Batch: 500-101897
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Total Dissolved Solids-Dissolved	1100	250	1300	96	75 - 125	4

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Duplicate - Batch: 500-101897

Method: SM 2540C
Preparation: N/A

Lab Sample ID: 500-29848-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/14/2010 2247
Date Prepared: N/A

Analysis Batch: 500-101897
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids-Dissolved	1100	1040	2	20	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Method Blank - Batch: 500-102260

Method: SM 4500 F C
Preparation: N/A

Lab Sample ID: MB 500-102260/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/20/2010 1331
Date Prepared: N/A

Analysis Batch: 500-102260
Prep Batch: N/A
Units: mg/L

Instrument ID: PC-Titrate
Lab File ID: 10122000.txt
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL
Fluoride-Dissolved	<0.10		0.10

Lab Control Sample - Batch: 500-102260

Method: SM 4500 F C
Preparation: N/A

Lab Sample ID: LCS 500-102260/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/20/2010 1334
Date Prepared: N/A

Analysis Batch: 500-102260
Prep Batch: N/A
Units: mg/L

Instrument ID: PC-Titrate
Lab File ID: 10122000.txt
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Fluoride-Dissolved	10.0	10.4	104	80 - 120	

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 500-102260

Method: SM 4500 F C
Preparation: N/A

MS Lab Sample ID: 500-29848-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/20/2010 1415
Date Prepared: N/A

Analysis Batch: 500-102260
Prep Batch: N/A

Instrument ID: PC-Titrate
Lab File ID: 10122000.txt
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

MSD Lab Sample ID: 500-29848-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/20/2010 1418
Date Prepared: N/A

Analysis Batch: 500-102260
Prep Batch: N/A

Instrument ID: PC-Titrate
Lab File ID: 10122000.txt
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Fluoride-Dissolved	101	100	75 - 125	1	20		

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Method Blank - Batch: 500-102007

Method: SM 4500 NO2 B
Preparation: N/A

Lab Sample ID: MB 500-102007/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/15/2010 0940
Date Prepared: N/A

Analysis Batch: 500-102007
Prep Batch: N/A
Units: mg/L

Instrument ID: SPEC5
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrite-Dissolved	<0.020		0.020

Lab Control Sample - Batch: 500-102007

Method: SM 4500 NO2 B
Preparation: N/A

Lab Sample ID: LCS 500-102007/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/15/2010 0940
Date Prepared: N/A

Analysis Batch: 500-102007
Prep Batch: N/A
Units: mg/L

Instrument ID: SPEC5
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrite-Dissolved	0.100	0.0983	98	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 500-102007

Method: SM 4500 NO2 B
Preparation: N/A

MS Lab Sample ID: 500-29848-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/15/2010 0941
Date Prepared: N/A

Analysis Batch: 500-102007
Prep Batch: N/A

Instrument ID: SPEC5
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 500-29848-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/15/2010 0941
Date Prepared: N/A

Analysis Batch: 500-102007
Prep Batch: N/A

Instrument ID: SPEC5
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrite-Dissolved	92	94	75 - 125	2	20		

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Method Blank - Batch: 500-102133

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID: MB 500-102133/28
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/17/2010 1137
Date Prepared: N/A

Analysis Batch: 500-102133
Prep Batch: N/A
Units: mg/L

Instrument ID: AQ2
Lab File ID: 2010-12-17-12-27-19.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate Nitrite-Dissolved	<0.10		0.10

Lab Control Sample - Batch: 500-102133

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID: LCS 500-102133/29
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/17/2010 1139
Date Prepared: N/A

Analysis Batch: 500-102133
Prep Batch: N/A
Units: mg/L

Instrument ID: AQ2
Lab File ID: 2010-12-17-12-27-19.csv
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate Nitrite-Dissolved	1.00	0.990	99	80 - 120	

Quality Control Results

Client: Midwest Generation EME LLC

Job Number: 500-29848-1

Method Blank - Batch: 500-102427

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID: MB 500-102427/22
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/22/2010 1036
Date Prepared: N/A

Analysis Batch: 500-102427
Prep Batch: N/A
Units: mg/L

Instrument ID: AQ2
Lab File ID: 2010-12-22-11-37-39.csv
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate Nitrite-Dissolved	<0.10		0.10

Lab Control Sample - Batch: 500-102427

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID: LCS 500-102427/23
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/22/2010 1038
Date Prepared: N/A

Analysis Batch: 500-102427
Prep Batch: N/A
Units: mg/L

Instrument ID: AQ2
Lab File ID: 2010-12-22-11-37-39.csv
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate Nitrite-Dissolved	1.00	1.06	106	80 - 120	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Report To (optional)
Contact: Andrew Gaynon
Company: Patrick Eng.
Address: 4985 Varsity Drive
Address: Lisle IL 60532
Phone: 630-795-7359
Fax: 630-724-9290
E-Mail: AGaynon@Patrickengineering.com

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-29848
Chain of Custody Number:
Page ___ of ___
Temperature °C of Cooler: (3.3) (3.5)

Client: Patrick Eng.
Client Project #: 21053.070
Project Name: Midwest Gen. Ash pond Study
Project Location/State: Will County, IL
Lab Project #:
Sampler:
Lab PM:

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Dissolved TDS, S, F, SO4, Cl (Preservative: —)	Dissolved NO3-NO2 (Preservative: Sulfuric Acid)	Dissolved metals (Preservative: Nitric Acid)	Dissolved cyanide (Preservative: Sodium Hydroxide)	Dissolved NO2 (Preservative: —)					Comments
1		MW-01	12/13/10	14:00	5	W	X	X	X	X	X					
2		MW-02	↓	13:15	↓	↓	↓	↓	↓	↓	↓					
3		MW-03		12:30												
4		MW-04		12:00												
5		MW-05		11:30												
6		MW-06		9:45												
7		MW-07		14:45												
8		MW-08		1555												
9		MW-09		15:25												
10		MW-10		10:45												

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days X 15 Days ___ Other
Requested Due Date ______

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ___ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Dave [illegible]	Patrick Eng.	12/14/10	1255	[signature]	TA	12/14/10	1255

Lab Courier:
Shipped:
Hand Delivered: PEI

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OI – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments:

Lab Comments:

TAL-4124-500 (1209)

Login Sample Receipt Check List

Client: Midwest Generation EME LLC

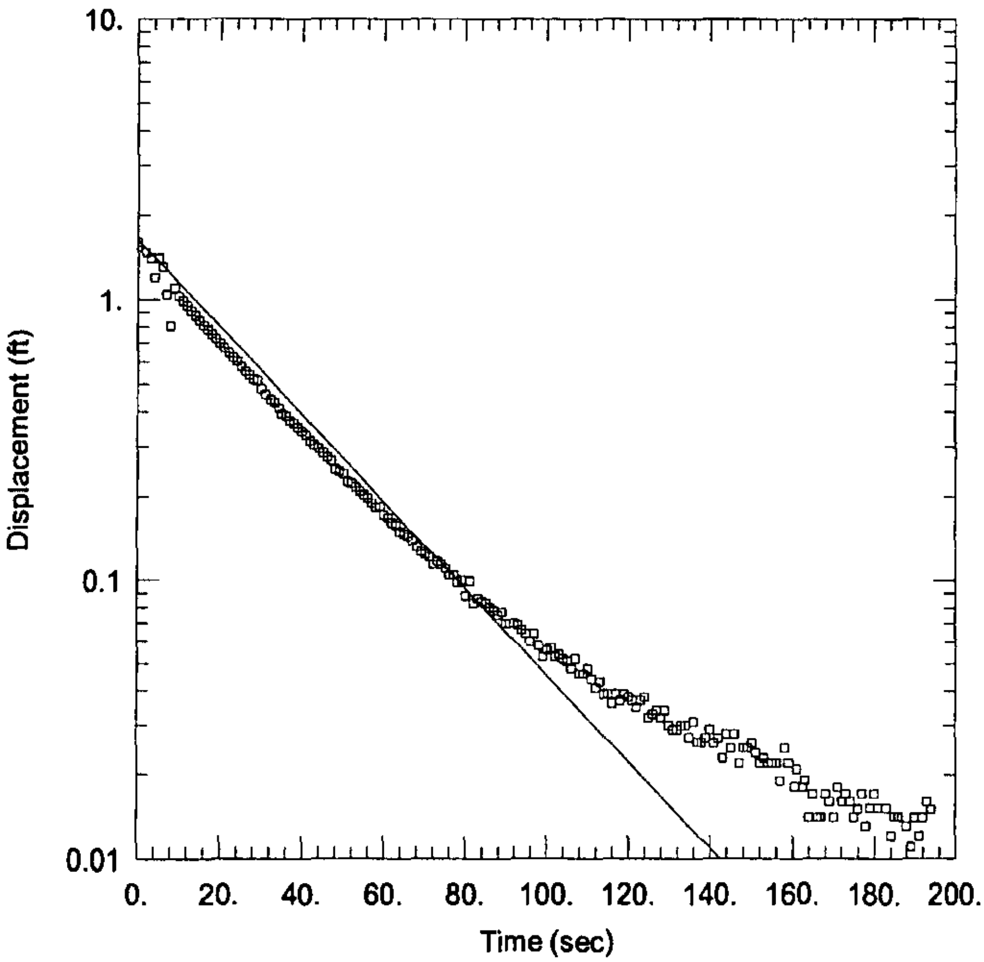
Job Number: 500-29848-1

Login Number: 29848
Creator: Lunt, Jeff T
List Number: 1

List Source: TestAmerica Chicago

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	3.3,3.5
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

APPENDIX D



WELL TEST ANALYSIS

Data Set: P:\...\will mw-1 d1.aqt
Date: 02/18/11 Time: 14:59:40

PROJECT INFORMATION

Company: Patrick Engineering
Client: Midwest Generation
Project: 21053.070
Location: Waukegan
Test Well: MW-1 (u2)
Test Date: 12/22/10

AQUIFER DATA

Saturated Thickness: 12.57 ft Anisotropy Ratio (Kz/Kr): 1.

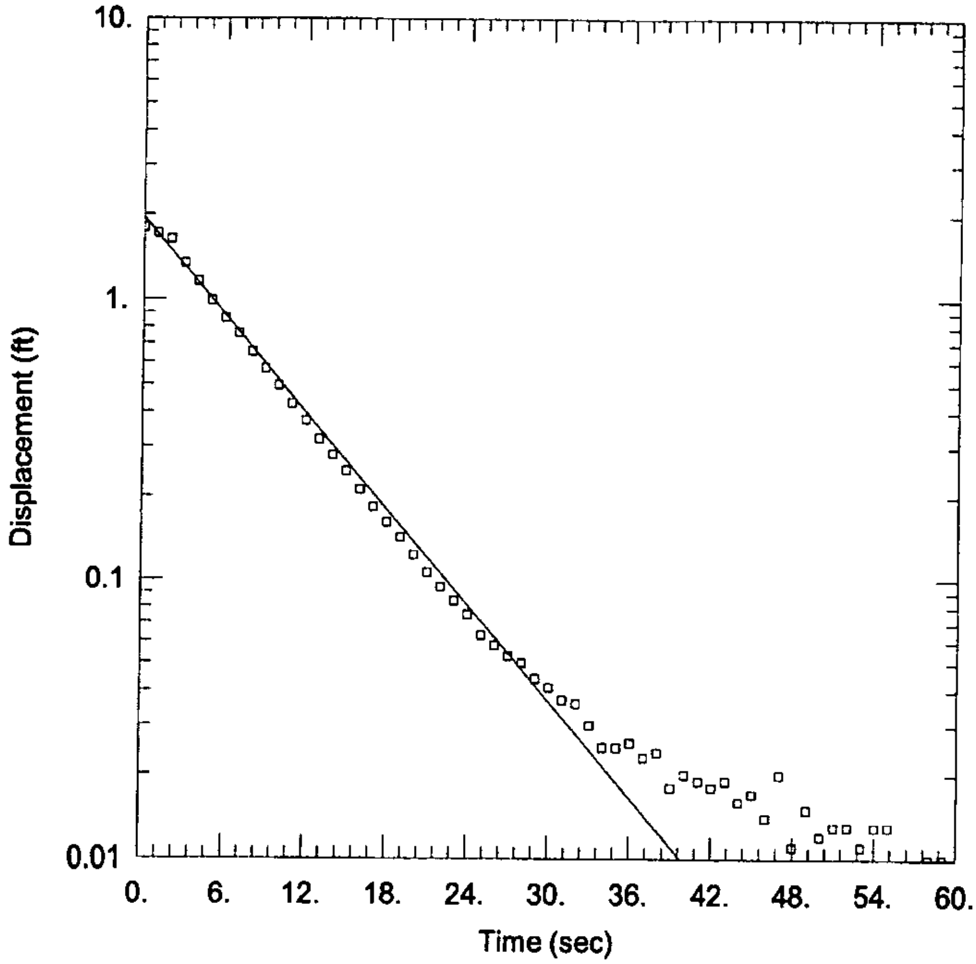
WELL DATA (MW-1 (d1))

Initial Displacement: 1.6 ft
Total Well Penetration Depth: 22. ft
Casing Radius: 0.2 ft
Static Water Column Height: 12.57 ft
Screen Length: 10. ft
Well Radius: 0.085 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0002245 ft/sec y0 = 1.635 ft



WELL TEST ANALYSIS

Data Set: P:\...\will mw-1 u1.aqt
Date: 02/18/11 Time: 14:59:24

PROJECT INFORMATION

Company: Patrick Engineering
Client: Midwest Generation
Project: 21053.070
Location: Waukegan
Test Well: MW-1 (u2)
Test Date: 12/22/10

AQUIFER DATA

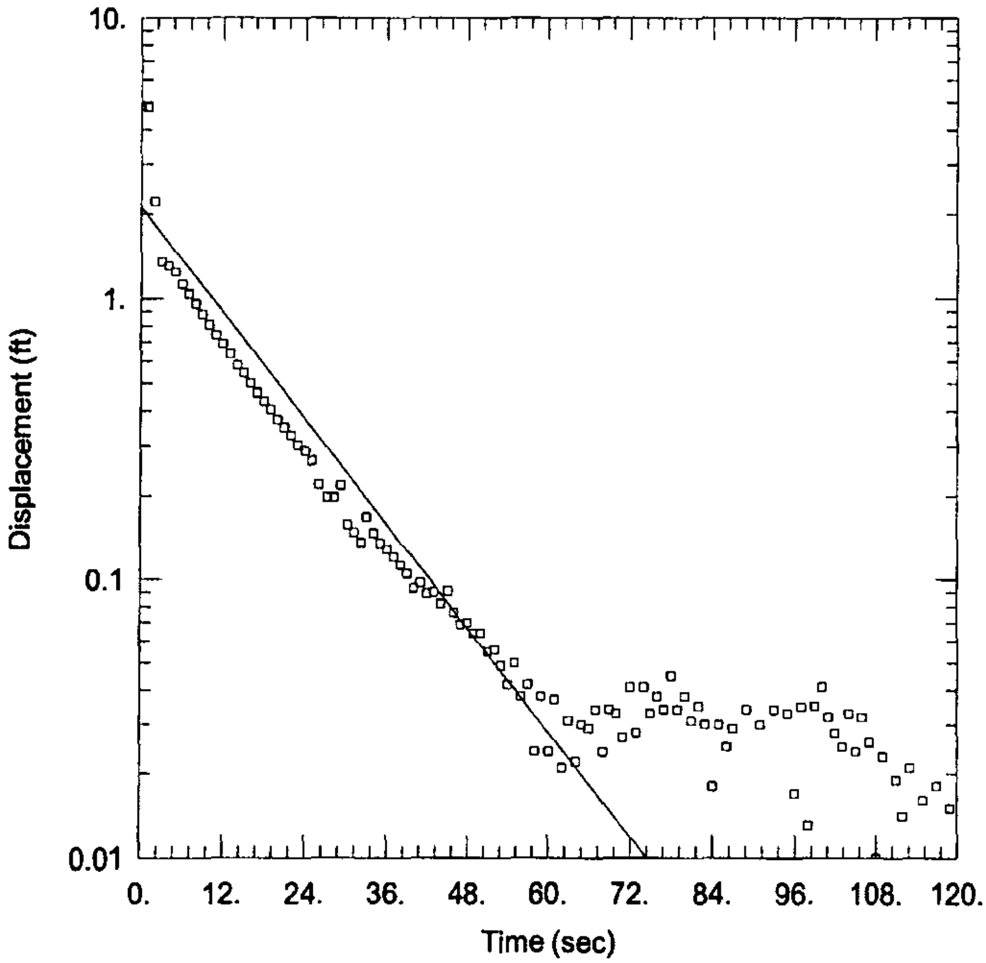
Saturated Thickness: 12.57 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-1 (u1))

Initial Displacement: 1.8 ft
Total Well Penetration Depth: 22. ft
Casing Radius: 0.2 ft
Static Water Column Height: 12.57 ft
Screen Length: 10. ft
Well Radius: 0.085 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0008312 ft/sec
y0 = 1.948 ft



WELL TEST ANALYSIS

Data Set: P:\...\will mw-4 d1.aqt
Date: 02/18/11 Time: 14:59:01

PROJECT INFORMATION

Company: Patrick Engineering
Client: Midwest Generation
Project: 21053.070
Location: Waukegan
Test Well: MW-1 (u2)
Test Date: 12/22/10

AQUIFER DATA

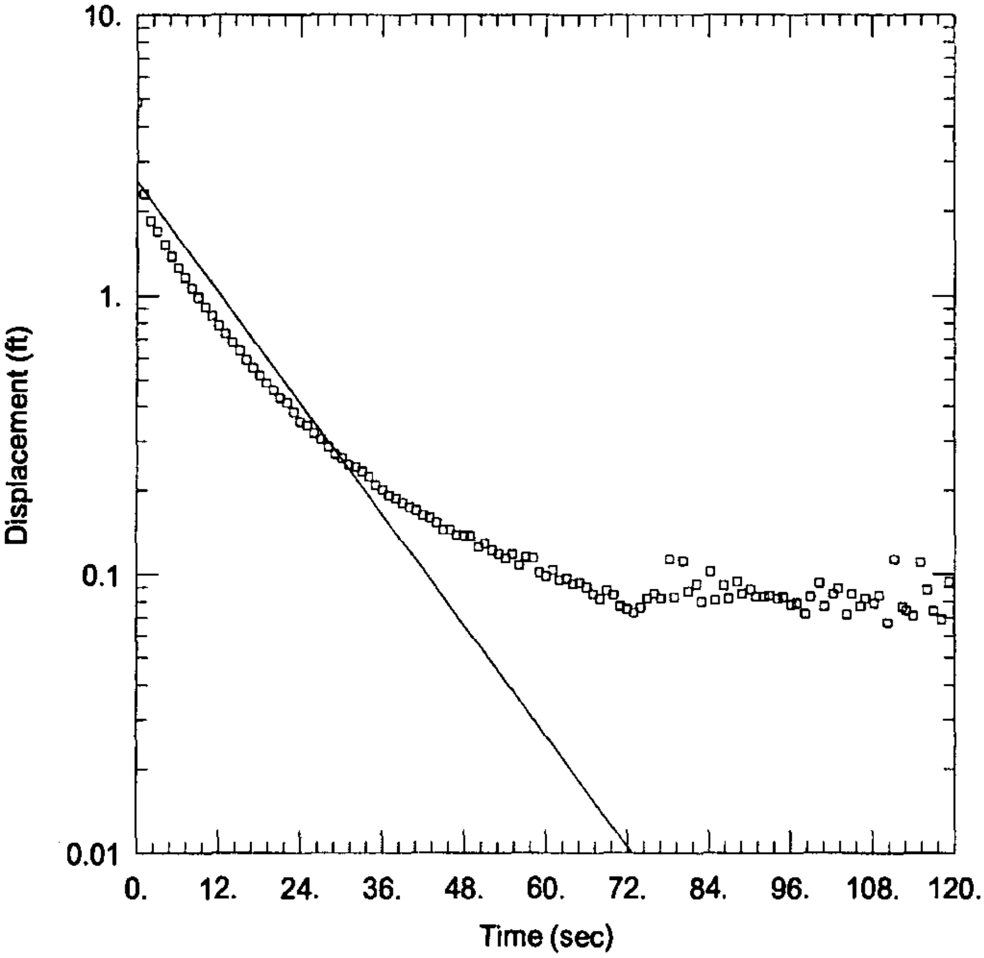
Saturated Thickness: 11.3 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-4 (d1))

Initial Displacement: 4.85 ft
Total Well Penetration Depth: 22.48 ft
Casing Radius: 0.2 ft
Static Water Column Height: 11.3 ft
Screen Length: 10. ft
Well Radius: 0.085 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0004525 ft/sec
y0 = 2.117 ft



WELL TEST ANALYSIS

Data Set: P:\...\will mw-4 u2.aqt
Date: 02/18/11 Time: 14:58:33

PROJECT INFORMATION

Company: Patrick Engineering
Client: Midwest Generation
Project: 21053.070
Location: Waukegan
Test Well: MW-1 (u2)
Test Date: 12/22/10

AQUIFER DATA

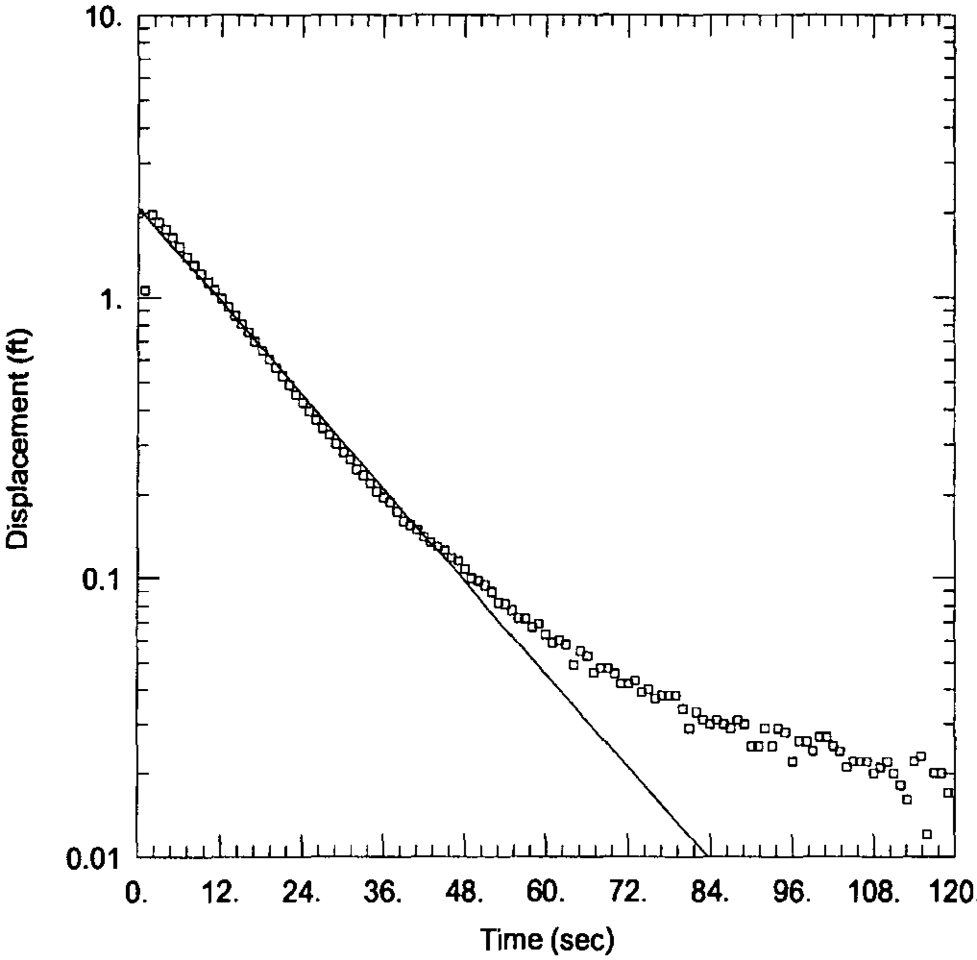
Saturated Thickness: 11.3 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-4 (u2))

Initial Displacement: 4.87 ft
Total Well Penetration Depth: 22.48 ft
Casing Radius: 0.2 ft
Static Water Column Height: 11.3 ft
Screen Length: 10. ft
Well Radius: 0.085 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0004797 ft/sec
y0 = 2.553 ft



WELL TEST ANALYSIS

Data Set: P:\...\will mw-6 u2.aqt
Date: 02/18/11 Time: 14:54:43

PROJECT INFORMATION

Company: Patrick Engineering
Client: Midwest Generation
Project: 21053.070
Location: Waukegan
Test Well: MW-1 (u2)
Test Date: 12/22/10

AQUIFER DATA

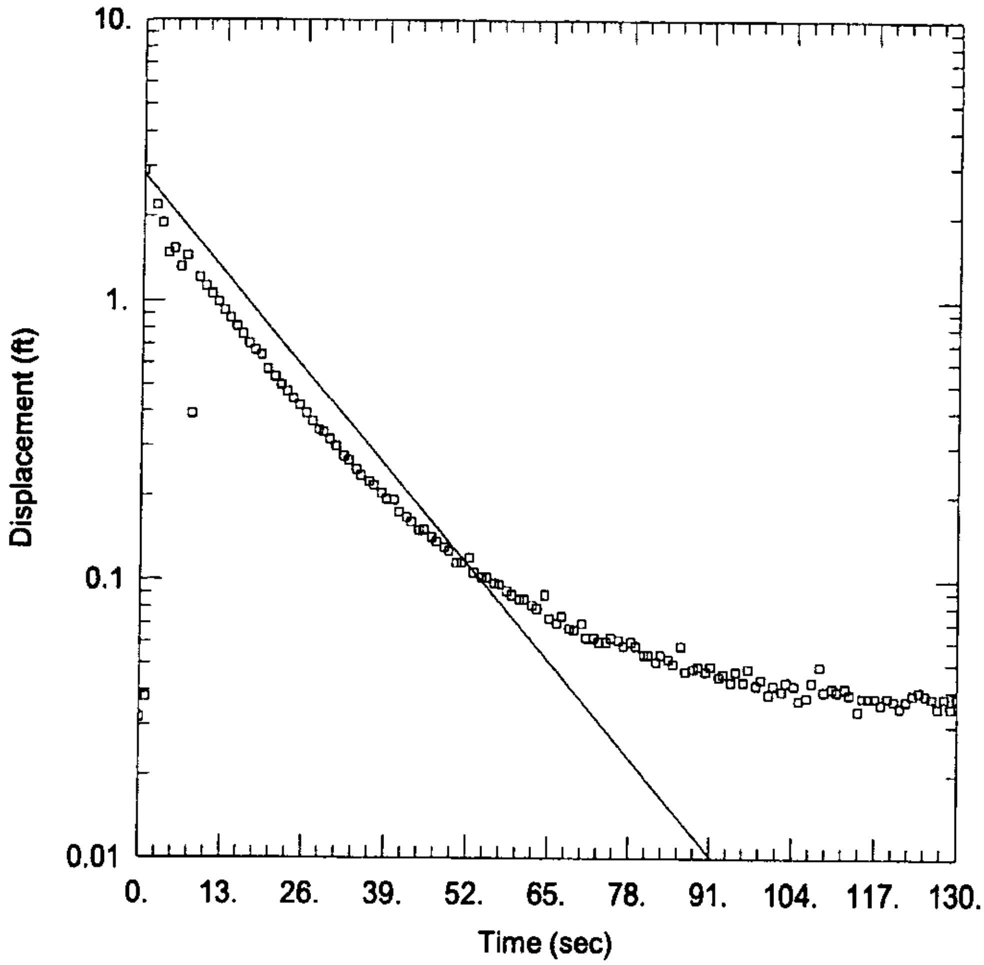
Saturated Thickness: 10.32 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-6 (u2))

Initial Displacement: 2. ft
Total Well Penetration Depth: 21.15 ft
Casing Radius: 0.2 ft
Static Water Column Height: 10.32 ft
Screen Length: 10. ft
Well Radius: 0.085 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0003977 ft/sec
y0 = 2.08 ft



WELL TEST ANALYSIS

Data Set: P:\...\will mw-6 d1.aqt
Date: 02/18/11 Time: 14:55:01

PROJECT INFORMATION

Company: Patrick Engineering
Client: Midwest Generation
Project: 21053.070
Location: Waukegan
Test Well: MW-1 (u2)
Test Date: 12/22/10

AQUIFER DATA

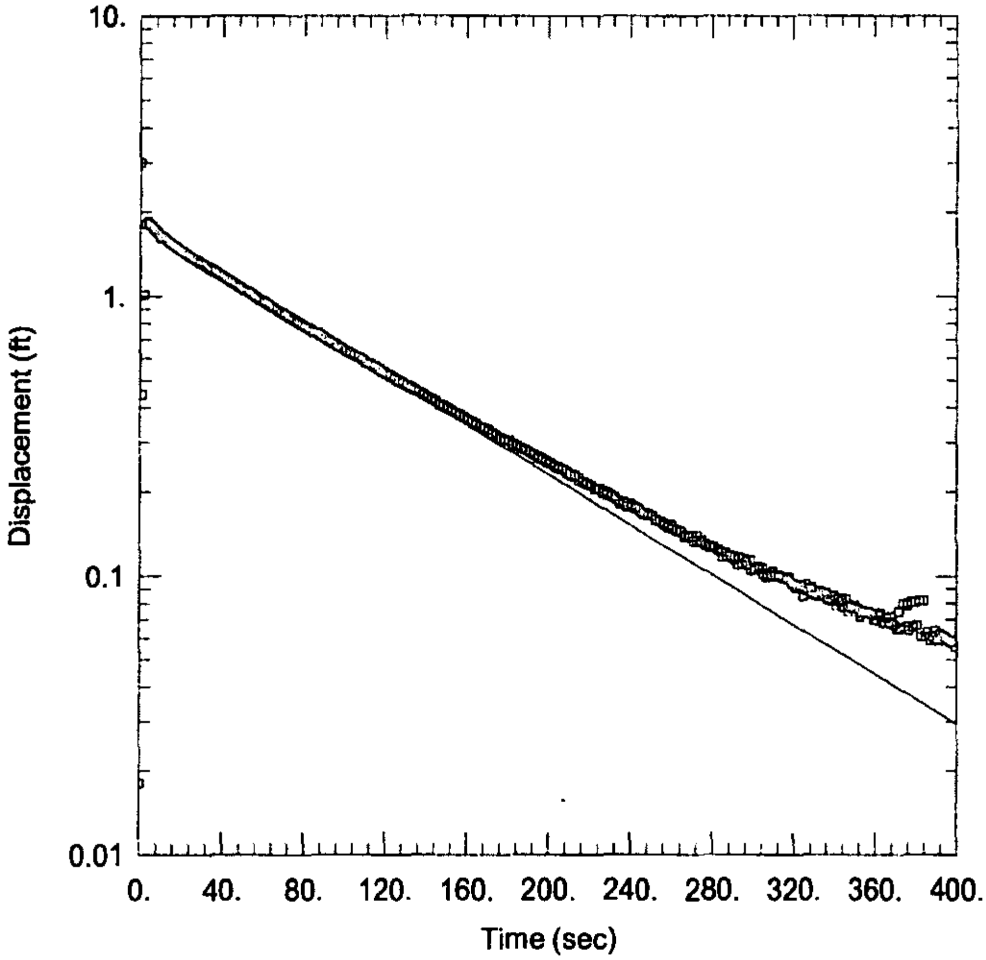
Saturated Thickness: 10.32 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-6 (d1))

Initial Displacement: 2.9 ft
Total Well Penetration Depth: 21.15 ft
Casing Radius: 0.2 ft
Static Water Column Height: 10.32 ft
Screen Length: 10. ft
Well Radius: 0.085 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0003843 ft/sec
y0 = 2.81 ft



WELL TEST ANALYSIS

Data Set: P:\...\will mw-7 d2.aqt
Date: 02/18/11 Time: 15:00:51

PROJECT INFORMATION

Company: Patrick Engineering
Client: Midwest Generation
Project: 21053.070
Location: Waukegan
Test Well: MW-1 (u2)
Test Date: 12/22/10

AQUIFER DATA

Saturated Thickness: 10.71 ft Anisotropy Ratio (Kz/Kr): 1.

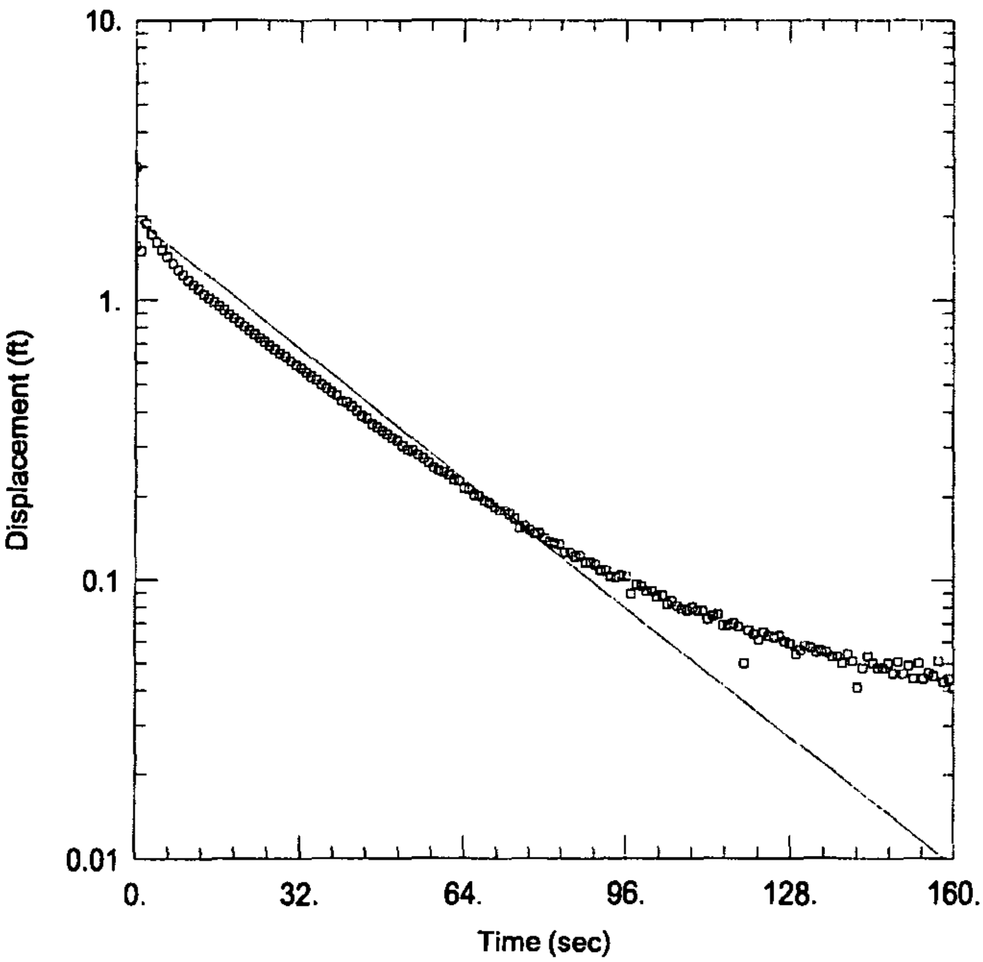
WELL DATA (MW-7 (d2))

Initial Displacement: 3. ft
Total Well Penetration Depth: 20.81 ft
Casing Radius: 0.2 ft
Static Water Column Height: 10.71 ft
Screen Length: 10. ft
Well Radius: 0.085 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 6.381E-5 ft/sec y0 = 1.796 ft



WELL TEST ANALYSIS

Data Set: P:\...\will mw-7 u2.aqt
Date: 02/18/11 Time: 15:00:31

PROJECT INFORMATION

Company: Patrick Engineering
Client: Midwest Generation
Project: 21053.070
Location: Waukegan
Test Well: MW-1 (u2)
Test Date: 12/22/10

AQUIFER DATA

Saturated Thickness: 10.71 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-7 (u2))

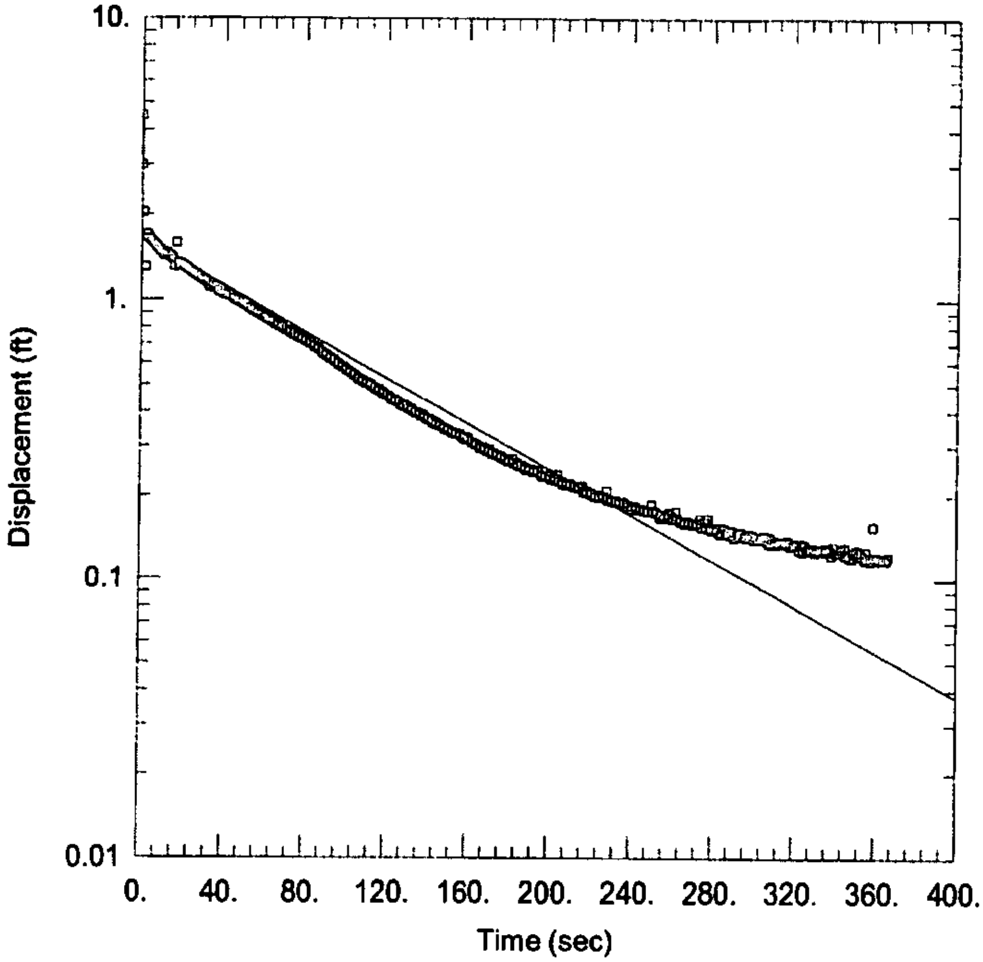
Initial Displacement: 3. ft
Total Well Penetration Depth: 20.81 ft
Casing Radius: 0.2 ft

Static Water Column Height: 10.71 ft
Screen Length: 10. ft
Well Radius: 0.085 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0002072 ft/sec y0 = 1.947 ft



WELL TEST ANALYSIS

Data Set: P:\...\will mw-9 d1.aqt
Date: 02/18/11 Time: 15:03:27

PROJECT INFORMATION

Company: Patrick Engineering
Client: Midwest Generation
Project: 21053.070
Location: Waukegan
Test Well: MW-1 (u2)
Test Date: 12/22/10

AQUIFER DATA

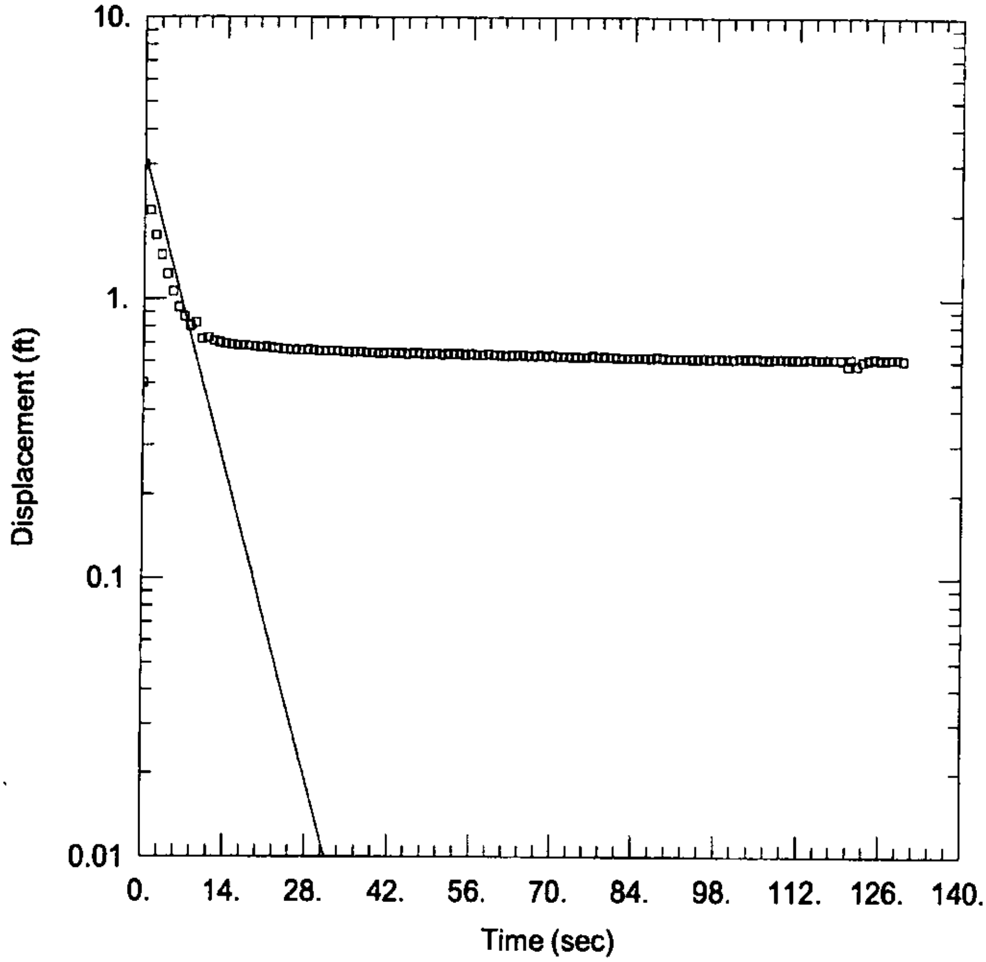
Saturated Thickness: 9.64 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-9 (d1))

Initial Displacement: 3. ft
Total Well Penetration Depth: 22.18 ft
Casing Radius: 0.2 ft
Static Water Column Height: 12.54 ft
Screen Length: 10. ft
Well Radius: 0.085 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 6.116E-5 ft/sec
y0 = 1.634 ft



WELL TEST ANALYSIS

Data Set: P:\...\will mw-9 u1.aqt
Date: 02/18/11 Time: 15:00:00

PROJECT INFORMATION

Company: Patrick Engineering
Client: Midwest Generation
Project: 21053.070
Location: Waukegan
Test Well: MW-1 (u2)
Test Date: 12/22/10

AQUIFER DATA

Saturated Thickness: 9.43 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-9 (u1))

Initial Displacement: 3. ft
Total Well Penetration Depth: 22. ft
Casing Radius: 0.2 ft
Static Water Column Height: 9.43 ft
Screen Length: 10. ft
Well Radius: 0.085 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.001217 ft/sec
y0 = 3.263 ft

Exhibit

D

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

Midwest Generation, LLC	)	
(Will County Station)	)	PCB 2021-108
	)	
v.	)	
	)	
Illinois Environmental Protection Agency	)	

AFFIDAVIT OF MELINDA K. SHAW

I, Melinda K. Shaw, certify under penalty of perjury pursuant to Section 1-109 of the Illinois Code of Civil Procedure, 735 ILCS 5/1-109, that the statements set forth in this affidavit are true and correct, and further state that if called upon to testify in this matter, I would competently testify as follows:

1. I am an Environmental Protection Geologist employed by the Illinois Environmental Protection Agency (the "Illinois EPA") in the Bureau of Water, Groundwater Section, Hydroegeology and Compliance Unit (HCU), and I am located in Springfield, Illinois. Cumulatively, I have worked for the Illinois EPA for approximately eight years in various remediation programs.

2. As an Environmental Protection Geologist in the HCU, my duties include, but are not limited to, working on the development and implementation of rules and regulations related protecting, monitoring, and restoring groundwater in Illinois, and providing technical expertise to the Bureau of Water Permit Section on groundwater issues. As part of these duties, I served as a witness on behalf of the Groundwater Section in support of Illinois EPA's proposed Part 845 throughout the Illinois Pollution Control Board's rulemaking proceedings in R2020-019.

3. I have reviewed the Petition for Variance ("Petition") filed by Midwest Generation, LLC ("MWG") requesting extension of certain requirements contains in 35 Ill. Adm. Code 845.

4. I have personal knowledge of the facts set forth in Illinois EPA's Recommendation to the Board as stated below.

5. Attached to the Recommendation as Exhibit A ("Rec. Ex. A) is Violation Notice ("VN") W-2012-00058. This violation notice is kept by the Illinois EPA in the regular course of business, and it was the regular course of business of the Illinois EPA to transmit the information thereof to be included in this record. VN W-2012-00058, attached to the Recommendation as Exhibit A, is an exact duplicate of the original.

6. Attached to the Recommendation as Exhibit C ("Rec. Ex. C) is a Hydrogeologic Assessment Report, dated February 2011 and submitted to Illinois EPA by MWG. This report is kept by the Illinois EPA in the regular course of business, and it was the regular course of business of the Illinois EPA to transmit the information thereof to be included in this record. The February 2011 Hydrogeologic Assessment Report, attached to the Recommendation as Exhibit C, is an exact duplicate of the original.

7. Attached to the Recommendation as Exhibit E ("Rec. Ex. E") is the April 2021 Quarterly Groundwater Monitoring Report for the Will County Generating Station. This quarterly report is kept by the Illinois EPA in the regular course of business, and it was the regular course of business of the Illinois EPA to transmit the information thereof to be included in this record. The April 2021 Quarterly Groundwater Monitoring Report for the Will County Generating Station, attached to the Recommendation as Exhibit E, is an exact duplicate of the original.

8. Attached to the Recommendation as Exhibit F ("Rec. Ex. F") is an Illinois EPA Division of Water Pollution Control invoice related to Will County Generating Station, dated December 16, 2019. This invoice is kept by the Illinois EPA in the regular course of business, and it was the regular course of business of the Illinois EPA to transmit the information thereof to be

included in such a record. Illinois EPA Division of Water Pollution Control invoice related to Will County Generating Station, dated December 16, 2019, and attached to the Recommendation as Exhibit F, is an exact duplicate of the original.

9. Attached to the Recommendation as Exhibit G ("Rec. Ex. G") is a March 24, 2020 Illinois EPA letter to MWG related to the initial fee invoice for the Will County CCR surface impoundments. The March 24, 2020 letter is kept by the Illinois EPA in the regular course of business, and it was the regular course of business of the Illinois EPA to transmit the information thereof to be included in this record. The March 24, 2020 letter, attached to the Recommendation as Exhibit G, is an exact duplicate of the original.

10. Attached to the Recommendation as Exhibit H ("Rec. Ex. H.") is a March 18, 2021 MWG letter to Illinois EPA concerning payment for Pond 1N and Pond 1S at the Will County Generating Station. This letter is kept by the Illinois EPA in the regular course of business, and it was the regular course of business of the Illinois EPA to transmit the information thereof to be included in this record. The March 18, 2021 MWG letter to Illinois EPA concerning payment for Pond 1N and Pond 1S at the Will County Generating Station, attached to the Recommendation as Exhibit H, is an exact duplicate of the original.

11. Attached to the Recommendation as Exhibit J ("Rec. Ex. J") is a Groundwater Management Zone Application for the Will County Generating Station. This application is kept by the Illinois EPA in the regular course of business, and it was the regular course of business of the Illinois EPA to transmit the information thereof to be included in this record. The Groundwater Management Zone Application for the Will County Generating Station, attached to the Recommendation as Exhibit J, is an exact duplicate of the original.

12. Ponds 1N and 1S are inactive CCR surface impoundments that have not been properly closed.

13. Illinois EPA invoiced Ponds 1N and 1S as CCR surface impoundments in December 2019 and has maintained that they are CCR surface impoundments since that time in various correspondence and meetings with MWG, and during the Part 845 rulemaking proceedings. *See* Rec. Ex. F, G. Further, MWG submitted its CCR surface impoundment fee to Illinois EPA in March 2021, acknowledging Ponds 1N and 1S to be CCR surface impoundments. *See* Rec. Ex. H.

14. Ponds 1N and 1S are at least one foot below average groundwater elevations. A February 2011 Hydrogeologic Assessment Report ("HAR") submitted to the Agency for the Will County Station indicates the bottom of Pond 1N is approximately 581.50 feet above mean sea level (ft MSL). *See* Rec. Ex. C, Figure 4. The same Figure 4 indicates that potentiometric surface, at that time, was approximately 583 ft MSL. Wells specifically associated with Ash Pond 1N, MW-1 and MW-2 (both up gradient), and MW-7 (downgradient), contained groundwater elevations above 581.50 ft MSL. *See* Rec. Ex. C, Table 3. The HAR did not contain a cross section of Ash Pond 1S, so the Agency did not do a similar comparison.

15. I reviewed quarterly groundwater monitoring reports submitted by MWG after December 2010 through March 2021 (41 quarters). According to my observations, the groundwater elevations for all the monitoring wells at the Will County Station never reported groundwater elevations at monitoring wells MW-1 or MW-2 below 581.50 ft MSL. At monitoring well MW-7, the groundwater elevation was reported below 581.5 feet only eight times during the same 10-year period. The groundwater elevation surrounding Ash Pond 1N only occasionally falls below a portion of the bottom of the impoundment.

16. Based on my observations, the bottoms of Ponds 1N and 1S are one foot lower than average groundwater elevations; therefore, these CCR surface impoundments will not meet the location restrictions in Section 845.300 (Placement Above the Uppermost Aquifer).

17. I reviewed the Interim Opinion and Order of the Board in *Sierra Club, et. al v. Midwest Generation, LLC*, dated June 20, 2019 ("Board Order"), specific to the Will County Generating Station. *See* Rec. Ex. B. The Board Order cites testimony indicating that, because the bottom of the CCR surface impoundments are sitting below the water table, the cracks in the poz-o-pac liners of Ponds 1N and 1S allow groundwater to flow into the surface impoundments and for CCR constituents to leak out into the groundwater. *See* Rec. Ex. B, p. 56 Therefore, groundwater can flow into the concrete-like poz-o-pac, become contaminated by CCR material, and either flow out through the dewatering system or leak back out of the cracked poz-o-pac as leachate.

18. Groundwater requires a difference in head to flow – the difference is what determines the direction. If groundwater is flowing out of the impoundment, there is more head in the impoundment. If groundwater is flowing into the impoundment, there is more head outside of the impoundment. Since the Board found that groundwater has flowed both into and out of the CCR surface impoundments carrying coal ash constituents, there is head that threatens to contaminate groundwater. *See* Rec. Ex. B, p. 56

19. The design and use of Ponds 1N and 1S over many years and certain conditions, including cracked poz-o-pac below the water table, threaten groundwater contamination. Groundwater contamination can persist at a CCR surface impoundment, even after the CCR is removed.

20. Illinois EPA and MWG entered into a Compliance Commitment Agreement ("CCA") following VN W-2020-00058. One of the requirements listed in the CCA was to establish a sitewide Groundwater Management Zone ("GMZ") to monitor the groundwater exceedances at the Will County facility. *See* Petition, Exhibit E. Ponds 1N and 1S are within the boundary of the sitewide GMZ established in 2013 and, as part of the CCA, MWG agreed to ongoing groundwater monitoring of the wells at the Will County Station, including those associated with Ponds 1N and 1S. *See* Petition, Exhibit E and Rec. Ex. J.[1]

21. In accordance with Illinois EPA's request that Petitioner develop a groundwater monitoring plan, and the subsequent GMZ, the Will County facility has conducted significant historical groundwater monitoring since at least 2010. *See* Rec. Ex. I.

22. VN W-2012-00058 included wells downgradient of Ponds 1N and 1S due to exceedances of the Class I groundwater quality standards contained in 35 Ill. Adm. Code §620.410. *See* Rec. Ex. A.

23. The most recent groundwater quarterly monitoring report (April 2021) indicates exceedances of the Class I groundwater quality standards listed in 35 Ill. Adm. Code §620.410 downgradient of Ponds 1N and 1S. Downgradient of Pond 1N, MW-7 has general exceedances of boron, sulfate and TDS. Downgradient of Pond 1S, MW-8 has general exceedances of boron, chloride, sulfate and TDS. *See* Rec. Ex. E, Table 2, pp. 7-8. Therefore, existing data indicates that Ponds 1N and 1S may be contributing to groundwater contamination.

24. The groundwater quality data that currently exists at Ponds 1N and 1S is limited to dissolved (filtered) chemical constituents, instead of total (not filtered) chemical constituent analysis, and does not include the full list of constituents required in 35 Ill. Adm. Code §845.600.

[1] I searched Illinois EPA records and cannot locate the GMZ approval letter.

25. Except for natural variation in groundwater quality and laboratory or sampling variability, the concentrations of filtered boron, chloride, sulfate and TDS samples should not yield higher concentrations than total analysis for those constituents.

26. 180-day requirement as provided in 35 Ill. Adm. Code §845.650(b)(1)(A) to collect and analyze eight independent samples from each background and downgradient well at Ponds 1N and 1S will not yield high quality background groundwater quality data. However, 40 CFR 257.94(b) requires that new CCR surface impoundments and lateral expansions of CCR surface impoundments collect eight independent samples from each background well within the first six months of sampling. Therefore, the quality of the background data collected for statistical analysis would be on par with the data required under Part 257.

27. Independent samples provide greater statistical power when adequate time between sampling events can account for temporal variation such as seasonal variation in the data. Accounting for temporal variation can vary from site to site, depending on hydrogeologic conditions, but typically requires at least a month between sampling events. Because of logistical considerations resulting in MWG only recently beginning collection of the required eight independent groundwater samples, MWG cannot meet the deadline of 180 days after April 21, 2021, to complete the sampling as provided in 35 Ill. Adm. Code §845.650(b)(1)(A).

28. I conducted a potable well survey using the publicly available Source Water Assessment Protection Program (SWAP) website that maps potable wells in the state. According to the SWAP website, no potable wells were identified in the downgradient direction. The two potable wells referenced by the Petition are non-transient non-community water supply ("NTNCWS") wells. Due to the depth of the NTNCWS wells and the existence of a confining

layer between the uppermost aquifer and the aquifer supplying the wells, the likelihood of impact from the Will County Station CCR surface impoundments is low.

29. Illinois EPA issued VN W-2020-00045 to MWG on July 28, 2020, and VN W-2020-00086 on December 16, 2020, for failure to pay fees related to Ponds 1N and 1S, but MWG has since paid the appropriate fees and the Agency considers the VNs resolved.

FURTHER AFFIANT SAYETH NOT

Melinda K. Shaw

MELINDA K. SHAW

7/1/2021

DATE

OFFICIAL SEAL
DAWN A. HOLLIS
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 03-21-2025

Dawn A. Hollis

Exhibit E

Sent OLGK

QUARTERLY GROUNDWATER MONITORING REPORT
WILL COUNTY GENERATING STATION

April 26, 2021

Ms. Andrea Rhodes
Illinois Environmental Protection Agency
Division of Public Water Supplies
MC#19
1021 North Grand Avenue East
Springfield, IL 62794-9276

VIA FedEx

Re: Quarterly Groundwater Monitoring Results – First Quarter 2021
Will County Generating Station – Ash Impoundments
Compliance Commitment Agreement VN W-2012-00058; ID# 6283

Dear Ms. Rhodes:

The first quarterly groundwater sampling for 2021 has been completed for the ash pond monitoring wells located at the Midwest Generation, LLC (Midwest Generation) Will County Generating Station in accordance with the signed Compliance Commitment Agreement (CCA) with Illinois Environmental Protection Agency (IEPA) dated October 24, 2012. This quarterly monitoring report summarizes the results of the monitoring event.

Well Inspection and Sampling Procedures

The groundwater monitoring network around the ash ponds at the Will County facility consists of ten wells (MW-1 through MW-10) as shown on Figure 1. As part of sampling procedures, the integrity of all monitoring wells was inspected and water levels obtained using an electronic water level meter (see summary of water level discussion below). The wells were found in good condition with protector casings and the concrete surface seals were intact. Well MW-10 is completed as a flush-mount at ground surface and was also in good condition.

Groundwater samples were collected using the low-flow sampling technique. One duplicate sample was collected for quality assurance purposes. In addition, a deionized water trip blank was placed with the sample bottle shipment by the laboratory and accompanied the groundwater samples bottles from and back to the laboratory. The groundwater monitoring samples and the duplicate sample were analyzed for the inorganic compounds listed in Illinois Administrative Code (IAC) 620.410(a), 620.410(d) and

620.410(e), excluding radium 226/228. The trip blank was analyzed for the volatile organic compounds (VOCs) listed in IAC 620.410(d).

Groundwater Flow Evaluation

Water level data from the most recent round of sampling along with historical water levels obtained from each well are summarized in Table 1. The water levels from the most recent sampling were used to generate a groundwater flow map which is provided on Figure 2. The water elevation data indicates a general westerly flow of groundwater. The flow conditions observed during this sampling are consistent with historical conditions reported for the site.

Summary of Analytical Data

A copy of the analytical data package is provided in Attachment 1. The field parameter and analytical data from the most recent sampling, along with the previous eight quarters of data, are summarized in Table 2. The duplicate sample was collected from well MW-10. All duplicate values were within an acceptable range (below +/- 30%). It is noted that nitrogen/nitrate/nitrite and lead were not detected in the duplicate, but were detected in investigative sample MW-10 at trace concentrations 0.13 mg/l and 0.00066 mg/l, respectively. All wells for which the sampling data reports a value above one or more groundwater standards are located within the area of the IEPA approved Groundwater Management Zone (GMZ) and Environmental Land Use Control (ELUC) areas.

If there are any questions, please contact either Sharene Shealey of Midwest Generation at 724-255-3220 or Richard Gnat of KPRG at 262-781-0475.

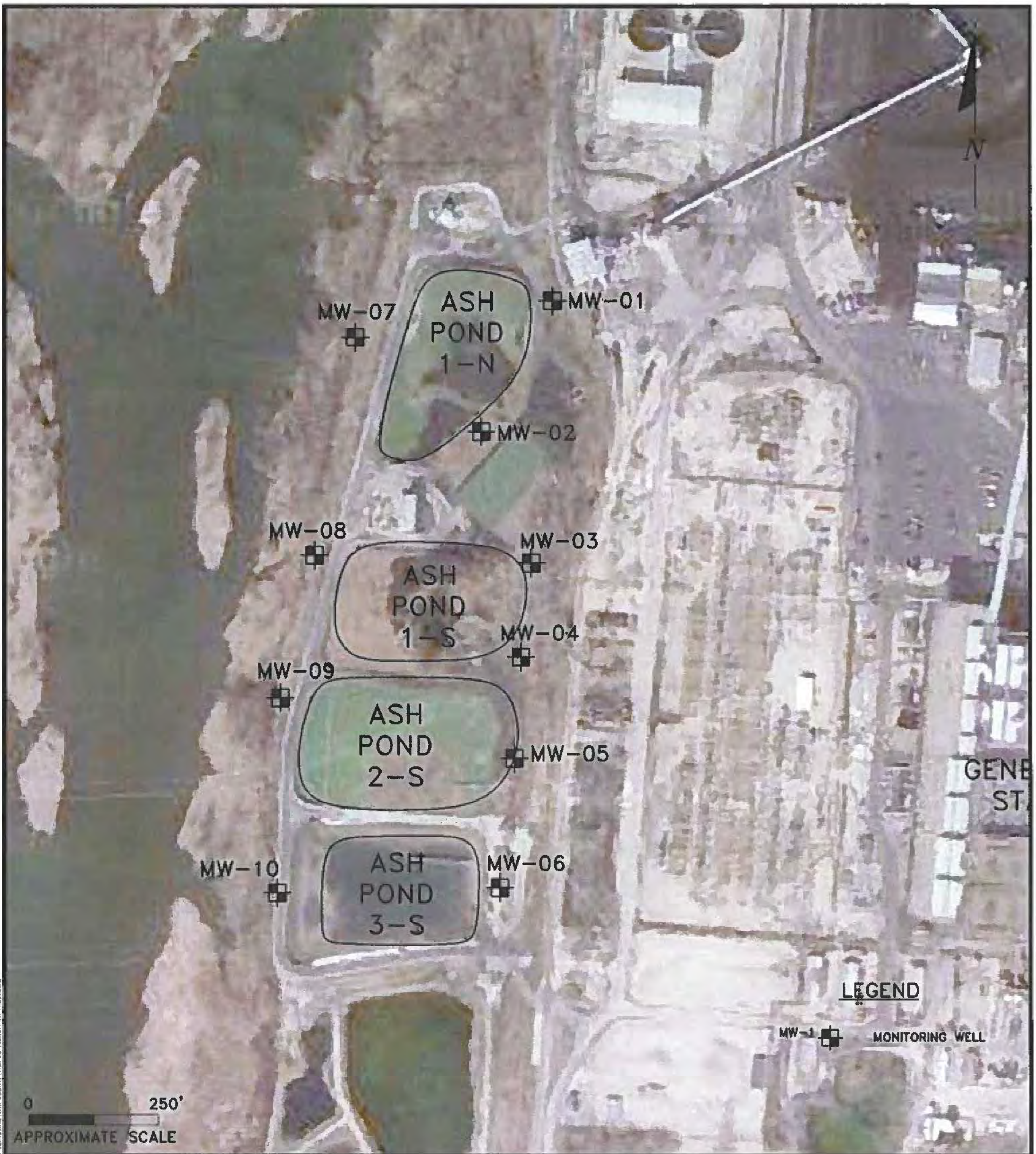
Sincerely,

Phillip Raush
Plant Manager

Attachments

cc: Mike Summers/Lynn Dunaway, IEPA
Sharene Shealey, Midwest Generation
Peter O'Day, Midwest Generation
DeAndre Cooley, Midwest Generation
Richard Gnat, KPRG and Associates, Inc.

FIGURES



ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG

KPRG and Associates, Inc.

14665 West Lisbon Road, Suite 2B Brookfield, Wisconsin 53005 Telephone 262-781-0475 Facsimile 262-781-0478

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

SITE MAP	
WILL COUNTY STATION ROMEOVILLE, ILLINOIS	
Scale: 1" = 250'	Date: January 23, 2015
KPRG Project No. 12313.3	FIGURE 1

ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG

KPRG and Associates, inc.

14665 West Lisbon Road, Suite 1A Brookfield, Wisconsin 53005 Telephone 262-781-0475 Facsimile 262-781-0478

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

GROUNDWATER CONTOUR MAP 3/2021

WILL COUNTY STATION
ROMEOVILLE, ILLINOIS

Scale: 1" = 250' | Date: April 2, 2021

KPRG Project No. 12313.3 | FIGURE 2

TABLES

Table 1. Groundwater Elevations - Midwest Generation, LLC, Will County Station, Romeoville, IL

Well ID	Date	Top of Casing (TOC) Elevation (ft above MSL)	Ground Elevation (ft above MSL)	Groundwater Elevation (ft above MSL)	Sampling Groundwater Elevation (ft above MSL)	Bottom of Well Elevation (ft above MSL)	Depth to Groundwater (ft below TOC)	Sampling Depth to Groundwater (ft below TOC)	Depth to Bottom of Well (ft below TOC)
	2/4/2015	592.95	589.81	583.12	583.12	570.95	9.83	9.83	22.00
	4/30/2015	592.95	589.81	583.19	583.21	570.95	9.76	9.74	22.00
	7/27/2015	592.95	589.81	583.09	583.08	570.95	9.86	9.87	22.00
	11/9/2015	592.95	589.81	583.12	583.12	570.95	9.83	9.83	22.00
	2/16/2016	592.95	589.93	583.22	583.21	570.95	9.73	9.74	22.00
	5/24/2016	592.95	589.93	583.20	583.17	570.95	9.75	9.78	22.00
	8/9/2016	592.95	589.93	583.09	583.06	570.95	9.86	9.89	22.00
	10/25/2016	592.95	589.93	583.11	583.24	570.95	9.84	9.71	22.00
	1/31/2017	592.95	589.93	583.31	583.26	570.95	9.64	9.69	22.00
	5/10/2017	592.95	589.93	583.44	583.46	570.95	9.51	9.49	22.00
	9/8/2017	592.95	589.93	583.00	582.85	570.95	9.95	10.10	22.00
	11/15/2017	592.95	589.93	583.19	583.20	570.95	9.76	9.75	22.00
MW-01	2/28/2018	592.95	589.93	583.55	583.50	570.95	9.40	9.45	22.00
	5/2/2018	592.95	589.93	583.24	583.23	570.95	9.71	9.72	22.00
	7/24/2018	592.95	589.93	583.14	583.15	570.95	9.81	9.80	22.00
	10/2/2018	592.95	589.93	583.06	583.06	570.95	9.89	9.89	22.00
	2/19/2019	592.95	589.93	583.33	583.32	570.95	9.62	9.63	22.00
	5/28/2019	592.95	589.93	584.01	584.02	570.95	8.94	8.93	22.00
	8/21/2019	592.95	589.93	582.38	582.35	570.95	10.57	10.60	22.00
	12/5/2019	592.95	589.93	582.91	582.91	570.95	10.04	10.04	22.00
	2/18/2020	592.95	589.93	582.89	582.93	570.95	10.06	10.02	22.00
	5/26/2020	592.95	589.93	583.33	583.32	570.95	9.62	9.63	22.00
	8/5/2020	592.95	589.93	582.52	582.49	570.95	10.43	10.46	22.00
	11/3/2020	592.95	589.93	582.10	582.09	570.95	10.85	10.86	22.00
	3/1/2021	592.95	589.93	583.13	582.09	570.95	9.82	10.86	22.00
	2/4/2015	593.99	590.62	582.89	582.88	568.62	11.10	11.11	25.37
	5/1/2015	593.99	590.62	583.02	583.02	568.62	10.97	10.97	25.37
	7/27/2015	593.99	590.62	582.89	582.89	568.62	11.10	11.10	25.37
	11/9/2015	593.99	590.62	582.89	582.87	568.62	11.10	11.12	25.37
	2/16/2016	594.00	590.66	583.08	583.01	568.63	10.92	10.99	25.37
	5/24/2016	594.00	590.66	583.07	583.03	568.63	10.93	10.97	25.37
	8/9/2016	594.00	590.66	582.85	582.77	568.63	11.15	11.23	25.37
	10/25/2016	594.00	590.66	582.87	583.09	568.63	11.13	10.91	25.37
	1/31/2017	594.00	590.66	583.15	583.10	568.63	10.85	10.90	25.37
	5/10/2017	594.00	590.66	583.54	583.51	568.63	10.46	10.49	25.37
	9/7/2017	594.00	590.66	582.67	582.56	568.63	11.33	11.44	25.37
	11/15/2017	594.00	590.66	583.02	583.04	568.63	10.98	10.96	25.37
MW-02	2/28/2018	594.00	590.66	583.61	583.55	568.63	10.39	10.45	25.37
	5/2/2018	594.00	590.66	583.09	583.04	568.63	10.91	10.96	25.37
	7/24/2018	594.00	590.66	582.92	582.92	568.63	11.08	11.08	25.37
	10/2/2018	594.00	590.66	582.76	582.78	568.63	11.24	11.22	25.37
	2/19/2019	594.00	590.66	583.24	583.24	568.63	10.76	10.76	25.37
	5/28/2019	594.00	590.66	584.11	584.05	568.63	9.89	9.95	25.37
	8/21/2019	594.00	590.66	582.29	582.29	568.63	11.71	11.71	25.37
	12/5/2019	594.00	590.66	582.85	582.85	568.63	11.15	11.15	25.37
	2/18/2020	594.00	590.66	582.82	582.75	568.63	11.18	11.25	25.37
	5/22/2020	594.00	590.66	583.98	583.89	568.63	10.02	10.11	25.37
	8/5/2020	594.00	590.66	582.41	582.39	568.63	11.59	11.61	25.37
	11/3/2020	594.00	590.66	581.99	582.01	568.63	12.01	11.99	25.37
	3/1/2021	594.00	590.66	583.05	582.01	568.63	10.95	11.99	25.37
	2/4/2015	593.51	590.50	583.17	583.00	573.74	10.34	10.51	19.77
	5/1/2015	593.51	590.50	583.27	583.27	573.74	10.24	10.24	19.77
	7/28/2015	593.51	590.50	582.98	582.97	573.74	10.53	10.54	19.77
	11/9/2015	593.51	590.50	583.15	583.14	573.74	10.36	10.37	19.77
	2/16/2016	593.51	590.54	583.23	583.25	573.74	10.28	10.26	19.77
	5/24/2016	593.51	590.54	583.19	583.17	573.74	10.32	10.34	19.77
	8/9/2016	593.51	590.54	582.88	582.80	573.74	10.63	10.71	19.77
	10/25/2016	593.51	590.54	583.14	583.19	573.74	10.37	10.32	19.77
	1/31/2017	593.51	590.54	583.30	583.27	573.74	10.21	10.24	19.77
	5/11/2017	593.51	590.54	583.52	583.79	573.74	9.99	9.72	19.77
	9/8/2017	593.51	590.54	582.63	582.54	573.74	10.88	10.97	19.77
	11/16/2017	593.51	590.54	583.17	583.18	573.74	10.34	10.33	19.77
MW-03	2/28/2018	593.51	590.54	583.70	583.61	573.74	9.81	9.90	19.77
	5/2/2018	593.51	590.54	583.20	583.18	573.74	10.31	10.33	19.77
	7/24/2018	593.51	590.54	583.01	582.98	573.74	10.50	10.53	19.77
	10/2/2018	593.51	590.54	582.79	582.80	573.74	10.72	10.71	19.77
	2/20/2019	593.51	590.54	583.33	583.31	573.74	10.18	10.20	19.77
	5/28/2019	593.51	590.54	584.51	584.86	573.74	9.00	8.65	19.77
	8/21/2019	593.51	590.54	581.98	581.98	573.74	11.53	11.53	19.77
	12/5/2019	593.51	590.54	583.03	583.03	573.74	10.48	10.48	19.77
	2/18/2020	593.51	590.54	582.95	582.86	573.74	10.56	10.65	19.77
	5/26/2020	593.51	590.54	583.43	583.43	573.74	10.08	10.08	19.77
	8/5/2020	593.51	590.54	582.22	582.00	573.74	11.29	11.51	19.77
	11/3/2020	593.51	590.54	581.90	581.74	573.74	11.61	11.77	19.77
	3/1/2021	593.51	590.54	583.09	581.74	573.74	10.42	11.77	19.77

Table 1. Groundwater Elevations - Midwest Generation, LLC, Will County Station, Romeoville, IL

Well ID	Date	Top of Casing (TOC) Elevation (ft above MSL)	Ground Elevation (ft above MSL)	Groundwater Elevation (ft above MSL)	Sampling Groundwater Elevation (ft above MSL)	Bottom of Well Elevation (ft above MSL)	Depth to Groundwater (ft below TOC)	Sampling Depth to Groundwater (ft below TOC)	Depth to Bottom of Well (ft below TOC)
MW-04	2/4/2015	593.95	591.06	582.93	582.93	571.47	11.02	11.02	22.48
	5/1/2015	593.95	591.06	583.06	583.05	571.47	10.89	10.90	22.48
	7/28/2015	593.95	591.06	582.78	582.77	571.47	11.17	11.18	22.48
	11/9/2015	593.95	591.06	582.87	582.85	571.47	11.08	11.10	22.48
	2/16/2016	593.93	591.08	582.94	582.91	571.45	10.99	11.02	22.48
	5/24/2016	593.93	591.08	582.91	582.90	571.45	11.02	11.03	22.48
	8/9/2016	593.93	591.08	582.74	582.67	571.45	11.19	11.26	22.48
	10/25/2016	593.93	591.08	582.89	583.07	571.45	11.04	10.86	22.48
	1/31/2017	593.93	591.08	583.06	583.03	571.45	10.87	10.90	22.48
	5/11/2017	593.93	591.08	583.26	583.26	571.45	10.67	10.67	22.48
	9/8/2017	593.93	591.08	582.39	582.25	571.45	11.54	11.68	22.48
	11/16/2017	593.93	591.08	582.85	582.84	571.45	11.08	11.09	22.48
	2/28/2018	593.93	591.08	583.46	583.35	571.45	10.47	10.58	22.48
	5/2/2018	593.93	591.08	582.94	582.91	571.45	10.99	11.02	22.48
	7/24/2018	593.93	591.08	582.72	582.71	571.45	11.21	11.22	22.48
	10/2/2018	593.93	591.08	582.33	582.34	571.45	11.60	11.59	22.48
	2/20/2019	593.93	591.08	583.85	583.11	571.45	10.08	10.82	22.48
	5/28/2019	593.93	591.08	584.25	584.08	571.45	9.68	9.85	22.48
	8/21/2019	593.93	591.08	582.14	582.13	571.45	11.79	11.80	22.48
	12/5/2019	593.93	591.08	582.93	582.93	571.45	11.00	11.00	22.48
	2/18/2020	593.93	591.08	582.87	582.70	571.45	11.06	11.23	22.48
	5/26/2020	593.93	591.08	583.25	583.22	571.45	10.68	10.71	22.48
	8/5/2020	593.93	591.08	582.38	582.27	571.45	11.55	11.66	22.48
	11/4/2020	593.93	591.08	582.28	582.22	571.45	11.65	11.71	22.48
	3/1/2021	593.93	591.08	583.32	582.22	571.45	10.61	11.71	22.48
MW-05	2/3/2015	592.87	589.60	582.96	582.96	570.80	9.91	9.91	22.07
	5/1/2015	592.87	589.60	583.03	583.03	570.80	9.84	9.84	22.07
	7/28/2015	592.87	589.60	582.78	582.76	570.80	10.09	10.11	22.07
	11/9/2015	592.87	589.60	582.88	582.84	570.80	9.99	10.03	22.07
	2/16/2016	592.87	589.60	582.96	582.88	570.80	9.91	9.99	22.07
	5/24/2016	592.87	589.60	582.93	582.88	570.80	9.94	9.99	22.07
	8/9/2016	592.87	589.60	582.78	582.73	570.80	10.09	10.14	22.07
	10/25/2016	592.87	589.60	583.85	582.98	570.80	9.02	9.89	22.07
	1/31/2017	592.87	589.60	583.06	582.98	570.80	9.81	9.89	22.07
	5/11/2017	592.87	589.60	583.24	583.51	570.80	9.63	9.36	22.07
	9/8/2017	592.87	589.60	582.39	582.26	570.80	10.48	10.61	22.07
	11/16/2017	592.87	589.60	582.85	582.89	570.80	10.02	9.98	22.07
	2/28/2018	592.87	589.60	583.39	583.33	570.80	9.48	9.54	22.07
	5/2/2018	592.87	589.60	582.93	582.91	570.80	9.94	9.96	22.07
	7/25/2018	592.87	589.60	582.69	582.65	570.80	10.18	10.22	22.07
	10/2/2018	592.87	589.60	582.23	582.24	570.80	10.64	10.63	22.07
	2/20/2019	592.87	589.60	583.14	583.14	570.80	9.73	9.73	22.07
	5/28/2019	592.87	589.60	584.14	584.42	570.80	8.73	8.45	22.07
	8/21/2019	592.87	589.60	582.23	582.22	570.80	10.64	10.65	22.07
	12/5/2019	592.87	589.60	582.95	582.95	570.80	9.92	9.92	22.07
	2/18/2020	592.87	589.60	582.89	582.82	570.80	9.98	10.05	22.07
	5/22/2020	592.87	589.60	583.48	583.48	570.80	9.39	9.39	22.07
	8/5/2020	592.87	589.60	582.38	582.33	570.80	10.49	10.54	22.07
	11/3/2020	592.87	589.60	582.39	582.32	570.80	10.48	10.55	22.07
	3/1/2021	592.87	589.60	583.35	582.32	570.80	9.52	10.55	22.07
MW-06	2/3/2015	592.97	589.77	581.66	581.65	571.82	11.31	11.32	21.15
	4/30/2015	592.97	589.77	581.93	581.89	571.82	11.04	11.08	21.15
	7/28/2015	592.97	589.77	581.67	581.66	571.82	11.30	11.31	21.15
	11/9/2015	592.97	589.77	583.01	581.98	571.82	9.96	10.99	21.15
	2/16/2016	592.97	589.77	581.60	581.51	571.82	11.37	11.46	21.15
	5/24/2016	593.18	589.77	581.81	581.72	572.03	11.37	11.46	21.15
	8/9/2016	593.18	589.77	581.64	581.52	572.03	11.54	11.66	21.15
	10/25/2016	593.18	589.77	581.81	581.77	572.03	11.37	11.41	21.15
	1/31/2017	593.18	589.77	581.94	581.87	572.03	11.24	11.31	21.15
	5/11/2017	593.18	589.77	582.32	582.55	572.03	10.86	10.63	21.15
	9/7/2017	593.18	589.77	581.41	581.36	572.03	11.77	11.82	21.15
	11/16/2017	593.18	589.77	581.69	581.74	572.03	11.49	11.44	21.15
	2/28/2018	593.18	589.77	582.27	582.17	572.03	10.91	11.01	21.15
	5/3/2018	593.18	589.77	581.71	581.64	572.03	11.47	11.54	21.15
	7/25/2018	593.18	589.77	581.67	581.59	572.03	11.51	11.59	21.15
	10/2/2018	593.18	589.77	581.29	581.28	572.03	11.89	11.90	21.15
	2/20/2019	593.18	589.77	581.95	581.90	572.03	11.23	11.28	21.15
	5/28/2019	593.18	589.77	583.00	583.13	572.03	10.18	10.05	21.15
	8/21/2019	593.18	589.77	581.50	581.30	572.03	11.68	11.88	21.15
	12/5/2019	593.18	589.77	581.67	581.67	572.03	11.51	11.51	21.15
	2/18/2020	593.18	589.77	581.76	581.78	572.03	11.42	11.40	21.15
	5/22/2020	593.18	589.77	582.63	582.63	572.03	10.55	10.55	21.15
	8/5/2020	593.18	589.77	581.25	581.06	572.03	11.93	12.12	21.15
	11/3/2020	593.18	589.77	581.32	581.29	572.03	11.86	11.89	21.15
	3/1/2021	593.18	589.77	582.09	581.29	572.03	11.09	11.89	21.15
MW-07	2/3/2015	592.88	589.55	581.79	581.70	572.07	11.09	11.18	20.81
	4/30/2015	592.88	589.55	582.10	582.04	572.07	10.78	10.84	20.81
	7/27/2015	592.88	589.55	581.42	581.29	572.07	11.46	11.59	20.81
	11/9/2015	592.88	589.55	581.75	581.64	572.07	11.13	11.24	20.81
	2/16/2016	592.88	589.55	582.02	581.90	572.07	10.86	10.98	20.81
	5/24/2016	592.89	589.55	581.81	581.67	572.08	11.08	11.22	20.81
	8/9/2016	592.89	589.55	581.46	581.32	572.08	11.43	11.57	20.81
	10/25/2016	592.89	589.55	581.73	581.62	572.08	11.16	11.27	20.81
	1/31/2017	592.89	589.55	582.28	582.08	572.08	10.61	10.81	20.81
	5/9/2017	592.89	589.55	582.73	582.68	572.08	10.16	10.21	20.81
	9/7/2017	592.89	589.55	581.22	580.84	572.08	11.67	12.05	20.81
	11/14/2017	592.89	589.55	582.09	581.96	572.08	10.80	10.93	20.81
	2/27/2018	592.89	589.55	582.80	582.70	572.08	10.09	10.19	20.81
	5/1/2018	592.89	589.55	582.14	582.09	572.08	10.75	10.80	20.81
	7/25/2018	592.89	589.55	581.58	581.40	572.08	11.31	11.49	20.81
	10/2/2018	592.89	589.55	581.51	581.44	572.08	11.38	11.45	20.81
	2/19/2019	592.89	589.55	582.35	582.35	572.08	10.54	10.54	20.81
	5/28/2019	592.89	589.55	583.33	583.33	572.08	9.56	9.56	20.81
	8/21/2019	592.89	589.55	581.51	580.48	572.08	11.38	12.41	20.81
	12/5/2019	592.89	589.55	582.28	582.28	572.08	10.61	10.61	20.81
	2/18/2020	592.89	589.55	582.19	581.71	572.08	10.70	11.18	20.81
	5/26/2020	592.89	589.55	583.23	583.00	572.08	9.66	9.89	20.81
	8/5/2020	592.89	589.55	581.42	581.11	572.08	11.47	11.78	20.81
	11/3/2020	592.89	589.55	581.39	580.79	572.08	11.50	12.10	20.81
	3/1/2021	592.89	589.55	582.40	580.79	572.08	10.49	12.10	20.81

Table 1. Groundwater Elevations - Midwest Generation, LLC, Will County Station, Romeoville, IL

Well ID	Date	Top of Casing (TOC) Elevation (ft above MSL)	Ground Elevation (ft above MSL)	Groundwater Elevation (ft above MSL)	Sampling Groundwater Elevation (ft above MSL)	Bottom of Well Elevation (ft above MSL)	Depth to Groundwater (ft below TOC)	Sampling Depth to Groundwater (ft below TOC)	Depth to Bottom of Well (ft below TOC)
MW-08	2/3/2015	592.71	589.64	581.25	580.83	572.50	11.46	11.88	20.21
	4/30/2015	592.71	589.64	581.48	581.20	572.50	11.23	11.51	20.21
	7/27/2015	592.71	589.64	581.10	579.97	572.50	11.61	12.74	20.21
	11/9/2015	592.71	589.64	581.36	580.82	572.50	11.35	11.89	20.21
	2/16/2016	592.71	589.64	581.60	581.23	572.50	11.11	11.48	20.21
	5/24/2016	592.75	589.64	581.46	581.22	572.54	11.29	11.53	20.21
	8/9/2016	592.75	589.64	580.99	580.78	572.54	11.76	11.97	20.21
	10/25/2016	592.75	589.64	581.31	581.27	572.54	11.44	11.48	20.21
	1/31/2017	592.75	589.64	581.77	581.57	572.54	10.98	11.18	20.21
	5/9/2017	592.75	589.64	582.20	582.11	572.54	10.55	10.64	20.21
	9/6/2017	592.75	589.64	580.80	579.84	572.54	11.95	12.91	20.21
	11/14/2017	592.75	589.64	581.44	581.41	572.54	11.31	11.34	20.21
	2/27/2018	592.75	589.64	582.45	582.39	572.54	10.30	10.36	20.21
	5/1/2018	592.75	589.64	581.53	581.50	572.54	11.22	11.25	20.21
	7/25/2018	592.75	589.64	581.11	580.92	572.54	11.64	11.83	20.21
	10/2/2018	592.75	589.64	580.97	580.90	572.54	11.78	11.85	20.21
	2/19/2019	592.75	589.64	582.02	581.65	572.54	10.73	11.10	20.21
	5/28/2019	592.75	589.64	581.85	582.03	572.54	10.90	10.72	20.21
	8/21/2019	592.75	589.64	582.05	581.85	572.54	10.70	10.90	20.21
	12/5/2019	592.75	589.64	581.81	581.81	572.54	10.94	10.94	20.21
	2/18/2020	592.75	589.64	581.77	580.53	572.54	10.98	12.22	20.21
	5/26/2020	592.75	589.64	582.97	582.39	572.54	9.78	10.36	20.21
	8/5/2020	592.75	589.64	580.86	579.72	572.54	11.89	13.03	20.21
	11/3/2020	592.75	589.64	581.35	581.05	572.54	11.40	11.70	20.21
	3/1/2021	592.75	589.64	582.20	581.05	572.54	10.55	11.70	20.21
MW-09	2/3/2015	592.84	589.76	581.97	581.36	570.66	10.87	11.48	22.18
	4/30/2015	592.84	589.76	581.57	581.53	570.66	11.27	11.31	22.18
	7/27/2015	592.84	589.76	581.31	580.86	570.66	11.53	11.98	22.18
	11/9/2015	592.84	589.76	581.46	581.30	570.66	11.38	11.54	22.18
	2/16/2016	592.84	589.76	581.81	581.57	570.66	11.03	11.27	22.19
	5/24/2016	592.87	589.76	581.52	581.45	570.69	11.35	11.42	22.18
	8/9/2016	592.87	589.76	581.44	581.21	570.69	11.43	11.66	22.18
	10/25/2016	592.87	589.76	582.13	582.08	570.69	10.74	10.79	22.18
	1/31/2017	592.87	589.76	581.72	581.55	570.69	11.15	11.32	22.18
	5/9/2017	592.87	589.76	582.42	582.43	570.69	10.45	10.44	22.18
	9/6/2017	592.87	589.76	580.92	580.79	570.69	11.95	12.08	22.18
	11/14/2017	592.87	589.76	581.33	581.23	570.69	11.54	11.64	22.18
	2/27/2018	592.87	589.76	582.74	582.58	570.69	10.13	10.29	22.18
	5/1/2018	592.87	589.76	581.48	581.44	570.69	11.39	11.43	22.18
	7/25/2018	592.87	589.76	581.11	581.00	570.69	11.76	11.87	22.18
	10/2/2018	592.87	589.76	580.96	580.94	570.69	11.91	11.93	22.18
	2/192019	592.87	589.76	582.59	582.12	570.69	10.28	10.75	22.18
	5/28/2019	592.87	589.76	583.22	583.04	570.69	9.65	9.83	22.18
	8/21/2019	592.87	589.76	581.31	579.92	570.69	11.56	12.95	22.18
	12/5/2019	592.87	589.76	581.70	581.70	570.69	11.17	11.17	22.18
	2/18/2020	592.87	589.76	581.68	581.29	570.69	11.19	11.58	22.18
	5/26/2020	592.87	589.76	583.20	582.76	570.69	9.67	10.11	22.18
	8/5/2020	592.87	589.76	581.10	580.39	570.69	11.77	12.49	22.18
	11/3/2020	592.87	589.76	580.97	579.97	570.69	11.90	12.90	22.18
	3/1/2021	592.87	589.76	581.96	579.97	570.69	10.91	12.90	22.18
MW-10	02/03/15	590.98	591.31	580.12	579.94	571.45	10.86	11.04	19.53
	04/30/15	590.98	591.31	580.37	580.26	571.45	10.61	10.72	19.53
	07/27/15	590.98	591.31	580.11	579.95	571.45	10.87	11.03	19.53
	11/9/2015	590.98	591.31	580.33	580.14	571.45	10.65	10.84	19.53
	2/16/2016	590.98	591.31	580.55	580.26	571.45	10.43	10.72	19.53
	5/24/2016	590.96	591.31	580.24	580.10	571.43	10.72	10.86	19.53
	8/9/2016	590.96	591.31	579.84	579.68	571.43	11.12	11.28	19.53
	10/25/2016	590.96	591.31	580.23	580.27	571.43	10.73	10.69	19.53
	1/31/2017	590.96	591.31	580.59	580.48	571.43	10.37	10.48	19.53
	5/10/2017	590.96	591.31	581.18	580.94	571.43	9.78	10.02	19.53
	9/7/2017	590.96	591.31	579.76	579.44	571.43	11.20	11.52	19.53
	11/15/2017	590.96	591.31	580.20	580.14	571.43	10.76	10.82	19.53
	2/27/2018	590.96	591.31	581.42	581.27	571.43	9.54	9.69	19.53
	5/1/2018	590.96	591.31	580.32	580.30	571.43	10.64	10.66	19.53
	7/25/2018	590.96	591.31	579.78	579.65	571.43	11.18	11.31	19.53
	10/2/2018	590.96	591.31	579.84	580.32	571.43	11.12	10.64	19.53
	2/20/2019	590.96	591.31	580.92	580.68	571.43	10.04	10.28	19.53
	5/28/2019	590.96	591.31	581.94	582.27	571.43	9.02	8.69	19.53
	8/21/2019	590.96	591.31	580.31	579.96	571.43	10.65	11.00	19.53
	12/5/2019	590.96	591.31	580.68	580.68	571.43	10.28	10.28	19.53
	2/18/2020	590.96	591.31	580.57	580.01	571.43	10.39	10.95	19.53
	5/27/2020	590.96	591.31	582.07	581.85	571.43	8.89	9.11	19.53
	8/5/2020	590.96	591.31	579.90	579.57	571.43	11.06	11.39	19.53
	11/3/2020	590.96	591.31	580.28	580.11	571.43	10.68	10.85	19.53
	3/1/2021	590.96	591.31	581.25	580.11	571.43	9.71	10.85	19.53

Note. Values for Depth to Bottom of Well are from prior to the installation of the dedicated pumps.

Table 2. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-01	Date	10/4/2018		2/19/2019		5/28/2019		8/21/2019		12/6/2019		2/19/2020		5/26/2020		8/5/2020		11/3/2020		2/23/2021	
Parameter	Standards	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result
Antimony	0.006	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND
Arsenic	0.01	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
Barium	2	0.0025	0.092	0.0025	0.082	0.0025	0.081	0.0025	0.13	0.0025	0.11	0.0025	0.093	0.0025	0.08	0.0025	0.097	0.0025	0.1	0.0025	0.095
Beryllium	0.004	0.001	ND	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND ^
Boron	2	0.05	0.7	0.05	0.57	0.05	0.9	0.05	1.7	0.05	2.5	0.05	2.7	0.05	2.1	0.25	2.7	0.5	2.9	0.25	2.4
Cadmium	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Chloride	200	2	28	2	59	2	64	2	31	2	25	2	21	2	35	2	16	2	23	2	25
Chromium	0.1	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Cobalt	1	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
Copper	0.65	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Cyanide	0.2	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	ND
Fluoride	4	0.1	1	0.1	0.82	0.1	0.78	0.1	0.78	0.1	0.78	0.1	0.73	0.1	0.71	0.1	0.73	0.1	0.7	0.1	0.58
Iron	5	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Lead	0.0075	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Manganese	0.15	0.0025	0.043	0.0025	ND	0.0025	0.057	0.0025	0.13	0.0025	0.11	0.0025	0.079	0.0025	0.067	0.0025	0.1	0.0025	0.058	0.0025	0.017
Mercury	0.002	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
Nickel	0.1	0.002	ND	0.002	ND	0.002	0.0031	0.002	0.0048	0.002	0.0045	0.002	0.0041	0.002	0.0041	0.002	0.0042	0.002	0.0041	0.002	0.0032
Nitrogen/Nitrate	10	0.1	0.3	0.1	0.51	0.1	0.12	0.1	0.69	0.1	1.4	0.1	0.8	0.1	0.16	0.1	0.13	0.1	ND	0.1	0.22
Nitrogen/Nitrate, Nitrite	NA	0.1	0.3	0.1	0.51	0.1	0.12	0.1	0.69	0.1	1.4	0.1	0.8	0.1	0.16	0.1	0.13	0.1	ND	0.1	0.22
Nitrogen/Nitrite	NA	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND I13	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Perchlorate	0.0049	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND
Selenium	0.05	0.0025	ND	0.0025	0.0028	0.0025	ND	0.0025	ND	0.0025	0.0027	0.0025	0.0061	0.0025	0.0025	0.0025	0.0026	0.0025	0.0068	0.0025	0.017
Silver	0.05	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND F1
Sulfate	400	20	82	20	100	20	160	20	270	20	340	20	ND	20	300	100	300	50	260	100	270
Thallium	0.002	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Total Dissolved Solids	1,200	10	520	10	590	10	780	10	950	10	1000	10	1000	10	910	30	950	30	2800	10	860 H
Vanadium	0.049	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Zinc	5	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Benzene	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
BETX	11.705	0.0025	0.0011	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
pH	6.5 - 9.0	NA	7.5	NA	7.02	NA	7.12	NA	6.91	NA	6.93	NA	6.91	NA	6.88	NA	6.58	NA	6.60	NA	6.89
Temperature	NA	NA	16.65	NA	11.60	NA	12.40	NA	16.00	NA	14.90	NA	11.71	NA	13.30	NA	15.90	NA	16.70	NA	12.80
Conductivity	NA	NA	0.629	NA	0.944	NA	1.070	NA	0.146	NA	1.669	NA	1.007	NA	1.289	NA	1.414	NA	0.270	NA	1.492
Dissolved Oxygen	NA	NA	3.18	NA	0.45	NA	0.29	NA	0.34	NA	0.73	NA	2.79	NA	0.59	NA	NM	NA	0.31	NA	0.63
ORP	NA	NA	-57.2	NA	88.5	NA	233.1	NA	34.3	NA	26.3	NA	145.0	NA	74.8	NA	83.4	NA	-23.5	NA	33.9

Notes: Standards obtained from IAC, Title 35, Chapter I, Part 620, Subpart D, Section 620.410 - Groundwater Quality Standards for Class I: Potable Resource Groundwater

All values are in mg/L (ppm) unless otherwise noted.

Temperature	°C	degrees Celsius
Conductivity	ms/cm³	millisiemens/centimeters
Dissolved Oxygen	mg/L	milligrams/liter
Oxygen Reduction Potential (ORP)	mV	millivolts

DL - Detection limit
NA - Not Applicable
ND - Not Detected
NM - Not Measured

F1 - MS and/or MSD recovery exceeds control limits.
^ - Instrument related QC outside limits.
H - Sample was prepped or analyzed beyond the specified holding time

Lithium
Molybdenum
Radium
Calcium
Turbidity

Table 2. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-02	Date	10/4/2018		2/19/2019		5/28/2019		8/21/2019		12/6/2019		2/27/2020		5/22/2020		8/5/2020		11/3/2020		2/25/2021	
Parameter	Standards	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result
Antimony	0.006	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND
Arsenic	0.01	0.001	0.012	0.001	0.0078	0.001	0.0078	0.001	0.011	0.001	0.012	0.001	0.0097	0.001	0.0073	0.001	0.01	0.001	0.0095	0.001	0.0082
Barium	2	0.0025	0.073	0.0025	0.068	0.0025	0.058	0.0025	0.072	0.0025	0.073	0.0025	0.058	0.0025	0.058	0.0025	0.059	0.0025	0.056	0.0025	0.058
Beryllium	0.004	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND	0.001	ND^	0.001	ND ^
Boron	2	1	5.4	1	4.1	1	3.8	1	4.9	1	5.4	1	4.4	1	4.4	0.5	5.4	1	5.1	1	5.4
Cadmium	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Chloride	200	2	62	2	39	2	22	2	43	2	62	2	25	2	16	2	17	2	21	2	27
Chromium	0.1	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Cobalt	1	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
Copper	0.65	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Cyanide	0.2	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	ND
Fluoride	4	0.1	0.38	0.1	0.32	0.1	0.24	0.1	0.31	0.1	0.38	0.1	0.34	0.1	0.32	0.1	0.38	0.1	0.41	0.1	0.4
Iron	5	0.1	0.83	0.1	0.17	0.1	ND	0.1	0.64	0.1	0.83	0.1	0.13	0.1	0.13	0.1	0.32	0.1	0.28	0.1	0.1
Lead	0.0075	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Manganese	0.15	0.0025	0.069	0.0025	0.055	0.0025	0.029	0.0025	0.066	0.0025	0.069	0.0025	0.048	0.0025	0.038	0.0025	0.055	0.0025	0.044	0.0025	0.053
Mercury	0.002	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
Nickel	0.1	0.002	0.0028	0.002	0.0026	0.002	ND	0.002	0.0028	0.002	0.0028	0.002	0.0023	0.002	ND	0.002	ND	0.002	ND	0.002	0.0021
Nitrogen/Nitrate	10	0.1	ND	0.1	ND	0.1	0.17	0.1	ND	0.1	ND	0.1	ND	0.1	0.1	0.1	ND	0.1	ND	0.1	0.15
Nitrogen/Nitrate, Nitrite	NA	0.1	ND	0.1	ND	0.1	0.17	0.1	ND	0.1	ND	0.1	ND	0.1	0.1	0.1	ND	0.1	ND	0.1	0.15
Nitrogen/Nitrite	NA	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Perchlorate	0.0049	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND
Selenium	0.05	0.0025	0.0029	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	0.0029	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	0.0051	0.0025	0.0025
Silver	0.05	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Sulfate	400	100	640	100	580	100	460	100	650	100	640	100	ND	100	450	100	450	50	440	100	520
Thallium	0.002	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Total Dissolved Solids	1,200	10	1400	10	1300	10	1200	10	1400	10	1400	10	1000	10	980	30	980	30	1000	10	1100
Vanadium	0.049	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Zinc	5	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Benzene	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
BETX	11.705	0.0025	0.0014	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	0.0014	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
pH	6.5 - 9.0	NA	7.93	NA	7.61	NA	7.66	NA	6.99	NA	7.93	NA	7.57	NA	7.62	NA	7.32	NA	7.41	NA	7.88
Temperature	NA	NA	17.93	NA	14.90	NA	14.10	NA	21.65	NA	17.93	NA	13.65	NA	14.10	NA	16.00	NA	17.40	NA	13.90
Conductivity	NA	NA	1.459	NA	1.785	NA	1.590	NA	1.554	NA	1.459	NA	1.059	NA	1.570	NA	1.422	NA	1.500	NA	1.512
Dissolved Oxygen	NA	NA	1.19	NA	0.07	NA	0.41	NA	1.95	NA	1.19	NA	3.33	NA	0.82	NA	NM	NA	0.35	NA	0.13
ORP	NA	NA	-107.4	NA	-110.5	NA	10.1	NA	-105.7	NA	-107.4	NA	-105.6	NA	-60.4	NA	-111.5	NA	-181.9	NA	-113.0

Notes: Standards obtained from IAC, Title 35, Chapter I, Part 620, Subpart D, Section 620.410 - Groundwater Quality Standards for Class I: Potable Resource Groundwater
All values are in mg/L (ppm) unless otherwise noted.

Temperature	°C	degrees Celsius
Conductivity	ms/cm³	millisiemens/centimeters
Dissolved Oxygen	mg/L	milligrams/liter
Oxygen Reduction Potential (ORP)	mV	millivolts

DL - Detection limit
NA - Not Applicable
ND - Not Detected
NM - Not Measured

F1 - MS and/or MSD recovery exceeds control limits.
^ - Instrument related QC outside limits
H - Sample was prepped or analyzed beyond the specified holding time

Table 2. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-03	Date	10/4/2018		2/20/2019		5/29/2019		8/21/2019		12/6/2019		2/27/2020		5/26/2020		8/7/2020		11/4/2020		3/1/2021	
Parameter	Standards	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result
Antimony	0.006	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND
Arsenic	0.01	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	0.0017	0.001	ND	0.001	ND
Barium	2	0.0025	0.11	0.0025	0.086	0.0025	0.086	0.0025	0.086	0.0025	0.089	0.0025	0.088	0.0025	0.07	0.0025	0.077	0.0025	0.088	0.0025	0.097
Beryllium	0.004	0.001	ND	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND
Boron	2	0.5	2.5	0.5	2.4	0.5	2.9	0.5	2.9	0.5	3.2	0.5	2.6	0.5	3.1	0.5	4.2	1	3.2	0.5	3.6
Cadmium	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Chloride	200	2	22	2	35	2	19	2	41	2	12	2	14	2	17	2	21	2	40	2	17
Chromium	0.1	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Cobalt	1	0.001	ND	0.001	ND	0.001	ND	0.001	0.0014	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
Copper	0.65	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Cyanide	0.2	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	0.0067
Fluoride	4	0.1	0.38	0.1	0.36	0.1	0.29	0.1	0.38	0.1	0.49	0.1	0.4	0.1	0.32	0.1	0.38	0.1	0.45	0.1	0.3
Iron	5	0.1	0.16	0.1	ND	0.1	ND	0.1	0.14	0.1	ND	0.1	ND	0.1	0.11	0.1	0.18	0.1	0.13	0.1	ND
Lead	0.0075	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Manganese	0.15	0.0025	0.54	0.0025	0.31	0.0025	0.26	0.0025	0.35	0.0025	0.24	0.0025	0.27	0.0025	0.2	0.0025	0.21	0.0025	0.27	0.0025	0.27
Mercury	0.002	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
Nickel	0.1	0.002	0.0043	0.002	0.0059	0.002	0.0058	0.002	0.0078	0.002	0.0047	0.002	0.0047	0.002	0.0052	0.002	0.0062	0.002	0.009	0.002	0.0056
Nitrogen/Nitrate	10	0.1	ND	0.1	0.26	0.1	0.58	0.1	ND	0.1	ND	0.1	ND	0.1	0.21	0.1	ND	0.1	ND	0.1	ND
Nitrogen/Nitrate, Nitrite	NA	0.1	ND	0.1	0.26	0.1	0.58	0.1	ND	0.1	ND	0.1	ND	0.1	0.21	0.1	ND	0.1	ND	0.1	ND
Nitrogen/Nitrite	NA	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND H3	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Perchlorate	0.0049	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND
Selenium	0.05	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND ^	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
Silver	0.05	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Sulfate	400	50	120	50	300	50	290	50	360	50	260	50	ND	50	310	100	360	50	330	100	340
Thallium	0.002	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Total Dissolved Solids	1,200	10	820	10	880	10	970	10	960	10	710	10	770	10	700	30	870	60	940	10	1000
Vanadium	0.049	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Zinc	5	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Benzene	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
BETX	11.705	0.0025	0.0011	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
pH	6.5 - 9.0	NA	7.09	NA	6.86	NA	7.15	NA	7.15	NA	7.05	NA	6.83	NA	7.15	NA	6.78	NA	7.14	NA	7.19
Temperature	NA	NA	15.47	NA	11.00	NA	12.00	NA	15.20	NA	13.40	NA	10.12	NA	12.00	NA	14.80	NA	15.00	NA	10.60
Conductivity	NA	NA	0.962	NA	1.380	NA	1.330	NA	0.218	NA	1.226	NA	0.743	NA	1.235	NA	1.341	NA	1.330	NA	1.425
Dissolved Oxygen	NA	NA	2.22	NA	0.12	NA	0.20	NA	0.31	NA	0.81	NA	3.01	NA	0.59	NA	NM	NA	0.25	NA	-0.01
ORP	NA	NA	-56.6	NA	109.6	NA	-2.1	NA	-23.6	NA	-29.8	NA	-80.1	NA	-36.8	NA	-58.4	NA	-75.9	NA	-69.3

Notes: Standards obtained from IAC, Title 35, Chapter I, Part 620, Subpart D, Section 620.410 - Groundwater Quality Standards for Class I: Potable Resource Groundwater
All values are in mg/L (ppm) unless otherwise noted

Temperature	°C	degrees Celsius
Conductivity	ms/cm²	millisiemens/centimeters
Dissolved Oxygen	mg/L	milligrams/liter
Oxygen Reduction Potential (ORP)	mV	millivolts

DL - Detection limit
NA - Not Applicable
ND - Not Detected
NM - Not Measured

F1 - MS and/or MSD recovery exceeds control limits
^ - Instrument related QC outside limits
H - Sample was prepped or analyzed beyond the specified holding time.

Table 2. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-04	Date	10/3/2018		2/20/2019		5/29/2019		8/21/2019		12/5/2019		2/27/2020		5/26/2020		8/7/2020		11/4/2020		2/2/2021	
Parameter	Standards	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result
Antimony	0.006	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND
Arsenic	0.01	0.001	ND	0.001	ND	0.001	ND	0.001	0.0014	0.001	0.0013	0.001	0.0012	0.001	ND	0.001	0.0022	0.001	0.0017	0.001	0.0011
Barium	2	0.0025	0.042	0.0025	0.052	0.0025	0.045	0.0025	0.054	0.0025	0.047	0.0025	0.039	0.0025	0.04	0.0025	0.041	0.0025	0.037	0.0025	0.04
Beryllium	0.004	0.001	ND	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND ^
Boron	2	0.5	4.4	0.5	3.4	0.5	3.3	0.5	5.9	0.5	6.4	0.5	4.5	0.5	5.8	1	6.8	1	5.5	1	5.3
Cadmium	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Chloride	200	2	28	2	70	2	37	2	28	2	22	2	18	2	15	2	15	2	20	2	16
Chromium	0.1	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Cobalt	1	0.001	0.0011	0.001	0.0012	0.001	ND	0.001	0.0015	0.001	ND	0.001	ND	0.001	0.0011	0.001	ND	0.001	0.0012	0.001	0.0018
Copper	0.65	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	0.0025	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Cyanide	0.2	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	ND
Fluoride	4	0.1	0.42	0.1	0.38	0.1	0.39	0.1	0.44	0.1	0.51	0.1	0.41	0.1	0.43	0.1	0.47	0.1	0.44	0.1	0.37
Iron	5	0.1	0.35	0.1	0.19	0.1	0.24	0.1	0.91	0.1	0.31	0.1	0.26	0.1	0.52	0.1	0.85	0.1	0.72	0.1	0.43
Lead	0.0075	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Manganese	0.15	0.0025	0.55	0.0025	0.59	0.0025	0.55	0.0025	0.69	0.0025	0.5	0.0025	0.48	0.0025	0.52	0.0025	0.52	0.0025	0.56	0.0025	0.76
Mercury	0.002	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
Nickel	0.1	0.002	0.0041	0.002	0.0045	0.002	0.004	0.002	0.0063	0.002	0.0041	0.002	0.0031	0.002	0.0038	0.002	0.0034	0.002	0.0057	0.002	0.0054
Nitrogen/Nitrate	10	0.1	ND	0.1	0.93	0.1	ND	0.1	ND	0.1	0.52	0.1	0.32	0.1	ND	0.1	ND	0.1	ND	0.1	0.35
Nitrogen/Nitrate, Nitrite	NA	0.1	ND	0.1	0.93	0.1	ND ^	0.1	ND	0.1	0.52	0.1	0.32	0.1	ND	0.1	ND	0.1	ND	0.1	0.35
Nitrogen/Nitrite	NA	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Perchlorate	0.0049	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND
Selenium	0.05	0.0025	ND	0.0025	0.014	0.0025	0.0094	0.0025	ND	0.0025	0.009	0.0025	0.0066	0.0025	ND	0.0025	ND	0.0025	0.0089	0.0025	0.013
Silver	0.05	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Sulfate	400	250	410	250	920	250	650	250	1100	250	1200	250	1100	250	1100	250	970	100	630	100	860
Thallium	0.002	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Total Dissolved Solids	1,200	10	1600	10	2100	10	2000	10	2200	10	2400	10	2200	10	2200	150	1900	150	1800	10	1900 H
Vanadium	0.049	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Zinc	5	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Benzene	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
BETX	11.705	0.0025	0.0015	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
pH	6.5 - 9.0	NA	6.96	NA	6.68	NA	6.91	NA	7.04	NA	6.86	NA	6.56	NA	6.84	NA	6.86	NA	6.69	NA	6.84
Temperature	NA	NA	21.53	NA	10.70	NA	11.70	NA	15.00	NA	13.80	NA	10.01	NA	11.70	NA	15.10	NA	16.00	NA	11.20
Conductivity	NA	NA	1.921	NA	2.653	NA	2.260	NA	0.224	NA	3.025	NA	1.628	NA	2.851	NA	2.365	NA	2.000	NA	2.299
Dissolved Oxygen	NA	NA	1.79	NA	0.03	NA	0.29	NA	0.37	NA	0.68	NA	2.79	NA	0.66	NA	NM	NA	0.19	NA	6.03
ORP	NA	NA	-4.4	NA	60.2	NA	7.7	NA	-46.3	NA	15.0	NA	-74.9	NA	-14.8	NA	-58.6	NA	-71.0	NA	-12.0

Notes: Standards obtained from IAC, Title 35, Chapter I, Part 620, Subpart D, Section 620.410 - Groundwater Quality Standards for Class I Potable Resource Groundwater

All values are in mg/L (ppm) unless otherwise noted.

Temperature	°C	degrees Celsius
Conductivity	ms/cm	millisiemens/centimeters
Dissolved Oxygen	mg/L	milligrams/liter
Oxygen Reduction Potential (ORP)	mV	millivolts

DL - Detection limit
NA - Not Applicable
ND - Not Detected
NM - Not Measured

FI - MS and/or MSD recovery exceeds control limits.
^ - Instrument related QC outside limits.
H - Sample was prepped or analyzed beyond the specified holding time

Table 2. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-05	Date	10/3/2018		2/20/2019		5/29/2019		8/21/2019		12/6/2019		2/27/2020		5/22/2020		8/6/2020		11/4/2020		2/23/2021	
Parameter	Standards	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result
Antimony	0.006	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND
Arsenic	0.01	0.001	0.0024	0.001	0.0031	0.001	0.0034	0.001	0.0047	0.001	0.0027	0.001	0.002	0.001	0.0025	0.001	0.006	0.001	0.0016	0.001	ND
Barium	2	0.0025	0.049	0.0025	0.029	0.0025	0.028	0.0025	0.036	0.0025	0.078	0.0025	0.049	0.0025	0.029	0.0025	0.025	0.0025	0.077	0.0025	0.038
Beryllium	0.004	0.001	ND	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND ^
Boron	2	1	5.2	1	3.6	1	3.5	1	4.2	1	4.8	1	3.3	1	4.1	0.5	5.1	1	5.1	1	5.6
Cadmium	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Chloride	200	2	61	2	78	2	76	2	48	2	31	2	29	2	72	2	49	2	32	2	10
Chromium	0.1	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Cobalt	1	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
Copper	0.65	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Cyanide	0.2	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	ND
Fluoride	4	0.1	0.57	0.1	0.59	0.1	0.64	0.1	0.78	0.1	0.43	0.1	0.48	0.1	0.56	0.1	0.77	0.1	0.34	0.1	0.56
Iron	5	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	0.17	0.1	0.17	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Lead	0.0075	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Manganese	0.15	0.0025	0.083	0.0025	0.04	0.0025	0.027	0.0025	0.046	0.0025	0.15	0.0025	0.12	0.0025	0.035	0.0025	0.014	0.0025	0.21	0.0025	0.044
Mercury	0.002	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
Nickel	0.1	0.002	0.0023	0.002	ND	0.002	0.002	0.002	0.0024	0.002	0.0023	0.002	0.0022	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Nitrogen/Nitrate	10	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	0.25	0.1	0.43	0.1	ND	0.1	0.15	0.1	0.15
Nitrogen/Nitrate, Nitrite	NA	0.1	ND	0.1	ND	0.1	ND ^	0.1	ND	0.1	ND	0.1	0.25	0.1	0.43	0.1	ND	0.1	0.15	0.1	0.15
Nitrogen/Nitrite	NA	0.02	ND	0.02	0.038	0.02	0.021	0.02	ND	0.02	ND H3	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Perchlorate	0.0049	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND
Selenium	0.05	0.0025	ND	0.0025	ND	0.0025	0.0026	0.0025	0.0025	0.0025	0.011	0.0025	0.018 F1	0.0025	0.0029	0.0025	ND	0.0025	0.083	0.0025	0.037
Silver	0.05	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Sulfate	400	100	420	100	420	100	390	100	450	100	470	100	ND	100	410	100	420	50	410	100	380
Thallium	0.002	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Total Dissolved Solids	1,200	10	1000	10	890	10	1000	10	950	10	1200	10	1100	10	850	30	750	60	1200	10	830 H
Vanadium	0.049	0.005	ND	0.005	0.0066	0.005	0.015	0.005	0.0073	0.005	ND	0.005	0.0057	0.005	0.015	0.005	0.014	0.005	0.013	0.005	ND
Zinc	5	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Benzene	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
BETX	11.705	0.0025	0.0012	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
pH	6.5 - 9.0	NA	7.07	NA	9.04	NA	8.45	NA	8.64	NA	6.95	NA	6.75	NA	7.39	NA	9.02	NA	7.06	NA	7.29
Temperature	NA	NA	18.05	NA	10.40	NA	11.80	NA	16.20	NA	13.50	NA	9.76	NA	11.40	NA	15.40	NA	16.30	NA	10.70
Conductivity	NA	NA	1.380	NA	1.301	NA	1.360	NA	0.193	NA	1.814	NA	1.097	NA	1.593	NA	1.123	NA	1.480	NA	1.269
Dissolved Oxygen	NA	NA	3.00	NA	0.10	NA	0.22	NA	0.43	NA	0.72	NA	3.98	NA	0.80	NA	NM	NA	0.46	NA	2.97
ORP	NA	NA	100.6	NA	59.3	NA	-9.7	NA	-78.8	NA	-2.6	NA	-66.0	NA	-11.1	NA	-55.6	NA	-42.1	NA	-11.0

Notes: Standards obtained from IAC, Title 35, Chapter I, Part 620, Subpart D, Section 620.410 - Groundwater Quality Standards for Class I: Potable Resource Groundwater
All values are in mg/L (ppm) unless otherwise noted

Temperature	°C	degrees Celsius
Conductivity	ms/cm²	millisiemens/centimeters
Dissolved Oxygen	mg/L	milligrams/liter
Oxygen Reduction Potential (ORP)	mV	millivolts

DL - Detection limit
NA - Not Applicable
ND - Not Detected
NM - Not Measured

F1 - MS and/or MSD recovery exceeds control limits
^ - Instrument related QC outside limits.
H - Sample was prepped or analyzed beyond the specified holding time

Table 2. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-06	Date	10/3/2018		2/20/2019		5/29/2019		8/21/2019		12/6/2019		2/19/2020		5/22/2020		8/5/2020		11/3/2020		2/23/2021	
Parameter	Standards	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result
Antimony	0.006	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND
Arsenic	0.01	0.001	0.0032	0.001	0.002	0.001	0.0018	0.001	0.0032	0.001	0.0028	0.001	0.002	0.001	ND	0.001	0.0028	0.001	0.0022	0.001	0.001
Barium	2	0.0025	0.085	0.0025	0.076	0.0025	0.1	0.0025	0.082	0.0025	0.087	0.0025	0.08	0.0025	0.072	0.0025	0.084	0.0025	0.083	0.0025	0.073
Beryllium	0.004	0.001	ND	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND ^
Boron	2	0.95	7.1	0.95	2.9	0.95	3.8	0.95	3.2	0.95	7.3	0.95	3.1	0.95	3.2	0.25	3.1	0.5	3.4	0.5	2.8
Cadmium	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Chloride	200	2	47	2	53	2	37	2	39	2	30	2	25	2	58	2	50	2	42	2	31
Chromium	0.1	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Cobalt	1	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
Copper	0.65	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Cyanide	0.2	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	ND
Fluoride	4	0.1	0.32	0.1	0.26	0.1	0.21	0.1	0.28	0.1	0.33	0.1	0.29	0.1	0.3	0.1	0.31	0.1	0.35	0.1	0.33
Iron	5	0.1	0.23	0.1	0.15	0.1	ND	0.1	0.3	0.1	0.12	0.1	0.15	0.1	ND	0.1	0.24	0.1	0.47	0.1	0.33
Lead	0.0075	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Manganese	0.15	0.0025	0.12	0.0025	0.12	0.0025	0.11	0.0025	0.14	0.0025	0.13	0.0025	0.14	0.0025	0.14	0.0025	0.18	0.0025	0.23	0.0025	0.24
Mercury	0.002	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
Nickel	0.1	0.002	ND	0.002	0.0021	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Nitrogen/Nitrate	10	0.1	ND	0.1	ND	0.1	0.31	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Nitrogen/Nitrate, Nitrite	NA	0.1	ND	0.1	ND	0.1	0.31	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Nitrogen/Nitrite	NA	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND 113	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Perchlorate	0.0049	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND
Selenium	0.05	0.0025	ND	0.0025	ND	0.0025	0.045	0.0025	ND	0.0025	0.004	0.0025	0.012	0.0025	0.011	0.0025	ND	0.0025	0.004	0.0025	0.0086
Silver	0.05	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Sulfate	400	100	210	100	250	100	410	100	230	100	250	100	ND	100	280	100	200	25	160	25	150
Thallium	0.002	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Total Dissolved Solids	1,200	10	740	10	730	10	1200	10	720	10	760	10	740	10	710	30	640	30	710	10	580 H
Vanadium	0.049	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Zinc	5	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Benzene	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
BETX	11.705	0.0025	0.0025	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
pH	6.5 - 9.0	NA	7.83	NA	7.8	NA	7.51	NA	7.83	NA	7.91	NA	7.81	NA	7.47	NA	7.58	NA	7.29	NA	7.79
Temperature	NA	NA	19.92	NA	10.70	NA	11.60	NA	16.10	NA	14.10	NA	10.17	NA	11.20	NA	15.60	NA	16.50	NA	10.70
Conductivity	NA	NA	0.910	NA	1.120	NA	1.590	NA	1.070	NA	1.029	NA	0.722	NA	1.170	NA	1.037	NA	1.090	NA	1.000
Dissolved Oxygen	NA	NA	6.47	NA	0.10	NA	0.31	NA	0.36	NA	0.91	NA	1.89	NA	0.68	NA	NM	NA	0.18	NA	0.16
ORP	NA	NA	-43.3	NA	-97.1	NA	-15.8	NA	-137.3	NA	-90.8	NA	-82.1	NA	-37.6	NA	-106.4	NA	-185.7	NA	-72.6

Notes: Standards obtained from IAC, Title 35, Chapter I, Part 620,
Subpart D, Section 620.410 - Groundwater Quality Standards for Class I: Potable Resource Groundwater
All values are in mg/L (ppm) unless otherwise noted

Temperature	°C	degrees Celsius
Conductivity	mS/cm	millisiemens/centimeters
Dissolved Oxygen	mg/L	milligrams/liter
Oxygen Reduction Potential (ORP)	mV	millivolts

DL - Detection limit
NA - Not Applicable
ND - Not Detected
NM - Not Measured

F1 - MS and/or MSD recovery exceeds control limits.
^ - Instrument related QC outside limits.
H - Sample was prepped or analyzed beyond the specified holding time

Downgradient of Pond 1N

Table 2. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-07	Date	10/2/2018		2/19/2019		5/28/2019		8/21/2019		12/6/2019		2/18/2020		5/26/2020		8/6/2020		11/3/2020		3/1/2021	
Parameter	Standards	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result
Antimony	0.006	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND
Arsenic	0.01	0.001	0.002	0.001	0.0018	0.001	0.0019	0.001	0.0029	0.001	0.0029	0.001	0.0021	0.001	ND	0.001	0.0026	0.001	0.0025	0.001	0.0021
Barium	2	0.0025	0.036	0.0025	0.069	0.0025	0.045	0.0025	0.079	0.0025	0.057	0.0025	0.047	0.0025	0.039	0.0025	0.071	0.0025	0.079	0.0025	0.084
Beryllium	0.004	0.001	ND	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND
Boron	2	0.25	2.6	0.25	3.5	0.25	3	0.25	4.3	0.25	ND	0.25	5.7	0.25	4.4	0.5	3.8	1	4.5	1	4.[illegible]
Cadmium	0.005	0.0005	ND	0.0005	0.0005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Chloride	200	10	160	10	140	10	100	10	120	10	72	10	65	10	130	10	140	10	160	10	140
Chromium	0.1	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Cobalt	1	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
Copper	0.65	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Cyanide	0.2	0.01	ND	0.01	0.011	0.01	0.03	0.01	0.018	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.012	0.005	0.017
Fluoride	4	0.1	0.82	0.1	0.56	0.1	0.68	0.1	0.63	0.1	0.49	0.1	0.47	0.1	0.61	0.1	0.67	0.1	0.68	0.1	0.56
Iron	5	0.1	ND	0.1	0.48	0.1	0.13	0.1	0.58	0.1	0.59	0.1	0.42	0.1	0.42	0.1	0.87	0.1	1.4	0.1	1.3
Lead	0.0075	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Manganese	0.15	0.0025	0.012	0.0025	0.22	0.0025	0.068	0.0025	0.19	0.0025	0.43	0.0025	0.48	0.0025	0.4[illegible]	0.0025	0.14	0.0025	0.23	0.0025	0.31
Mercury	0.002	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
Nickel	0.1	0.002	0.0026	0.002	0.003	0.002	0.0025	0.002	0.0036	0.002	0.0026	0.002	0.0023	0.002	0.0026	0.002	0.0026	0.002	0.0028	0.002	0.0027
Nitrogen/Nitrate	10	0.1	0.22	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	0.15	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Nitrogen/Nitrate, Nitrite	NA	0.1	0.22	0.1	ND	0.1	ND ^	0.1	ND	0.1	ND	0.1	0.15	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Nitrogen/Nitrite	NA	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND H3	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Perchlorate	0.0049	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND
Selenium	0.05	0.0025	0.0095	0.0025	0.0032	0.0025	0.0032	0.0025	0.0057	0.0025	0.0032	0.0025	0.012	0.0025	ND	0.0025	ND	0.0025	0.0089	0.0025	0.0098
Silver	0.05	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Sulfate	400	100	340	100	600	100	460	100	600	100	820	100	770	100	620	100	540	100	540	100	680
Thallium	0.002	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Total Dissolved Solids	1,200	10	970	10	1500	10	1300	10	1400	10	1800	10	1500	10	1400	60	1200	60	1300	10	1500
Vanadium	0.049	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Zinc	5	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	0.02	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Benzene	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
BTEX	11.705	0.0025	0.0052	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
pH	6.5 - 9.0	NA	7.81	NA	7.58	NA	8.65	NA	7.54	NA	6.97	NA	8.42	NA	7.08	NA	7.28	NA	7.08	NA	7.21
Temperature	NA	NA	14.85	NA	11.70	NA	11.50	NA	14.00	NA	13.70	NA	11.50	NA	11.90	NA	13.70	NA	14.90	NA	11.30
Conductivity	NA	NA	1.206	NA	1.785	NA	1.490	NA	1.415	NA	2.383	NA	2.520	NA	1.617	NA	1.515	NA	1.866	NA	1.894
Dissolved Oxygen	NA	NA	2.20	NA	0.02	NA	0.48	NA	NM	NA	0.89	NA	0.17	NA	0.68	NA	NM	NA	1.70	NA	[illegible]
ORP	NA	NA	-116.2	NA	-90.7	NA	-65.3	NA	-191.7	NA	-76.0	NA	-3.9	NA	-25.4	NA	[illegible]	NA	-132.8	NA	-118.3

Notes: Standards obtained from IAC, Title 35, Chapter I, Part 620
Subpart D, Section 620.410 - Groundwater Quality Standards for Class I Potable Resource Groundwater
All values are in mg/L (ppm) unless otherwise noted

Temperature	°C	degrees Celsius
Conductivity	ms/cm³	millisiemens/centimeters
Dissolved Oxygen	mg/L	milligrams/liter
Oxygen Reduction Potential (ORP)	mV	millivolts

DL - Detection limit
NA - Not Applicable
ND - Not Detected
NM - Not Measured

F1 - MS and/or MSD recovery exceeds control limits
^ - Instrument related QC outside limits
H - Sample was prepped or analyzed beyond the specified holding time

Electronic Filing: Received, Clerk's Office 07/01/2021

Downgradient of Pond 1S

Table 2. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-08	Date	10/2/2018		2/19/2019		5/29/2019		8/21/2019		12/6/2019		2/18/2020		5/26/2020		8/6/2020		11/3/2020		3/1/2021	
Parameter	Standards	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result
Antimony	0.006	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND
Arsenic	0.01	0.001	0.011	0.001	0.0018	0.001	0.0032	0.001	0.0083	0.001	0.0069	0.001	0.006	0.001	0.003	0.001	0.011	0.001	0.002	0.001	ND
Barium	2	0.0025	0.064	0.0025	0.077	0.0025	0.069	0.0025	0.064	0.0025	0.082	0.0025	0.075	0.0025	0.086	0.0025	0.081	0.0025	0.067	0.0025	0.063
Beryllium	0.004	0.001	ND	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND
Boron	2	0.25	2.7	0.25	1.5	0.25	1	0.25	2.5	0.25	2.6	0.25	2.4	0.25	1.1	0.25	2.8	0.5	3	0.25	1.6
Cadmium	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Chloride	200	10	140	10	64	10	27	10	130	10	50	10	150	10	200	10	180	10	210	10	180
Chromium	0.1	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Cobalt	1	0.001	ND	0.001	0.001	0.001	ND	0.001	ND	0.001	0.0012	0.001	0.0011	0.001	0.0011	0.001	ND	0.001	0.0012	0.001	ND
Copper	0.65	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Cyanide	0.2	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	0.0058
Fluoride	4	0.1	0.74	0.1	0.47	0.1	0.48	0.1	0.67	0.1	0.58	0.1	0.54	0.1	0.48	0.1	0.63	0.1	0.61	0.1	0.46
Iron	5	0.1	1.2	0.1	0.52	0.1	1.3	0.1	1.4 F1	0.1	2.1	0.1	1.9	0.1	2	0.1	2	0.1	0.51	0.1	0.22
Lead	0.0075	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Manganese	0.15	0.0025	0.23	0.0025	0.3	0.0025	0.28	0.0025	0.23	0.0025	0.45	0.0025	0.44	0.0025	0.45	0.0025	0.36	0.0025	0.34	0.0025	0.21
Mercury	0.002	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	0.0022 F1	0.0002	ND	0.0002	ND
Nickel	0.1	0.002	0.0035	0.002	0.0024	0.002	ND	0.002	0.0032	0.002	0.0038	0.002	0.0036	0.002	ND	0.002	0.0037	0.002	0.0057	0.002	0.0021
Nitrogen/Nitrate	10	0.1	0.11	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Nitrogen/Nitrate, Nitrite	NA	0.1	0.11	0.1	ND	0.1	ND ^	0.1	ND	0.1	ND	0.1	ND F2	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Nitrogen/Nitrite	NA	0.02	ND	0.02	ND	0.02	0.02	0.02	ND	0.02	ND H3	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Perchlorate	0.0049	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND
Selenium	0.05	0.0025	0.0025	0.0025	0.011	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	0.0044	0.0025	ND	0.0025	ND	0.0025	0.0034	0.0025	0.032
Silver	0.05	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND ^	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Sulfate	400	100	510	100	290	100	80	100	530	100	500	100	ND	100	150	100	560	100	620	100	250
Thallium	0.002	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Total Dissolved Solids	1,200	10	1200	10	1100	10	630	10	1100	10	1200	10	1100	10	1000	60	[illegible]	150	1800	10	1200
Vanadium	0.049	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Zinc	5	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Benzene	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
BETX	11.705	0.0025	0.00502	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
pH	6.5 - 9.0	NA	7.31	NA	6.9	NA	6.99	NA	7.23	NA	6.98	NA	7.08	NA	6.86	NA	6.92	NA	6.83	NA	7.03
Temperature	NA	NA	17.44	NA	9.60	NA	11.70	NA	15.30	NA	13.10	NA	10.20	NA	11.70	NA	15.00	NA	16.00	NA	9.10
Conductivity	NA	NA	1.496	NA	1.558	NA	0.980	NA	0.165	NA	1.806	NA	1.717	NA	1.509	NA	1.826	NA	2.530	NA	1.682
Dissolved Oxygen	NA	NA	2.40	NA	0.89	NA	0.37	NA	0.23	NA	0.93	NA	0.70	NA	0.66	NA	NM	NA	1.90	NA	2.30
ORP	NA	NA	-36.30	NA	-22.20	NA	-58.90	NA	-97.60	NA	-69.20	NA	-67.90	NA	-57.80	NA	-85.30	NA	-60.10	NA	-23.50

Notes: Standards obtained from IAC, Title 35, Chapter I, Part 620, Subpart D, Section 620.410 - Groundwater Quality Standards for Class I: Potable Resource Groundwater
All values are in mg/L (ppm) unless otherwise noted

Temperature	°C	degrees Celsius
Conductivity	ms/cm	millisiemens/centimeters
Dissolved Oxygen	mg/L	milligrams/liter
Oxygen Reduction Potential (ORP)	mV	millivolts

DL - Detection limit
NA - Not Applicable
ND - Not Detected
NM - Not Measured

F1 - MS and/or MSD recovery exceeds control limits
^ - Instrument related QC outside limits
H - Sample was prepped or analyzed beyond the specified holding time

Table 2. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-09	Date	10/2/2018		2/19/2019		5/29/2019		8/21/2019		12/6/2019		2/18/2020		5/26/2020		8/6/2020		11/3/2020		3/1/2021	
Parameter	Standards	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result
Antimony	0.006	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND
Arsenic	0.01	0.001	0.006	0.001	0.0033	0.001	0.0034	0.001	0.0039	0.001	0.0055	0.001	0.003	0.001	0.0021	0.001	0.0047	0.001	0.0056	0.001	0.0037
Barium	2	0.0025	0.033	0.0025	0.034	0.0025	0.031	0.0025	0.027	0.0025	0.025	0.0025	0.04	0.0025	0.037	0.0025	0.036	0.0025	0.03	0.0025	0.043
Beryllium	0.004	0.001	ND	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND	0.001	ND	0.001	ND
Boron	2	0.5	2.3	0.5	1.1	0.5	1.1	0.5	1.6	0.5	1.9	0.5	1.3	0.5	1.3	0.25	1.8	0.5	2	0.25	1.3
Cadmium	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Chloride	200	10	190F1	10	350	10	270	10	230	10	150	10	340	10	310	10	280	10	250	40	310
Chromium	0.1	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Cobalt	1	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
Copper	0.65	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Cyanide	0.2	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	0.0064
Fluoride	4	0.1	0.54	0.1	0.26	0.1	0.29	0.1	0.36	0.1	0.46	0.1	0.34	0.1	0.32	0.1	0.45	0.1	0.52	0.1	0.37
Iron	5	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND
Lead	0.0075	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Manganese	0.15	0.0025	0.0069	0.0025	0.0044	0.0025	0.0059	0.0025	0.0066	0.0025	0.0074	0.0025	0.011	0.0025	0.011	0.0025	0.011	0.0025	0.0097	0.0025	0.014
Mercury	0.002	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
Nickel	0.1	0.002	0.002	0.002	0.0024	0.002	0.0025	0.002	0.0029	0.002	0.0023	0.002	ND	0.002	0.0021	0.002	0.0026	0.002	0.0026	0.002	0.0022
Nitrogen/Nitrate	10	0.1	ND	0.1	2.8	0.1	0.96	0.1	ND	0.1	ND	0.1	0.32	0.1	ND	0.1	ND	0.1	ND	0.1	0.18
Nitrogen/Nitrate, Nitrite	NA	0.1	ND	0.1	2.9	0.1	1.1	0.1	ND	0.1	ND	0.1	0.4	0.1	ND	0.1	ND	0.1	ND	0.1	0.23
Nitrogen/Nitrite	NA	0.02	ND	0.02	0.063	0.02	0.14	0.02	ND	0.02	ND H3	0.02	0.076	0.02	ND	0.02	ND	0.02	ND	0.02	0.054
Perchlorate	0.0049	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND
Selenium	0.05	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND ^	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
Silver	0.05	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND ^	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	0.0005	0.0005	ND
Sulfate	400	100	260	100	150	100	160	100	200	100	190	100	150	100	140	25	190	25	180	25	170
Thallium	0.002	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	0.002	0.002	ND
Total Dissolved Solids	1,200	10	810	10	870	10	830	10	710	10	620	10	810	10	800	30	760	30	760	10	860
Vanadium	0.049	0.005	ND	0.005	0.0054	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	0.005	0.005	ND
Zinc	5	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	0.02	0.02	ND
Benzene	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
BETX	11.705	0.0025	0.0128	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
pH	6.5 - 9.0	NA	8.09	NA	8.29	NA	8.9	NA	8.87	NA	8.65	NA	8.44	NA	8.66	NA	8.03	NA	8.64	NA	8.02
Temperature	NA	NA	17.73	NA	11.4	NA	11.9	NA	15.5	NA	14.8	NA	11.6	NA	12.4	NA	15.3	NA	17.1	NA	11.2
Conductivity	NA	NA	1.136	NA	1.541	NA	1.34	NA	9.14	NA	1.161	NA	1.519	NA	1.377	NA	1.346	NA	1.433	NA	1.481
Dissolved Oxygen	NA	NA	1.88	NA	2.52	NA	0.31	NA	NM	NA	0.72	NA	0.81	NA	0.62	NA	NM	NA	1.6	NA	0.06
ORP	NA	NA	-103.1	NA	-37.9	NA	129.4	NA	-189.2	NA	-64.6	NA	-5.1	NA	-48.6	NA	-89.4	NA	-134.8	NA	-61.3

Notes: Standards obtained from IAC, Title 35, Chapter I, Part 620, Subpart D, Section 620.410 - Groundwater Quality Standards for Class I: Potable Resource Groundwater

All values are in mg/L (ppm) unless otherwise noted.

Temperature °C degrees Celsius
Conductivity ms/cm millisiemens/centimeters
Dissolved Oxygen mg/L milligrams/liter
Oxygen Reduction Potential (ORP) mV millivolts

DL - Detection limit
NA - Not Applicable
ND - Not Detected
NM - Not Measured

F1 - MS and/or MSD recovery exceeds control limits
^ - Instrument related QC outside limits
H - Sample was prepped or analyzed beyond the specified holding time

Table 2. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-10	Date	10/3/2018		2/20/2019		5/29/2019		8/21/2019		12/5/2019		2/18/2020		5/27/2020		8/6/2020		11/3/2020		2/25/2021	
Parameter	Standards	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result	DL	Result
Antimony	0.006	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND
Arsenic	0.01	0.001	0.0058	0.001	0.0029	0.001	0.0059	0.001	0.0076	0.001	0.011	0.001	0.016	0.001	0.0056	0.001	0.008	0.001	0.011	0.001	0.0074
Barium	2	0.0025	0.067	0.0025	0.079	0.0025	0.071	0.0025	0.07	0.0025	0.089	0.0025	0.11	0.0025	0.076	0.0025	0.084	0.0025	0.088	0.0025	0.13
Beryllium	0.004	0.001	ND	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND ^	0.001	ND	0.001	ND	0.001	ND ^	0.001	ND ^
Boron	2	0.5	2.6	0.5	2.5	0.5	1.9	0.5	2.3	0.5	3.5	0.5	3.7	0.5	2.4	0.25	3	0.5	3.8	0.5	2.9
Cadmium	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Chloride	200	10	150	10	130	10	140	10	150	10	120	10	160	10	160	10	140	10	140	10	150
Chromium	0.1	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Cobalt	1	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
Copper	0.65	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Cyanide	0.2	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	ND
Fluoride	4	0.1	0.91	0.1	0.76	0.1	0.81	0.1	0.9	0.1	0.92	0.1	0.76	0.1	0.9	0.1	0.91	0.1	0.91	0.1	0.59
Iron	5	0.1	0.85	0.1	0.43	0.1	0.93	0.1	1.2	0.1	1.3	0.1	1.8	0.1	1.2	0.1	1.2	0.1	1.4	0.1	1.5
Lead	0.0075	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	0.00066
Manganese	0.15	0.0025	0.12	0.0025	0.14	0.0025	0.13	0.0025	0.13	0.0025	0.21	0.0025	0.25	0.0025	0.14	0.0025	0.17	0.0025	0.25	0.0025	0.26
Mercury	0.002	0.0002	ND	0.0002	ND	0.0002	ND F2	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
Nickel	0.1	0.002	ND	0.002	0.0028	0.002	0.0025	0.002	0.0026	0.002	0.0029	0.002	0.0023	0.002	0.0025	0.002	0.0027	0.002	0.0026	0.002	0.0023
Nitrogen/Nitrate	10	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	0.13
Nitrogen/Nitrate, Nitrite	NA	0.1	ND	0.1	ND	0.1	0.10 ^	0.1	ND	0.1	ND ^	0.1	ND	0.1	ND	0.1	ND	0.1	ND	0.1	0.13
Nitrogen/Nitrite	NA	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Perchlorate	0.0049	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND
Selenium	0.05	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	0.012	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
Silver	0.05	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND ^	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Sulfate	400	100	310	100	260	100	250	100	280	100	220	100	ND	100	280	100	240	25	170	25	190 F1
Thallium	0.002	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND	0.002	ND
Total Dissolved Solids	1,200	10	850	10	920	10	970	10	800	10	890	10	1000	10	870 F1	30	860	30	890	10	950
Vanadium	0.049	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND
Zinc	5	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND
Benzene	0.005	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
BETX	11.705	0.0025	0.0013	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
pH	6.5 - 9.0	NA	7.60	NA	7.16	NA	7.53	NA	7.58	NA	7.21	NA	7.05	NA	7.29	NA	7.50	NA	7.02	NA	7.20
Temperature	NA	NA	20.65	NA	11.40	NA	11.50	NA	15.10	NA	14.30	NA	10.80	NA	11.60	NA	14.90	NA	16.10	NA	10.20
Conductivity	NA	NA	1.139	NA	1.386	NA	1.320	NA	0.182	NA	1.503	NA	1.641	NA	1.300	NA	1.348	NA	1.420	NA	1.485
Dissolved Oxygen	NA	NA	1.49	NA	0.63	NA	0.22	NA	0.34	NA	0.84	NA	0.17	NA	0.63	NA	NM	NA	0.16	NA	2.12
ORP	NA	NA	-105.4	NA	-78.3	NA	-116.4	NA	-130.4	NA	-94.6	NA	-106.0	NA	-110.6	NA	-128.7	NA	-149.2	NA	-49.9

Notes: Standards obtained from IAC, Title 35, Chapter I, Part 620, Subpart D, Section 620.410 - Groundwater Quality Standards for Class I: Potable Resource Groundwater
All values are in mg/L (ppm) unless otherwise noted

Temperature	°C	degrees Celsius
Conductivity	mS/cm	milliSiemens/centimeters
Dissolved Oxygen	mg/L	milligrams/liter
Oxygen Reduction Potential (ORP)	mV	millivolts

DL - Detection limit
NA - Not Applicable
ND - Not Detected
NM - Not Measured

F1 - MS and/or MSD recovery exceeds control limits
^ - Instrument related QC outside limits
H - Sample was prepped or analyzed beyond the specified holding time

ATTACHMENT 1
Analytical Data Package(s)

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-195197-1
Client Project/Site: Will Co. Station Groundwater

For:
KPRG and Associates, Inc.
14665 West Lisbon Road,
Suite 1A
Brookfield, Wisconsin 53005

Attn: Richard Gnat

Diana Mockler

Authorized for release by:
4/8/2021 9:02:08 AM

Diana Mockler, Project Manager I
(219)252-7570
Diana.Mockler@Eurofinset.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Case Narrative

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Job ID: 500-195197-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative
500-195197-1

Comments
No additional comments.

Receipt
The samples were received on 2/24/2021 10:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.6° C, 3.2° C and 4.3° C.

Receipt Exceptions

The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC):Sample #7 "MW-10". The container labels list "MW-08" 2/25/21 1240 for 3 voa vials only while the COC lists "MW-10". Logged per COC.

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC). Added to COC as sample #9 and logged.

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. Sample #8 "Duplicate" no date on COC. Logged date per container label (2/25/21).

Method 314.0: Sample #6 "MW-02", COC is not checked off for perchlorate analysis, however container for analysis was received. Logged method.

GC/MS VOA
Method 8260B: The matrix spike duplicate (MSD) for the following sample was analyzed outside the 12 hour tune window. No futher action was taken.MW-02 (500-195197-6)

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

Metals
Method 6020A: The low level continuing calibration verification (CCVL) associated with batch 500-586865 recovered above the upper control limit for Beryllium. 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.

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

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

Narrative

Job Narrative
500-195197-2

Comments
No additional comments.

Receipt
The samples were received on 2/24/2021 10:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.6° C, 3.2° C and 4.3° C.

Receipt Exceptions

Case Narrative

Job ID: 500-195197-1 (Continued)

Laboratory: Eurofins TestAmerica, Chicago (Continued)

The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC):Sample #7 "MW-10". The container labels list "MW-08" 2/25/21 1240 for 3 voa vials only while the COC lists "MW-10". Logged per COC.

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC). Added to COC as sample #9 and logged.

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. Sample #8 "Duplicate" no date on COC. Logged date per container label (2/25/21).

Method 314.0: Sample #6 "MW-02", COC is not checked off for perchlorate analysis, however container for analysis was received. Logged method.

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

General Chemistry
Method SM 2540C: The following samples were analyzed outside of analytical holding time due to a laboratory error, MW-01 (500-195197-1), MW-04 (500-195197-2), MW-05 (500-195197-3), MW-06 (500-195197-4).

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

Method Summary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
314.0	Perchlorate (IC)	EPA	TAL SAC
6020A	Metals (ICP/MS)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9012B	Cyanide, Total andor Amenable	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9251	Chloride	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CHI
SM 4500 F C	Fluoride	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
7470A	Preparation, Mercury	SW846	TAL CHI
9010C	Cyanide, Distillation	SW846	TAL CHI
Soluble Metals	Preparation, Soluble	None	TAL CHI

Protocol References:

EPA = US Environmental Protection Agency

None = None

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:

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

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-195197-1	MW-01	Water	02/23/21 14:06	02/24/21 10:40	
500-195197-2	MW-04	Water	02/22/21 14:58	02/24/21 10:40	
500-195197-3	MW-05	Water	02/23/21 11:42	02/24/21 10:40	
500-195197-4	MW-06	Water	02/23/21 15:26	02/24/21 10:40	
500-195197-5	Trip Blank	Water	02/23/21 00:00	02/24/21 10:40	
500-195197-6	MW-02	Water	02/25/21 11:15	02/26/21 11:30	
500-195197-7	MW-10	Water	02/25/21 12:40	02/26/21 11:30	
500-195197-8	Duplicate	Water	02/25/21 00:00	02/26/21 11:30	
500-195197-9	Trip Blank	Water	02/25/21 00:00	02/26/21 11:30	
500-195197-10	MW-07	Water	03/01/21 15:04	03/02/21 10:57	
500-195197-11	MW-08	Water	03/01/21 13:04	03/02/21 10:57	
500-195197-12	MW-09	Water	03/01/21 14:06	03/02/21 10:57	
500-195197-13	MW-03	Water	03/01/21 10:41	03/02/21 10:57	
500-195197-14	Trip Blank	Water	03/01/21 00:00	03/02/21 10:57	

Client Sample Results

Client: KPRG and Associates, Inc. Job ID: 500-195197-1
Project/Site: Will Co. Station Groundwater

Client Sample ID: MW-01 **Lab Sample ID: 500-195197-1**
Date Collected: 02/23/21 14:06 **Matrix: Water**
Date Received: 02/24/21 10:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			02/25/21 12:53	1
Toluene	<0.00050		0.00050		mg/L			02/25/21 12:53	1
Ethylbenzene	<0.00050		0.00050		mg/L			02/25/21 12:53	1
Xylenes, Total	<0.0010		0.0010		mg/L			02/25/21 12:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 126*		*02/25/21 12:53*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/25/21 12:53*	*1*
4-Bromofluorobenzene (Surr)	*100*		*72 - 124*		*02/25/21 12:53*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*02/25/21 12:53*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/22/21 13:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/01/21 13:44	03/01/21 16:52	1
Arsenic	<0.0010		0.0010		mg/L		03/01/21 13:44	03/01/21 16:52	1
Barium	**0.095**		0.0025		mg/L		03/01/21 13:44	03/01/21 16:52	1
Beryllium	<0.0010	^+	0.0010		mg/L		03/01/21 13:44	03/01/21 16:52	1
Boron	**2.4**		0.25		mg/L		03/01/21 13:44	03/02/21 14:59	5
Cadmium	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 16:52	1
Chromium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 16:52	1
Cobalt	<0.0010		0.0010		mg/L		03/01/21 13:44	03/01/21 16:52	1
Copper	<0.0020		0.0020		mg/L		03/01/21 13:44	03/02/21 16:15	1
Iron	<0.10		0.10		mg/L		03/01/21 13:44	03/01/21 16:52	1
Lead	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 16:52	1
Manganese	**0.017**		0.0025		mg/L		03/01/21 13:44	03/01/21 16:52	1
Nickel	**0.0032**		0.0020		mg/L		03/01/21 13:44	03/01/21 16:52	1
Selenium	**0.017**		0.0025		mg/L		03/01/21 13:44	03/01/21 16:52	1
Silver	<0.00050	F1	0.00050		mg/L		03/01/21 13:44	03/01/21 16:52	1
Thallium	<0.0020		0.0020		mg/L		03/01/21 13:44	03/01/21 16:52	1
Vanadium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 16:52	1
Zinc	<0.020		0.020		mg/L		03/01/21 13:44	03/01/21 16:52	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		02/26/21 09:30	03/01/21 09:09	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0050		0.0050		mg/L		02/25/21 10:10	02/25/21 12:30	1
Sulfate	**270**		100		mg/L			02/26/21 13:28	20
Chloride	**25**		2.0		mg/L			02/26/21 13:15	1
Nitrogen, Nitrate	**0.22**		0.10		mg/L			03/11/21 16:27	1
Total Dissolved Solids	**860**	H	10		mg/L			04/06/21 01:51	1
Fluoride	**0.58**		0.10		mg/L			03/03/21 12:13	1
Nitrogen, Nitrite	<0.020		0.020		mg/L			02/25/21 15:27	1
Nitrogen, Nitrate Nitrite	**0.22**		0.10		mg/L			03/10/21 12:31	1

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: MW-04
Date Collected: 02/22/21 14:58
Date Received: 02/24/21 10:40

Lab Sample ID: 500-195197-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			02/25/21 13:19	1
Toluene	<0.00050		0.00050		mg/L			02/25/21 13:19	1
Ethylbenzene	<0.00050		0.00050		mg/L			02/25/21 13:19	1
Xylenes, Total	<0.0010		0.0010		mg/L			02/25/21 13:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*02/25/21 13:19*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/25/21 13:19*	*1*
4-Bromofluorobenzene (Surr)	*100*		*72 - 124*		*02/25/21 13:19*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*02/25/21 13:19*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/19/21 18:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/01/21 13:44	03/01/21 17:09	1
Arsenic	**0.0011**		0.0010		mg/L		03/01/21 13:44	03/01/21 17:09	1
Barium	**0.040**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:09	1
Beryllium	<0.0010	^+	0.0010		mg/L		03/01/21 13:44	03/01/21 17:09	1
Boron	**5.3**		1.0		mg/L		03/01/21 13:44	03/02/21 15:26	20
Cadmium	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:09	1
Chromium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 17:09	1
Cobalt	**0.0018**		0.0010		mg/L		03/01/21 13:44	03/01/21 17:09	1
Copper	<0.0020		0.0020		mg/L		03/01/21 13:44	03/02/21 16:40	1
Iron	**0.43**		0.10		mg/L		03/01/21 13:44	03/01/21 17:09	1
Lead	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:09	1
Manganese	**0.76**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:09	1
Nickel	**0.0054**		0.0020		mg/L		03/01/21 13:44	03/01/21 17:09	1
Selenium	**0.013**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:09	1
Silver	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:09	1
Thallium	<0.0020		0.0020		mg/L		03/01/21 13:44	03/01/21 17:09	1
Vanadium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 17:09	1
Zinc	<0.020		0.020		mg/L		03/01/21 13:44	03/01/21 17:09	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		02/26/21 09:30	03/01/21 09:11	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0050		0.0050		mg/L		02/25/21 10:10	02/25/21 12:31	1
Sulfate	**860**		100		mg/L			02/26/21 13:30	20
Chloride	**16**		2.0		mg/L			02/26/21 13:16	1
Nitrogen, Nitrate	**0.35**		0.10		mg/L			03/11/21 16:27	1
Total Dissolved Solids	**1900**	**H**	10		mg/L			04/06/21 01:58	1
Fluoride	**0.37**		0.10		mg/L			03/03/21 12:32	1
Nitrogen, Nitrite	<0.020		0.020		mg/L			02/25/21 15:28	1
Nitrogen, Nitrate Nitrite	**0.35**		0.10		mg/L			03/10/21 12:37	1

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: MW-05
Date Collected: 02/23/21 11:42
Date Received: 02/24/21 10:40

Lab Sample ID: 500-195197-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			02/25/21 13:45	1
Toluene	<0.00050		0.00050		mg/L			02/25/21 13:45	1
Ethylbenzene	<0.00050		0.00050		mg/L			02/25/21 13:45	1
Xylenes, Total	<0.0010		0.0010		mg/L			02/25/21 13:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*02/25/21 13:45*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/25/21 13:45*	*1*
4-Bromofluorobenzene (Surr)	*101*		*72 - 124*		*02/25/21 13:45*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*02/25/21 13:45*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/22/21 13:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/01/21 13:44	03/01/21 17:13	1
Arsenic	<0.0010		0.0010		mg/L		03/01/21 13:44	03/01/21 17:13	1
Barium	**0.038**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:13	1
Beryllium	<0.0010	^+	0.0010		mg/L		03/01/21 13:44	03/01/21 17:13	1
Boron	**5.6**		1.0		mg/L		03/01/21 13:44	03/02/21 15:30	20
Cadmium	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:13	1
Chromium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 17:13	1
Cobalt	<0.0010		0.0010		mg/L		03/01/21 13:44	03/01/21 17:13	1
Copper	<0.0020		0.0020		mg/L		03/01/21 13:44	03/02/21 16:43	1
Iron	<0.10		0.10		mg/L		03/01/21 13:44	03/01/21 17:13	1
Lead	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:13	1
Manganese	**0.044**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:13	1
Nickel	<0.0020		0.0020		mg/L		03/01/21 13:44	03/01/21 17:13	1
Selenium	**0.037**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:13	1
Silver	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:13	1
Thallium	<0.0020		0.0020		mg/L		03/01/21 13:44	03/01/21 17:13	1
Vanadium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 17:13	1
Zinc	<0.020		0.020		mg/L		03/01/21 13:44	03/01/21 17:13	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		02/26/21 09:30	03/01/21 09:18	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0050		0.0050		mg/L		02/25/21 10:10	02/25/21 12:33	1
Sulfate	**380**		100		mg/L			02/26/21 13:31	20
Chloride	**10**		2.0		mg/L			02/26/21 13:17	1
Nitrogen, Nitrate	**0.15**		0.10		mg/L			03/11/21 16:27	1
Total Dissolved Solids	**830**	H	10		mg/L			04/06/21 02:01	1
Fluoride	**0.56**		0.10		mg/L			03/03/21 12:35	1
Nitrogen, Nitrite	<0.020		0.020		mg/L			02/25/21 15:28	1
Nitrogen, Nitrate Nitrite	**0.15**		0.10		mg/L			03/10/21 12:39	1

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: MW-06
Date Collected: 02/23/21 15:26
Date Received: 02/24/21 10:40

Lab Sample ID: 500-195197-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			02/25/21 14:11	1
Toluene	<0.00050		0.00050		mg/L			02/25/21 14:11	1
Ethylbenzene	<0.00050		0.00050		mg/L			02/25/21 14:11	1
Xylenes, Total	<0.0010		0.0010		mg/L			02/25/21 14:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 126*		*02/25/21 14:11*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/25/21 14:11*	*1*
4-Bromofluorobenzene (Surr)	*99*		*72 - 124*		*02/25/21 14:11*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*02/25/21 14:11*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/22/21 13:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/01/21 13:44	03/01/21 17:16	1
Arsenic	**0.0010**		0.0010		mg/L		03/01/21 13:44	03/01/21 17:16	1
Barium	**0.073**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:16	1
Beryllium	<0.0010	^+	0.0010		mg/L		03/01/21 13:44	03/01/21 17:16	1
Boron	**2.8**		0.50		mg/L		03/01/21 13:44	03/02/21 15:33	10
Cadmium	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:16	1
Chromium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 17:16	1
Cobalt	<0.0010		0.0010		mg/L		03/01/21 13:44	03/01/21 17:16	1
Copper	<0.0020		0.0020		mg/L		03/01/21 13:44	03/02/21 16:47	1
Iron	**0.33**		0.10		mg/L		03/01/21 13:44	03/01/21 17:16	1
Lead	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:16	1
Manganese	**0.24**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:16	1
Nickel	<0.0020		0.0020		mg/L		03/01/21 13:44	03/01/21 17:16	1
Selenium	**0.0086**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:16	1
Silver	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:16	1
Thallium	<0.0020		0.0020		mg/L		03/01/21 13:44	03/01/21 17:16	1
Vanadium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 17:16	1
Zinc	<0.020		0.020		mg/L		03/01/21 13:44	03/01/21 17:16	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		02/26/21 09:30	03/01/21 09:26	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0050		0.0050		mg/L		02/25/21 10:10	02/25/21 12:35	1
Sulfate	**150**		25		mg/L			02/26/21 13:25	5
Chloride	**31**		2.0		mg/L			02/26/21 13:17	1
Nitrogen, Nitrate	<0.10		0.10		mg/L			03/11/21 16:27	1
Total Dissolved Solids	**580**	**H**	10		mg/L			04/06/21 02:03	1
Fluoride	**0.33**		0.10		mg/L			03/03/21 12:39	1
Nitrogen, Nitrite	<0.020		0.020		mg/L			02/25/21 15:29	1
Nitrogen, Nitrate Nitrite	<0.10		0.10		mg/L			03/10/21 12:41	1

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: Trip Blank
Date Collected: 02/23/21 00:00
Date Received: 02/24/21 10:40

Lab Sample ID: 500-195197-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			02/25/21 12:02	1
Toluene	<0.00050		0.00050		mg/L			02/25/21 12:02	1
Ethylbenzene	<0.00050		0.00050		mg/L			02/25/21 12:02	1
Xylenes, Total	<0.0010		0.0010		mg/L			02/25/21 12:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 126*		*02/25/21 12:02*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/25/21 12:02*	*1*
4-Bromofluorobenzene (Surr)	*101*		*72 - 124*		*02/25/21 12:02*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*02/25/21 12:02*	*1*

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: MW-02
Date Collected: 02/25/21 11:15
Date Received: 02/26/21 11:30

Lab Sample ID: 500-195197-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			03/01/21 14:22	1
Toluene	<0.00050		0.00050		mg/L			03/01/21 14:22	1
Ethylbenzene	<0.00050		0.00050		mg/L			03/01/21 14:22	1
Xylenes, Total	<0.0010		0.0010		mg/L			03/01/21 14:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 126*		*03/01/21 14:22*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*03/01/21 14:22*	*1*
4-Bromofluorobenzene (Surr)	*99*		*72 - 124*		*03/01/21 14:22*	*1*
Dibromofluoromethane	*96*		*75 - 120*		*03/01/21 14:22*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/22/21 17:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/01/21 13:44	03/01/21 17:27	1
Arsenic	**0.0082**		0.0010		mg/L		03/01/21 13:44	03/01/21 17:27	1
Barium	**0.058**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:27	1
Beryllium	<0.0010	^+	0.0010		mg/L		03/01/21 13:44	03/01/21 17:27	1
Boron	**5.4**		1.0		mg/L		03/01/21 13:44	03/02/21 15:37	20
Cadmium	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:27	1
Chromium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 17:27	1
Cobalt	<0.0010		0.0010		mg/L		03/01/21 13:44	03/01/21 17:27	1
Copper	<0.0020		0.0020		mg/L		03/01/21 13:44	03/02/21 16:50	1
Iron	**0.10**		0.10		mg/L		03/01/21 13:44	03/01/21 17:27	1
Lead	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:27	1
Manganese	**0.053**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:27	1
Nickel	**0.0021**		0.0020		mg/L		03/01/21 13:44	03/01/21 17:27	1
Selenium	<0.0025		0.0025		mg/L		03/01/21 13:44	03/01/21 17:27	1
Silver	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:27	1
Thallium	<0.0020		0.0020		mg/L		03/01/21 13:44	03/01/21 17:27	1
Vanadium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 17:27	1
Zinc	<0.020		0.020		mg/L		03/01/21 13:44	03/01/21 17:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		03/01/21 10:20	03/02/21 09:03	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0050		0.0050		mg/L		03/01/21 10:01	03/01/21 11:55	1
Sulfate	**520**		100		mg/L			03/10/21 12:46	20
Chloride	**27**		2.0		mg/L			03/05/21 15:51	1
Nitrogen, Nitrate	**0.15**		0.10		mg/L			03/11/21 16:27	1
Total Dissolved Solids	**1100**		10		mg/L			03/01/21 23:05	1
Fluoride	**0.40**		0.10		mg/L			03/03/21 12:44	1
Nitrogen, Nitrite	<0.020		0.020		mg/L			02/26/21 13:38	1
Nitrogen, Nitrate Nitrite	**0.15**		0.10		mg/L			03/10/21 12:44	1

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: MW-10
Date Collected: 02/25/21 12:40
Date Received: 02/26/21 11:30

Lab Sample ID: 500-195197-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			03/01/21 14:48	1
Toluene	<0.00050		0.00050		mg/L			03/01/21 14:48	1
Ethylbenzene	<0.00050		0.00050		mg/L			03/01/21 14:48	1
Xylenes, Total	<0.0010		0.0010		mg/L			03/01/21 14:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*75 - 126*		*03/01/21 14:48*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*03/01/21 14:48*	*1*
4-Bromofluorobenzene (Surr)	*99*		*72 - 124*		*03/01/21 14:48*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*03/01/21 14:48*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/22/21 17:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/01/21 13:44	03/01/21 17:30	1
Arsenic	**0.0074**		0.0010		mg/L		03/01/21 13:44	03/01/21 17:30	1
Barium	**0.13**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:30	1
Beryllium	<0.0010	^+	0.0010		mg/L		03/01/21 13:44	03/01/21 17:30	1
Boron	**2.9**		0.50		mg/L		03/01/21 13:44	03/02/21 15:40	10
Cadmium	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:30	1
Chromium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 17:30	1
Cobalt	<0.0010		0.0010		mg/L		03/01/21 13:44	03/01/21 17:30	1
Copper	<0.0020		0.0020		mg/L		03/01/21 13:44	03/02/21 16:54	1
Iron	**1.5**		0.10		mg/L		03/01/21 13:44	03/01/21 17:30	1
Lead	**0.00066**		0.00050		mg/L		03/01/21 13:44	03/01/21 17:30	1
Manganese	**0.26**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:30	1
Nickel	**0.0023**		0.0020		mg/L		03/01/21 13:44	03/01/21 17:30	1
Selenium	<0.0025		0.0025		mg/L		03/01/21 13:44	03/01/21 17:30	1
Silver	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:30	1
Thallium	<0.0020		0.0020		mg/L		03/01/21 13:44	03/01/21 17:30	1
Vanadium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 17:30	1
Zinc	<0.020		0.020		mg/L		03/01/21 13:44	03/01/21 17:30	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		03/01/21 10:20	03/02/21 09:05	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0050		0.0050		mg/L		03/01/21 10:01	03/01/21 11:57	1
Sulfate	**190**	**F1**	25		mg/L			03/10/21 13:38	5
Chloride	**150**		10		mg/L			03/10/21 13:44	5
Nitrogen, Nitrate	**0.13**		0.10		mg/L			03/11/21 16:27	1
Total Dissolved Solids	**950**		10		mg/L			03/01/21 23:08	1
Fluoride	**0.59**		0.10		mg/L			03/03/21 12:49	1
Nitrogen, Nitrite	<0.020		0.020		mg/L			02/26/21 13:38	1
Nitrogen, Nitrate Nitrite	**0.13**		0.10		mg/L			03/10/21 12:46	1

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: Duplicate
Date Collected: 02/25/21 00:00
Date Received: 02/26/21 11:30

Lab Sample ID: 500-195197-8
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			03/01/21 15:41	1
Toluene	<0.00050		0.00050		mg/L			03/01/21 15:41	1
Ethylbenzene	<0.00050		0.00050		mg/L			03/01/21 15:41	1
Xylenes, Total	<0.0010		0.0010		mg/L			03/01/21 15:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*75 - 126*		*03/01/21 15:41*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*03/01/21 15:41*	*1*
4-Bromofluorobenzene (Surr)	*102*		*72 - 124*		*03/01/21 15:41*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*03/01/21 15:41*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/22/21 18:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/01/21 13:44	03/01/21 17:34	1
Arsenic	**0.0079**		0.0010		mg/L		03/01/21 13:44	03/01/21 17:34	1
Barium	**0.13**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:34	1
Beryllium	<0.0010	^+	0.0010		mg/L		03/01/21 13:44	03/01/21 17:34	1
Boron	**2.9**		0.50		mg/L		03/01/21 13:44	03/02/21 15:44	10
Cadmium	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:34	1
Chromium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 17:34	1
Cobalt	<0.0010		0.0010		mg/L		03/01/21 13:44	03/01/21 17:34	1
Copper	<0.0020		0.0020		mg/L		03/01/21 13:44	03/02/21 16:57	1
Iron	**1.7**		0.10		mg/L		03/01/21 13:44	03/01/21 17:34	1
Lead	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:34	1
Manganese	**0.28**		0.0025		mg/L		03/01/21 13:44	03/01/21 17:34	1
Nickel	**0.0020**		0.0020		mg/L		03/01/21 13:44	03/01/21 17:34	1
Selenium	<0.0025		0.0025		mg/L		03/01/21 13:44	03/01/21 17:34	1
Silver	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 17:34	1
Thallium	<0.0020		0.0020		mg/L		03/01/21 13:44	03/01/21 17:34	1
Vanadium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 17:34	1
Zinc	<0.020		0.020		mg/L		03/01/21 13:44	03/01/21 17:34	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		03/01/21 10:20	03/02/21 09:08	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0050		0.0050		mg/L		03/01/21 10:01	03/01/21 11:58	1
Sulfate	**180**		25		mg/L			03/10/21 13:39	5
Chloride	**150**		10		mg/L			03/10/21 13:46	5
Nitrogen, Nitrate	<0.10		0.10		mg/L			03/11/21 16:27	1
Total Dissolved Solids	**980**		10		mg/L			03/01/21 23:10	1
Fluoride	**0.59**		0.10		mg/L			03/03/21 13:04	1
Nitrogen, Nitrite	<0.020		0.020		mg/L			02/26/21 13:38	1
Nitrogen, Nitrate Nitrite	<0.10		0.10		mg/L			03/10/21 12:48	1

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: Trip Blank
Date Collected: 02/25/21 00:00
Date Received: 02/26/21 11:30

Lab Sample ID: 500-195197-9
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			03/01/21 16:07	1
Toluene	<0.00050		0.00050		mg/L			03/01/21 16:07	1
Ethylbenzene	<0.00050		0.00050		mg/L			03/01/21 16:07	1
Xylenes, Total	<0.0010		0.0010		mg/L			03/01/21 16:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*75 - 126*		*03/01/21 16:07*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*03/01/21 16:07*	*1*
4-Bromofluorobenzene (Surr)	*101*		*72 - 124*		*03/01/21 16:07*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*03/01/21 16:07*	*1*

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: MW-07
Date Collected: 03/01/21 15:04
Date Received: 03/02/21 10:57

Lab Sample ID: 500-195197-10
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			03/03/21 12:04	1
Toluene	<0.00050		0.00050		mg/L			03/03/21 12:04	1
Ethylbenzene	<0.00050		0.00050		mg/L			03/03/21 12:04	1
Xylenes, Total	<0.0010		0.0010		mg/L			03/03/21 12:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*75 - 126*		*03/03/21 12:04*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*03/03/21 12:04*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 124*		*03/03/21 12:04*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*03/03/21 12:04*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/26/21 15:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/05/21 11:47	03/05/21 17:29	1
Arsenic	**0.0021**		0.0010		mg/L		03/05/21 11:47	03/05/21 17:29	1
Barium	**0.084**		0.0025		mg/L		03/05/21 11:47	03/05/21 17:29	1
Beryllium	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:29	1
Boron	**4.1**		1.0		mg/L		03/05/21 11:47	03/08/21 18:17	20
Cadmium	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:29	1
Chromium	<0.0050		0.0050		mg/L		03/05/21 11:47	03/05/21 17:29	1
Cobalt	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:29	1
Copper	<0.0020		0.0020		mg/L		03/05/21 11:47	03/09/21 12:28	1
Iron	**1.3**		0.10		mg/L		03/05/21 11:47	03/05/21 17:29	1
Lead	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:29	1
Manganese	**0.31**		0.0025		mg/L		03/05/21 11:47	03/05/21 17:29	1
Nickel	**0.0027**		0.0020		mg/L		03/05/21 11:47	03/05/21 17:29	1
Selenium	**0.0098**		0.0025		mg/L		03/05/21 11:47	03/05/21 17:29	1
Silver	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:29	1
Thallium	<0.0020		0.0020		mg/L		03/05/21 11:47	03/05/21 17:29	1
Vanadium	<0.0050		0.0050		mg/L		03/05/21 11:47	03/08/21 19:18	1
Zinc	<0.020		0.020		mg/L		03/05/21 11:47	03/05/21 17:29	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		03/03/21 10:20	03/05/21 09:55	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.017**		0.0050		mg/L		03/03/21 09:14	03/03/21 15:59	1
Sulfate	**680**		100		mg/L			03/10/21 13:46	20
Chloride	**140**		10		mg/L			03/10/21 13:47	5
Nitrogen, Nitrate	<0.10		0.10		mg/L			03/11/21 16:27	1
Total Dissolved Solids	**1500**		10		mg/L			03/03/21 05:02	1
Fluoride	**0.56**		0.10		mg/L			03/03/21 13:09	1
Nitrogen, Nitrite	<0.020		0.020		mg/L			03/02/21 13:16	1
Nitrogen, Nitrate Nitrite	<0.10		0.10		mg/L			03/10/21 12:54	1

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: MW-08
Date Collected: 03/01/21 13:04
Date Received: 03/02/21 10:57

Lab Sample ID: 500-195197-11
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			03/03/21 12:31	1
Toluene	<0.00050		0.00050		mg/L			03/03/21 12:31	1
Ethylbenzene	<0.00050		0.00050		mg/L			03/03/21 12:31	1
Xylenes, Total	<0.0010		0.0010		mg/L			03/03/21 12:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*75 - 126*		*03/03/21 12:31*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*03/03/21 12:31*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 124*		*03/03/21 12:31*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*03/03/21 12:31*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/26/21 15:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/05/21 11:47	03/05/21 17:32	1
Arsenic	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:32	1
Barium	**0.063**		0.0025		mg/L		03/05/21 11:47	03/05/21 17:32	1
Beryllium	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:32	1
Boron	**1.6**		0.25		mg/L		03/05/21 11:47	03/08/21 18:20	5
Cadmium	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:32	1
Chromium	<0.0050		0.0050		mg/L		03/05/21 11:47	03/05/21 17:32	1
Cobalt	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:32	1
Copper	<0.0020		0.0020		mg/L		03/05/21 11:47	03/09/21 12:31	1
Iron	**0.22**		0.10		mg/L		03/05/21 11:47	03/05/21 17:32	1
Lead	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:32	1
Manganese	**0.21**		0.0025		mg/L		03/05/21 11:47	03/05/21 17:32	1
Nickel	**0.0021**		0.0020		mg/L		03/05/21 11:47	03/05/21 17:32	1
Selenium	**0.032**		0.0025		mg/L		03/05/21 11:47	03/05/21 17:32	1
Silver	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:32	1
Thallium	<0.0020		0.0020		mg/L		03/05/21 11:47	03/05/21 17:32	1
Vanadium	<0.0050		0.0050		mg/L		03/05/21 11:47	03/08/21 19:22	1
Zinc	<0.020		0.020		mg/L		03/05/21 11:47	03/05/21 17:32	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		03/03/21 10:20	03/05/21 09:57	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.0058**		0.0050		mg/L		03/03/21 09:14	03/03/21 16:27	1
Sulfate	**250**		100		mg/L			03/10/21 13:46	20
Chloride	**180**		10		mg/L			03/10/21 13:47	5
Nitrogen, Nitrate	<0.10		0.10		mg/L			03/11/21 16:27	1
Total Dissolved Solids	**1200**		10		mg/L			03/03/21 05:10	1
Fluoride	**0.46**		0.10		mg/L			03/03/21 13:16	1
Nitrogen, Nitrite	<0.020		0.020		mg/L			03/02/21 13:16	1
Nitrogen, Nitrate Nitrite	<0.10		0.10		mg/L			03/10/21 12:56	1

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: MW-09
Date Collected: 03/01/21 14:06
Date Received: 03/02/21 10:57

Lab Sample ID: 500-195197-12
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			03/03/21 12:58	1
Toluene	<0.00050		0.00050		mg/L			03/03/21 12:58	1
Ethylbenzene	<0.00050		0.00050		mg/L			03/03/21 12:58	1
Xylenes, Total	<0.0010		0.0010		mg/L			03/03/21 12:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*75 - 126*		*03/03/21 12:58*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*03/03/21 12:58*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 124*		*03/03/21 12:58*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*03/03/21 12:58*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/26/21 15:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/05/21 11:47	03/05/21 17:36	1
Arsenic	**0.0037**		0.0010		mg/L		03/05/21 11:47	03/05/21 17:36	1
Barium	**0.043**		0.0025		mg/L		03/05/21 11:47	03/05/21 17:36	1
Beryllium	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:36	1
Boron	**1.3**		0.25		mg/L		03/05/21 11:47	03/08/21 18:23	5
Cadmium	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:36	1
Chromium	<0.0050		0.0050		mg/L		03/05/21 11:47	03/05/21 17:36	1
Cobalt	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:36	1
Copper	<0.0020		0.0020		mg/L		03/05/21 11:47	03/09/21 12:34	1
Iron	<0.10		0.10		mg/L		03/05/21 11:47	03/05/21 17:36	1
Lead	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:36	1
Manganese	**0.014**		0.0025		mg/L		03/05/21 11:47	03/05/21 17:36	1
Nickel	**0.0022**		0.0020		mg/L		03/05/21 11:47	03/05/21 17:36	1
Selenium	<0.0025		0.0025		mg/L		03/05/21 11:47	03/05/21 17:36	1
Silver	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:36	1
Thallium	<0.0020		0.0020		mg/L		03/05/21 11:47	03/05/21 17:36	1
Vanadium	<0.0050		0.0050		mg/L		03/05/21 11:47	03/08/21 19:25	1
Zinc	<0.020		0.020		mg/L		03/05/21 11:47	03/05/21 17:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		03/03/21 10:20	03/05/21 09:59	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.0064**		0.0050		mg/L		03/03/21 09:14	03/03/21 16:29	1
Sulfate	**170**		25		mg/L			03/10/21 13:41	5
Chloride	**310**		40		mg/L			03/10/21 13:56	20
Nitrogen, Nitrate	**0.18**		0.10		mg/L			03/11/21 16:27	1
Total Dissolved Solids	**860**		10		mg/L			03/03/21 05:16	1
Fluoride	**0.37**		0.10		mg/L			03/03/21 13:22	1
Nitrogen, Nitrite	**0.054**		0.020		mg/L			03/02/21 13:17	1
Nitrogen, Nitrate Nitrite	**0.23**		0.10		mg/L			03/10/21 12:58	1

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: MW-03
Date Collected: 03/01/21 10:41
Date Received: 03/02/21 10:57

Lab Sample ID: 500-195197-13
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			03/03/21 13:25	1
Toluene	<0.00050		0.00050		mg/L			03/03/21 13:25	1
Ethylbenzene	<0.00050		0.00050		mg/L			03/03/21 13:25	1
Xylenes, Total	<0.0010		0.0010		mg/L			03/03/21 13:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*117*		*75 - 126*		*03/03/21 13:25*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*03/03/21 13:25*	*1*
4-Bromofluorobenzene (Surr)	*96*		*72 - 124*		*03/03/21 13:25*	*1*
Dibromofluoromethane	*94*		*75 - 120*		*03/03/21 13:25*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/26/21 17:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/05/21 11:47	03/05/21 17:39	1
Arsenic	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:39	1
Barium	**0.097**		0.0025		mg/L		03/05/21 11:47	03/05/21 17:39	1
Beryllium	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:39	1
Boron	**3.6**		0.50		mg/L		03/05/21 11:47	03/08/21 18:27	10
Cadmium	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:39	1
Chromium	<0.0050		0.0050		mg/L		03/05/21 11:47	03/05/21 17:39	1
Cobalt	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:39	1
Copper	<0.0020		0.0020		mg/L		03/05/21 11:47	03/09/21 12:38	1
Iron	<0.10		0.10		mg/L		03/05/21 11:47	03/05/21 17:39	1
Lead	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:39	1
Manganese	**0.27**		0.0025		mg/L		03/05/21 11:47	03/05/21 17:39	1
Nickel	**0.0056**		0.0020		mg/L		03/05/21 11:47	03/05/21 17:39	1
Selenium	<0.0025		0.0025		mg/L		03/05/21 11:47	03/05/21 17:39	1
Silver	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:39	1
Thallium	<0.0020		0.0020		mg/L		03/05/21 11:47	03/05/21 17:39	1
Vanadium	<0.0050		0.0050		mg/L		03/05/21 11:47	03/08/21 19:29	1
Zinc	<0.020		0.020		mg/L		03/05/21 11:47	03/05/21 17:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		03/03/21 10:20	03/05/21 10:21	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.0067**		0.0050		mg/L		03/03/21 09:14	03/03/21 16:31	1
Sulfate	**340**		100		mg/L			03/10/21 13:52	20
Chloride	**17**		2.0		mg/L			03/10/21 13:34	1
Nitrogen, Nitrate	<0.10		0.10		mg/L			03/11/21 16:27	1
Total Dissolved Solids	**1000**		10		mg/L			03/03/21 05:18	1
Fluoride	**0.30**		0.10		mg/L			03/03/21 13:25	1
Nitrogen, Nitrite	<0.020		0.020		mg/L			03/02/21 13:17	1
Nitrogen, Nitrate Nitrite	<0.10		0.10		mg/L			03/10/21 13:00	1

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: Trip Blank
Date Collected: 03/01/21 00:00
Date Received: 03/02/21 10:57

Lab Sample ID: 500-195197-14
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			03/03/21 11:37	1
Toluene	<0.00050		0.00050		mg/L			03/03/21 11:37	1
Ethylbenzene	<0.00050		0.00050		mg/L			03/03/21 11:37	1
Xylenes, Total	<0.0010		0.0010		mg/L			03/03/21 11:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*75 - 126*		*03/03/21 11:37*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*03/03/21 11:37*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 124*		*03/03/21 11:37*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*03/03/21 11:37*	*1*

Definitions/Glossary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Qualifiers

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.

General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

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

QC Association Summary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

GC/MS VOA

Analysis Batch: 586286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Total/NA	Water	8260B	
500-195197-2	MW-04	Total/NA	Water	8260B	
500-195197-3	MW-05	Total/NA	Water	8260B	
500-195197-4	MW-06	Total/NA	Water	8260B	
500-195197-5	Trip Blank	Total/NA	Water	8260B	
MB 500-586286/7	Method Blank	Total/NA	Water	8260B	
LCS 500-586286/5	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 586664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-6	MW-02	Total/NA	Water	8260B	
500-195197-7	MW-10	Total/NA	Water	8260B	
500-195197-8	Duplicate	Total/NA	Water	8260B	
500-195197-9	Trip Blank	Total/NA	Water	8260B	
MB 500-586664/7	Method Blank	Total/NA	Water	8260B	
LCS 500-586664/5	Lab Control Sample	Total/NA	Water	8260B	
500-195197-6 MS	MW-02	Total/NA	Water	8260B	
500-195197-6 MSD	MW-02	Total/NA	Water	8260B	

Analysis Batch: 587034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10	MW-07	Total/NA	Water	8260B	
500-195197-11	MW-08	Total/NA	Water	8260B	
500-195197-12	MW-09	Total/NA	Water	8260B	
500-195197-13	MW-03	Total/NA	Water	8260B	
500-195197-14	Trip Blank	Total/NA	Water	8260B	
MB 500-587034/6	Method Blank	Total/NA	Water	8260B	
LCS 500-587034/4	Lab Control Sample	Total/NA	Water	8260B	
500-195197-13 MS	MW-03	Total/NA	Water	8260B	
500-195197-13 MSD	MW-03	Total/NA	Water	8260B	

HPLC/IC

Analysis Batch: 472167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-2	MW-04	Total/NA	Water	314.0	
MB 320-472167/13	Method Blank	Total/NA	Water	314.0	
LCS 320-472167/14	Lab Control Sample	Total/NA	Water	314.0	
MRL 320-472167/12	Lab Control Sample	Total/NA	Water	314.0	
500-195197-2 MS	MW-04	Total/NA	Water	314.0	
500-195197-2 MSD	MW-04	Total/NA	Water	314.0	

Analysis Batch: 472649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Total/NA	Water	314.0	
500-195197-3	MW-05	Total/NA	Water	314.0	
500-195197-4	MW-06	Total/NA	Water	314.0	
500-195197-6	MW-02	Total/NA	Water	314.0	
500-195197-7	MW-10	Total/NA	Water	314.0	
500-195197-8	Duplicate	Total/NA	Water	314.0	
MB 320-472649/5	Method Blank	Total/NA	Water	314.0	

QC Association Summary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

HPLC/IC (Continued)

Analysis Batch: 472649 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-472649/6	Lab Control Sample	Total/NA	Water	314.0	
MRL 320-472649/4	Lab Control Sample	Total/NA	Water	314.0	

Analysis Batch: 474175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10	MW-07	Total/NA	Water	314.0	
500-195197-11	MW-08	Total/NA	Water	314.0	
500-195197-12	MW-09	Total/NA	Water	314.0	
500-195197-13	MW-03	Total/NA	Water	314.0	
MB 320-474175/5	Method Blank	Total/NA	Water	314.0	
LCS 320-474175/6	Lab Control Sample	Total/NA	Water	314.0	
MRL 320-474175/4	Lab Control Sample	Total/NA	Water	314.0	

Metals

Prep Batch: 586541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	7470A	
500-195197-2	MW-04	Dissolved	Water	7470A	
500-195197-3	MW-05	Dissolved	Water	7470A	
500-195197-4	MW-06	Dissolved	Water	7470A	
MB 500-586541/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-586541/13-A	Lab Control Sample	Total/NA	Water	7470A	
500-195197-3 MS	MW-05	Dissolved	Water	7470A	
500-195197-3 MSD	MW-05	Dissolved	Water	7470A	
500-195197-3 DU	MW-05	Dissolved	Water	7470A	

Prep Batch: 586703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-6	MW-02	Dissolved	Water	7470A	
500-195197-7	MW-10	Dissolved	Water	7470A	
500-195197-8	Duplicate	Dissolved	Water	7470A	
MB 500-586703/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-586703/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 586704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	7470A	586541
500-195197-2	MW-04	Dissolved	Water	7470A	586541
500-195197-3	MW-05	Dissolved	Water	7470A	586541
500-195197-4	MW-06	Dissolved	Water	7470A	586541
MB 500-586541/12-A	Method Blank	Total/NA	Water	7470A	586541
LCS 500-586541/13-A	Lab Control Sample	Total/NA	Water	7470A	586541
500-195197-3 MS	MW-05	Dissolved	Water	7470A	586541
500-195197-3 MSD	MW-05	Dissolved	Water	7470A	586541
500-195197-3 DU	MW-05	Dissolved	Water	7470A	586541

Prep Batch: 586721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	Soluble Metals	
500-195197-2	MW-04	Dissolved	Water	Soluble Metals	

QC Association Summary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Metals (Continued)

Prep Batch: 586721 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-3	MW-05	Dissolved	Water	Soluble Metals	
500-195197-4	MW-06	Dissolved	Water	Soluble Metals	
500-195197-6	MW-02	Dissolved	Water	Soluble Metals	
500-195197-7	MW-10	Dissolved	Water	Soluble Metals	
500-195197-8	Duplicate	Dissolved	Water	Soluble Metals	
MB 500-586721/1-A	Method Blank	Soluble	Water	Soluble Metals	
LCS 500-586721/2-A	Lab Control Sample	Soluble	Water	Soluble Metals	
500-195197-1 MS	MW-01	Dissolved	Water	Soluble Metals	
500-195197-1 MSD	MW-01	Dissolved	Water	Soluble Metals	
500-195197-1 DU	MW-01	Dissolved	Water	Soluble Metals	

Analysis Batch: 586865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	6020A	586721
500-195197-2	MW-04	Dissolved	Water	6020A	586721
500-195197-3	MW-05	Dissolved	Water	6020A	586721
500-195197-4	MW-06	Dissolved	Water	6020A	586721
500-195197-6	MW-02	Dissolved	Water	6020A	586721
500-195197-7	MW-10	Dissolved	Water	6020A	586721
500-195197-8	Duplicate	Dissolved	Water	6020A	586721
MB 500-586721/1-A	Method Blank	Soluble	Water	6020A	586721
LCS 500-586721/2-A	Lab Control Sample	Soluble	Water	6020A	586721
500-195197-1 MS	MW-01	Dissolved	Water	6020A	586721
500-195197-1 MSD	MW-01	Dissolved	Water	6020A	586721
500-195197-1 DU	MW-01	Dissolved	Water	6020A	586721

Analysis Batch: 586885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-6	MW-02	Dissolved	Water	7470A	586703
500-195197-7	MW-10	Dissolved	Water	7470A	586703
500-195197-8	Duplicate	Dissolved	Water	7470A	586703
MB 500-586703/12-A	Method Blank	Total/NA	Water	7470A	586703
LCS 500-586703/13-A	Lab Control Sample	Total/NA	Water	7470A	586703

Analysis Batch: 587062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	6020A	586721
500-195197-1	MW-01	Dissolved	Water	6020A	586721
500-195197-2	MW-04	Dissolved	Water	6020A	586721
500-195197-2	MW-04	Dissolved	Water	6020A	586721
500-195197-3	MW-05	Dissolved	Water	6020A	586721
500-195197-3	MW-05	Dissolved	Water	6020A	586721
500-195197-4	MW-06	Dissolved	Water	6020A	586721
500-195197-4	MW-06	Dissolved	Water	6020A	586721
500-195197-6	MW-02	Dissolved	Water	6020A	586721
500-195197-6	MW-02	Dissolved	Water	6020A	586721
500-195197-7	MW-10	Dissolved	Water	6020A	586721
500-195197-7	MW-10	Dissolved	Water	6020A	586721
500-195197-8	Duplicate	Dissolved	Water	6020A	586721
500-195197-8	Duplicate	Dissolved	Water	6020A	586721
MB 500-586721/1-A	Method Blank	Soluble	Water	6020A	586721

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QC Association Summary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Metals (Continued)

Analysis Batch: 587062 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-586721/2-A	Lab Control Sample	Soluble	Water	6020A	586721
500-195197-1 MS	MW-01	Dissolved	Water	6020A	586721
500-195197-1 MS	MW-01	Dissolved	Water	6020A	586721
500-195197-1 MSD	MW-01	Dissolved	Water	6020A	586721
500-195197-1 MSD	MW-01	Dissolved	Water	6020A	586721
500-195197-1 DU	MW-01	Dissolved	Water	6020A	586721
500-195197-1 DU	MW-01	Dissolved	Water	6020A	586721

Prep Batch: 587077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10	MW-07	Dissolved	Water	7470A	
500-195197-11	MW-08	Dissolved	Water	7470A	
500-195197-12	MW-09	Dissolved	Water	7470A	
500-195197-13	MW-03	Dissolved	Water	7470A	
MB 500-587077/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-587077/13-A	Lab Control Sample	Total/NA	Water	7470A	
500-195197-12 MS	MW-09	Dissolved	Water	7470A	
500-195197-12 MSD	MW-09	Dissolved	Water	7470A	
500-195197-12 DU	MW-09	Dissolved	Water	7470A	

Analysis Batch: 587433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10	MW-07	Dissolved	Water	7470A	587077
500-195197-11	MW-08	Dissolved	Water	7470A	587077
500-195197-12	MW-09	Dissolved	Water	7470A	587077
500-195197-13	MW-03	Dissolved	Water	7470A	587077
MB 500-587077/12-A	Method Blank	Total/NA	Water	7470A	587077
LCS 500-587077/13-A	Lab Control Sample	Total/NA	Water	7470A	587077
500-195197-12 MS	MW-09	Dissolved	Water	7470A	587077
500-195197-12 MSD	MW-09	Dissolved	Water	7470A	587077
500-195197-12 DU	MW-09	Dissolved	Water	7470A	587077

Prep Batch: 587445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10	MW-07	Dissolved	Water	Soluble Metals	
500-195197-11	MW-08	Dissolved	Water	Soluble Metals	
500-195197-12	MW-09	Dissolved	Water	Soluble Metals	
500-195197-13	MW-03	Dissolved	Water	Soluble Metals	
MB 500-587445/1-A	Method Blank	Soluble	Water	Soluble Metals	
LCS 500-587445/2-A	Lab Control Sample	Soluble	Water	Soluble Metals	

Analysis Batch: 587606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10	MW-07	Dissolved	Water	6020A	587445
500-195197-11	MW-08	Dissolved	Water	6020A	587445
500-195197-12	MW-09	Dissolved	Water	6020A	587445
500-195197-13	MW-03	Dissolved	Water	6020A	587445
MB 500-587445/1-A	Method Blank	Soluble	Water	6020A	587445
LCS 500-587445/2-A	Lab Control Sample	Soluble	Water	6020A	587445

QC Association Summary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Metals

Analysis Batch: 587780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10	MW-07	Dissolved	Water	6020A	587445
500-195197-10	MW-07	Dissolved	Water	6020A	587445
500-195197-11	MW-08	Dissolved	Water	6020A	587445
500-195197-11	MW-08	Dissolved	Water	6020A	587445
500-195197-12	MW-09	Dissolved	Water	6020A	587445
500-195197-12	MW-09	Dissolved	Water	6020A	587445
500-195197-13	MW-03	Dissolved	Water	6020A	587445
500-195197-13	MW-03	Dissolved	Water	6020A	587445
MB 500-587445/1-A	Method Blank	Soluble	Water	6020A	587445
LCS 500-587445/2-A	Lab Control Sample	Soluble	Water	6020A	587445

Analysis Batch: 587838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10	MW-07	Dissolved	Water	6020A	587445
500-195197-11	MW-08	Dissolved	Water	6020A	587445
500-195197-12	MW-09	Dissolved	Water	6020A	587445
500-195197-13	MW-03	Dissolved	Water	6020A	587445
MB 500-587445/1-A	Method Blank	Soluble	Water	6020A	587445
LCS 500-587445/2-A	Lab Control Sample	Soluble	Water	6020A	587445

General Chemistry

Prep Batch: 586365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	9010C	
500-195197-2	MW-04	Dissolved	Water	9010C	
500-195197-3	MW-05	Dissolved	Water	9010C	
500-195197-4	MW-06	Dissolved	Water	9010C	
MB 500-586365/1-A	Method Blank	Total/NA	Water	9010C	
HLCS 500-586365/2-A	Lab Control Sample	Total/NA	Water	9010C	
LCS 500-586365/3-A	Lab Control Sample	Total/NA	Water	9010C	
LLCS 500-586365/4-A	Lab Control Sample	Total/NA	Water	9010C	

Analysis Batch: 586382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	9012B	586365
500-195197-2	MW-04	Dissolved	Water	9012B	586365
500-195197-3	MW-05	Dissolved	Water	9012B	586365
500-195197-4	MW-06	Dissolved	Water	9012B	586365
MB 500-586365/1-A	Method Blank	Total/NA	Water	9012B	586365
HLCS 500-586365/2-A	Lab Control Sample	Total/NA	Water	9012B	586365
LCS 500-586365/3-A	Lab Control Sample	Total/NA	Water	9012B	586365
LLCS 500-586365/4-A	Lab Control Sample	Total/NA	Water	9012B	586365

Analysis Batch: 586397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	SM 4500 NO2 B	
500-195197-2	MW-04	Dissolved	Water	SM 4500 NO2 B	
500-195197-3	MW-05	Dissolved	Water	SM 4500 NO2 B	
500-195197-4	MW-06	Dissolved	Water	SM 4500 NO2 B	
MB 500-586397/33	Method Blank	Total/NA	Water	SM 4500 NO2 B	

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QC Association Summary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

General Chemistry (Continued)

Analysis Batch: 586397 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-586397/34	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 586582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-6	MW-02	Dissolved	Water	SM 4500 NO2 B	
500-195197-7	MW-10	Dissolved	Water	SM 4500 NO2 B	
500-195197-8	Duplicate	Dissolved	Water	SM 4500 NO2 B	
MB 500-586582/9	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-586582/10	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 586601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	9038	
500-195197-2	MW-04	Dissolved	Water	9038	
500-195197-3	MW-05	Dissolved	Water	9038	
500-195197-4	MW-06	Dissolved	Water	9038	
MB 500-586601/44	Method Blank	Total/NA	Water	9038	
LCS 500-586601/49	Lab Control Sample	Total/NA	Water	9038	
500-195197-1 MS	MW-01	Dissolved	Water	9038	
500-195197-1 MSD	MW-01	Dissolved	Water	9038	

Analysis Batch: 586602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	9251	
500-195197-2	MW-04	Dissolved	Water	9251	
500-195197-3	MW-05	Dissolved	Water	9251	
500-195197-4	MW-06	Dissolved	Water	9251	
MB 500-586602/46	Method Blank	Total/NA	Water	9251	
LCS 500-586602/47	Lab Control Sample	Total/NA	Water	9251	
500-195197-1 MS	MW-01	Dissolved	Water	9251	
500-195197-1 MSD	MW-01	Dissolved	Water	9251	

Prep Batch: 586709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-6	MW-02	Dissolved	Water	9010C	
500-195197-7	MW-10	Dissolved	Water	9010C	
500-195197-8	Duplicate	Dissolved	Water	9010C	
MB 500-586709/1-A	Method Blank	Total/NA	Water	9010C	
LCS 500-586709/3-A	Lab Control Sample	Total/NA	Water	9010C	
LLCS 500-586709/4-A	Lab Control Sample	Total/NA	Water	9010C	

Analysis Batch: 586718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-6	MW-02	Dissolved	Water	9012B	586709
500-195197-7	MW-10	Dissolved	Water	9012B	586709
500-195197-8	Duplicate	Dissolved	Water	9012B	586709
MB 500-586709/1-A	Method Blank	Total/NA	Water	9012B	586709
LCS 500-586709/3-A	Lab Control Sample	Total/NA	Water	9012B	586709
LLCS 500-586709/4-A	Lab Control Sample	Total/NA	Water	9012B	586709

QC Association Summary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

General Chemistry

Analysis Batch: 586782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-6	MW-02	Dissolved	Water	SM 2540C	
500-195197-7	MW-10	Dissolved	Water	SM 2540C	
500-195197-8	Duplicate	Dissolved	Water	SM 2540C	
MB 500-586782/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-586782/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 586907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10	MW-07	Dissolved	Water	SM 4500 NO2 B	
500-195197-11	MW-08	Dissolved	Water	SM 4500 NO2 B	
500-195197-12	MW-09	Dissolved	Water	SM 4500 NO2 B	
500-195197-13	MW-03	Dissolved	Water	SM 4500 NO2 B	
MB 500-586907/9	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-586907/10	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 586978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10	MW-07	Dissolved	Water	SM 2540C	
500-195197-11	MW-08	Dissolved	Water	SM 2540C	
500-195197-12	MW-09	Dissolved	Water	SM 2540C	
500-195197-13	MW-03	Dissolved	Water	SM 2540C	
MB 500-586978/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-586978/2	Lab Control Sample	Total/NA	Water	SM 2540C	
500-195197-10 MS	MW-07	Dissolved	Water	SM 2540C	
500-195197-10 DU	MW-07	Dissolved	Water	SM 2540C	
500-195197-11 DU	MW-08	Dissolved	Water	SM 2540C	

Prep Batch: 587070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10	MW-07	Dissolved	Water	9010C	
500-195197-11	MW-08	Dissolved	Water	9010C	
500-195197-12	MW-09	Dissolved	Water	9010C	
500-195197-13	MW-03	Dissolved	Water	9010C	
MB 500-587070/1-A	Method Blank	Total/NA	Water	9010C	
HLCS 500-587070/2-A	Lab Control Sample	Total/NA	Water	9010C	
LCS 500-587070/3-A	Lab Control Sample	Total/NA	Water	9010C	
LLCS 500-587070/4-A	Lab Control Sample	Total/NA	Water	9010C	
500-195197-10 MS	MW-07	Dissolved	Water	9010C	
500-195197-10 MSD	MW-07	Dissolved	Water	9010C	

Analysis Batch: 587125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10	MW-07	Dissolved	Water	9012B	587070
500-195197-11	MW-08	Dissolved	Water	9012B	587070
500-195197-12	MW-09	Dissolved	Water	9012B	587070
500-195197-13	MW-03	Dissolved	Water	9012B	587070
MB 500-587070/1-A	Method Blank	Total/NA	Water	9012B	587070
HLCS 500-587070/2-A	Lab Control Sample	Total/NA	Water	9012B	587070
LCS 500-587070/3-A	Lab Control Sample	Total/NA	Water	9012B	587070
LLCS 500-587070/4-A	Lab Control Sample	Total/NA	Water	9012B	587070
500-195197-10 MS	MW-07	Dissolved	Water	9012B	587070

QC Association Summary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

General Chemistry (Continued)

Analysis Batch: 587125 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-10 MSD	MW-07	Dissolved	Water	9012B	587070

Analysis Batch: 587127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	SM 4500 F C	
500-195197-2	MW-04	Dissolved	Water	SM 4500 F C	
500-195197-3	MW-05	Dissolved	Water	SM 4500 F C	
500-195197-4	MW-06	Dissolved	Water	SM 4500 F C	
500-195197-6	MW-02	Dissolved	Water	SM 4500 F C	
500-195197-7	MW-10	Dissolved	Water	SM 4500 F C	
500-195197-8	Duplicate	Dissolved	Water	SM 4500 F C	
500-195197-10	MW-07	Dissolved	Water	SM 4500 F C	
500-195197-11	MW-08	Dissolved	Water	SM 4500 F C	
500-195197-12	MW-09	Dissolved	Water	SM 4500 F C	
500-195197-13	MW-03	Dissolved	Water	SM 4500 F C	
MB 500-587127/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 500-587127/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
500-195197-1 MS	MW-01	Dissolved	Water	SM 4500 F C	
500-195197-1 MSD	MW-01	Dissolved	Water	SM 4500 F C	

Analysis Batch: 587472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-6	MW-02	Dissolved	Water	9251	
MB 500-587472/111	Method Blank	Total/NA	Water	9251	
LCS 500-587472/112	Lab Control Sample	Total/NA	Water	9251	

Analysis Batch: 588004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-6	MW-02	Dissolved	Water	9038	
500-195197-7	MW-10	Dissolved	Water	9038	
500-195197-8	Duplicate	Dissolved	Water	9038	
500-195197-10	MW-07	Dissolved	Water	9038	
500-195197-11	MW-08	Dissolved	Water	9038	
500-195197-12	MW-09	Dissolved	Water	9038	
500-195197-13	MW-03	Dissolved	Water	9038	
MB 500-588004/39	Method Blank	Total/NA	Water	9038	
LCS 500-588004/41	Lab Control Sample	Total/NA	Water	9038	
LCS 500-588004/67	Lab Control Sample	Total/NA	Water	9038	
500-195197-7 MS	MW-10	Dissolved	Water	9038	
500-195197-7 MSD	MW-10	Dissolved	Water	9038	

Analysis Batch: 588005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-7	MW-10	Dissolved	Water	9251	
500-195197-8	Duplicate	Dissolved	Water	9251	
500-195197-10	MW-07	Dissolved	Water	9251	
500-195197-11	MW-08	Dissolved	Water	9251	
500-195197-12	MW-09	Dissolved	Water	9251	
500-195197-13	MW-03	Dissolved	Water	9251	
MB 500-588005/39	Method Blank	Total/NA	Water	9251	
LCS 500-588005/63	Lab Control Sample	Total/NA	Water	9251	

QC Association Summary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

General Chemistry (Continued)

Analysis Batch: 588005 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-7 MS	MW-10	Dissolved	Water	9251	
500-195197-7 MSD	MW-10	Dissolved	Water	9251	

Analysis Batch: 588051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	SM 4500 NO3 F	
500-195197-2	MW-04	Dissolved	Water	SM 4500 NO3 F	
500-195197-3	MW-05	Dissolved	Water	SM 4500 NO3 F	
500-195197-4	MW-06	Dissolved	Water	SM 4500 NO3 F	
500-195197-6	MW-02	Dissolved	Water	SM 4500 NO3 F	
500-195197-7	MW-10	Dissolved	Water	SM 4500 NO3 F	
500-195197-8	Duplicate	Dissolved	Water	SM 4500 NO3 F	
500-195197-10	MW-07	Dissolved	Water	SM 4500 NO3 F	
500-195197-11	MW-08	Dissolved	Water	SM 4500 NO3 F	
500-195197-12	MW-09	Dissolved	Water	SM 4500 NO3 F	
500-195197-13	MW-03	Dissolved	Water	SM 4500 NO3 F	
MB 500-588051/12	Method Blank	Total/NA	Water	SM 4500 NO3 F	
LCS 500-588051/13	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	
500-195197-1 MS	MW-01	Dissolved	Water	SM 4500 NO3 F	
500-195197-1 MSD	MW-01	Dissolved	Water	SM 4500 NO3 F	

Analysis Batch: 588260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	Nitrate by calc	
500-195197-2	MW-04	Dissolved	Water	Nitrate by calc	
500-195197-3	MW-05	Dissolved	Water	Nitrate by calc	
500-195197-4	MW-06	Dissolved	Water	Nitrate by calc	
500-195197-6	MW-02	Dissolved	Water	Nitrate by calc	
500-195197-7	MW-10	Dissolved	Water	Nitrate by calc	
500-195197-8	Duplicate	Dissolved	Water	Nitrate by calc	
500-195197-10	MW-07	Dissolved	Water	Nitrate by calc	
500-195197-11	MW-08	Dissolved	Water	Nitrate by calc	
500-195197-12	MW-09	Dissolved	Water	Nitrate by calc	
500-195197-13	MW-03	Dissolved	Water	Nitrate by calc	

Analysis Batch: 591802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-195197-1	MW-01	Dissolved	Water	SM 2540C	
500-195197-2	MW-04	Dissolved	Water	SM 2540C	
500-195197-3	MW-05	Dissolved	Water	SM 2540C	
500-195197-4	MW-06	Dissolved	Water	SM 2540C	
MB 500-591802/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-591802/2	Lab Control Sample	Total/NA	Water	SM 2540C	

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Surrogate Summary

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(75-126)	(75-120)	(72-124)	(75-120)
500-195197-1	MW-01	99	100	100	99
500-195197-2	MW-04	100	100	100	97
500-195197-3	MW-05	100	98	101	100
500-195197-4	MW-06	102	98	99	100
500-195197-5	Trip Blank	102	99	101	99
500-195197-6	MW-02	108	98	99	96
500-195197-6 MS	MW-02	107	98	98	99
500-195197-6 MSD	MW-02	107	99	98	98
500-195197-7	MW-10	109	97	99	97
500-195197-8	Duplicate	111	97	102	99
500-195197-9	Trip Blank	111	97	101	97
500-195197-10	MW-07	115	95	94	93
500-195197-11	MW-08	112	96	95	93
500-195197-12	MW-09	114	95	94	93
500-195197-13	MW-03	117	95	96	94
500-195197-13 MS	MW-03	113	96	89	95
500-195197-13 MSD	MW-03	110	96	91	95
500-195197-14	Trip Blank	112	96	95	93
LCS 500-586286/5	Lab Control Sample	105	98	101	101
LCS 500-586664/5	Lab Control Sample	106	100	97	97
LCS 500-587034/4	Lab Control Sample	112	99	92	97
MB 500-586286/7	Method Blank	105	98	100	101
MB 500-586664/7	Method Blank	108	99	99	96
MB 500-587034/6	Method Blank	114	95	95	93

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-586286/7
Matrix: Water
Analysis Batch: 586286

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			02/25/21 11:36	1
Toluene	<0.00050		0.00050		mg/L			02/25/21 11:36	1
Ethylbenzene	<0.00050		0.00050		mg/L			02/25/21 11:36	1
Xylenes, Total	<0.0010		0.0010		mg/L			02/25/21 11:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 126*		*02/25/21 11:36*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/25/21 11:36*	*1*
4-Bromofluorobenzene (Surr)	*100*		*72 - 124*		*02/25/21 11:36*	*1*
Dibromofluoromethane	*101*		*75 - 120*		*02/25/21 11:36*	*1*

Lab Sample ID: LCS 500-586286/5
Matrix: Water
Analysis Batch: 586286

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0500	0.0446		mg/L		89	70 - 120
Toluene	0.0500	0.0435		mg/L		87	70 - 125
Ethylbenzene	0.0500	0.0449		mg/L		90	70 - 123
Xylenes, Total	0.100	0.0901		mg/L		90	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 126*
Toluene-d8 (Surr)	*98*		*75 - 120*
4-Bromofluorobenzene (Surr)	*101*		*72 - 124*
Dibromofluoromethane	*101*		*75 - 120*

Lab Sample ID: MB 500-586664/7
Matrix: Water
Analysis Batch: 586664

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			03/01/21 11:20	1
Toluene	<0.00050		0.00050		mg/L			03/01/21 11:20	1
Ethylbenzene	<0.00050		0.00050		mg/L			03/01/21 11:20	1
Xylenes, Total	<0.0010		0.0010		mg/L			03/01/21 11:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 126*		*03/01/21 11:20*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*03/01/21 11:20*	*1*
4-Bromofluorobenzene (Surr)	*99*		*72 - 124*		*03/01/21 11:20*	*1*
Dibromofluoromethane	*96*		*75 - 120*		*03/01/21 11:20*	*1*

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-586664/5
Matrix: Water
Analysis Batch: 586664

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0500	0.0482		mg/L		96	70 - 120
Toluene	0.0500	0.0490		mg/L		98	70 - 125
Ethylbenzene	0.0500	0.0474		mg/L		95	70 - 123
Xylenes, Total	0.100	0.0942		mg/L		94	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 126*
Toluene-d8 (Surr)	*100*		*75 - 120*
4-Bromofluorobenzene (Surr)	*97*		*72 - 124*
Dibromofluoromethane	*97*		*75 - 120*

Lab Sample ID: 500-195197-6 MS
Matrix: Water
Analysis Batch: 586664

Client Sample ID: MW-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00050		0.0500	0.0512		mg/L		102	70 - 120
Toluene	<0.00050		0.0500	0.0519		mg/L		104	70 - 125
Ethylbenzene	<0.00050		0.0500	0.0508		mg/L		102	70 - 123
Xylenes, Total	<0.0010		0.100	0.102		mg/L		102	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 126*
Toluene-d8 (Surr)	*98*		*75 - 120*
4-Bromofluorobenzene (Surr)	*98*		*72 - 124*
Dibromofluoromethane	*99*		*75 - 120*

Lab Sample ID: 500-195197-6 MSD
Matrix: Water
Analysis Batch: 586664

Client Sample ID: MW-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00050		0.0500	0.0484		mg/L		97	70 - 120	6	20
Toluene	<0.00050		0.0500	0.0496		mg/L		99	70 - 125	5	20
Ethylbenzene	<0.00050		0.0500	0.0486		mg/L		97	70 - 123	5	20
Xylenes, Total	<0.0010		0.100	0.0964		mg/L		96	70 - 125	6	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 126*
Toluene-d8 (Surr)	*99*		*75 - 120*
4-Bromofluorobenzene (Surr)	*98*		*72 - 124*
Dibromofluoromethane	*98*		*75 - 120*

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-587034/6
Matrix: Water
Analysis Batch: 587034

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.00050		mg/L			03/03/21 11:09	1
Toluene	<0.00050		0.00050		mg/L			03/03/21 11:09	1
Ethylbenzene	<0.00050		0.00050		mg/L			03/03/21 11:09	1
Xylenes, Total	<0.0010		0.0010		mg/L			03/03/21 11:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*75 - 126*		*03/03/21 11:09*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*03/03/21 11:09*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 124*		*03/03/21 11:09*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*03/03/21 11:09*	*1*

Lab Sample ID: LCS 500-587034/4
Matrix: Water
Analysis Batch: 587034

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0500	0.0477		mg/L		95	70 - 120
Toluene	0.0500	0.0475		mg/L		95	70 - 125
Ethylbenzene	0.0500	0.0503		mg/L		101	70 - 123
Xylenes, Total	0.100	0.101		mg/L		101	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*112*		*75 - 126*
Toluene-d8 (Surr)	*99*		*75 - 120*
4-Bromofluorobenzene (Surr)	*92*		*72 - 124*
Dibromofluoromethane	*97*		*75 - 120*

Lab Sample ID: 500-195197-13 MS
Matrix: Water
Analysis Batch: 587034

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00050		0.0500	0.0461		mg/L		92	70 - 120
Toluene	<0.00050		0.0500	0.0457		mg/L		91	70 - 125
Ethylbenzene	<0.00050		0.0500	0.0487		mg/L		97	70 - 123
Xylenes, Total	<0.0010		0.100	0.0998		mg/L		100	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*113*		*75 - 126*
Toluene-d8 (Surr)	*96*		*75 - 120*
4-Bromofluorobenzene (Surr)	*89*		*72 - 124*
Dibromofluoromethane	*95*		*75 - 120*

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-195197-13 MSD
Matrix: Water
Analysis Batch: 587034

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00050		0.0500	0.0470		mg/L		94	70 - 120	2	20
Toluene	<0.00050		0.0500	0.0463		mg/L		93	70 - 125	1	20
Ethylbenzene	<0.00050		0.0500	0.0492		mg/L		98	70 - 123	1	20
Xylenes, Total	<0.0010		0.100	0.0992		mg/L		99	70 - 125	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*110*		*75 - 126*
Toluene-d8 (Surr)	*96*		*75 - 120*
4-Bromofluorobenzene (Surr)	*91*		*72 - 124*
Dibromofluoromethane	*95*		*75 - 120*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 320-472167/13
Matrix: Water
Analysis Batch: 472167

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/19/21 18:01	1

Lab Sample ID: LCS 320-472167/14
Matrix: Water
Analysis Batch: 472167

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	0.0500	0.0528		mg/L		106	85 - 115

Lab Sample ID: MRL 320-472167/12
Matrix: Water
Analysis Batch: 472167

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	<4.0		ug/L		96	75 - 125

Lab Sample ID: 500-195197-2 MS
Matrix: Water
Analysis Batch: 472167

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
Perchlorate	<0.0040		0.0500	0.0516		mg/L		103	80 - 120

Lab Sample ID: 500-195197-2 MSD
Matrix: Water
Analysis Batch: 472167

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	<0.0040		0.0500	0.0509		mg/L		102	80 - 120	1	20

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MB 320-472649/5
Matrix: Water
Analysis Batch: 472649

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/22/21 12:26	1

Lab Sample ID: LCS 320-472649/6
Matrix: Water
Analysis Batch: 472649

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	0.0500	0.0554		mg/L		111	85 - 115

Lab Sample ID: MRL 320-472649/4
Matrix: Water
Analysis Batch: 472649

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	<4.0		ug/L		87	75 - 125

Lab Sample ID: MB 320-474175/5
Matrix: Water
Analysis Batch: 474175

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.0040		0.0040		mg/L			03/26/21 12:16	1

Lab Sample ID: LCS 320-474175/6
Matrix: Water
Analysis Batch: 474175

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	0.0500	0.0535		mg/L		107	85 - 115

Lab Sample ID: MRL 320-474175/4
Matrix: Water
Analysis Batch: 474175

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	<4.0		ug/L		95	75 - 125

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: 500-195197-1 MS
Matrix: Water
Analysis Batch: 586865

Client Sample ID: MW-01
Prep Type: Dissolved
Prep Batch: 586721

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	<0.0030		0.500	0.516		mg/L		103	75 - 125
Arsenic	<0.0010		0.100	0.104		mg/L		104	75 - 125
Barium	0.095		0.500	0.643		mg/L		110	75 - 125
Beryllium	<0.0010	^+	0.0500	0.0474	^+	mg/L		95	75 - 125
Cadmium	<0.00050		0.0500	0.0498		mg/L		99	75 - 125
Chromium	<0.0050		0.200	0.199		mg/L		100	75 - 125

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

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

Lab Sample ID: 500-195197-1 MS
Matrix: Water
Analysis Batch: 586865

Client Sample ID: MW-01
Prep Type: Dissolved
Prep Batch: 586721

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	<0.0010		0.500	0.471		mg/L		94	75 - 125
Iron	<0.10		1.00	0.958		mg/L		96	75 - 125
Lead	<0.00050		0.100	0.105		mg/L		105	75 - 125
Manganese	0.017		0.500	0.511		mg/L		99	75 - 125
Nickel	0.0032		0.500	0.475		mg/L		94	75 - 125
Selenium	0.017		0.100	0.131		mg/L		114	75 - 125
Silver	<0.00050	F1	0.0500	0.0367	F1	mg/L		73	75 - 125
Thallium	<0.0020		0.100	0.109		mg/L		109	75 - 125
Vanadium	<0.0050		0.500	0.484		mg/L		97	75 - 125
Zinc	<0.020		0.500	0.491		mg/L		98	75 - 125

Lab Sample ID: 500-195197-1 MS
Matrix: Water
Analysis Batch: 587062

Client Sample ID: MW-01
Prep Type: Dissolved
Prep Batch: 586721

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	2.4		1.00	3.46		mg/L		104	75 - 125

Lab Sample ID: 500-195197-1 MS
Matrix: Water
Analysis Batch: 587062

Client Sample ID: MW-01
Prep Type: Dissolved
Prep Batch: 586721

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	<0.0020		0.250	0.252		mg/L		101	75 - 125

Lab Sample ID: 500-195197-1 MSD
Matrix: Water
Analysis Batch: 586865

Client Sample ID: MW-01
Prep Type: Dissolved
Prep Batch: 586721

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	<0.0030		0.500	0.531		mg/L		106	75 - 125	3	20
Arsenic	<0.0010		0.100	0.107		mg/L		107	75 - 125	3	20
Barium	0.095		0.500	0.645		mg/L		110	75 - 125	0	20
Beryllium	<0.0010	^+	0.0500	0.0461	^+	mg/L		92	75 - 125	3	20
Cadmium	<0.00050		0.0500	0.0510		mg/L		102	75 - 125	2	20
Chromium	<0.0050		0.200	0.205		mg/L		102	75 - 125	3	20
Cobalt	<0.0010		0.500	0.491		mg/L		98	75 - 125	4	20
Iron	<0.10		1.00	0.994		mg/L		99	75 - 125	4	20
Lead	<0.00050		0.100	0.108		mg/L		108	75 - 125	2	20
Manganese	0.017		0.500	0.523		mg/L		101	75 - 125	2	20
Nickel	0.0032		0.500	0.492		mg/L		98	75 - 125	4	20
Selenium	0.017		0.100	0.135		mg/L		118	75 - 125	3	20
Silver	<0.00050	F1	0.0500	0.0439		mg/L		88	75 - 125	18	20
Thallium	<0.0020		0.100	0.111		mg/L		111	75 - 125	2	20
Vanadium	<0.0050		0.500	0.502		mg/L		100	75 - 125	4	20
Zinc	<0.020		0.500	0.506		mg/L		101	75 - 125	3	20

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

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

Lab Sample ID: 500-195197-1 MSD
Matrix: Water
Analysis Batch: 587062

Client Sample ID: MW-01
Prep Type: Dissolved
Prep Batch: 586721

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	2.4		1.00	3.39		mg/L		97	75 - 125	2	20

Lab Sample ID: 500-195197-1 MSD
Matrix: Water
Analysis Batch: 587062

Client Sample ID: MW-01
Prep Type: Dissolved
Prep Batch: 586721

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Copper	<0.0020		0.250	0.259		mg/L		103	75 - 125	3	20

Lab Sample ID: 500-195197-1 DU
Matrix: Water
Analysis Batch: 586865

Client Sample ID: MW-01
Prep Type: Dissolved
Prep Batch: 586721

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<0.0030		<0.0030		mg/L		NC	20
Arsenic	<0.0010		<0.0010		mg/L		NC	20
Barium	0.095		0.0958		mg/L		0.8	20
Beryllium	<0.0010	^+	<0.0010	^+	mg/L		NC	20
Cadmium	<0.00050		<0.00050		mg/L		NC	20
Chromium	<0.0050		<0.0050		mg/L		NC	20
Cobalt	<0.0010		<0.0010		mg/L		NC	20
Iron	<0.10		<0.10		mg/L		NC	20
Lead	<0.00050		<0.00050		mg/L		NC	20
Manganese	0.017		0.0178		mg/L		2	20
Nickel	0.0032		0.00309		mg/L		2	20
Selenium	0.017		0.0169		mg/L		0.9	20
Silver	<0.00050	F1	<0.00050		mg/L		NC	20
Thallium	<0.0020		<0.0020		mg/L		NC	20
Vanadium	<0.0050		<0.0050		mg/L		NC	20
Zinc	<0.020		<0.020		mg/L		NC	20

Lab Sample ID: 500-195197-1 DU
Matrix: Water
Analysis Batch: 587062

Client Sample ID: MW-01
Prep Type: Dissolved
Prep Batch: 586721

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Boron	2.4		2.42		mg/L		0.1	20

Lab Sample ID: 500-195197-1 DU
Matrix: Water
Analysis Batch: 587062

Client Sample ID: MW-01
Prep Type: Dissolved
Prep Batch: 586721

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Copper	<0.0020		<0.0020		mg/L		NC	20

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

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

Lab Sample ID: MB 500-586721/1-A
Matrix: Water
Analysis Batch: 586865

Client Sample ID: Method Blank
Prep Type: Soluble
Prep Batch: 586721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/01/21 13:44	03/01/21 16:45	1
Arsenic	<0.0010		0.0010		mg/L		03/01/21 13:44	03/01/21 16:45	1
Barium	<0.0025		0.0025		mg/L		03/01/21 13:44	03/01/21 16:45	1
Beryllium	<0.0010	^+	0.0010		mg/L		03/01/21 13:44	03/01/21 16:45	1
Cadmium	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 16:45	1
Chromium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 16:45	1
Cobalt	<0.0010		0.0010		mg/L		03/01/21 13:44	03/01/21 16:45	1
Iron	<0.10		0.10		mg/L		03/01/21 13:44	03/01/21 16:45	1
Lead	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 16:45	1
Manganese	<0.0025		0.0025		mg/L		03/01/21 13:44	03/01/21 16:45	1
Nickel	<0.0020		0.0020		mg/L		03/01/21 13:44	03/01/21 16:45	1
Selenium	<0.0025		0.0025		mg/L		03/01/21 13:44	03/01/21 16:45	1
Silver	<0.00050		0.00050		mg/L		03/01/21 13:44	03/01/21 16:45	1
Thallium	<0.0020		0.0020		mg/L		03/01/21 13:44	03/01/21 16:45	1
Vanadium	<0.0050		0.0050		mg/L		03/01/21 13:44	03/01/21 16:45	1
Zinc	<0.020		0.020		mg/L		03/01/21 13:44	03/01/21 16:45	1

Lab Sample ID: MB 500-586721/1-A
Matrix: Water
Analysis Batch: 587062

Client Sample ID: Method Blank
Prep Type: Soluble
Prep Batch: 586721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.050		0.050		mg/L		03/01/21 13:44	03/02/21 14:52	1
Copper	<0.0020		0.0020		mg/L		03/01/21 13:44	03/02/21 14:52	1

Lab Sample ID: LCS 500-586721/2-A
Matrix: Water
Analysis Batch: 586865

Client Sample ID: Lab Control Sample
Prep Type: Soluble
Prep Batch: 586721

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.495		mg/L		99	80 - 120
Arsenic	0.100	0.0957		mg/L		96	80 - 120
Barium	0.500	0.521		mg/L		104	80 - 120
Beryllium	0.0500	0.0483	^+	mg/L		97	80 - 120
Cadmium	0.0500	0.0496		mg/L		99	80 - 120
Chromium	0.200	0.203		mg/L		101	80 - 120
Cobalt	0.500	0.501		mg/L		100	80 - 120
Iron	1.00	0.999		mg/L		100	80 - 120
Lead	0.100	0.103		mg/L		103	80 - 120
Manganese	0.500	0.504		mg/L		101	80 - 120
Nickel	0.500	0.514		mg/L		103	80 - 120
Selenium	0.100	0.0973		mg/L		97	80 - 120
Silver	0.0500	0.0470		mg/L		94	80 - 120
Thallium	0.100	0.106		mg/L		106	80 - 120
Vanadium	0.500	0.492		mg/L		98	80 - 120
Zinc	0.500	0.486		mg/L		97	80 - 120

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

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

Lab Sample ID: LCS 500-586721/2-A
Matrix: Water
Analysis Batch: 587062

Client Sample ID: Lab Control Sample
Prep Type: Soluble
Prep Batch: 586721

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.03		mg/L		103	80 - 120
Copper	0.250	0.266		mg/L		106	80 - 120

Lab Sample ID: MB 500-587445/1-A
Matrix: Water
Analysis Batch: 587606

Client Sample ID: Method Blank
Prep Type: Soluble
Prep Batch: 587445

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0030		0.0030		mg/L		03/05/21 11:47	03/05/21 17:22	1
Arsenic	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:22	1
Barium	<0.0025		0.0025		mg/L		03/05/21 11:47	03/05/21 17:22	1
Beryllium	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:22	1
Cadmium	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:22	1
Chromium	<0.0050		0.0050		mg/L		03/05/21 11:47	03/05/21 17:22	1
Cobalt	<0.0010		0.0010		mg/L		03/05/21 11:47	03/05/21 17:22	1
Iron	<0.10		0.10		mg/L		03/05/21 11:47	03/05/21 17:22	1
Lead	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:22	1
Manganese	<0.0025		0.0025		mg/L		03/05/21 11:47	03/05/21 17:22	1
Nickel	<0.0020		0.0020		mg/L		03/05/21 11:47	03/05/21 17:22	1
Selenium	<0.0025		0.0025		mg/L		03/05/21 11:47	03/05/21 17:22	1
Silver	<0.00050		0.00050		mg/L		03/05/21 11:47	03/05/21 17:22	1
Thallium	<0.0020		0.0020		mg/L		03/05/21 11:47	03/05/21 17:22	1
Zinc	<0.020		0.020		mg/L		03/05/21 11:47	03/05/21 17:22	1

Lab Sample ID: MB 500-587445/1-A
Matrix: Water
Analysis Batch: 587780

Client Sample ID: Method Blank
Prep Type: Soluble
Prep Batch: 587445

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.050		0.050		mg/L		03/05/21 11:47	03/08/21 18:03	1
Vanadium	<0.0050		0.0050		mg/L		03/05/21 11:47	03/08/21 18:03	1

Lab Sample ID: MB 500-587445/1-A
Matrix: Water
Analysis Batch: 587838

Client Sample ID: Method Blank
Prep Type: Soluble
Prep Batch: 587445

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	<0.0020		0.0020		mg/L		03/05/21 11:47	03/09/21 12:21	1

Lab Sample ID: LCS 500-587445/2-A
Matrix: Water
Analysis Batch: 587606

Client Sample ID: Lab Control Sample
Prep Type: Soluble
Prep Batch: 587445

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.484		mg/L		97	80 - 120
Arsenic	0.100	0.0990		mg/L		99	80 - 120
Barium	0.500	0.516		mg/L		103	80 - 120
Beryllium	0.0500	0.0494		mg/L		99	80 - 120
Cadmium	0.0500	0.0471		mg/L		94	80 - 120

QC Sample Results

Client: KPRG and Associates, Inc. Job ID: 500-195197-1
Project/Site: Will Co. Station Groundwater

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

Lab Sample ID: LCS 500-587445/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Soluble**
Analysis Batch: 587606 **Prep Batch: 587445**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.207		mg/L		104	80 - 120
Cobalt	0.500	0.512		mg/L		102	80 - 120
Iron	1.00	1.02		mg/L		102	80 - 120
Lead	0.100	0.107		mg/L		107	80 - 120
Manganese	0.500	0.507		mg/L		101	80 - 120
Nickel	0.500	0.528		mg/L		106	80 - 120
Selenium	0.100	0.0986		mg/L		99	80 - 120
Silver	0.0500	0.0474		mg/L		95	80 - 120
Thallium	0.100	0.107		mg/L		107	80 - 120
Zinc	0.500	0.508		mg/L		102	80 - 120

Lab Sample ID: LCS 500-587445/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Soluble**
Analysis Batch: 587780 **Prep Batch: 587445**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.03		mg/L		103	80 - 120
Vanadium	0.500	0.496		mg/L		99	80 - 120

Lab Sample ID: LCS 500-587445/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Soluble**
Analysis Batch: 587838 **Prep Batch: 587445**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	0.250	0.255		mg/L		102	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-586541/12-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 586704 **Prep Batch: 586541**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		02/26/21 09:30	03/01/21 08:55	1

Lab Sample ID: LCS 500-586541/13-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 586704 **Prep Batch: 586541**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00222		mg/L		111	80 - 120

Lab Sample ID: MB 500-586703/12-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 586885 **Prep Batch: 586703**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		03/01/21 10:20	03/02/21 08:55	1

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

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

Lab Sample ID: LCS 500-586703/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 586885 — **Prep Batch: 586703**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00199		mg/L		99	80 - 120

Lab Sample ID: MB 500-587077/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 587433 — **Prep Batch: 587077**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020		mg/L		03/03/21 10:20	03/05/21 09:45	1

Lab Sample ID: LCS 500-587077/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 587433 — **Prep Batch: 587077**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00198		mg/L		99	80 - 120

Lab Sample ID: 500-195197-3 MS — **Client Sample ID: MW-05**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 586704 — **Prep Batch: 586541**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	<0.00020		0.00100	0.00103		mg/L		103	75 - 125

Lab Sample ID: 500-195197-3 MSD — **Client Sample ID: MW-05**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 586704 — **Prep Batch: 586541**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.00020		0.00100	0.00103		mg/L		103	75 - 125	0	20

Lab Sample ID: 500-195197-3 DU — **Client Sample ID: MW-05**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 586704 — **Prep Batch: 586541**

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

Lab Sample ID: 500-195197-12 MS — **Client Sample ID: MW-09**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 587433 — **Prep Batch: 587077**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	<0.00020		0.00100	0.000922		mg/L		92	75 - 125

Lab Sample ID: 500-195197-12 MSD — **Client Sample ID: MW-09**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 587433 — **Prep Batch: 587077**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.00020		0.00100	0.000910		mg/L		91	75 - 125	1	20

QC Sample Results

Client: KPRG and Associates, Inc.
Job ID: 500-195197-1
Project/Site: Will Co. Station Groundwater

Method: 7470A - Mercury (CVAA)

Lab Sample ID: 500-195197-12 DU | **Client Sample ID: MW-09**
Matrix: Water | **Prep Type: Dissolved**
Analysis Batch: 587433 | **Prep Batch: 587077**

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

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 500-586365/1-A | **Client Sample ID: Method Blank**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 586382 | **Prep Batch: 586365**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0050		0.0050		mg/L		02/25/21 10:10	02/25/21 12:06	1

Lab Sample ID: HLCS 500-586365/2-A | **Client Sample ID: Lab Control Sample**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 586382 | **Prep Batch: 586365**

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.500	0.528		mg/L		106	90 - 110

Lab Sample ID: LCS 500-586365/3-A | **Client Sample ID: Lab Control Sample**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 586382 | **Prep Batch: 586365**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.0940		mg/L		94	85 - 115

Lab Sample ID: LLCS 500-586365/4-A | **Client Sample ID: Lab Control Sample**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 586382 | **Prep Batch: 586365**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0499		mg/L		100	75 - 125

Lab Sample ID: MB 500-586709/1-A | **Client Sample ID: Method Blank**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 586718 | **Prep Batch: 586709**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0050		0.0050		mg/L		03/01/21 10:01	03/01/21 11:26	1

Lab Sample ID: LCS 500-586709/3-A | **Client Sample ID: Lab Control Sample**
Matrix: Water | **Prep Type: Total/NA**
Analysis Batch: 586718 | **Prep Batch: 586709**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.0871		mg/L		87	85 - 115

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method: 9012B - Cyanide, Total andor Amenable (Continued)

Lab Sample ID: LLCS 500-586709/4-A
Matrix: Water
Analysis Batch: 586718

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 586709

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0440		mg/L		88	75 - 125

Lab Sample ID: MB 500-587070/1-A
Matrix: Water
Analysis Batch: 587125

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 587070

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0050		0.0050		mg/L		03/03/21 09:14	03/03/21 15:53	1

Lab Sample ID: HLCS 500-587070/2-A
Matrix: Water
Analysis Batch: 587125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 587070

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.500	0.518		mg/L		104	90 - 110

Lab Sample ID: LCS 500-587070/3-A
Matrix: Water
Analysis Batch: 587125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 587070

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.102		mg/L		102	85 - 115

Lab Sample ID: LLCS 500-587070/4-A
Matrix: Water
Analysis Batch: 587125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 587070

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0594		mg/L		119	75 - 125

Lab Sample ID: 500-195197-10 MS
Matrix: Water
Analysis Batch: 587125

Client Sample ID: MW-07
Prep Type: Dissolved
Prep Batch: 587070

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.017		0.0500	0.0667		mg/L		100	75 - 125

Lab Sample ID: 500-195197-10 MSD
Matrix: Water
Analysis Batch: 587125

Client Sample ID: MW-07
Prep Type: Dissolved
Prep Batch: 587070

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.017		0.0500	0.0633		mg/L		93	75 - 125	5	20

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-586601/44
Matrix: Water
Analysis Batch: 586601

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			02/26/21 13:11	1

Lab Sample ID: LCS 500-586601/49
Matrix: Water
Analysis Batch: 586601

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	22.3		mg/L		112	80 - 120

Lab Sample ID: MB 500-588004/39
Matrix: Water
Analysis Batch: 588004

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			03/10/21 12:32	1

Lab Sample ID: LCS 500-588004/41
Matrix: Water
Analysis Batch: 588004

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	22.4		mg/L		112	80 - 120

Lab Sample ID: LCS 500-588004/67
Matrix: Water
Analysis Batch: 588004

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	22.4		mg/L		112	80 - 120

Lab Sample ID: 500-195197-1 MS
Matrix: Water
Analysis Batch: 586601

Client Sample ID: MW-01
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	270		20.0	290	4	mg/L		81	75 - 125

Lab Sample ID: 500-195197-1 MSD
Matrix: Water
Analysis Batch: 586601

Client Sample ID: MW-01
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	270		20.0	292	4	mg/L		88	75 - 125	1	20

Lab Sample ID: 500-195197-7 MS
Matrix: Water
Analysis Batch: 588004

Client Sample ID: MW-10
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	190	F1	5000	201	F1	mg/L		0.2	75 - 125

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: 500-195197-7 MSD
Matrix: Water
Analysis Batch: 588004

Client Sample ID: MW-10
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	190	F1	5000	199	F1	mg/L		0.2	75 - 125	1	20

Method: 9251 - Chloride

Lab Sample ID: MB 500-586602/46
Matrix: Water
Analysis Batch: 586602

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			02/26/21 13:13	1

Lab Sample ID: LCS 500-586602/47
Matrix: Water
Analysis Batch: 586602

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.1		mg/L		105	80 - 120

Lab Sample ID: MB 500-587472/111
Matrix: Water
Analysis Batch: 587472

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			03/05/21 15:45	1

Lab Sample ID: LCS 500-587472/112
Matrix: Water
Analysis Batch: 587472

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	22.5		mg/L		112	80 - 120

Lab Sample ID: MB 500-588005/39
Matrix: Water
Analysis Batch: 588005

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			03/10/21 12:34	1

Lab Sample ID: LCS 500-588005/63
Matrix: Water
Analysis Batch: 588005

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.7		mg/L		109	80 - 120

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method: 9251 - Chloride (Continued)

Lab Sample ID: 500-195197-1 MS
Matrix: Water
Analysis Batch: 586602

Client Sample ID: MW-01
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25		20.0	45.5		mg/L		101	75 - 125

Lab Sample ID: 500-195197-1 MSD
Matrix: Water
Analysis Batch: 586602

Client Sample ID: MW-01
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25		20.0	45.2		mg/L		99	75 - 125	1	20

Lab Sample ID: 500-195197-7 MS
Matrix: Water
Analysis Batch: 588005

Client Sample ID: MW-10
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	150		20.0	161	4	mg/L		71	75 - 125

Lab Sample ID: 500-195197-7 MSD
Matrix: Water
Analysis Batch: 588005

Client Sample ID: MW-10
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	150		20.0	163	4	mg/L		81	75 - 125	1	20

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

Lab Sample ID: MB 500-586782/1
Matrix: Water
Analysis Batch: 586782

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			03/01/21 22:40	1

Lab Sample ID: LCS 500-586782/2
Matrix: Water
Analysis Batch: 586782

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	242		mg/L		97	80 - 120

Lab Sample ID: MB 500-586978/1
Matrix: Water
Analysis Batch: 586978

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			03/03/21 04:57	1

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

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

Lab Sample ID: LCS 500-586978/2
Matrix: Water
Analysis Batch: 586978

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

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

Lab Sample ID: MB 500-591802/1
Matrix: Water
Analysis Batch: 591802

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			04/06/21 01:46	1

Lab Sample ID: LCS 500-591802/2
Matrix: Water
Analysis Batch: 591802

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	244		mg/L		98	80 - 120

Lab Sample ID: 500-195197-10 MS
Matrix: Water
Analysis Batch: 586978

Client Sample ID: MW-07
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1500		250	1790	4	mg/L		103	75 - 125

Lab Sample ID: 500-195197-10 DU
Matrix: Water
Analysis Batch: 586978

Client Sample ID: MW-07
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1500		1530		mg/L		0.7	5

Lab Sample ID: 500-195197-11 DU
Matrix: Water
Analysis Batch: 586978

Client Sample ID: MW-08
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1200		1160		mg/L		2	5

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 500-587127/3
Matrix: Water
Analysis Batch: 587127

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			03/03/21 12:08	1

Eurofins TestAmerica, Chicago

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: LCS 500-587127/4
Matrix: Water
Analysis Batch: 587127

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	10.0	11.1		mg/L		111	80 - 120

Lab Sample ID: 500-195197-1 MS
Matrix: Water
Analysis Batch: 587127

Client Sample ID: MW-01
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.58		5.00	6.02		mg/L		109	75 - 125

Lab Sample ID: 500-195197-1 MSD
Matrix: Water
Analysis Batch: 587127

Client Sample ID: MW-01
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.58		5.00	6.14		mg/L		111	75 - 125	2	20

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-586397/33
Matrix: Water
Analysis Batch: 586397

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020		mg/L			02/25/21 15:25	1

Lab Sample ID: LCS 500-586397/34
Matrix: Water
Analysis Batch: 586397

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.112		mg/L		112	80 - 120

Lab Sample ID: MB 500-586582/9
Matrix: Water
Analysis Batch: 586582

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020		mg/L			02/26/21 13:36	1

Lab Sample ID: LCS 500-586582/10
Matrix: Water
Analysis Batch: 586582

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.110		mg/L		110	80 - 120

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Method: SM 4500 NO2 B - Nitrogen, Nitrite (Continued)

Lab Sample ID: MB 500-586907/9
Matrix: Water
Analysis Batch: 586907

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020		mg/L			03/02/21 13:10	1

Lab Sample ID: LCS 500-586907/10
Matrix: Water
Analysis Batch: 586907

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.110		mg/L		110	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-588051/12
Matrix: Water
Analysis Batch: 588051

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10		mg/L			03/10/21 12:04	1

Lab Sample ID: LCS 500-588051/13
Matrix: Water
Analysis Batch: 588051

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	1.04		mg/L		104	80 - 120

Lab Sample ID: 500-195197-1 MS
Matrix: Water
Analysis Batch: 588051

Client Sample ID: MW-01
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	0.22		1.00	1.17		mg/L		96	75 - 125

Lab Sample ID: 500-195197-1 MSD
Matrix: Water
Analysis Batch: 588051

Client Sample ID: MW-01
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrogen, Nitrate Nitrite	0.22		1.00	1.23		mg/L		101	75 - 125	4	20

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park IL 60484
Phone 708-534-5200 Fax 708-534-5211

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Mark Wilson	Lab PM: Mockler Diana J	Carrier Tracking No(s):	COC No: 500-88820-39759 1
Client Contact: Erin Bulson	Phone: 630-325-1300	E-Mail: Diana Mockler@Eurofinset.com	State of Origin:	Page: Page 1 of 2
Company: KPRG and Associates Inc	PWSID:	Analysis Requested		Job #: 500-195197
Address: 14665 West Lisbon Road Suite 1A	Due Date Requested:			
City: Brookfield	TAT Requested (days):			
State Zip: WI 53005	Compliance Project: Δ Yes Δ No			
Phone: 815-671-2258(Tel)	PO #: 4500071756			
Email: erinb@kprginc com	WO #:			
Project Name: Midwest Generation Will Co Groundwater	Project #: 50005079			
Site: Illinois	SSOW#:			

500-195197 COC

Preservation Codes: A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Z other (specify)

Other:

	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)	6020 7470A	2540C, 4500_F_C 9038 9251	SM4500_NO2_B - Nitrogen Nitrite	SM4500_NO3_F - Nitrogen, Nitrate Nitrite	9014 - Cyanide	8260B - BTEX	314.0 - Perchlorate (leave 1/3 headspace)	Total Number of containers	Special Instructions/Note
					Preservation Code:			D	N	N	S	B	A	N		
	MW-07				Water											
	MW-08				Water											
	MW-09				Water											
1	MW-01	2-23-21	1406	G	Water	Y		X	X	X	X	X	X	X		
	MW-02				Water											
	MW-03				Water											
2	MW-04	2-22-21	1458	G	Water	Y		X	X	X	X	X	X	X		
3	MW-05	2-23-21	1142	G	Water	Y		X	X	X	X	X	X	X		
4	MW-06	2-23-21	1526	G	Water	Y		X	X	X	X	X	X	X		
5	~~MW-10~~ Trip Blank				Water								X			
	Duplicate				Water											

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by	Date		Time		Method of Shipment:
Relinquished by: Mark Wilson	Date/Time: 2-23-21 / 1800	Company: KPRG	Received by: [signature]	Date/Time: 2/24/21 1040	Company: ETA-CHI
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No | Custody Seal No: | Cooler Temperature(s) °C and Other Remarks: 2.9 → 3.2

Ver 11/01/2020 4/8/2021

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler:	Lab PM: Mockler, Diana J	Carrier Tracking No(s):	COC No: 500-86820-39759 1
Client Contact: Erin Bulson	Phone:	E-Mail: Diana Mockler@Eurofinset.com	State of Origin:	Page: Page 1 of 2
Company: KPRG and Associates Inc	PWSID:	Analysis Requested		Job #: 500-195197
Address: 14665 West Lisbon Road Suite 1A	Due Date Requested:			Preservation Codes
City: Brookfield	TAT Requested (days):			
State Zip: WI, 53005	Compliance Project: Δ Yes Δ No			
Phone: 815-671-2258(Tel)	PO #: 4500071756			
Email: erinb@kprginc.com	WO #:		500-195197 COC	
Project Name: Midwest Generation Will Co Groundwater	Project #: 50005079			
Site: Illinois	SSOW#:			Other:

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G - Amchlor, H Ascorbic Acid, I Ice, J - DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V MCAA, W - pH 4-5, Z - other (specify)

	Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020 (18 elements), 7470A - Mercury	2540C - TDS, 4500FC-Fluoride, 9038 - Sulfate, 9251 - Chloride	SM4500NO2B - Nitrogen, Nitrite	SM4500NO3F - Nitrogen, Nitrate Nitrite (Nitrate Calc)	9012 - Cyanide	8260B - BTEX	314.0 - Perchlorate (leave 1/3 headspace)	Total Number of containers	Special Instructions/Note:
					Preservation Code:			D	N	N	S	B	A	N		
	MW-07				Water											
	MW-08				Water											
	MW-09				Water											
	MW-01				Water											
6	MW-02	2-25	1115		Water			X	X	X	X	X	X			
	MW-03				Water											
	MW-04				Water											
	MW-05				Water											
	MW-06				Water											
7	MW-10	2-25	1240		Water			X	X	X	X	X	X	X		
8	Duplicate	—			Water			X	X	X	X	X	X	X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested I II III IV, Other (specify)

Special Instructions/QC Requirements

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Erin Bulson	2/25 1745		P. N[illegible]	2/26/21 1045	E[illegible]
P. N[illegible]	2/26/21 1130	ETA	Stephanie Hernandez	2/26/21 1130	ETA-CHI

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks: ~~4.8~~, 4.3 SH 2/26/21

9 Trip Blank Added by ETA-CHI 2/26/21 SH.

Ver: 01/16/2019 4/8/2021

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Michael Ress	Lab PM: Mockler, Diana J	Carrier Tracking No(s):	COC No: 500-88820-39759 1
Client Contact: Erin Bulson	Phone: 630-203-7240	E-Mail: Diana.Mockler@Eurofinset.com	State of Origin	Page: Page 1 of 2
Company: KPRG and Associates, Inc.	PWSID	Analysis Requested		Job #: 500-195197

Address: 14665 West Lisbon Road, Suite 1A	Due Date Requested:	
City: Brookfield	TAT Requested (days):	
State, Zip: WI, 53005	Compliance Project: Δ Yes Δ No	
Phone: 815-671-2258(Tel)	PO #: 4500071756	500-195197 COC
Email: erinb@kprginc.com	WO #:	
Project Name: Midwest Generation Will Co. Groundwater	Project #: 50005079	
Site: Illinois	SSOW#:	

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

	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)	6020 (18 elements), 7470A - Mercury	2540C - TDS, 4500FC - Fluoride, 9038 - Sulfate, 9251 - Chloride	SM4500NO2B - Nitrogen, Nitrite	SM4500NO3F - Nitrogen, Nitrate Nitrite (Nitrate Calc)	9012 - Cyanide	8260B - BTEX	314.0 - Perchlorate (leave 1/3 headspace)	Total Number of containers	Special Instructions/Note:
				Preservation Code:				D	N	N	S	B	A	N		
10	MW-07	3/1/2021	15:04	G	Water	X		X	X	X	X	X	X	X		
11	MW-08	3/1/2021	13:04	G	Water	X		↓	↓	↓	↓	↓	↓	↓		
12	MW-09	3/1/2021	14:06	G	Water	X		↓	↓	↓	↓	↓	↓	↓		
	MW-01				Water											
	MW-02				Water											
13	MW-03	3/1/2021	10:41	G	Water	X		X	X	X	X	X	X	X		
	MW-04				Water											
	MW-05				Water											
	MW-06				Water											
	MW-10				Water											
14	~~Duplicate~~ Trip Blank				Water											

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Michael Ress	3/1/2021 17:15	KPRG	T. Neal	3/2/21 1012	ETA
T. Neal	3/2/21 1037	ETA	Debbie Buckley	3/2/21 1057	ETA

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.6	484

Ver: 01/16/2019

4/8/2021

ORIGIN ID:JOTA (630) 325-1300
ERIN BULSON
KPRG AND ASSOCIATES, INC.
414 PLAZA DRIVE SUITE 106

WESTMONT, IL 60559
UNITED STATES US

SHIP DATE: 12FEB21
ACTWGT: 20.00 LB MAN
CAD: 033264/CAFE3409

TO SAMPLE LOGIN
TESTAMERICA LABS
2417 BOND ST

UNIVERSITY PARK IL 60484
(708) 534-5200
REF: S600 - 89402

RMA:

FedEx
Express

E

RETURNS MON-FRI

FedEx
TRK# 0221 1893 4450 9613

WED - 24 FEB 10:30A
PRIORITY OVERNIGHT

79 JOTA

60484
IL-US ORD

EXP 07/21

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Mockler, Diana J	Carrier Tracking No(s):	COC No: 500-145798.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Diana.Mockler@Eurofinset.com	State of Origin: Illinois	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Illinois		Job #: 500-195197-1
Address: 880 Riverside Parkway,	Due Date Requested: 3/9/2021	**Analysis Requested**		**Preservation Codes:**
City: West Sacramento	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA; M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Will Co. Station Groundwater	Project #: 50005079			
Site: NRG Midwest Generation Will County	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	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)	314.0/ Perchlorate	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-01 (500-195197-1)	2/23/21	14:06 Central		Water			X	1	
MW-04 (500-195197-2)	2/22/21	14:58 Central		Water			X	1	
MW-05 (500-195197-3)	2/23/21	11:42 Central		Water			X	1	
MW-06 (500-195197-4)	2/23/21	15:26 Central		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica 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/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) — Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:		Method of Shipment:	
Relinquished by: Shin Scott	Date/Time: 2/24/21 1500	Company: ETA CHI	Received by:	Date/Time: 2/25/21 1030	Company:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Custody Seals Intact: Yes / No — Yes	Custody Seal No.: 1447697		Cooler Temperature(s) °C and Other Remarks: 1.5°C			

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Mockler, Diana J	Carrier Tracking No(s):	COC No: 500-145935.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Diana.Mockler@Eurofinset.com	State of Origin: Illinois	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Illinois		Job #: 500-195197-1
Address: 880 Riverside Parkway,	Due Date Requested: 3/11/2021	**Analysis Requested**		Preservation Codes:
City: West Sacramento	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA; M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Will Co. Station Groundwater	Project #: 50005079			
Site: NRG Midwest Generation Will County	SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	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)	314.0/ Perchlorate	Total Number of containers	Special Instructions/Note:
				Preservation Code:					
MW-07 (500-195197-10)	3/1/21	15:04 Central		Water			X	1	
MW-08 (500-195197-11)	3/1/21	13:04 Central		Water			X	1	
MW-09 (500-195197-12)	3/1/21	14:06 Central		Water			X	1	
MW-03 (500-195197-13)	3/1/21	10:41 Central		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica 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/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification
Unconfirmed

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

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	3/2/2021 1600	ETA	[signature]	3/3/21 1120	EMsa
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 1447773
Cooler Temperature(s) °C and Other Remarks: 1.5c

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: KPRG and Associates, Inc.

Job Number: 500-195197-2

Login Number: 195197
List Number: 1
Creator: Scott, Sherri L

List Source: Eurofins TestAmerica, Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.2,4.3,1.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	No sample date on COC, logged in per container labels.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
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.	False	No date on COC, logged in per container labels.
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Lab Chronicle

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: MW-01
Date Collected: 02/23/21 14:06
Date Received: 02/24/21 10:40

Lab Sample ID: 500-195197-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	586286	02/25/21 12:53	PMF	TAL CHI
Total/NA	Analysis	314.0		1	472649	03/22/21 13:11	TCS	TAL SAC
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	586865	03/01/21 16:52	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		5	587062	03/02/21 14:59	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587062	03/02/21 16:15	FXG	TAL CHI
Dissolved	Prep	7470A			586541	02/26/21 09:30	MJG	TAL CHI
Dissolved	Analysis	7470A		1	586704	03/01/21 09:09	MJG	TAL CHI
Dissolved	Prep	9010C			586365	02/25/21 10:10	CMC	TAL CHI
Dissolved	Analysis	9012B		1	586382	02/25/21 12:30	CMC	TAL CHI
Dissolved	Analysis	9038		20	586601	02/26/21 13:28	MS	TAL CHI
Dissolved	Analysis	9251		1	586602	02/26/21 13:15	MS	TAL CHI
Dissolved	Analysis	Nitrate by calc		1	588260	03/11/21 16:27	JMP	TAL CHI
Dissolved	Analysis	SM 2540C		1	591802	04/06/21 01:51	CLB	TAL CHI
Dissolved	Analysis	SM 4500 F C		1	587127	03/03/21 12:13	MS	TAL CHI
Dissolved	Analysis	SM 4500 NO2 B		1	586397	02/25/21 15:27	TMS	TAL CHI
Dissolved	Analysis	SM 4500 NO3 F		1	588051	03/10/21 12:31	PFK	TAL CHI

Client Sample ID: MW-04
Date Collected: 02/22/21 14:58
Date Received: 02/24/21 10:40

Lab Sample ID: 500-195197-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	586286	02/25/21 13:19	PMF	TAL CHI
Total/NA	Analysis	314.0		1	472167	03/19/21 18:46	TCS	TAL SAC
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	586865	03/01/21 17:09	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		20	587062	03/02/21 15:26	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587062	03/02/21 16:40	FXG	TAL CHI
Dissolved	Prep	7470A			586541	02/26/21 09:30	MJG	TAL CHI
Dissolved	Analysis	7470A		1	586704	03/01/21 09:11	MJG	TAL CHI
Dissolved	Prep	9010C			586365	02/25/21 10:10	CMC	TAL CHI
Dissolved	Analysis	9012B		1	586382	02/25/21 12:31	CMC	TAL CHI
Dissolved	Analysis	9038		20	586601	02/26/21 13:30	MS	TAL CHI
Dissolved	Analysis	9251		1	586602	02/26/21 13:16	MS	TAL CHI
Dissolved	Analysis	Nitrate by calc		1	588260	03/11/21 16:27	JMP	TAL CHI
Dissolved	Analysis	SM 2540C		1	591802	04/06/21 01:58	CLB	TAL CHI
Dissolved	Analysis	SM 4500 F C		1	587127	03/03/21 12:32	MS	TAL CHI
Dissolved	Analysis	SM 4500 NO2 B		1	586397	02/25/21 15:28	TMS	TAL CHI

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Lab Chronicle

Client: KPRG and Associates, Inc. Job ID: 500-195197-1
Project/Site: Will Co. Station Groundwater

Client Sample ID: MW-04 Lab Sample ID: 500-195197-2

Date Collected: 02/22/21 14:58 **Matrix: Water**
Date Received: 02/24/21 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	SM 4500 NO3 F		1	588051	03/10/21 12:37	PFK	TAL CHI

Client Sample ID: MW-05 Lab Sample ID: 500-195197-3

Date Collected: 02/23/21 11:42 **Matrix: Water**
Date Received: 02/24/21 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	586286	02/25/21 13:45	PMF	TAL CHI
Total/NA	Analysis	314.0		1	472649	03/22/21 13:33	TCS	TAL SAC
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	586865	03/01/21 17:13	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		20	587062	03/02/21 15:30	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587062	03/02/21 16:43	FXG	TAL CHI
Dissolved	Prep	7470A			586541	02/26/21 09:30	MJG	TAL CHI
Dissolved	Analysis	7470A		1	586704	03/01/21 09:18	MJG	TAL CHI
Dissolved	Prep	9010C			586365	02/25/21 10:10	CMC	TAL CHI
Dissolved	Analysis	9012B		1	586382	02/25/21 12:33	CMC	TAL CHI
Dissolved	Analysis	9038		20	586601	02/26/21 13:31	MS	TAL CHI
Dissolved	Analysis	9251		1	586602	02/26/21 13:17	MS	TAL CHI
Dissolved	Analysis	Nitrate by calc		1	588260	03/11/21 16:27	JMP	TAL CHI
Dissolved	Analysis	SM 2540C		1	591802	04/06/21 02:01	CLB	TAL CHI
Dissolved	Analysis	SM 4500 F C		1	587127	03/03/21 12:35	MS	TAL CHI
Dissolved	Analysis	SM 4500 NO2 B		1	586397	02/25/21 15:28	TMS	TAL CHI
Dissolved	Analysis	SM 4500 NO3 F		1	588051	03/10/21 12:39	PFK	TAL CHI

Client Sample ID: MW-06 Lab Sample ID: 500-195197-4

Date Collected: 02/23/21 15:26 **Matrix: Water**
Date Received: 02/24/21 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	586286	02/25/21 14:11	PMF	TAL CHI
Total/NA	Analysis	314.0		1	472649	03/22/21 13:55	TCS	TAL SAC
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	586865	03/01/21 17:16	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		10	587062	03/02/21 15:33	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587062	03/02/21 16:47	FXG	TAL CHI
Dissolved	Prep	7470A			586541	02/26/21 09:30	MJG	TAL CHI
Dissolved	Analysis	7470A		1	586704	03/01/21 09:26	MJG	TAL CHI
Dissolved	Prep	9010C			586365	02/25/21 10:10	CMC	TAL CHI
Dissolved	Analysis	9012B		1	586382	02/25/21 12:35	CMC	TAL CHI

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Lab Chronicle

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: MW-06
Date Collected: 02/23/21 15:26
Date Received: 02/24/21 10:40

Lab Sample ID: 500-195197-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	9038		5	586601	02/26/21 13:25	MS	TAL CHI
Dissolved	Analysis	9251		1	586602	02/26/21 13:17	MS	TAL CHI
Dissolved	Analysis	Nitrate by calc		1	588260	03/11/21 16:27	JMP	TAL CHI
Dissolved	Analysis	SM 2540C		1	591802	04/06/21 02:03	CLB	TAL CHI
Dissolved	Analysis	SM 4500 F C		1	587127	03/03/21 12:39	MS	TAL CHI
Dissolved	Analysis	SM 4500 NO2 B		1	586397	02/25/21 15:29	TMS	TAL CHI
Dissolved	Analysis	SM 4500 NO3 F		1	588051	03/10/21 12:41	PFK	TAL CHI

Client Sample ID: Trip Blank
Date Collected: 02/23/21 00:00
Date Received: 02/24/21 10:40

Lab Sample ID: 500-195197-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	586286	02/25/21 12:02	PMF	TAL CHI

Client Sample ID: MW-02
Date Collected: 02/25/21 11:15
Date Received: 02/26/21 11:30

Lab Sample ID: 500-195197-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	586664	03/01/21 14:22	PMF	TAL CHI
Total/NA	Analysis	314.0		1	472649	03/22/21 17:37	TCS	TAL SAC
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	586865	03/01/21 17:27	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		20	587062	03/02/21 15:37	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587062	03/02/21 16:50	FXG	TAL CHI
Dissolved	Prep	7470A			586703	03/01/21 10:20	MJG	TAL CHI
Dissolved	Analysis	7470A		1	586885	03/02/21 09:03	MJG	TAL CHI
Dissolved	Prep	9010C			586709	03/01/21 10:01	CMC	TAL CHI
Dissolved	Analysis	9012B		1	586718	03/01/21 11:55	CMC	TAL CHI
Dissolved	Analysis	9038		20	588004	03/10/21 12:46	MS	TAL CHI
Dissolved	Analysis	9251		1	587472	03/05/21 15:51	MS	TAL CHI
Dissolved	Analysis	Nitrate by calc		1	588260	03/11/21 16:27	JMP	TAL CHI
Dissolved	Analysis	SM 2540C		1	586782	03/01/21 23:05	CLB	TAL CHI
Dissolved	Analysis	SM 4500 F C		1	587127	03/03/21 12:44	MS	TAL CHI
Dissolved	Analysis	SM 4500 NO2 B		1	586582	02/26/21 13:38	TMS	TAL CHI
Dissolved	Analysis	SM 4500 NO3 F		1	588051	03/10/21 12:44	PFK	TAL CHI

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Lab Chronicle

Client: KPRG and Associates, Inc. Job ID: 500-195197-1
Project/Site: Will Co. Station Groundwater

Client Sample ID: MW-10 Lab Sample ID: 500-195197-7

Date Collected: 02/25/21 12:40 **Matrix: Water**
Date Received: 02/26/21 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	586664	03/01/21 14:48	PMF	TAL CHI
Total/NA	Analysis	314.0		1	472649	03/22/21 17:59	TCS	TAL SAC
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	586865	03/01/21 17:30	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		10	587062	03/02/21 15:40	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587062	03/02/21 16:54	FXG	TAL CHI
Dissolved	Prep	7470A			586703	03/01/21 10:20	MJG	TAL CHI
Dissolved	Analysis	7470A		1	586885	03/02/21 09:05	MJG	TAL CHI
Dissolved	Prep	9010C			586709	03/01/21 10:01	CMC	TAL CHI
Dissolved	Analysis	9012B		1	586718	03/01/21 11:57	CMC	TAL CHI
Dissolved	Analysis	9038		5	588004	03/10/21 13:38	MS	TAL CHI
Dissolved	Analysis	9251		5	588005	03/10/21 13:44	CMC	TAL CHI
Dissolved	Analysis	Nitrate by calc		1	588260	03/11/21 16:27	JMP	TAL CHI
Dissolved	Analysis	SM 2540C		1	586782	03/01/21 23:08	CLB	TAL CHI
Dissolved	Analysis	SM 4500 F C		1	587127	03/03/21 12:49	MS	TAL CHI
Dissolved	Analysis	SM 4500 NO2 B		1	586582	02/26/21 13:38	TMS	TAL CHI
Dissolved	Analysis	SM 4500 NO3 F		1	588051	03/10/21 12:46	PFK	TAL CHI

Client Sample ID: Duplicate Lab Sample ID: 500-195197-8

Date Collected: 02/25/21 00:00 **Matrix: Water**
Date Received: 02/26/21 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	586664	03/01/21 15:41	PMF	TAL CHI
Total/NA	Analysis	314.0		1	472649	03/22/21 18:22	TCS	TAL SAC
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	586865	03/01/21 17:34	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		10	587062	03/02/21 15:44	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			586721	03/01/21 13:44	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587062	03/02/21 16:57	FXG	TAL CHI
Dissolved	Prep	7470A			586703	03/01/21 10:20	MJG	TAL CHI
Dissolved	Analysis	7470A		1	586885	03/02/21 09:08	MJG	TAL CHI
Dissolved	Prep	9010C			586709	03/01/21 10:01	CMC	TAL CHI
Dissolved	Analysis	9012B		1	586718	03/01/21 11:58	CMC	TAL CHI
Dissolved	Analysis	9038		5	588004	03/10/21 13:39	MS	TAL CHI
Dissolved	Analysis	9251		5	588005	03/10/21 13:46	CMC	TAL CHI
Dissolved	Analysis	Nitrate by calc		1	588260	03/11/21 16:27	JMP	TAL CHI
Dissolved	Analysis	SM 2540C		1	586782	03/01/21 23:10	CLB	TAL CHI
Dissolved	Analysis	SM 4500 F C		1	587127	03/03/21 13:04	MS	TAL CHI
Dissolved	Analysis	SM 4500 NO2 B		1	586582	02/26/21 13:38	TMS	TAL CHI

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Lab Chronicle

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: Duplicate **Lab Sample ID: 500-195197-8**
Date Collected: 02/25/21 00:00 **Matrix: Water**
Date Received: 02/26/21 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	SM 4500 NO3 F		1	588051	03/10/21 12:48	PFK	TAL CHI

Client Sample ID: Trip Blank **Lab Sample ID: 500-195197-9**
Date Collected: 02/25/21 00:00 **Matrix: Water**
Date Received: 02/26/21 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	586664	03/01/21 16:07	PMF	TAL CHI

Client Sample ID: MW-07 **Lab Sample ID: 500-195197-10**
Date Collected: 03/01/21 15:04 **Matrix: Water**
Date Received: 03/02/21 10:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	587034	03/03/21 12:04	PMF	TAL CHI
Total/NA	Analysis	314.0		1	474175	03/26/21 15:13	TCS	TAL SAC
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587606	03/05/21 17:29	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		20	587780	03/08/21 18:17	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587780	03/08/21 19:18	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587838	03/09/21 12:28	FXG	TAL CHI
Dissolved	Prep	7470A			587077	03/03/21 10:20	MJG	TAL CHI
Dissolved	Analysis	7470A		1	587433	03/05/21 09:55	MJG	TAL CHI
Dissolved	Prep	9010C			587070	03/03/21 09:14	CMC	TAL CHI
Dissolved	Analysis	9012B		1	587125	03/03/21 15:59	CMC	TAL CHI
Dissolved	Analysis	9038		20	588004	03/10/21 13:46	MS	TAL CHI
Dissolved	Analysis	9251		5	588005	03/10/21 13:47	CMC	TAL CHI
Dissolved	Analysis	Nitrate by calc		1	588260	03/11/21 16:27	JMP	TAL CHI
Dissolved	Analysis	SM 2540C		1	586978	03/03/21 05:02	CLB	TAL CHI
Dissolved	Analysis	SM 4500 F C		1	587127	03/03/21 13:09	MS	TAL CHI
Dissolved	Analysis	SM 4500 NO2 B		1	586907	03/02/21 13:16	TMS	TAL CHI
Dissolved	Analysis	SM 4500 NO3 F		1	588051	03/10/21 12:54	PFK	TAL CHI

Client Sample ID: MW-08 **Lab Sample ID: 500-195197-11**
Date Collected: 03/01/21 13:04 **Matrix: Water**
Date Received: 03/02/21 10:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	587034	03/03/21 12:31	PMF	TAL CHI
Total/NA	Analysis	314.0		1	474175	03/26/21 15:36	TCS	TAL SAC

Lab Chronicle

Client: KPRG and Associates, Inc. Job ID: 500-195197-1
Project/Site: Will Co. Station Groundwater

Client Sample ID: MW-08 Lab Sample ID: 500-195197-11

Date Collected: 03/01/21 13:04 **Matrix: Water**
Date Received: 03/02/21 10:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587606	03/05/21 17:32	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		5	587780	03/08/21 18:20	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587780	03/08/21 19:22	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587838	03/09/21 12:31	FXG	TAL CHI
Dissolved	Prep	7470A			587077	03/03/21 10:20	MJG	TAL CHI
Dissolved	Analysis	7470A		1	587433	03/05/21 09:57	MJG	TAL CHI
Dissolved	Prep	9010C			587070	03/03/21 09:14	CMC	TAL CHI
Dissolved	Analysis	9012B		1	587125	03/03/21 16:27	CMC	TAL CHI
Dissolved	Analysis	9038		20	588004	03/10/21 13:46	MS	TAL CHI
Dissolved	Analysis	9251		5	588005	03/10/21 13:47	CMC	TAL CHI
Dissolved	Analysis	Nitrate by calc		1	588260	03/11/21 16:27	JMP	TAL CHI
Dissolved	Analysis	SM 2540C		1	586978	03/03/21 05:10	CLB	TAL CHI
Dissolved	Analysis	SM 4500 F C		1	587127	03/03/21 13:16	MS	TAL CHI
Dissolved	Analysis	SM 4500 NO2 B		1	586907	03/02/21 13:16	TMS	TAL CHI
Dissolved	Analysis	SM 4500 NO3 F		1	588051	03/10/21 12:56	PFK	TAL CHI

Client Sample ID: MW-09 Lab Sample ID: 500-195197-12

Date Collected: 03/01/21 14:06 **Matrix: Water**
Date Received: 03/02/21 10:57

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	587034	03/03/21 12:58	PMF	TAL CHI
Total/NA	Analysis	314.0		1	474175	03/26/21 15:58	TCS	TAL SAC
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587606	03/05/21 17:36	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		5	587780	03/08/21 18:23	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587780	03/08/21 19:25	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587838	03/09/21 12:34	FXG	TAL CHI
Dissolved	Prep	7470A			587077	03/03/21 10:20	MJG	TAL CHI
Dissolved	Analysis	7470A		1	587433	03/05/21 09:59	MJG	TAL CHI
Dissolved	Prep	9010C			587070	03/03/21 09:14	CMC	TAL CHI
Dissolved	Analysis	9012B		1	587125	03/03/21 16:29	CMC	TAL CHI
Dissolved	Analysis	9038		5	588004	03/10/21 13:41	MS	TAL CHI
Dissolved	Analysis	9251		20	588005	03/10/21 13:56	CMC	TAL CHI
Dissolved	Analysis	Nitrate by calc		1	588260	03/11/21 16:27	JMP	TAL CHI
Dissolved	Analysis	SM 2540C		1	586978	03/03/21 05:16	CLB	TAL CHI

1

Lab Chronicle

Client: KPRG and Associates, Inc.
Project/Site: Will Co. Station Groundwater

Job ID: 500-195197-1

Client Sample ID: MW-09
Date Collected: 03/01/21 14:06
Date Received: 03/02/21 10:57

Lab Sample ID: 500-195197-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	SM 4500 F C		1	587127	03/03/21 13:22	MS	TAL CHI
Dissolved	Analysis	SM 4500 NO2 B		1	586907	03/02/21 13:17	TMS	TAL CHI
Dissolved	Analysis	SM 4500 NO3 F		1	588051	03/10/21 12:58	PFK	TAL CHI

Client Sample ID: MW-03
Date Collected: 03/01/21 10:41
Date Received: 03/02/21 10:57

Lab Sample ID: 500-195197-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	587034	03/03/21 13:25	PMF	TAL CHI
Total/NA	Analysis	314.0		1	474175	03/26/21 17:07	TCS	TAL SAC
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587606	03/05/21 17:39	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		10	587780	03/08/21 18:27	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587780	03/08/21 19:29	FXG	TAL CHI
Dissolved	Prep	Soluble Metals			587445	03/05/21 11:47	FXG	TAL CHI
Dissolved	Analysis	6020A		1	587838	03/09/21 12:38	FXG	TAL CHI
Dissolved	Prep	7470A			587077	03/03/21 10:20	MJG	TAL CHI
Dissolved	Analysis	7470A		1	587433	03/05/21 10:21	MJG	TAL CHI
Dissolved	Prep	9010C			587070	03/03/21 09:14	CMC	TAL CHI
Dissolved	Analysis	9012B		1	587125	03/03/21 16:31	CMC	TAL CHI
Dissolved	Analysis	9038		20	588004	03/10/21 13:52	MS	TAL CHI
Dissolved	Analysis	9251		1	588005	03/10/21 13:34	CMC	TAL CHI
Dissolved	Analysis	Nitrate by calc		1	588260	03/11/21 16:27	JMP	TAL CHI
Dissolved	Analysis	SM 2540C		1	586978	03/03/21 05:18	CLB	TAL CHI
Dissolved	Analysis	SM 4500 F C		1	587127	03/03/21 13:25	MS	TAL CHI
Dissolved	Analysis	SM 4500 NO2 B		1	586907	03/02/21 13:17	TMS	TAL CHI
Dissolved	Analysis	SM 4500 NO3 F		1	588051	03/10/21 13:00	PFK	TAL CHI

Client Sample ID: Trip Blank
Date Collected: 03/01/21 00:00
Date Received: 03/02/21 10:57

Lab Sample ID: 500-195197-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	587034	03/03/21 11:37	PMF	TAL CHI

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200
TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

13

Exhibit F

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue East
Springfield, IL 62794-9276

Will County Generating Station
Attn: Sharene Shealey
529 East 135th Street,
Romeoville, IL 60446

Billing Date	Mon December 16, 2019
Due Date	Tue January 31, 2020
Account Number	W1978100011
Facility Name	Will County Station

Initial Invoice

Pond ID	Pond Description	Amount
W1978100011-01	Pond 1 North	75,000.00
W1978100011-02	Pond 3 South	75,000.00
W1978100011-03	Pond 2 South	75,000.00
W1978100011-04	Pond 1 South	75,000.00

Amount Due **$300,000.00**

Other Information/Messages

Questions. Please direct any technical/permit questions to the Permit Section at (217) 782-0610. Questions about the amount of your fee should be emailed to: EPA.AcctsReceivable@illinois.gov

- See Reverse Side for Additional Important Information –

Return bottom portion with a check made payable to Illinois EPA

Payment
Remittance Stub

Account Information

Acct. Number	W1978100011
Facility Name	Will County Station
IEPA Program	COALIN
Billing Date	Mon December 16, 2019

Amount Due

Tue January 31, 2020	**$300,000.00**
Amount Enclosed	

Please remit payment to:
Illinois Environmental Protection Agency
Fiscal Services #2
P.O. Box 19276
Springfield, IL 62794-9276

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue East
Springfield, IL 62794-9276

Other Information

State Law Compliance. The owner or operator of a CCR surface impoundment shall pay all fees pursuant to 415 ILCS 5/22.59(j). The owner or operator of a CCR surface impoundment is ultimately responsible and liable for determining an accurate number of CCR impoundments under its control and the fees owed to the Agency under 415 ILCS 5/22.59(j). The amount specified by the Agency within this invoice does not waive or modify the statutory requirement, per 415 ILCS 5/22.59(j) as added by Public Act 101-171, that the owner or operator accurately pay the required initial fee and annual fee for each CCR surface impoundment.

Collection Notice. Failure to submit the amount due by the due date constitutes a violation of Section 22.59 of the Illinois Environmental Protection Act, 415 ILCS 5/22.59(j). The Agency may utilize any available collection procedures to recover unpaid fees and all accumulated interest. These may include, but are not limited to, enforcement actions pursuant to Section 31 of the Illinois Environmental Protection Act, 415 ILCS 5/31, submittal of the unpaid amounts for Comptroller's Offset pursuant to 30 ILCS 210, or submittal of the unpaid fee to the Illinois Department of Revenue's Debt Collection Bureau pursuant to 30 ILCS 210.

Exhibit G

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397

JB PRITZKER, GOVERNOR — JOHN J. KIM, DIRECTOR

217-782-1020

March 24, 2020

Will County Generating Station
Attn: Sharene Shealey
529 East 135th Street
Romeoville, Illinois 60446

Re: Invoices for Midwest Generation at Joliet 29 Station, Waukegan Station and Will County Generating Station.

Dear Ms. Shealey:

Pursuant to Section 22.59(j) of the Illinois Environmental Protection Act ("Act"), the Illinois Environmental Protection Agency ("Illinois EPA") invoiced coal combustion residuals ("CCR") surface impoundments at the Joliet 29 Station, Waukegan Station and Will County Station electrical generating facilities operated by Midwest Generation. These invoices provided a billing date of December 16, 2019, and a due date of January 31, 2020.

To date, Midwest Generation has failed to timely remit payment to Illinois EPA for invoiced CCR surface impoundments. In a letter dated January 29, 2020 and in a meeting on February 7, 2020, Midwest Generation has disputed whether one or more of the invoiced CCR surface impoundments should be considered a CCR surface impoundment as defined in Section 3.143 of the Act (415 ILCS 5/3.143).

Illinois EPA provides the following preliminary analysis regarding the disputed CCR surface impoundments and maintains the fees are owing to Illinois EPA:

Joliet 29 Station - W1970450047-01 Pond 1

- January 18,2013 CCA Groundwater Management Zone Application Figure 1 shows Ash Pond 1.

- July 10, 2019 CCA Quarterly Groundwater Monitoring Report: contains 10 quarters of groundwater data for wells MW-01 and MW-02 that are downgradient of Pond 1. Figures 1 and 2 display Ash Pond 1.

Illinois EPA will review a demonstration from Midwest Generation that there is not an accumulation of CCR in Pond 1. Midwest Generation may submit an environmental media sampling plan of the bottom contents of this Pond for Illinois EPA review.

Based on the above, the Illinois EPA does not consider Pond 1 to have completed closure. The appropriate fee for a CCR surface impoundment that has not completed closure is $75,000.00.

Joliet 29 Station - W1970450047-03 Pond 3

- January 18, 2013 CCA Groundwater Management Zone Application Figure 1 shows Ash Pond 3.

- November 9, 2015 Illinois EPA facility inspection letter for NPDES permit no. IL0064254 contains a General Site Flow Diagram (dated March 5, 2015) that shows Pond 3 as receiving flow from the clarifier unit.

- July 10, 2019 CCA Quarterly Groundwater Monitoring Report: contains 10 quarters of groundwater data for wells MW-06 and MW-07 that are downgradient of Pond 3. Figures 1 and 2 display Ash Pond 3.

Illinois EPA will review a demonstration from Midwest Generation that there is not an accumulation of CCR in Pond 3. Midwest Generation may submit an environmental media sampling plan of the bottom contents of this Pond for Illinois EPA review.

Based on the above, the Illinois EPA does not consider Pond 3 to have completed closure. The appropriate fee for a CCR surface impoundment that has not completed closure is $75,000.00.

Waukegan Station - W09781900021-03 Old Pond

Lake County has a number of historical photos displaying the historic features and changes to Waukegan Station.

- 1939 aerial photos: the sand dunes of the beach are clearly visible.

- 1946 aerial photos: progressive filling of the dune area from north to south.

- 1961 aerial photos: the entire area currently occupied by the East, West and Old CCR surface impoundments surrounded by a berm to restrict the migration of CCR. Therefore, the area was designed to hold an accumulation of CCR and liquids.

- 1974 aerial photo: berm constructed around the total footprint of what today are the East and West CCR surface impoundments, with Old CCR surface impoundment still appearing to contain CCR.

- 1980 aerial photos: East and West CCR surface impoundments configured as they are currently.

- Permit #1974-EB-346-OP authorizes the operation of the Slag Field and Settling Basin, displayed on the permit application as one large area south of the powerhouse.

- Permit #1977-EB-3699 approves the splitting of the Slag Field and Settling Basin initially permitted to operate by Permit #1974-EB-346-OP into two parts.

- October 24, 1979 letter to Illinois EPA: Commonwealth Edison submitted as-built plans for Permit #1977-EB-3699 displaying the East and West CCR surface impoundments configured as they are currently. The drawings also indicate the area of the Old CCR surface impoundment was to be covered with topsoil, graded and seeded. Therefore, it appears the Old Pond never received an operating permit by Illinois EPA.

Based on the above, Illinois EPA will accept a demonstration from Midwest Generation that there is not an accumulation of CCR in the Old Pond. If no accumulation of CCR exists, Old Pond would be exempt from meeting the definition as a CCR surface impoundment.

Based on the above, the Illinois EPA does not consider the Old Pond to have completed closure. The appropriate fee for a CCR surface impoundment that has not completed closure is $75,000.00.

Will County Generating Station - W1978100011-01 Pond 1 North

- December 30, 1976 Permit No. IL0002208 Attachment I exhibit the North Ash Disposal Area (Pond 1 North) and South Ash Disposal Area (Ponds 1-S, 2-S and 3-S) parallel to the Des Plaines River in the current position of the four existing ash ponds.

- February 4, 1980 NPDES Permit No. IL 0002208 Standard Form C Generator Water Flow Diagram shows that there are "4 Ash Ponds" with CCR in them.

- July 3, 1984 Letter from the Center for Law In The Public Interest contains a Site Plan (Dated October 1978) prepared by Harza engineering on the behalf of Common Wealth Edison (owner at the time) that exhibits four Ash Ponds labelled North Ash Pond, South Ash Pond No. 1, South Ash Pond No. 2, and South Ash Pond No. 3.

- October 18, 2013 Quarterly Groundwater Sampling Report shows Ash Ponds 1-N, 1-S, 2-S, and 3-S separately in response to compliance with the Compliance Agreement for VN W-2012-00058, ID # 6283.

- According to Quarterly Groundwater Monitoring reports from 2013 to 2019, MW-07 (downgradient from Pond 1 North) has exceeded groundwater quality standards for one or more constituents.

Based on the above, the Illinois EPA does not consider Pond 1 North to have completed closure. The appropriate fee for a CCR surface impoundment that has not completed closure is $75,000.00.

Will County Generating Station - W1978100011-04 Pond 1 South

- December 30, 1976 Permit No. IL0002208 Attachment I exhibit the North Ash Disposal Area (Pond 1 North) and South Ash Disposal Area (Ponds 1-S, 2-S and 3-S) parallel to the Des Plaines River in the current position of the four existing ash ponds;

- February 4, 1980 NPDES Permit No. IL 0002208 Standard Form C Generator Water Flow Diagram shows that there are "4 Ash Ponds" with CCR in them.

- July 3, 1984 Letter from the Center for Law In The Public Interest contains a Site Plan (Dated October 1978) prepared by Harza engineering on the behalf of Common Wealth Edison (owner at the time) that exhibits four Ash Ponds labelled North Ash Pond, South Ash Pond No. 1, South Ash Pond No. 2, and South Ash Pond No. 3.

- October 18, 2013 Quarterly Groundwater Sampling Report shows Ash Ponds 1-N, 1-S, 2-S, and 3-S separately in response to compliance with the Compliance Agreement for VN W-2012-00058, ID # 6283.

- According to Quarterly Groundwater Monitoring reports from 2013 to 2019, MW-08 (downgradient from Pond 1 South) has exceeded groundwater quality standards for one or more constituents.

Based on the above, the Illinois EPA does not consider Pond 1 North to have completed closure. The appropriate fee for a CCR surface impoundment that has not completed closure is $75,000.00.

Total Fees Due to Illinois EPA

Joliet Station 29	
W1970450047-01 Pond 1	$75,000.00*
W1970450047-03 Pond 3	$75,000.00*
Waukegan Station	
W09781900021-03 Old Pond	$75,000.00*
Will County Station	
W1978100011-01 Pond 1 North	$75,000.00
W1978100011-04 Pond 1 South	$75,000.00
Total	**$375,000.00**

*The Illinois EPA is allowing Midwest Generation to make a further demonstration that these ponds do not meet the definition of a CCR surface impoundment, which could reduce the total by $225,000.00.

Given the above analysis, Illinois EPA requests that within 30 days Midwest Generation either, submit the fees that are due, or arrange a meeting or conference call to discuss any surface impoundments still in dispute. Please note that the Illinois EPA may utilize any available collection procedures to recover unpaid fees.

Please submit all payments responsive to this notification within 30 days to: Illinois EPA, Fiscal Services #2, P.O. Box 19276, Springfield, Illinois 62794-9276. If you have any questions concerning the information provided above, please call 217-782-1020.

Sincerely,

William E. Buscher

William E. Buscher, P.G.
Manager, Hydrogeology and Compliance Unit
Division of Public Water Supplies
Bureau of Water

cc: Darin LeCrone
Rex Gradeless
Ai Kindlon
Records

Exhibit

H

Midwest Generation, LLC
Will County Generating Station
529 E. 135th Street
Romeoville, Illinois 60436

March 18, 2021

Illinois Environmental Protection Agency
Fiscal Services #2
1021 North Grand Avenue East
Springfield, IL 62702

Re: Will County Generating Station – Romeoville, Illinois
Invoice for IEPA Program COALIN
Account Number W197810011

Dear Sir or Madam:

Please find enclosed two payments totaling $200,000 as invoiced for Pond 1 North (W197810011-01) and Pond 1 South (W197810011-04) at Will County Generating Station. The two payments are for the initial fee invoice for the two units ($150,000) and the annual fee invoice for the two units ($50,000). Payments for Pond 2 South (W197810011-03) and Pond 3 South (W197810011-02) were remitted under separate cover.

If you have any questions or require additional information regarding this submittal, please contact me at Sharene.Shealey@nrg.com or 724-255-3220.

Sincerely,

Sharene Shealey
Director, Environmental

cc via email: Lynn Dunaway, Illinois EPA
Kristen Gale, Nijman Franzetti LLP

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue East
Springfield, IL 62794-9276

Will County Generating Station
Attn: Sharene Shealey
529 East 135th Street,
Romeoville, IL 60446

Billing Date	Mon December 16, 2019
Due Date	Tue January 31, 2020
Account Number	W1978100011
Facility Name	Will County Station

Initial Invoice

Pond ID	Pond Description	Amount
W1978100011-01	Pond 1 North	75,000.00
W1978100011-02	Pond 3 South	75,000.00
W1978100011-03	Pond 2 South	75,000.00
W1978100011-04	Pond 1 South	75,000.00

WO 3088424 $150K THIS INVOICE

Amount Due $300,000.00

Other Information/Messages

Questions. Please direct any technical/permit questions to the Permit Section at (217) 782-0610.
Questions about the amount of your fee should be emailed to: EPA.AcctsReceivable@illinois.gov

- See Reverse Side for Additional Important Information –

Return bottom portion with a check made payable to Illinois EPA

Payment
Remittance Stub

Account Information

Acct. Number	W1978100011
Facility Name	Will County Station
IEPA Program	COALIN
Billing Date	Mon December 16, 2019

Amount Due

Tue January 31, 2020 $300,000.00

Amount Enclosed

Please remit payment to:
Illinois Environmental Protection Agency
Fiscal Services #2
P.O. Box 19276
Springfield, IL 62794-9276

Midwest Generation LLC

REFERENCE NUMBER	DATE	VOUCHER	GROSS AMOUNT	DISCOUNT	NET AMOUNT
*WILL COUNTY COALIN POND 1N+1S FEES W1978100011					
W1978100011	12/16/2019	1700014263	$150,000.00	0.00	$150,000.00

COALIN
-W1978100011

CHECK NUMBER	DATE	VENDOR NUMBER	VENDOR NAME	TOTAL AMOUNT
07001443	03/03/21	0000257184	ILLINOIS EPA	$150,000.00

Refer to above check number and voucher number when inquiring about your payment 0001

Exhibit
I

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 – (217) 782-2829
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 – (312) 814-6026

217/782-0610

DOUGLAS P. SCOTT, DIRECTOR

April 10, 2009

Midwest Generation, LLC.
Environmental Health and Safety Department
One Financial Place
440 South LaSalle Street, Suite 3500
Chicago, Illinois 60605

Re: Ash Impoundment Groundwater Protection
Development of Groundwater Monitoring Plan
Will County Station – NPDES Permit No. IL0002208

Gentlemen:

The Illinois Environmental Protection Agency (Illinois EPA) has undertaken efforts to evaluate ash impoundments at the various power generation facilities in Illinois which have one or more ash impoundments either currently in use, or out of use. A review of available groundwater monitoring data indicates that many of these facilities have no groundwater monitoring program and therefore there is no reliable way to demonstrate that these impoundments are in compliance with 35 Ill. Adm. Code Part 620.

Based on information available to the Illinois EPA, this facility operates four lined ash ponds, but does not have a monitoring well system to demonstrate compliance with the Part 620 groundwater quality standards. Regional maps of the area indicate that Class I: Potable_Resource Groundwater is likely to exist proximate to these ash ponds. Additionally, the Illinois State Geological Survey's well data base indicates potable water system wells may exist in the vicinity. Therefore, pursuant to Sections 4 and 12 of the Illinois_Environmental Protection Act, the Will County Station must submit a hydrogeologic assessment plan to characterize the subsurface hydrogeology and evaluate the potential for contaminant migration from these ash ponds. This assessment must include a groundwater monitoring plan for these ash ponds and a plan for identifying potable well use within 2500 feet of the ash ponds. These plans must be submitted for Illinois EPA review within 45 days of the date of this letter.

Copies of the proposed groundwater monitoring plan shall be submitted to the Industrial Unit, Permit Section, Division of Water Pollution Control and to the Hydrogeologic and Assessment Unit, Groundwater Section, Division of Public Water Supplies.

Thank you for your efforts. If you have any question concerning this letter, please contact Darin LeCrone of the Industrial Unit or Bill Buscher of the Hydrogeologic and Assessment Unit.

Sincerely,

Alan Keller

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

cc: DesPlaines Region
Records

Exhibit

J

MIDWEST
GENERATION EME, LLC
An EDISON INTERNATIONAL Company

Amy L. Hanrahan
Senior Environmental
Engineer
Environmental Services

January 18, 2013

RECEIVED
JAN 22 2013
IEPA/CAS

Ms. Andrea Rhodes
Illinois Environmental Protection Agency – DPWS
MC #19
1021 North Grand Avenue East
Springfield, IL 62702

VIA FEDERAL EXPRESS

Re:

Compliance Commitment Agreement – Groundwater Management Zone Application
Midwest Generation, LLC, Will County Generating Station; ID No. 6283
Violation Notice W-2012-0058

Dear Ms. Rhodes:

The Compliance Commitment Agreement (CCA) for the above referenced site relative to Violation Notice W-2012-00058 was signed by Midwest Generation on October 15, 2012 and executed by Illinois Environmental Protection Agency (IEPA) signature on October 24, 2012 (effective date). Item 5 (g) of the CCA requires Midwest Generation to submit an application to establish a Groundwater Management Zone (GMZ) pursuant to 35 Ill. Adm. Code Part 620.250 within 90 days of the effective date of the CCA.

Based on previous discussions with IEPA, the proposed areal extent of the GMZ is shown on Figure 1 in Attachment 1. The GMZ Application Forms (Parts I through III) and supporting information/data are provided in Attachment 2. As discussed in the Application Forms support documentation, groundwater flow in the vicinity of the subject ash ponds is in a westerly direction with discharge to the adjoining Des Plaines River. The western (downgradient) extent of the proposed GMZ corresponds with this hydraulic boundary. The eastern boundary is defined by the Chicago Sanitary and Ship Canal (CSSC) which forms a hydraulic boundary on the east side of the facility. The north and south sides of the proposed GMZ are based on the flow system and location of the four ash ponds. The vertical extent of the GMZ would be the first underlying aquitard identified as the Maquoketa Shale, approximately 140 feet below ground surface. The GMZ would therefore vertically include the unconsolidated overburden and the Silurian dolomite, both of which are hydraulically connected and overlie the Maquoketa Shale.

235 Remington Blvd.
Suite A
Bolingbrook, IL 60440
Tel: 630 771 7865
Fax: 949 225 0813
ahanrahan@mwgen.com

This submittal fulfills the requirements set forth under Item 5 (g) of the signed CCA. Once the application is approved by IEPA and the proposed extent of the GMZ is agreed upon, a formal surveying of the area will be performed and legal description generated. Please call me at 630-771-7863 if there are any questions.

Sincerely,
Midwest Generation, LLC

Amy Hanrahan
Senior Environmental Engineer

Attachments: 1 – Proposed Areal Extent of GMZ
2 – Completed GMZ Application Forms (Parts I through III)

cc: Ms. Maria Race, Midwest Generation EME, LLC
Mr. Basil Constantelos, Midwest Generation EME, LLC
Ms. Rebecca Maddox, Midwest Generation, LLC
Mr. Christopher Foley, Midwest Generation EME, LLC
Ms. Susan Franzetti, Nijman Franzetti, LLP
Mr. Richard Gnat, KPRG and Associates, Inc.
Mr. Bill Buscher, IEPA

ATTACHMENT 1
Proposed Areal Extent of GMZ

ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG

KPRG and Associates, Inc.

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

14665 West Lisbon Road, Suite 2B Brookfield, Wisconsin 53005 Telephone 262-781-0475 Facsimile 262-781-0478

PROPOSED GROUNDWATER MANAGEMENT ZONE

WILL COUNTY STATION
ROMEOVILLE, ILLINOIS

Scale: 1" = 500'	Date: January 11, 2013
KPRG Project No. 18311.41	FIGURE 1

ATTACHMENT 2
Completed GMZ Application Forms (Parts I through III)

Section 620.APPENDIX D Confirmation of an Adequate Corrective Action Pursuant to 35 Ill. Adm. Code 620.250(a)(2)

Pursuant to 35 Ill. Adm. Code 620.250(a) if an owner or operator provides a written confirmation to the Agency that an adequate corrective action, equivalent to a corrective action process approved by the Agency, is being undertaken in a timely and appropriate manner, then a groundwater management zone may be established as a three-dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site. This document provides the form in which the written confirmation is to be submitted to the Agency.

Note 1. Parts I and II are to be submitted to IEPA at the time that the facility claims the alternative groundwater standards. Part III is to be submitted at the completion of the site investigation. At the completion of the corrective process, a final report is to be filed which includes the confirmation statement included in Part IV.

Note 2. The issuance of a permit by IEPA's Division of Air Pollution Control or Water Pollution Control for a treatment system does not imply that the Agency has approved the corrective action process.

Note 3. If the facility is conducting a cleanup of a unit which is subject to the requirements of the Resource Conservation and Recovery Act (RCRA) or the 35 Ill. Adm. Code 731 regulations for Underground Storage Tanks, this confirmation process is not applicable and cannot be used.

Note 4. If the answers to any of these questions require explanation or clarification, provide such in an attachment to this document.

Part I. Facility Information

Facility Name Will County Generating Station

Facility Address 529 East 135th Street
Romeoville, IL

County Will County

Standard Industrial Code (SIC) 4911

1. Provide a general description of the type of industry, products manufactured, raw materials used, location and size of the facility.

The Midwest Generation Will County Station is a coal-fired electrical power generating station in operation since the mid-1950s. The facility is located at 529 E. 135th Street in Romeoville, Illinois. The generating station property covers an area of approximately 200 acres.

2. What specific units (operating or closed) are present at the facility which are or were used to manage waste, hazardous waste, hazardous substances or petroleum?

	YES	NO
Landfill		X
Surface Impoundment	X	
Land Treatment		X
Spray Irrigation		X
Waste Pile	X	
Incinerator		X
Storage Tank (above ground)	X	
Storage Tank (underground)		X
Container Storage Area	X	
Injection Well		X
Water Treatment Units	X	
Septic Tanks		X
French Drains		X
Transfer Station		X
Other Units (please describe)		

3. Provide an extract from a USGS topographic or county map showing the location of the site and a more detailed scaled map of the facility with each waste management unit identified in Question 2 or known/suspected source clearly identified. Map scale must be specified and the location of the facility must be provided with respect to Township, Range and Section.

Please see Figures 1 and 2 in Attachment 2A.

4. Has the facility ever conducted operations which involved the generation, manufacture, processing, transportation, treatment, storage or handling of "hazardous substances" as defined by the Illinois Environmental Protection

Act? Yes _X_ No ___ If the answer to this question is "yes" generally describe these operations.

Will County Generating Station generates typical hazardous and non-hazardous substance wastes associated with coal-fired electrical power generation. A full list of hazardous substances can be provided upon request.

5. Has the facility generated, stored or treated hazardous waste as defined by the Resource Conservation and Recovery Act? Yes_X_ No ___If the answer to this question is "yes" generally describe these operations.

The station's hazardous wastes have typically been lead paint chip debris associated with lead paint removal, empty aerosol cans, spent laboratory chemicals (hydrazine, monoethylamine, formic acid), etc. Complete logs of wastes generated and disposed of can be provided upon request.

6. Has the facility conducted operations which involved the processing, storage or handling of petroleum? Yes _X_ No ____If the answer to this question is "yes" generally describe these operations.

The facility stores oil for operations in above ground storage tanks for start-up operations and for heavy equipment fueling and other diesel powered equipment. There is also an above ground gasoline storage tank and two used oil storage tanks.

7. Has the facility ever held any of the following permits?

   a. Permits for any waste storage, waste treatment or waste disposal operation. Yes _X_ No ___ If the answer to this question is "yes", identify the IEPA permit numbers.

   The facility utilizes a sewerage treatment system that discharges to the Des Plaines River under NPDES Permit No. IL0002208.

   b. Interim Status under the Resources Conservation and Recovery Act (filing of a RCRA Part A application). Yes ___ No _X_ If the answer to this question is "yes", attach a copy of the last approved Part A application.

   c. RCRA Part B Permits. Yes ___ No _X_ If the answer to this question is "yes", identify the permit log number.

8. Has the facility ever conducted the closure of a RCRA hazardous waste management unit? Yes ___ No _X_

9. Have any of the following State or federal government actions taken place for a release at the facility?

   a. Written notification regarding known, suspected or alleged contamination on or emanating from the property (e.g., a Notice pursuant to Section 4(q) of the Environment Protection Act)? Yes _X_ No ___ If the to this question is "yes", identify the caption and date of issuance.

   A Violation Notice was issued by IEPA on June 11, 2012 relative to the four ash impoundments alleging a potential release of coal ash constituents to groundwater (Violation Notice No. W-2012-00058). This was resolved through a Compliance Commitment Agreement (CCA) dated October 4, 2012 and formally executed on October 24, 2012. This submittal is part of the CCA compliance.

   b. Consent Decree or Order under RCRA, CERCLA, EPAct Section 22.2 (State Superfund), or EPAct Section 21(f) (State RCRA). Yes ___ No _X_

   c. If either of Items a or b were answered by checking "yes", is the notice, order or decree still in effect? Yes _X_ No ___

   The CCA is currently in effect.

10. What groundwater classification will the facility be subject to at the completion of the remediation?

    Class I _X_ Class II ___ Class III ___ Class IV ___
    If more than one Class applies, please explain.

11. Describe the circumstances which the release to groundwater was identified.

As requested by Illinois Environmental Protection Agency (IEPA), a groundwater monitoring plan was developed and implemented for Ash Pond 1N, 1S, 2S and 3S located on the west side of the facility. A total of ten monitoring wells were installed around the four ash ponds. Quarterly sampling was initiated in December 2010 and has been ongoing since. The data were provided to IEPA on a quarterly basis. Based on the monitoring data, on June 11, 2012, IEPA issued a Violation Notice (W-2012-00058) to Midwest Generation alleging that potential leakage from the ponds has resulted in a violation of Class I groundwater standards for antimony, boron, chloride, manganese, pH, sulfate and total dissolved solids.

Based on my inquiry of those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true and accurate.

Will County Generating Station	
Facility Name	Signature of Owner/Operator
Romeoville, IL	Midwest Generation, LLC
Location of Facility	Name of Owner/Operator
ID No. 6283	January 17, 2013
EPA Identification Number	Date

PART II: Release Information

1. Identify the chemical constituents release to the groundwater. Attach additional documents as necessary.

Chemical Description	Chemical Abstract No.
Antimony	7440-36-0
Boron	7440-42-8
Chloride	16887-00-6
pH	Not Applicable
Manganese	7439-96-5
Sulfate	18785-72-3
Total Dissolved Solids	C-010

2. Describe how the site will be investigated to determine the source or sources of the release.

This work has already been performed. As requested by Illinois Environmental Protection Agency (IEPA), Midwest Generation, LLC (Midwest Generation) prepared and submitted on September 3, 2010 a Hydrogeologic Assessment Plan for four ash ponds located at the Will County Generating Station. The purpose of the hydrogeologic assessment was to: (i) evaluate the potential, if any, for migration of ash related constituents from the ash ponds and conduct monitoring for groundwater constituents regulated by Illinois Part 620 groundwater standards; (ii) characterize the subsurface hydrogeology: and (iii) identify potable well use within 2,500 feet of the ash ponds.

Upon IEPA approval of the Hydrogeologic Assessment Plan, a total of ten monitoring wells (MW-1 through MW-10) were installed around the four ash ponds identified as Ash Ponds 1N, 1S, 2S and 3S (see Figure 3 in Attachment 2A). The wells were drilled and constructed in October 2010 after which point quarterly monitoring was initiated in accordance with approved, low-flow sampling procedures. A Hydrogeologic Assessment Report for Will County Generating Station was prepared by Patrick Engineering, Inc. and submitted by Midwest Generation, LLC to IEPA in February 2011. The results of the Hydrogeologic Assessment Report are incorporated into this application submittal by reference.

Since the submittal of the Hydrogeologic Assessment Report in February 2011, quarterly monitoring of the wells has been ongoing. The most recent round of sampling was performed in December 2012. A complete updated data summary table is provided in Attachment 2B. An updated groundwater flow map using the water level measurements from the most recent round of sampling is provided as Figure 4 in Attachment 2A.

3. Describe how groundwater will be monitored to determine the rate and extent of the release.

As part of the hydrogeologic assessment already performed (see discussion for item 2 above), in-situ hydraulic conductivity tests were performed on five of the monitoring wells (MW-1, MW-4, MW-6, MW-7 and MW-9) installed around the ash ponds. Based on the results of the testing, hydraulic conductivity values in the vicinity of the well screens were found to range from 6.38×10^{-5} to 2.07×10^{-4} ft/sec with an average hydraulic conductivity of 4.32×10^{-4} ft/sec. Using the average hydraulic conductivity value, an estimated hydraulic gradient of 0.015 ft/ft based on the most recent groundwater contour map (Figure 4 in Attachment 2A) and an estimated effective porosity of 0.20 yields an estimated groundwater seepage velocity of approximately 2.8 ft/day.

Relative to the extent of impacts, a box-plot map of detections of the constituents identified in Part II - Item 1 above is provided as Figure 5 in Attachment 2A.

4. Has the release been contained on-site at the facility?

Yes. All groundwater monitoring data indicates that the impacts are limited to within the property boundary. Natural groundwater flow is generally to the west with discharge into the adjacent Des Plaines River. There are some instances when there could be flow to the east from the river onto the property at times of higher river stage.

5. Describe the groundwater monitoring network and groundwater and soil sampling protocols in place at the facility.

The IEPA approved groundwater monitoring network at the site consists of ten monitoring wells (MW-1 through MW-10) located around the four existing ash ponds (see Figure 1 in Attachment 2A). Wells MW-1 through MW-6 are generally upgradient monitoring wells. The remaining wells are considered downgradient monitoring points. The well borings were advanced using hollow-stem augers to depths ranging from approximately 18 to 22 feet below ground surface (bgs). The depth of a specific boring was terminated approximately 10 feet below the encountered water table. The wells were subsequently constructed using standard, 2-inch diameter PVC casing with 10-feet of 0.010 slot PVC screens. The wells were completed approximately three feet above grade with locking protective steel casings and bumper posts. The boring logs and well construction summaries are included in the above referenced Hydrogeologic Assessment Report (see discussion for item 2 above). The monitoring wells are sampled on a quarterly basis using low-flow sampling with a peristaltic pump. Field measurements of pH, specific conductivity, temperature, dissolved oxygen (DO) and oxidation-reduction potential (ORP) are recorded. Once collected, the samples are placed on ice and transported under a completed chain-of-custody to TestAmerica, Inc. which is an Illinois accredited analytical laboratory. The samples are analyzed for the inorganic compounds listed in 35 IAC 620.410(a) and (d), excluding radium 226/228.

There is no soil sampling that is performed as part of the approved site monitoring program.

6. Provide the schedule for investigation and monitoring.

Groundwater sampling of all existing monitoring wells is performed on a quarterly basis. The general sampling schedule is as follows:

Event	Sampling Schedule
1st Quarter	March
2nd Quarter	June
3rd Quarter	September
4th Quarter	December

7. Describe the laboratory quality assurance program utilized for the investigation.

TestAmerica's Quality Assurance Manual (QAM) is a document prepared to define the overall policies, organization objectives and functional responsibilities for achieving the laboratory's data quality goals. The laboratory maintains a local perspective in its scope of services and client relations and maintains a national perspective in terms of quality.

The QAM has been prepared to assure compliance with the NELAC Institute (TNI) Standard, dated 2009, Volume 1 Modules 2 and 4, and ISO/IEC Guide 17025:2005(E). In addition, the policies and procedures outlined in this manual are compliant with TestAmerica's Corporate Quality Management Plan (CQMP) and the various accreditation and certification programs. The CQMP provides a summary of TestAmerica's quality and data integrity system. It contains requirements and general guidelines under which all TestAmerica facilities shall conduct their operations.

The QAM has been prepared to be consistent with the requirements of the following documents:

- EPA 600/4-88/039, *Methods for the Determination of Organic Compounds in Drinking Water,* EPA, Revised July 1991.
- EPA 600/R-95/131, *Methods for the Determination of Organic Compounds in Drinking Water,* Supplement III, EPA, August 1995.
- EPA 600/4-79-019, *Handbook for Analytical Quality Control in Water and Wastewater Laboratories,* EPA, March 1979.

- Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846), Third Edition, September 1986, Final Update I, July 1992, Final Update IIA, August 1993, Final Update II, September 1994; Final Update IIB, January 1995; Final Update III, December 1996; Final Update IV, January 2008.
- Federal Register, 40 CFR Parts 136, 141, 172, 173, 178, 179 and 261.
- Statement of Work for Inorganics Analysis, SOM and ISM, current versions, USEPA Contract Laboratory Program Multi-media, Multi-concentration.
- APHA, *Standard Methods for the Examination of Water and Wastewater,* 18th Edition, 19th, 20th, 21st and on-line Editions.
- U.S. Department of Energy Order 414.1C, Quality Assurance, June 17, 2005.
- *U.S. Department of Energy*, *Quality Systems for Analytical Services*, Revision 3.6, November 2010.
- U.S. Department of Defense, *Quality Systems Manual for Environmental Laboratories*, Final Version 4.2, October 2010.
- U.S. Department of Defense, *Air Force Center for Environmental Excellence Quality Assurance Project Plan (QAPP),* Version 4.0.02, May 2006.
- National Environmental Laboratory Accreditation Conference, Constitution, Bylaws, and Standards, EPA 600/R-04/003, US EPA Office of Research and Development, June 2003
- Toxic Substances Control Act (TSCA).

Copies of TestAmerica's QAM and CQMP can be provided upon request.

8. Provide a summary of the results of available soil testing and groundwater monitoring associated with the release at the facility. The summary or results should provide the following information: dates of sampling; types of samples taken (soil or water); locations and depths of samples; sampling and analytical methods; analytical laboratories used; chemical constituents for which analyses were performed; analytical detection limits; and concentrations of chemical constituents in ppm (levels below detection should be identified as "ND").

The data summary for all groundwater sampling performed to date are provided in Tables 1 and 2 in Attachment 2B.

Based on my inquiry of those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of knowledge and belief, true and accurate and confirm that the actions identified herein will be undertaken in accordance with the schedule set forth herein.

Will County Generating Station	
Facility Name	Signature of Owner/Operator
Romeoville, IL	Midwest Generation, LLC
Location of Facility	Name of Owner/Operator
ID No. 6283	January 17, 2013
EPA Identification Number	Date

Part III: Remedy Selection Information

1. Describe the selected remedy.

Ash Pond 1S is already lined with high density polyethylene (HDPE) and the remaining three ash ponds have a Poz-o-Pac liner. The agreed upon remedy is specified in Item 5 (a) through (j) of the executed Compliance Commitment Agreement (CCA) which is provided in Attachment 2C. The remedy includes relining of Ash Pond 2S with HDPE, removing Ash Ponds 1S and 1N from service and installing a dewatering system within those ponds to keep liquid levels to within no more than one foot of the bottoms of those units. This Groundwater Management Zone (GMZ) application fulfills requirements set forth under Item 5 (g) of the CCA.

2. Describe other remedies which were considered and why they were rejected.

The primary alternate remedy discussed during negotiations with IEPA was to ensure that the ash ponds will not be used as permanent disposal sites, maintain the ash ponds in a manner that will be protective of the integrity of the existing liners, include visual inspections of the liners during ash removal events, implement repairs or replacement of the liners as necessary, establish a GMZ and to continue with the existing quarterly groundwater monitoring program until the federal ash regulation revisions are established. Upon the finalization of the new federal ash storage regulations, retrofit the impoundments, as necessary, to meet the new technical requirements for ash storage impoundments or re-engineer plant processes to maintain compliance and take the impoundments out of service.

This remedy was rejected by IEPA due to the uncertainty of the timeframe within which the new federal regulations will be issued.

3. Will waste, contaminated soil or contaminated groundwater be removed from the site in the course of this remediation? Yes _X_ No ___ If the answer to this question is "yes", where will the contaminated material be taken?

The ash that will be removed from Ash Pond 2S to facilitate new liner construction will be taken by Lafarge NA for beneficial reuse.

4. Describe how the selected remedy will accomplish the maximum practical restoration of beneficial use of groundwater.

Once Ash Pond 2S is relined with a HDPE liner, the two ponds that will remain in service for active ash accumulation will have been constructed and operated to minimize potential release of ash pond fluids to groundwater. In addition, the fluid accumulation within Ash Ponds 1S and 1N, which will no longer accumulate ash, will be managed to within one foot of the bottom of each pond to further minimize potential release of ash pond fluids from these units. Any residual groundwater impacts potentially associated with prior ash pond leakage will naturally attenuate through the groundwater system under monitored conditions within the established GMZ with eventual discharge to the adjoining Des Plaines River.

5. Describe how the selected remedy will minimize any threat to public health or the environment.

The existing conditions do not pose a threat to public health since the impacts are limited to within the property boundary, there are no groundwater use receptors and the ponds are located within a fenced property with 24-hour security controlled access. Any potential impacts to the environment will be minimized and managed as discussed under item 4 above.

6. Describe how the selected remedy will result in compliance with the applicable groundwater standards.

Once Ash Pond 2S is relined with an HDPE liner and the fluid level within Ash Ponds 1S and 1N is reduced to within no more than one foot of the pond bottoms, the ash collection system will have been constructed and operated to minimize potential release of ash pond fluids to groundwater (i.e, the ash ponds as a potential source of groundwater impacts will be eliminated). Any residual groundwater impacts potentially associated with prior ash pond leakage will naturally attenuate through the groundwater system under monitored conditions within the established GMZ and/or discharge to the adjoining Des Plaines River immediately west of the ash ponds.

7. Provide a schedule for design, construction and operation of the remedy, including dates for the start and completion.

The construction window for relining of Ash Pond 2S will occur from June 14, 2013 through September 2, 2013. Dredging will occur from June 14, 2013 through July 28, 2013. At this time liner installation is anticipated to occur in August 2013.

The dewatering system for Ash Ponds 1S and 1N is anticipated to be completed between July 14, 2013 and September 2, 2013.

A more detailed schedule is being provided under separate cover with the Application for Construction Permit to implement the remedy.

8. Describe how the remedy will be operated and maintained.

Upon completion of construction activities, Midwest Generation will develop and submit an Operation and Maintenance (O&M) Plan to the IEPA. The O&M Plan will be based on manufacturer and installer recommendations. It will include procedures for liner and dewatering system inspections, inspection frequency, documentation requirements and what corrective measure procedures are to be implemented, if necessary.

9. Have any of the following permits been issued for the remediation?

   a. Construction or Operating permit from the Division of Water Pollution Control. Yes _X_ No ___

   This permit submittal is currently under review by IEPA.

   b. Land treatment permit from the Division of Water Pollution Control. Yes ___ No _X__ If the answer to this question is "yes", identify the permit number.

   c. Construction or Operating permit from the Division of Air Pollution Control. Yes ___ No _X__ If the answer to this question is "yes", identify the permit number.

10. How will groundwater at the facility be monitored following completion of the remedy to ensure that the groundwater standards have been attained?

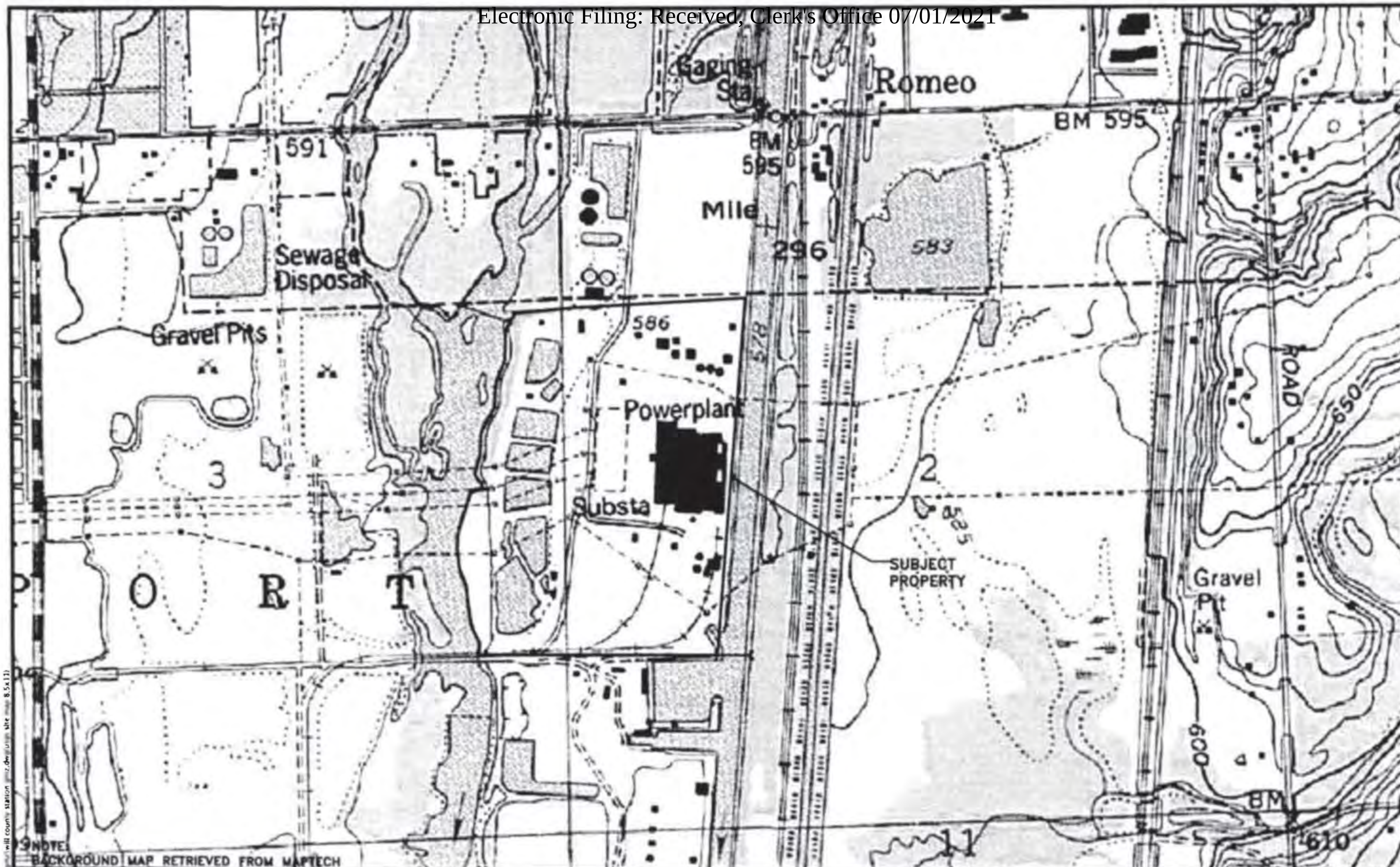
There are currently 10 monitoring wells surrounding Ash Ponds 1S, 2S, 3S and 1N (see Figure 3 in Attachment 2A). As required under Item 5 (d) of the CCA, these wells will continue to be monitored on a quarterly basis for constituents listed in 35 IAC 620.410(a) and (d), with the exception of radium 226/228. The monitoring data will be reported to IEPA within 30 days of the end of each quarter. In addition, an updated groundwater potentiometric surface map will be provided with each quarterly submittal. IEPA, upon written request, may approve a reduction in the frequency and scope of the sampling program in the future. Upon the IEPA's approval, the approved changes in the frequency and scope of the monitoring program shall be implemented.

Based on my inquiry of those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true and accurate and confirm that the actions identified herein will be undertaken in accordance with the schedule set forth herein.

Will County Generating Station	
Facility Name	Signature of Owner/Operator
Romeoville, IL	Midwest Generation, LLC
Location of Facility	Name of Owner/Operator
ID No. 6283	January 17, 2013
EPA Identification Number	Date

(Source: Amended at 36 Ill. Reg. 15206, effective October 5, 2012)

ATTACHMENT 2A
Figures



NOTE:
BACKGROUND MAP RETRIEVED FROM MAPTECH

LOCATION:
SECTION 2, TOWNSHIP 36 N, RANGE 10 E

0 1,000'
APPROXIMATE SCALE

N

ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG

KPRG and Associates, Inc.

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

14665 West Lisbon Road, Suite 2B Brookfield, Wisconsin 53005 Telephone 262-781-0475 Facsimile 262-781-0478

USGS TOPOGRAPHIC SITE MAP

WILL COUNTY STATION
ROMEOVILLE, ILLINOIS

Scale: 1" = 1,000'	Date: January 9, 2013
KPRG Project No. 18311.41	FIGURE 1

ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG

KPRG and Associates, Inc.

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

14665 West Lisbon Road, Suite 2B Brookfield, Wisconsin 53005 Telephone 262-781-0475 Facsimile 262-781-0478

GENERATING STATION SITE MAP	
WILL COUNTY STATION ROMEOVILLE, ILLINOIS	
Scale: 1" = 500'	Date: January 11, 2013
KPRG Project No. 18311.41	FIGURE 2

ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG

KPRG and Associates, Inc.

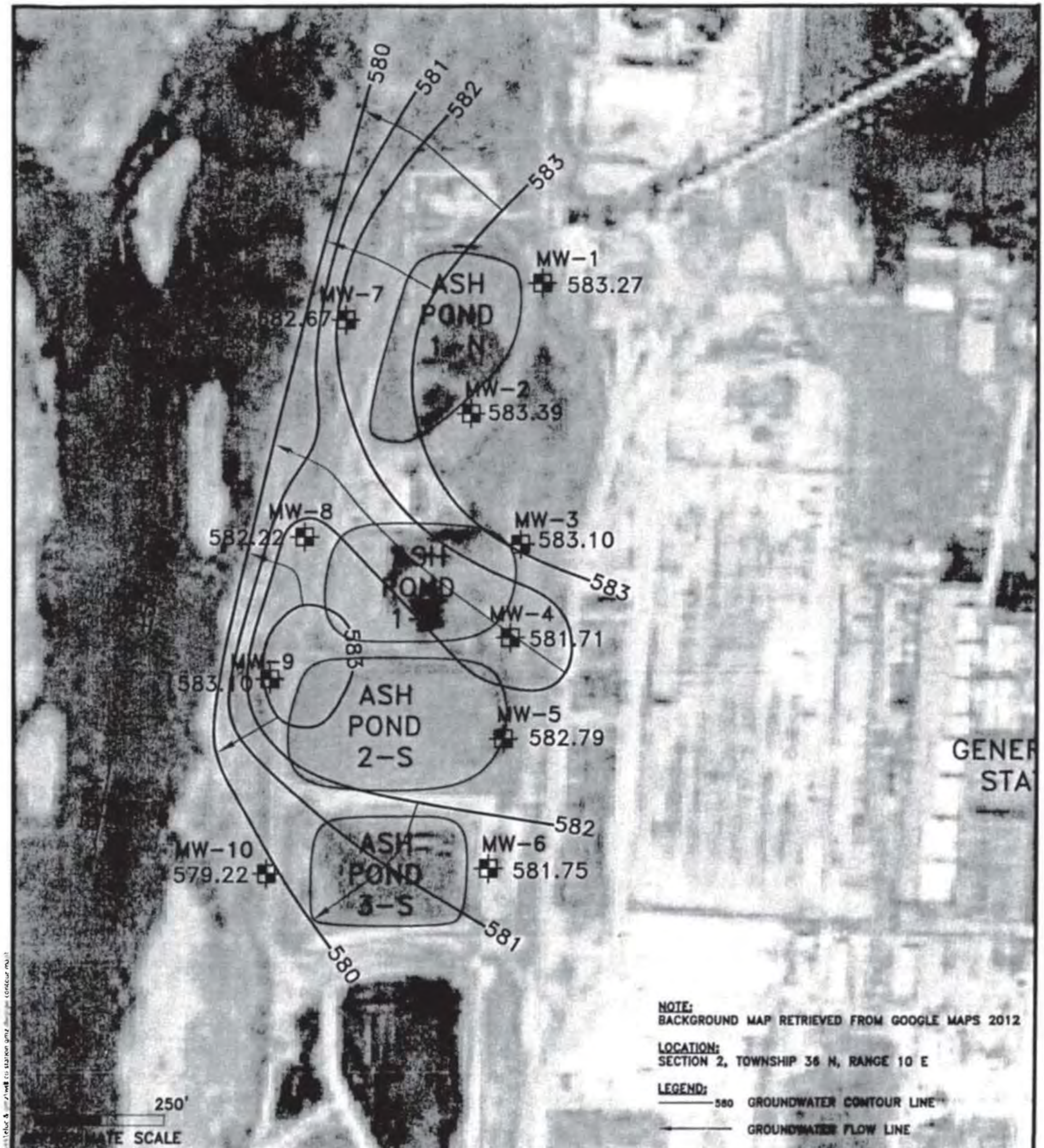
414 Plaza Drive, Suite 106 Westmont, Illinois 60559 Telephone 630-325-1300 Facsimile 630-325-1593

14665 West Lisbon Road, Suite 2B Brookfield, Wisconsin 53005 Telephone 262-781-0475 Facsimile 262-781-0478

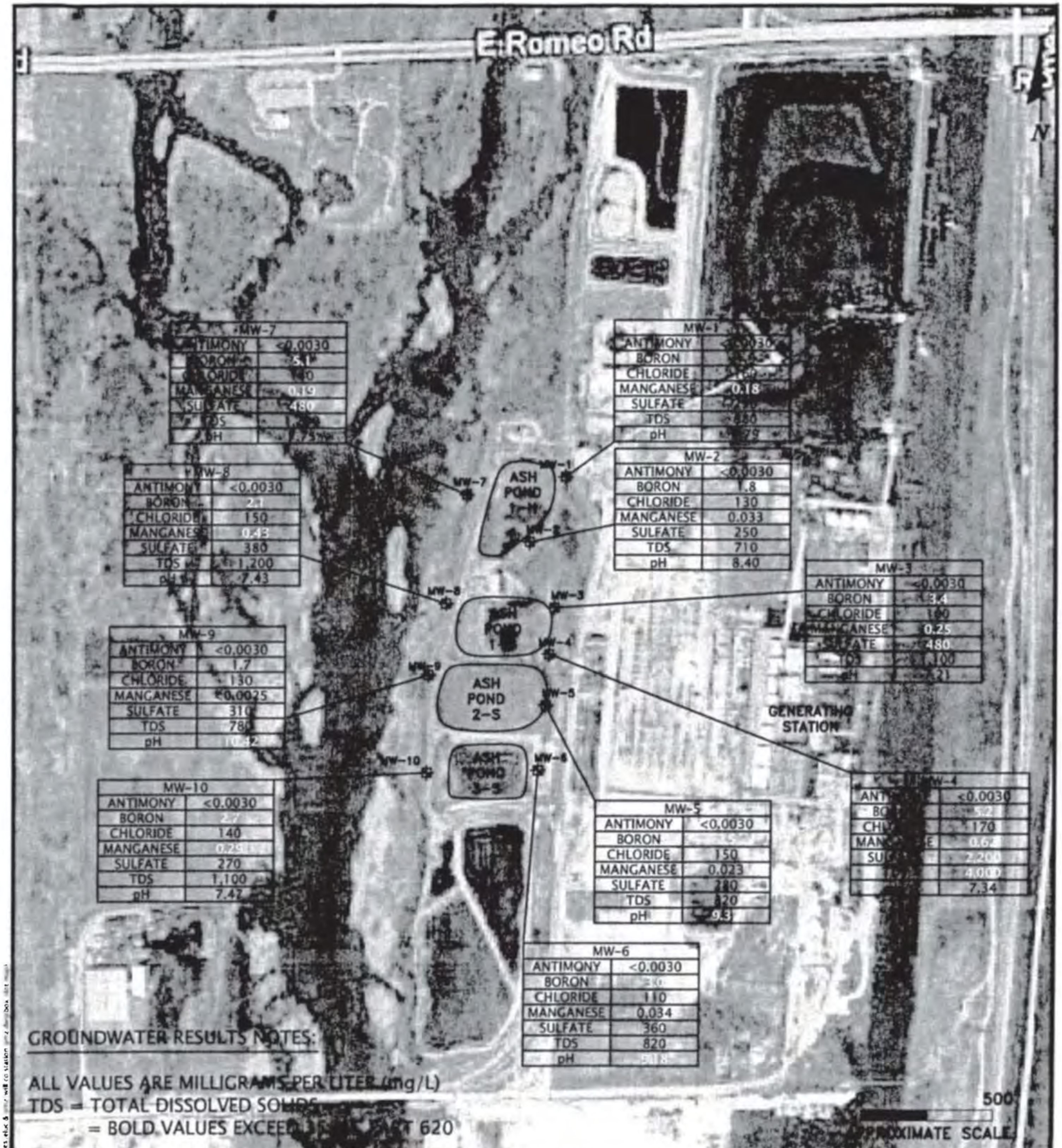
MONITORING WELLS LOCATION SITE MAP

WILL COUNTY STATION
ROMEOVILLE, ILLINOIS

Scale: 1" = 500'	Date: January 9, 2013
KPRG Project No. 18311.41	FIGURE 3



ENVIRONMENTAL CONSULTATION & REMEDIATION	GROUNDWATER CONTOUR MAP 12/18/12
KPRG — KPRG and Associates, Inc.	WILL COUNTY STATION ROMEOVILLE, ILLINOIS
414 Plaza Drive, Suite 106 Westmont, Illinois 60559 Telephone 630-325-1300 Facsimile 630-325-1593	Scale: 1" = 250' — Date: January 9, 2013
14665 West Lisbon Road, Suite 2B Brookfield, Wisconsin 53005 Telephone 262-781-0475 Facsimile 262-781-0478	KPRG Project No. 18311.41 — FIGURE 4



ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG and Associates, Inc.

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

14665 West Lisbon Road, Suite 2B Brookfield, Wisconsin 53005 Telephone 262-781-0475 Facsimile 262-781-0478

AREAL DISTRIBUTION OF GROUNDWATER IMPACTS

WILL COUNTY STATION
ROMEOVILLE, ILLINOIS

Scale: 1" = 500' | Date: January 17, 2013

KPRG Project No. 18311.41 | FIGURE 5

Electronic Filing: Received, Clerk's Office 07/01/2021

ATTACHMENT 2B
Summary Data Table

Table 1. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-01	Date	12/13/2010		3/28/2011		6/15/2011		9/15/2011		12/8/2011		3/16/2012		6/20/2012		9/24/2012		12/18/2012	
Parameter	Lab Method	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result
Antimony	6020	0.0030	ND^	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	0.0063	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND
Arsenic	6020	0.0010	ND	0.0010	ND	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Barium	6020	0.0025	0.050	0.0025	0.041	0.0025	0.046	0.0025	0.038	0.0025	0.033	0.0025	0.033	0.0025	0.039	0.0025	0.035	0.0025	0.034
Beryllium	6020	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Boron	6020	0.25	1.8	0.050	1.6	0.050	1.8	0.050	1.7	0.050	1.6	0.25	1.5	0.50	2.1	0.25	1.9	0.50	1.9
Cadmium	6020	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Chloride	9251	10	110	10	210	10	110	10	120	10	140	10	190	10	170	10	120	10	160
Chromium	6020	0.0050	ND	0.0050	ND	0.025	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Cobalt	6020	0.0010	0.0011	0.0010	ND	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Copper	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Cyanide	9014	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND
Fluoride	SM 4500 F C	0.10	0.71	0.10	0.65	0.10	0.53	0.10	0.77	0.10	0.73	0.10	0.69	0.10	0.77	0.10	0.86	0.10	0.86 ^
Iron	6020	0.10	ND	0.10	ND	0.50	ND	0.10	0.11	0.10	0.11	0.10	ND	0.10	0.23	0.10	0.33	0.10	0.20
Lead	6020	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Manganese	6020	0.0025	0.20	0.0025	0.15	0.013	0.22	0.0025	0.16	0.0025	0.17	0.0025	0.16	0.0025	0.16	0.0025	0.15	0.0025	0.18
Mercury	7470A	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND
Nickel	6020	0.0020	0.0046	0.0020	0.0038	0.010	ND	0.0020	0.0029	0.0020	0.0040	0.0020	0.0042	0.0020	0.0041	0.0020	0.0043	0.0020	0.0052
Nitrogen/Nitrate	Nitrogen Calc	0.10	ND	0.10	1.1	0.10	0.73	0.10	0.33	0.10	1.4	0.10	2.2	0.10	0.61	0.10	0.25	0.10	1.5
Nitrogen/Nitrate, Nitrite	SM 4500 NO3 F	0.10	ND	0.10	1.1	0.10	0.73	0.10	0.37	0.10	1.4	0.20	2.2	0.10	0.61	0.10	0.25	0.10	1.5
Nitrogen/Nitrite	SM 4500 NO2 B	0.020	ND	0.020	ND	0.020	ND	0.020	0.042	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND
pH	Obtained in field	NA	7.89	NA	8.05	NA	7.28	NA	7.57	NA	7.16	NA	7.84	NA	7.55	NA	7.70	NA	7.79
Selenium	6020	0.0025	ND	0.0025	ND	0.013	ND	0.0025	0.0053	0.0025	0.0025	0.0025	0.0033	0.0025	0.0040	0.0025	ND	0.0025	ND
Silver	6020	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Sulfate	9038	100	530	100	390	100	280	50	320	100	270	100	430	100	390	100	390	100	290
Thallium	6020	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Total Dissolved Solids	SM 2540C	10	1100	10	1100	10	1100	10	760	10	770	10	910	10	950	10	790	10	880
Zinc	6020	0.020	ND	0.020	ND	0.10	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	0.040	0.020	ND

Notes: Groundwater sample analyzed at TestAmerica laboratory.
Well screen depth is from 9.0 to 19.0 feet below ground surface.
Sample collected using low-flow technique.
All values are in mg/L (ppm).

DL - Detection limit
ND - Non-detect
NA - Not Applicable

^ - Denotes instrument related QC exceeds the control limits

Table 1. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-02	Date	12/13/2010		3/28/2011		6/15/2011		9/15/2011		12/8/2011		3/16/2012		6/20/2012		9/24/2012		12/18/2012	
Parameter	Lab Method	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result
Antimony	6020	0.0030	ND^	0.0030	ND	0.015	ND	0.0030	0.0073	0.0030	0.017	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND
Arsenic	6020	0.0010	0.0052	0.0010	0.0032	0.0050	ND	0.0010	0.0080	0.0010	0.0058	0.0010	0.0048	0.0010	0.0044	0.0010	0.0071	0.0010	0.0046
Barium	6020	0.0025	0.061	0.0025	0.068	0.013	0.068	0.0025	0.048	0.0025	0.048	0.0025	0.058	0.0025	0.062	0.0025	0.050	0.0025	0.051
Beryllium	6020	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Boron	6020	0.25	1.8	0.25	1.7	0.050	2.3	0.050	2.3	0.050	1.7	0.25	1.7	0.50	2.0	0.25	2.2	0.50	1.8
Cadmium	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Chloride	9251	10	110	10	250	10	180	10	110	10	120	10	140	10	150	10	110	10	130
Chromium	6020	0.0050	ND	0.0050	ND	0.025	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Cobalt	6020	0.0010	ND	0.0010	ND	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Copper	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Cyanide	9014	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND
Fluoride	SM 4500 F C	0.10	0.62	0.10	0.50	0.10	0.42	0.10	0.59	0.10	0.59	0.10	0.46	0.10	0.55	0.10	0.71	0.10	0.60 ^
Iron	6020	0.10	ND	0.10	ND	0.50	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND
Lead	6020	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Manganese	6020	0.0025	0.032	0.0025	0.032	0.013	0.043	0.0025	0.036	0.0025	0.031	0.0025	0.031	0.0025	0.038	0.0025	0.029	0.0025	0.033
Mercury	7470A	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND
Nickel	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Nitrogen/Nitrate	Nitrogen Calc	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND
Nitrogen/Nitrate, Nitrite	SM 4500 NO3 F	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND
Nitrogen/Nitrite	SM 4500 NO2 B	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND
pH	Obtained in field	NA	8.62	NA	8.62	NA	8.00	NA	8.11	NA	7.80	NA	8.34	NA	8.23	NA	8.33	NA	8.40
Selenium	6020	0.0025	ND	0.0025	ND	0.013	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
Silver	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Sulfate	9038	100	430	100	280	50	400	50	330	50	220	50	330	100	340	50	280	50	250
Thallium	6020	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Total Dissolved Solids	SM 2540C	10	870	10	970	10	900	10	720	10	650	10	810	10	850	10	690	10	710
Zinc	6020	0.020	ND	0.020	ND	0.10	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND

Notes: Groundwater sample analyzed at TestAmerica laboratory.
Well screen depth is from 12.0 to 22.0 feet below ground surface.
Sample collected using low-flow technique.
All values are in mg/L (ppm).

DL - Detection limit
ND - Non-detect
NA - Not Applicable

^ - Denotes instrument related QC exceeds the control limits

Table 1. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-03	Date	12/13/2010		3/28/2011		6/15/2011		9/15/2011		12/8/2011		3/16/2012		6/20/2012		9/24/2012		12/18/2012	
Parameter	Lab Method	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result
Antimony	6020	0.0030	ND^	0.0030	ND	0.015	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND
Arsenic	6020	0.0010	0.0020	0.0010	0.0024	0.0050	ND	0.0010	0.0025	0.0010	0.0018	0.0010	0.0017	0.0010	0.0020	0.0010	0.0026	0.0010	0.0019
Barium	6020	0.0025	0.084	0.0025	0.086	0.013	0.071	0.0025	0.079	0.0025	0.083	0.0025	0.075	0.0025	0.12	0.0025	0.085	0.0025	0.079
Beryllium	6020	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Boron	6020	0.25	2.7	0.25	2.4	0.050	2.6	0.050	3.3	0.050	2.8	0.25	2.7	0.50	3.1	0.25	3.9	0.50	3.4
Cadmium	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Chloride	9251	2.0	54	10	250	10	100	10	130	10	100	10	95	10	88	10	96	10	100
Chromium	6020	0.0050	ND	0.0050	ND	0.025	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Cobalt	6020	0.0010	ND	0.0010	0.0022	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Copper	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Cyanide	9014	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND
Fluoride	SM 4500 F C	0.10	0.50	0.10	0.37	0.10	0.36	0.10	0.45	0.10	0.39	0.10	0.38	0.10	0.36	0.10	0.45	0.10	0.44 ^
Iron	6020	0.10	0.37	0.10	0.57	0.50	ND	0.10	0.26	0.10	0.19	0.10	0.20	0.10	0.34	0.10	0.21	0.10	0.20
Lead	6020	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Manganese	6020	0.0025	0.34	0.0025	0.31	0.013	0.34	0.0025	0.26	0.0025	0.29	0.0025	0.27	0.0025	0.37	0.0025	0.24	0.0025	0.25
Mercury	7470A	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND
Nickel	6020	0.0020	0.0054	0.0020	0.0037	0.010	ND	0.0020	0.0061	0.0020	0.0053	0.0020	0.0052	0.0020	0.0051	0.0020	0.0069	0.0020	0.0079
Nitrogen/Nitrate	Nitrogen Calc	0.10	ND	0.10	ND	0.10	0.81	0.10	ND	0.10	0.54	0.10	ND	0.10	0.18	0.10	ND	0.10	ND
Nitrogen/Nitrate, Nitrite	SM 4500 NO3 F	0.10	ND	0.10	ND	0.10	0.81	0.10	ND	0.10	0.54	0.10	ND	0.10	0.18	0.10	ND^	0.10	ND
Nitrogen/Nitrite	SM 4500 NO2 B	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND
pH	Obtained in field	NA	7.21	NA	7.72	NA	7.01	NA	7.18	NA	6.55	NA	7.24	NA	6.79	NA	7.12	NA	7.21
Selenium	6020	0.0025	ND	0.0025	ND	0.013	ND	0.0025	0.0033	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	0.0040	0.0025	ND
Silver	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Sulfate	9038	100	330	50	270	50	240	100	250	100	280	100	320	100	500	100	440	100	480
Thallium	6020	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Total Dissolved Solids	SM 2540C	10	940	10	1000	10	990	10	1000	10	930	10	1000	10	1400	10	1100	10	1100
Zinc	6020	0.020	ND	0.020	ND	0.10	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND

Notes: Groundwater sample analyzed at TestAmerica laboratory.
Well screen depth is from 7.0 to 17.0 feet below ground surface.
Sample collected using low-flow technique.
All values are in mg/L (ppm).

DL - Detection limit
ND - Non-detect
NA - Not Applicable

^ - Denotes instrument related QC exceeds the control limits

Table 1. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-04	Date	12/13/2010		3/28/2011		6/15/2011		9/15/2011		12/8/2011		3/16/2012		6/20/2012		9/24/2012		12/18/2012	
Parameter	Lab Method	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result
Antimony	6020	0.0030	ND^	0.0030	ND	0.015	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND
Arsenic	6020	0.0010	0.0027	0.0010	0.0016	0.0050	ND	0.0010	0.0041	0.0010	0.0016	0.0010	0.0015	0.0010	0.0028	0.0010	0.0044	0.0020	0.0033
Barium	6020	0.0025	0.068	0.0025	0.062	0.013	0.050	0.0025	0.050	0.0025	0.043	0.0025	0.036	0.0025	0.041	0.0025	0.041	0.0050	0.037
Beryllium	6020	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0020	ND
Boron	6020	0.25	3.7	0.25	3.3	0.050	3.6	0.050	4.3	0.050	3.0	0.25	4.0	0.50	5.3	0.25	6.2	0.10	5.2
Cadmium	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.0010	ND
Chloride	9251	10	120	10	190	10	120	10	170	10	150	10	150	10	140	10	170	10	170
Chromium	6020	0.0050	ND	0.0050	ND	0.025	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.010	ND
Cobalt	6020	0.0010	0.0011	0.0010	ND	0.0050	ND	0.0010	0.0012	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0020	ND
Copper	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0040	ND
Cyanide	9014	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND
Fluoride	SM 4500 F C	0.10	0.52	0.10	0.49	0.10	0.48	0.10	0.53	0.10	0.55	0.10	0.50	0.10	0.62	0.10	0.68	0.10	0.63 ^
Iron	6020	0.10	0.83	0.10	0.78	0.50	0.70	0.10	1.2	0.10	0.64	0.10	0.53	0.10	0.95	0.10	0.83	0.20	1.2
Lead	6020	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.0010	ND
Manganese	6020	0.0025	0.52	0.0025	0.58	0.013	0.70	0.0025	1.0	0.0025	0.62	0.0025	0.60	0.0025	0.70	0.0025	0.99	0.0050	0.62
Mercury	7470A	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND
Nickel	6020	0.0020	0.0048	0.0020	0.0041	0.010	ND	0.0020	0.0051	0.0020	0.0047	0.0020	0.0048	0.0020	0.0047	0.0020	0.0046	0.0040	0.0050
Nitrogen/Nitrate	Nitrogen Calc	0.10	ND	0.10	ND	0.10	0.19	0.10	ND	0.10	0.37	0.10	0.45	0.10	ND	0.10	ND	0.10	ND
Nitrogen/Nitrate, Nitrite	SM 4500 NO3 F	0.10	ND	0.10	ND	0.10	0.19	0.10	ND	0.10	0.37	0.10	0.45	0.10	ND	0.10	ND^	0.10	ND
Nitrogen/Nitrite	SM 4500 NO2 B	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND
pH	Obtained in field	NA	7.37	NA	7.66	NA	7.23	NA	7.21	NA	6.58	NA	7.27	NA	7.10	NA	7.29	NA	7.34
Selenium	6020	0.0025	ND	0.0025	0.0033	0.013	ND	0.0025	ND	0.0025	0.0086	0.0025	0.0067	0.0025	ND	0.0025	0.0026	0.0050	ND
Silver	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.0010	ND
Sulfate	9038	250	1500	500	1500	250	1600	1000	4800	500	1600	500	2000	500	2800	500	3200	500	2200
Thallium	6020	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Total Dissolved Solids	SM 2540C	10	2500	10	2600	10	2800	25	6000	13	3100	13	3700	25	4300	17	4400	17	4000
Zinc	6020	0.020	ND	0.020	ND	0.10	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.040	ND

Notes: Groundwater sample analyzed at TestAmerica laboratory.
Well screen depth is from 9.5 to 19.5 feet below ground surface.
Sample collected using low-flow technique.
All values are in mg/L (ppm).

DL - Detection limit
ND - Non-detect
NA - Not Applicable

^ - Denotes instrument related QC exceeds the control limits

Table 1. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-05	Date	12/13/2010		3/28/2011		6/15/2011		9/15/2011		12/8/2011		3/16/2012		6/20/2012		9/24/2012		12/18/2012	
Parameter	Lab Method	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result
Antimony	6020	0.0030	ND*	0.0030	ND	0.015	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND
Arsenic	6020	0.0010	0.0066	0.0010	0.0048	0.0050	ND	0.0010	0.0025	0.0010	0.0065	0.0010	0.0065	0.0010	0.0073	0.0010	0.0023	0.0010	0.0058
Barium	6020	0.0025	0.051	0.0025	0.060	0.013	0.067	0.0025	0.070	0.0025	0.061	0.0025	0.053	0.0025	0.040	0.0025	0.073	0.0025	0.045
Beryllium	6020	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Boron	6020	0.25	2.6	0.25	2.7	0.050	3.2	0.050	4.0	0.050	3.2	0.25	2.9	0.50	2.3	0.25	3.8	0.50	2.5
Cadmium	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Chloride	9251	10	110	10	150	10	140	10	150	10	130	10	170	10	150	10	160	10	150
Chromium	6020	0.0050	ND	0.0050	ND	0.025	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Cobalt	6020	0.0010	ND	0.0010	ND	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Copper	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Cyanide	9014	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND
Fluoride	SM 4500 F C	0.10	0.41	0.10	0.40	0.10	0.46	0.10	0.49	0.10	0.38	0.10	0.42	0.10	0.59	0.10	0.44	0.10	0.47 ^
Iron	6020	0.10	ND	0.10	ND	0.50	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND
Lead	6020	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Manganese	6020	0.0025	0.0079	0.0025	0.0067	0.013	0.055	0.0025	0.13	0.0025	0.038	0.0025	0.032	0.0025	0.014	0.0025	0.073	0.0025	0.023
Mercury	7470A	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND
Nickel	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	0.0021	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	0.0025	0.0020	0.0020
Nitrogen/Nitrate	Nitrogen Calc	0.10	0.27	0.10	1.6	0.10	1.1	0.10	0.11	0.10	1.0	0.10	0.11	0.10	0.24	0.10	0.11	0.10	ND
Nitrogen/Nitrate, Nitrite	SM 4500 NO3 F	0.10	0.27	0.10	1.9	0.10	0.97	0.10	0.11	0.10	1.2	0.10	0.25	0.10	0.27	0.10	0.11	0.10	1.2
Nitrogen/Nitrite	SM 4500 NO2 B	0.020	ND	0.10	0.31	0.020	0.13	0.020	ND	0.020	0.17	0.020	0.14	0.020	0.031	0.020	ND	0.20	1.2
pH	Obtained in field	NA	9.58	NA	9.51	NA	7.44	NA	7.38	NA	8.20	NA	9.30	NA	9.41	NA	7.54	NA	9.37
Selenium	6020	0.0025	0.017	0.0025	0.014	0.013	0.016	0.0025	0.0080	0.0025	0.010	0.0025	0.0059	0.0025	ND	0.0025	0.017	0.0025	0.0079
Silver	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Sulfate	9038	100	580	100	570	100	540	130	690	100	500	100	370	100	410	100	540	100	280
Thallium	6020	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Total Dissolved Solids	SM 2540C	10	1000	10	1300	10	1400	10	1500	10	1000	10	1000	10	750	10	1100	10	820
Zinc	6020	0.020	ND	0.020	ND	0.10	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND

Notes: Groundwater sample analyzed at TestAmerica laboratory.
Well screen depth is from 9.0 to 19.0 feet below ground surface.
Sample collected using low-flow technique.
All values are in mg/L (ppm).

DL - Detection limit
ND - Non-detect
NA - Not Applicable

^ - Denotes instrument related QC exceeds the control limits

Table 1. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-06	Date	12/13/2010		3/28/2011		6/15/2011		9/15/2011		12/8/2011		3/16/2012		6/20/2012		9/24/2012		12/18/2012	
Parameter	Lab Method	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result
Antimony	6020	0.0030	ND^	0.0030	ND	0.015	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND
Arsenic	6020	0.0010	0.0018	0.0010	0.0018	0.0050	ND	0.0010	0.0031	0.0010	0.0022	0.0010	0.0022	0.0010	0.0021	0.0010	0.0026	0.0010	0.0020
Barium	6020	0.0025	0.050	0.0025	0.040	0.013	0.045	0.0025	0.041	0.0025	0.053	0.0025	0.044	0.0025	0.046	0.0025	0.054	0.0025	0.051
Beryllium	6020	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Boron	6020	0.25	2.7	0.25	2.5	0.050	2.4	0.050	3.0	0.050	2.5	0.25	2.5	0.50	2.9	0.25	3.0	0.50	3.0
Cadmium	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Chloride	9251	10	120	10	210	10	150	10	120	10	120	10	110	10	92	10	110	10	110
Chromium	6020	0.0050	ND	0.0050	ND	0.025	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Cobalt	6020	0.0010	ND	0.0010	ND	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Copper	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Cyanide	9014	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND
Fluoride	SM 4500 F C	0.10	0.85	0.10	0.88	0.10	0.79	0.10	0.97	0.10	0.77	0.10	0.68	0.10	0.81	0.10	ND	0.10	0.71 ^
Iron	6020	0.10	ND	0.10	ND	0.50	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND
Lead	6020	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Manganese	6020	0.0025	0.073	0.0025	0.051	0.013	0.047	0.0025	0.024	0.0025	0.038	0.0025	0.029	0.0025	0.033	0.0025	0.038	0.0025	0.034
Mercury	7470A	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND
Nickel	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	0.0022
Nitrogen/Nitrate	Nitrogen Calc	0.10	ND	0.10	ND	0.10	0.26	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND
Nitrogen/Nitrate, Nitrite	SM 4500 NO3 F	0.10	ND	0.10	ND	0.10	0.10	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND^	0.10	ND ^
Nitrogen/Nitrite	SM 4500 NO2 B	0.020	ND	0.020	0.048	0.020	0.16	0.020	ND	0.020	ND	0.020	ND	0.020	0.052	0.020	0.026	0.020	ND
pH	Obtained in field	NA	8.89	NA	9.65	NA	9.27	NA	9.44	NA	8.82	NA	9.39	NA	9.07	NA	9.17	NA	9.18
Selenium	6020	0.0025	0.0062	0.0025	0.0028	0.013	ND	0.0025	0.011	0.0025	ND	0.0025	ND	0.0025	0.0034	0.0025	0.014	0.0025	0.0057
Silver	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Sulfate	9038	100	500	100	540	100	570	100	420	100	440	100	380	100	450	100	550	100	360
Thallium	6020	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Total Dissolved Solids	SM 2540C	10	990	10	1100	10	1200	10	870	10	880	10	900	10	770	10	890	10	820
Zinc	6020	0.020	ND	0.020	ND	0.10	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND

Notes: Groundwater sample analyzed at TestAmerica laboratory.
Well screen depth is from 8.0 to 18.0 feet below ground surface.
Sample collected using low-flow technique.
All values are in mg/L (ppm).

DL - Detection limit
ND - Non-detect
NA - Not Applicable

^ - Denotes instrument related QC exceeds the control limits

Table 1. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-07	Date	12/13/2010		3/28/2011		6/15/2011		9/15/2011		12/8/2011		3/16/2012		6/20/2012		9/24/2012		12/18/2012	
Parameter	Lab Method	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result
Antimony	6020	0.0030	ND^	0.0030	ND	0.015	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND
Arsenic	6020	0.0010	0.0040	0.0010	0.0037	0.0050	ND	0.0010	0.0042	0.0010	0.0042	0.0010	0.0041	0.0010	0.0039	0.0010	0.0049	0.0010	0.0034
Barium	6020	0.0025	0.045	0.0025	0.067	0.013	0.076	0.0025	0.082	0.0025	0.082	0.0025	0.069	0.0025	0.057	0.0025	0.086	0.0025	0.044
Beryllium	6020	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Boron	6020	0.25	4.7	1.0	5.0	1.0	5.7	0.25	3.4	0.050	5.0	0.25	5.1	0.50	5.6	0.25	5.5	0.50	5.1
Cadmium	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Chloride	9251	10	160	10	140	10	140	10	160	10	150	10	130	10	120	10	150	10	140
Chromium	6020	0.0050	ND	0.0050	ND	0.025	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Cobalt	6020	0.0010	ND	0.0010	ND	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Copper	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Cyanide	9014	0.010	ND	0.010	ND	0.010	0.016	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	0.017
Fluoride	SM 4500 F C	0.10	0.96	0.10	0.77	0.10	0.71	0.10	0.82	0.10	0.86	0.10	0.76	0.10	0.83	0.10	ND	0.10	0.89 ^
Iron	6020	0.10	0.23	0.10	0.18	0.50	ND	0.10	0.37	0.10	0.50	0.10	0.57	0.10	0.60	0.10	0.51	0.10	0.62
Lead	6020	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Manganese	6020	0.0025	0.12	0.0025	0.11	0.013	0.15	0.0025	0.18	0.0025	0.20	0.0025	0.20	0.0025	0.19	0.0025	0.19	0.0025	0.19
Mercury	7470A	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND
Nickel	6020	0.0020	0.0029	0.0020	0.0023	0.010	ND	0.0020	0.0024	0.0020	0.0021	0.0020	ND	0.0020	0.0020	0.0020	ND	0.0020	ND
Nitrogen/Nitrate	Nitrogen Calc	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND
Nitrogen/Nitrate, Nitrite	SM 4500 NO3 F	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND^	0.10	ND ^
Nitrogen/Nitrite	SM 4500 NO2 B	0.020	ND	0.020	0.077	0.020	0.035	0.020	0.050	0.020	0.043	0.020	ND	0.020	ND	0.020	ND	0.020	ND
pH	Obtained in field	NA	8.61	NA	8.79	NA	8.13	NA	7.91	NA	7.69	NA	8.16	NA	7.92	NA	8.02	NA	7.75
Selenium	6020	0.0025	ND	0.0025	ND	0.013	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
Silver	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Sulfate	9038	100	610	250	650	200	1000	100	710	130	710	100	770	100	670	100	600	100	480
Thallium	6020	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Total Dissolved Solids	SM 2540C	10	1300	10	1500	10	1600	10	1400	10	1300	10	1400	10	1300	10	1200	10	1200
Zinc	6020	0.020	ND	0.020	ND	0.10	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND

Notes: Groundwater sample analyzed at TestAmerica laboratory.
Well screen depth is from 7.5 to 17.5 feet below ground surface.
Sample collected using low-flow technique.
All values are in mg/L (ppm).

DL - Detection limit
ND - Non-detect
NA - Not Applicable

^ - Denotes instrument related QC exceeds the control limits

Table 1. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-08	Date	12/13/2010		3/28/2011		6/15/2011		9/15/2011		12/8/2011		3/16/2012		6/20/2012		9/24/2012		12/18/2012	
Parameter	Lab Method	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result
Antimony	6020	0.0030	ND^	0.0030	ND	0.015	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND
Arsenic	6020	0.0010	0.0067	0.0010	0.0059	0.0050	0.0082	0.0010	0.014	0.0010	0.012	0.0010	0.0066	0.0010	0.013	0.0010	0.018	0.0010	0.0088
Barium	6020	0.0025	0.069	0.0025	0.089	0.013	0.085	0.0025	0.099	0.0025	0.078	0.0025	0.066	0.0025	0.074	0.0025	0.090	0.0025	0.079
Beryllium	6020	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Boron	6020	0.25	1.7	0.25	1.3	0.050	1.7	0.050	2.3	0.050	1.9	0.25	1.5	0.50	2.0	0.25	2.6	0.50	2.1
Cadmium	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Chloride	9251	10	93	10	270	10	200	10	160	10	130	10	160	10	160	10	150	10	150
Chromium	6020	0.0050	ND	0.0050	ND	0.025	ND	0.0050	ND	0.0050	ND	0.010	ND	0.0050	ND	0.0050	ND	0.0050	ND
Cobalt	6020	0.0010	ND	0.0010	ND	0.0050	ND	0.0010	ND	0.0010	ND	0.0020	ND	0.0010	ND	0.0010	ND	0.0010	ND
Copper	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Cyanide	9014	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND
Fluoride	SM 4500 F C	0.10	0.61	0.10	0.55	0.10	0.57	0.10	0.64	0.10	0.61	0.10	0.52	0.10	0.60	0.10	0.65	0.10	0.58 ^
Iron	6020	0.10	0.48	0.10	0.38	0.50	0.76	0.10	0.46	0.10	0.68	0.20	ND	0.10	0.58	0.10	0.66	0.10	0.50
Lead	6020	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Manganese	6020	0.0025	0.33	0.0025	0.44	0.013	0.47	0.0025	0.45	0.0025	0.40	0.0050	ND	0.0025	0.36	0.0025	0.41	0.0025	0.43
Mercury	7470A	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND
Nickel	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	0.0034	0.0020	0.0020	0.0040	ND	0.0020	0.0022	0.0020	0.0035	0.0020	0.0033
Nitrogen/Nitrate	Nitrogen Calc	0.10	ND	0.10	0.22	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	0.23
Nitrogen/Nitrate, Nitrite	SM 4500 NO3 F	0.10	ND	0.10	0.22	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND^	0.10	0.23
Nitrogen/Nitrite	SM 4500 NO2 B	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND
pH	Obtained in field	NA	7.65	NA	8.17	NA	7.47	NA	7.30	NA	6.99	NA	7.61	NA	7.36	NA	7.31	NA	7.43
Selenium	6020	0.0025	ND	0.0025	ND	0.013	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
Silver	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Sulfate	9038	100	440	100	440	100	420	100	600	100	330	50	330	100	370	100	630	100	380
Thallium	6020	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Total Dissolved Solids	SM 2540C	10	930	10	1200	10	1100	10	1300	10	980	10	910	10	1000	10	1200	10	1200
Zinc	6020	0.020	ND	0.020	ND	0.10	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND

Notes: Groundwater sample analyzed at TestAmerica laboratory.
Well screen depth is from 9.0 to 19.0 feet below ground surface.
Sample collected using low-flow technique.
All values are in mg/L (ppm).

DL - Detection limit
ND - Non-detect
NA - Not Applicable

^ - Denotes instrument related QC exceeds the control limits

Table 1. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-09	Date	12/13/2010		3/28/2011		6/15/2011		9/15/2011		12/8/2011		3/16/2012		6/20/2012		9/24/2012		12/18/2012	
Parameter	Lab Method	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result
Antimony	6020	0.0030	ND^	0.0030	ND	0.015	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND
Arsenic	6020	0.0010	0.0059	0.0010	0.0049	0.0050	0.0052	0.0010	0.0065	0.0010	0.0078	0.0010	0.0053	0.0010	0.0056	0.0010	0.0068	0.0010	0.0060
Barium	6020	0.0025	0.025	0.0025	0.031	0.013	0.025	0.0025	0.023	0.0025	0.017	0.0025	0.023	0.0025	0.022	0.0025	0.026	0.0025	0.020
Beryllium	6020	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Boron	6020	0.25	2.2	0.25	1.4	0.050	1.7	0.050	2.0	0.050	1.9	0.25	1.4	1.0	1.8	0.25	2.0	0.50	1.7
Cadmium	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Chloride	9251	10	100	10	280	10	230	10	190	10	140	10	200	10	160	10	160	10	130
Chromium	6020	0.0050	ND	0.0050	ND	0.025	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Cobalt	6020	0.0010	ND	0.0010	ND	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Copper	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Cyanide	9014	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	0.018	0.010	ND	0.010	ND
Fluoride	SM 4500 F C	0.10	0.33	0.10	0.36	0.10	0.28	0.10	0.28	0.10	0.38	0.10	0.39	0.10	0.32	0.10	0.41	0.10	0.42 ^
Iron	6020	0.10	ND	0.10	ND	0.50	ND	0.10	ND	0.10	ND^	0.10	ND	0.10	ND	0.10	ND	0.10	ND
Lead	6020	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Manganese	6020	0.0025	ND	0.0025	ND	0.013	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	0.0036	0.0025	ND
Mercury	7470A	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND
Nickel	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	0.0022	0.0020	0.0023
Nitrogen/Nitrate	Nitrogen Calc	0.10	ND	0.20	2.4	0.10	1.1	0.10	ND	0.10	1.9	0.10	3.2	0.10	ND	0.10	ND	0.10	4.1
Nitrogen/Nitrate, Nitrite	SM 4500 NO3 F	0.10	ND	0.10	3.6	0.10	0.94	0.10	0.18	0.10	2.0	0.50	3.3	0.10	ND	0.10	ND^	0.10	4.6
Nitrogen/Nitrite	SM 4500 NO2 B	0.10	0.44	0.20	1.2	0.020	0.16	0.040	0.22	0.020	0.15	0.020	0.12	0.020	0.027	0.020	0.023	0.10	0.55
pH	Obtained in field	NA	10.88	NA	10.87	NA	10.44	NA	10.27	NA	9.55	NA	10.56	NA	10.31	NA	10.23	NA	10.42
Selenium	6020	0.0025	0.0036	0.0025	0.0042	0.013	ND	0.0025	0.0045	0.0025	0.0031	0.0025	ND	0.0025	0.0026	0.0025	0.0031	0.0025	0.0039
Silver	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Sulfate	9038	100	410	100	320	100	410	50	400	50	270	50	340	100	340	100	380	50	310
Thallium	6020	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Total Dissolved Solids	SM 2540C	10	800	10	1000	10	940	10	850	10	660	10	820	10	880	10	800	10	780
Zinc	6020	0.020	ND	0.020	ND	0.10	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND

Notes: Groundwater sample analyzed at TestAmerica laboratory.
Well screen depth is from 9.0 to 19.0 feet below ground surface.
Sample collected using low-flow technique.
All values are in mg/L (ppm).

DL - Detection limit
ND - Non-detect
NA - Not Applicable

^ - Denotes instrument related QC exceeds the control limits

Table 1. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

Sample: MW-10	Date	12/13/2010		3/28/2011		6/15/2011		9/15/2011		12/8/2011		3/16/2012		6/20/2012		9/24/2012		12/18/2012	
Parameter	Lab Method	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result
Antimony	6020	0.0030	ND^	0.0030	ND	0.015	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030	ND
Arsenic	6020	0.0010	0.0041	0.0010	0.0046	0.0050	ND	0.0010	0.0088	0.0010	0.0083	0.0010	0.0056	0.0010	0.0058	0.0010	0.0098	0.0010	0.0085
Barium	6020	0.0025	0.098	0.0025	0.091	0.013	0.091	0.0025	0.11	0.0025	0.11	0.0025	0.10	0.0025	0.10	0.0025	0.097	0.0025	0.11
Beryllium	6020	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Boron	6020	0.25	2.1	0.25	1.8	0.050	2.2	0.050	2.8	0.050	2.5	0.25	2.1	0.50	2.1	0.25	3.2	0.50	2.7
Cadmium	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Chloride	9251	10	92	10	130	10	150	10	120	10	120	10	100	10	120	10	140	10	140
Chromium	6020	0.0050	ND	0.0050	ND	0.025	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	ND
Cobalt	6020	0.0010	ND	0.0010	ND	0.0050	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND
Copper	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Cyanide	9014	0.010	ND	0.010	ND	0.010	0.010	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND
Fluoride	SM 4500 F C	0.10	0.66	0.10	0.64	0.10	0.65	0.10	0.67	0.10	0.59	0.10	0.52	0.10	0.58	0.10	0.72	0.10	0.59 ^
Iron	6020	0.10	0.32	0.10	0.46	0.50	0.63	0.10	0.60	0.10	0.71	0.10	0.61	0.10	0.58	0.10	0.77	0.10	0.91
Lead	6020	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	0.00050
Manganese	6020	0.0025	0.25	0.0025	0.22	0.013	0.25	0.0025	0.27	0.0025	0.29	0.0025	0.25	0.0025	0.26	0.0025	0.23	0.0025	0.29
Mercury	7470A	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND	0.00020	ND
Nickel	6020	0.0020	ND	0.0020	ND	0.010	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	0.0022	0.0020	0.0023
Nitrogen/Nitrate	Nitrogen Calc	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND
Nitrogen/Nitrate, Nitrite	SM 4500 NO3 F	0.10	ND^	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND^	0.10	ND ^
Nitrogen/Nitrite	SM 4500 NO2 B	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND
pH	Obtained in field	NA	7.61	NA	8.14	NA	7.53	NA	7.45	NA	7.10	NA	7.59	NA	7.39	NA	7.60	NA	7.47
Selenium	6020	0.0025	ND	0.0025	ND	0.013	ND	0.0025	0.0032	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND	0.0025	ND
Silver	6020	0.00050	ND	0.00050	ND	0.0025	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND	0.00050	ND
Sulfate	9038	100	370	100	370	100	350	100	420	100	290	50	330	100	350	100	380	100	270
Thallium	6020	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND	0.0020	ND
Total Dissolved Solids	SM 2540C	10	990	10	960	10	990	10	1000	10	1100	10	990	10	1000	10	970	10	1100
Zinc	6020	0.020	ND	0.020	ND	0.10	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND

Notes: Groundwater sample analyzed at TestAmerica laboratory.
Well screen depth is from 10.0 to 20.0 feet below ground surface.
Sample collected using low-flow technique.
All values are in mg/L (ppm).

DL - Detection limit
ND - Non-detect
NA - Not Applicable

^ - Denotes instrument related QC exceeds the control limits

Table 2. Groundwater Analytical Results - Midwest Generation LLC, Will County Station, Romeoville, IL

12/18/2012	Sample	MW-01		MW-02		MW-03		MW-04		MW-05		MW-06		MW-07		MW-08		MW-09		MW-10	
Parameter	Lab Method	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result	D.L.	Result
Benzene	8260B	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Ethylbenzene	8260B	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Toluene	8260B	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND	0.0005	ND
Xylenes, Total	8260B	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
Perchlorate	314.0	0.004	ND	0.004	ND	0.004	ND	0.02	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND	0.004	ND
Vanadium, Dissolved	6020	0.0050	ND	0.0050	ND	0.0050	ND	0.010	ND	0.0050	0.034	0.0050	ND	0.0050	ND	0.0050	ND	0.0050	0.031	0.0050	ND

Notes: Groundwater sample analyzed at TestAmerica laboratory.
Sample collected using low-flow technique.
Please see Table 1 for sample depths.
All values are in mg/L (ppm).

DL - Detection limit
ND - Non-detect

ATTACHMENT 2C
Compliance Commitment Agreement

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217-785-0561

October 4, 2012

CERTIFIED MAIL # 7010 2780 0002 1163 4864
RETURN RECEIPT REQUESTED

John Kennedy
Senior Vice President, Generation
235 Remington, Suite A
Bolingbrook, IL 60440

Re: Proposed Compliance Commitment Agreement
Violation Notice: W-2012-00058
Midwest Generation, LLC, Will County Generating Station; ID Number: 6283

Dear Mr. Kennedy:

The Illinois Environmental Protection Agency ("Illinois EPA") has reviewed the proposed Compliance Commitment Agreement ("CCA") terms submitted by Midwest Generation, LLC, Will County Generating Station in a letter dated September 4, 2012 and a supplemental e-mail received September 27, 2012, in response to the Violation Notice dated June 11, 2012. Pursuant to the authority vested in the Illinois EPA under Section 31(a)(7)(i) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(7)(i), attached to this letter is a proposed CCA, which contains terms and conditions that the Illinois EPA has determined are necessary in order for you to attain compliance with the Act and Illinois Pollution Control Board Regulations.

Pursuant to Section 31(a)(7.5) of the Act, 415, ILCS 5/31(a)(7.5), **within 30 days of your receipt of this proposed CCA**, Midwest Generation, LLC, Will County Generating Station or its duly authorized representative must either (1) agree to and sign the proposed CCA, and submit the signed and dated CCA by certified mail to Illinois EPA Bureau of Water, Andrea Rhodes, MC #19, 1021 North Grand Ave East, Springfield, IL 62702; or (2) notify the Illinois EPA by certified mail that you reject the proposed CCA.

The proposed CCA shall only become effective upon your timely submittal of the signed CCA as discussed above, and upon final execution by the Illinois EPA. Failure by you to execute and submit the proposed CCA within 30 days of receipt shall be deemed a rejection of the CCA by operation of law. Upon timely receipt of the signed CCA, the Illinois EPA will send you a fully executed copy of the CCA for your records.

In addition, the proposed CCA is not subject to amendment or modification prior to execution by you and the Illinois EPA. Any amendment or modification to the proposed CCA by Respondent prior to execution by you and the Illinois EPA shall be deemed a rejection of the proposed CCA by operation of law. The proposed CCA may only be amended subsequent to its effective date, in writing, and by mutual agreement between the Illinois EPA and you.

RECEIVED

OCT 09 2012

Questions regarding this matter should be directed to Illinois EPA, Bureau of Water, Andrea Rhodes at 217/785-0561. Written communications should be directed to Illinois EPA – DPWS, Attn: Andrea Rhodes, MC #19, 1021 North Grand Ave East, Springfield, IL 62702.

Sincerely,

Michael Crumly
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

Attachments

cc: Basil G. Constantelos
Maria Race
Susan M. Franzetti

BOW ID: W1978100011 CASE ID: 2012-006

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF: MIDWEST GENERATION, LLC, WILL COUNTY GENERATING STATION ROMEOVILLE, WILL COUNTY, IL ID NUMBER: 6283	))))))))))	 ILLINOIS EPA VN W-2012-00058 BUREAU OF WATER

COMPLIANCE COMMITMENT AGREEMENT

I. Jurisdiction

1. This Compliance Commitment Agreement ("CCA") is entered into voluntarily by the Illinois Environmental Protection Agency ("Illinois EPA") and Midwest Generation, LLC, Will County Generating Station ("Respondent") (collectively, the "Parties") under the authority vested in the Illinois EPA pursuant to Section 31(a)(7)(i) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(7)(i).

II. Allegation of Violations

2. Respondent owns and operates Will County Generating Station in Romeoville, Will County, Illinois ("Will County Station").

3. Pursuant to Violation Notice ("VN") W-2012-00058 issued on June 11, 2012, the Illinois EPA contends that Respondent has violated the following provisions of the Act and Illinois Pollution Control Board ("Board") Regulations:

   a) Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, and MW-10.
   Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

III. Compliance Activities

4. On September 4, 2012, and September 27, 2012, the Illinois EPA received Respondent's response and supplemental e-mail response to VN W-2012-00058, which included proposed terms for a CCA. The Illinois EPA has reviewed Respondent's proposed CCA terms, as well as considered whether any additional terms and conditions are necessary to attain compliance with the alleged violations cited in the VN.

5. Respondent agrees to undertake and complete the following actions, which the Illinois EPA has determined are necessary to attain compliance with the allegations contained in VN W-2012-00058:

   a) The ash ponds at Will County Station shall not be used as permanent disposal sites and shall continue to function as treatment ponds to precipitate ash. Ash shall continue to be removed from the ponds on a periodic basis.

   b) The ash treatment ponds shall be maintained and operated in a manner which protects the integrity of the existing liners. During the removal of ash from the ponds, appropriate procedures shall be followed to protect the integrity of the existing liners, including operating the ash removal equipment in a manner which minimizes the risk of any damage to the liner.

   c) During the ash removal process, visual inspections of the ponds shall be conducted to identify any signs of a breach in the integrity of the pond liners. In the event that a breach of the pond liners is detected, Midwest Generation shall promptly notify the Illinois EPA and shall implement a corrective action plan for repair or replacement as necessary, of the liner. Upon the Illinois EPA's approval, and the issuance of any necessary construction permit, Midwest Generation will implement the corrective action plan.

   d) Midwest Generation shall continue quarterly monitoring of the existing ten groundwater monitoring wells for constituents in 35 Ill. Adm. Code 620.410(a) and (d), with the exception of radium 226 and 228, and report its findings to the Illinois EPA within 30 days of the end of each quarter. In addition, Midwest Generation shall record and report groundwater elevation and submit a potentiometric surface map with the above quarterly groundwater monitoring report.

   e) Ponds 1 North (1N) and 1 South (1S) shall be removed from service at Will County Station. All process water shall be diverted from ponds 1N and 1S to existing ponds 2 South (2S) and 3 South (3S). A dewatering system shall be developed and implemented which will not allow water to exceed a depth of one foot above the bottom of Ponds 1N and 1S.

   f) Within 90 days of the effective date of the CCA, Midwest Generation shall submit an application for a construction permit to re-line pond 2S at Will County Station with a 60 mil thickness high density polyethylene ("HDPE") liner or an Illinois EPA approved equivalent material.

g) Midwest Generation shall submit an application to establish a Groundwater Management Zone (GMZ) pursuant to 35 Ill. Adm. Code Part 620.250 within 90 days of the effective date of the CCA.

h) Midwest Generation shall enter into an Environmental Land Use Control (ELUC) to cover the area of the Will County Station property which is contained within the GMZ, except for that portion of the GMZ area which is owned by ComEd. Midwest Generation shall submit a proposed draft ELUC to the Illinois EPA for review and comment within 90 days of the effective date of the CCA.

i) Midwest Generation shall establish a GMZ pursuant to 35 Ill. Adm. Code Part 620.250 and submit a final proposed ELUC, incorporating the completed delineation of the GMZ boundaries, within one year of the effective date of the CCA.

j) Once ponds 1N and 1S have been taken out of service, a dewatering system has been implemented, pond 2S has been relined with a HDPE liner, and a GMZ and ELUC have been established, Midwest Generation shall submit a certification (or a statement) of compliance. Midwest Generation may submit either the attached "Illinois EPA Compliance Statement" or another similar writing to satisfy the statement of compliance within one year of the effective date of the CCA.

IV. Terms and Conditions

6. Respondent shall comply with all provisions of this CCA, including, but not limited to, any appendices to this CCA and all documents incorporated by reference into this CCA. Pursuant to Section 31(a)(10) of the Act, 415 ILCS 5/31(a)(10), if Respondent complies with the terms of this CCA, the Illinois EPA shall not refer the alleged violations that are the subject of this CCA, as described in Section II above, to the Office of the Illinois Attorney General or the State's Attorney of the county in which the alleged violations occurred. Successful completion of this CCA or an amended CCA shall be a factor to be weighed, in favor of the Respondent, by the Office of the Illinois Attorney General in determining whether to file a complaint on its own motion for the violations cited in VN W-2012-00058.

7. This CCA is solely intended to address the violations alleged in Illinois EPA VN W-2012-00058. The Illinois EPA reserves and this CCA is without prejudice to, all rights of the Illinois EPA against Respondent with respect to noncompliance with any term of this CCA, as well as to all other matters. Nothing in this CCA is intended as a waiver, discharge, release, or covenant not to sue for any claim or cause of action, administrative or judicial, civil or criminal, past or future, in law or in equity, which the Illinois EPA may have against Respondent, or any other person as defined by Section 3.315 of the Act, 415 ILCS 5/3.315. This CCA in no way affects the responsibilities of Respondent to comply with any other federal, state or local laws or regulations, including but not limited to the Act, and the Board Regulations [and Permit, if applicable].

8. Pursuant to Section 42(k) of the Act, 415 ILCS 5/42(k), in addition to any other remedy or penalty that may apply, whether civil or criminal, Respondent shall be liable for an additional civil penalty of $2,000 for violation of any of the terms or conditions of this CCA.

9. This CCA shall apply to and be binding upon the Illinois EPA, and on Respondent and Respondent's officers, directors, employees, agents, successors, assigns, heirs, trustees, receivers, and upon all persons, including but not limited to contractors and consultants, acting on behalf of Respondent, as well as upon subsequent purchasers of Respondent's Will County Station in Romeoville, Will County, Illinois.

10. In any action by the Illinois EPA to enforce the terms of this CCA, Respondent consents to and agrees not to contest the authority or jurisdiction of the Illinois EPA to enter into or enforce this CCA, and agrees not to contest the validity of this CCA or its terms and conditions.

11. This CCA shall only become effective:

    a) If, within 30 days of receipt, Respondent executes this CCA and submits it, via certified mail, to Illinois EPA, Bureau of Water, Andrea Rhodes, MC #19, 1021 North Grand Ave East, Springfield, IL 62702. If Respondent fails to execute and submit this CCA within 30 days of receipt, via certified mail, this CCA shall be deemed rejected by operation of law; and

    b) Upon execution by all Parties.

12. Pursuant to Section 31(a)(7.5) of the Act, 415 ILCS 5/31(a)(7.5), this CCA shall not be amended or modified prior to execution by the Parties. Any amendment or modification to this CCA by Respondent prior to execution by all Parties shall be considered a rejection of the CCA by operation of law. This CCA may only be amended subsequent to its effective date, in writing, and by mutual agreement between the Illinois EPA and Respondent's signatory to this CCA, Respondent's legal representative, or Respondent's agent.

AGREED:
FOR THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY:

BY: __________________ DATE: ______________

Michael Crumly
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

FOR RESPONDENT:

BY: __________________ DATE: Oct 15, 2012

John Kennedy
Senior Vice President, Generation
Midwest Generation, LLC

Illinois EPA Compliance Statement

The owner of the facility must acknowledge that all compliance commitment agreement (CCA) measures have been successfully completed.

Please complete, sign, and return.

I ________________________________ *(print name)*, hereby certify that all violations

addressed in Violation Notice (VN) number ____________________ have been addressed and

that all CCA measures were completed on __________________________ *(date)*.

____
Signature

____
Title

____
Telephone Number

____
Date

Be sure to retain copies of this document for your files. Should you need additional notification forms, please contact this office at (217)785-0561. Return this completed form to:

Illinois Environmental Protection Agency
Compliance Assurance Section #19
Bureau of Water
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

"Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Agency,.....related to or required by this Act, a regulation adopted under this Act, any federal law or regulation for which the Agency has responsibility, or any permit, term, or condition thereof, commits a Class 4 felony..." (415 ILCS 5/44(h) (8))

Exhibit K

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
BRUCE RAUNER, GOVERNOR ALEC MESSINA, DIRECTOR

217/782-0610

April 24, 2017

Midwest Generation, LLC
529 E. 135th Street
Romeoville, IL 60446

Re: Will County Generating Station
NPDES Permit No. IL0002208
Modification of NPDES Permit (After Public Notice)

Gentlemen:

The Illinois Environmental Protection Agency has examined your request dated December 21, 2016 for modification of the above-referenced NPDES Permit and issued a public notice based on that request. The final decision of the Agency is to modify the Permit as follows:

A new discharge of 400 gpd of Trona Mill Wash from outfall 002. Boiler Blowdown (auxiliary boilers) was added to outfall B01. Special Condition 9 was revised to reflect the new electronic reporting rule requirements.

Enclosed is a copy of the modified Permit. You have the right to appeal this modification to the Illinois Pollution Control Board within a 35 day period following the modification date shown on the first page of the permit.

Should you have questions concerning the Permit, please contact Jaime Rabins at 217/782-0610.

Sincerely,

Alan Keller

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK:JAR:17011301

Attachments: Final Permit

cc: Records Unit
Des Plaines FOS
Compliance Assurance Section
Billing
CMAP
DRSCW/The Conservation Foundation
US EPA

NPDES Permit No. IL0002208

Illinois Environmental Protection Agency

Division of Water Pollution Control

1021 North Grand Avenue East

Post Office Box 19276

Springfield, Illinois 62794-9276

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Modified (NPDES) Permit

Expiration Date: April 30, 2019

Issue Date: May 15, 2014
Modification Date: April 24, 2017

Name and Address of Permittee:
Midwest Generation, LLC
529 E. 135th Street
Romeoville, IL 60446

Facility Name and Address:
Will County Generating Station
529 East Romeo Road
Romeoville, IL 60446 (Will County)

Discharge Number and Name:
001 Condenser Cooling Water and House Service Water
A01 Reverse Osmosis Wastes
B01 Boiler Blowdown, Boiler Drain and Turbine Drain
002 Recycle Wastewater Treatment System Blowdown
A02 Non-Chemical Metal Cleaning Wastes
003 Sewage Treatment Plant Effluent

Receiving Waters:
Chicago Sanitary and Ship Canal

In compliance with the provisions of the Illinois Environmental Protection Act, Title 35 of Ill. Adm. Code, Subtitle C and/or Subtitle D, Chapter 1, and the Clean Water Act (CWA), the above-named permittee is hereby authorized to discharge at the above location to the above-named receiving stream in accordance with the standard conditions and attachments herein.
Permittee is not authorized to discharge after the above expiration date. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit the proper application as required by the Illinois Environmental Protection Agency (IEPA) not later than 180 days prior to the expiration date.

Alan Keller

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK:JAR:17011301

NPDES Permit No. IL0002208

Effluent Limitations and Monitoring

From the modification date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall: 001 Condenser Cooling and House Service Water (DAF = 741.4 MGD)

	LOAD LIMITS lbs/day DAF (DMF)		CONCENTRATION LIMITS mg/L			
PARAMETER	30 DAY AVERAGE	DAILY MAXIMUM	30 DAY AVERAGE	DAILY MAXIMUM	SAMPLE FREQUENCY	SAMPLE TYPE

This discharge consists of: | Approximate Flow

1. Condenser Cooling Water	587 MGD
2. House Service Water	78.9 MGD
3. Reverse Osmosis Wastes	0.27 MGD
4. Boiler Blowdown	0.023 MGD
5. Boiler Drain	Intermittent
6. Turbine Drain	Intermittent
7. Intake Screen Backwash	0.433 MGD

PARAMETER	30 DAY AVERAGE	DAILY MAXIMUM	30 DAY AVERAGE	DAILY MAXIMUM	SAMPLE FREQUENCY	SAMPLE TYPE
Flow (MGD)	See Special Condition 1				Daily	Continuous
pH	See Special Condition 2				Daily	Grab
Total Residual Chlorine	See Special Condition 3			0.05	*	Grab
Temperature	See Special Condition 4				Daily	Continuous

*Total Residual Chlorine shall be sampled whenever chlorination or biocide addition is being performed or residuals are likely to be present in the discharge. If chlorination and biocide addition are not used during the month it shall be so indicated on the DMR.

Modification Date: April 24, 2017

NPDES Permit No. IL0002208

Effluent Limitations and Monitoring

From the modification date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall: A01 Reverse Osmosis Wastes (DAF = 0.27 MGD)

	LOAD LIMITS lbs/day DAF (DMF)		CONCENTRATION LIMITS mg/l			
PARAMETER	30 DAY AVERAGE	DAILY MAXIMUM	30 DAY AVERAGE	DAILY MAXIMUM	SAMPLE FREQUENCY	SAMPLE TYPE
Flow(MGD)	See Special Condition 1				2/Month	24-Hour Total
Total Suspended Solids			15	30	2/Month	8-Hour Composite
Oil and Grease			15	20	1/Year	Grab

Effluent Limitations and Monitoring

From the modification date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall: B01 Boiler Blowdown, Boiler Drain and Turbine Drain (DAF = 0.023 MGD)

PARAMETER	LOAD LIMITS lbs/day DAF (DMF) 30 DAY AVERAGE	DAILY MAXIMUM	CONCENTRATION LIMITS mg/L 30 DAY AVERAGE	DAILY MAXIMUM	SAMPLE FREQUENCY	SAMPLE TYPE

This discharge consists of: | Approximate Flow

1. Boiler Blowdown (main boilers)	0.01 MGD
2. Boiler Blowdown (auxiliary boilers)	250 gpd
3. Boiler Drains (main and auxiliary boilers)	Intermittent Discharge
4. Turbine Drain	Intermittent Discharge

Flow (MGD)	See Special Condition 1				2/Month	24-Hour Total
Total Suspended Solids			15	30	2/Month	8-Hour Composite
Oil and Grease			15	20	1/Year	Grab

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Effluent Limitations and Monitoring

From the modification date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall: 002 Recycle Wastewater Treatment System Blowdown (DAF = 0.88 MGD)

PARAMETER	LOAD LIMITS lbs/day DAF (DMF) 30 DAY AVERAGE	LOAD LIMITS lbs/day DAF (DMF) DAILY MAXIMUM	CONCENTRATION LIMITS mg/l 30 DAY AVERAGE	CONCENTRATION LIMITS mg/l DAILY MAXIMUM	SAMPLE FREQUENCY	SAMPLE TYPE

This discharge consists of: Approximate Flow

1. Ash Sluice System Blowdown	0.88 MGD
a. Bottom ash sluice water	Intermittent
b. Unit no. 1, 2,3 and 4 slag tank overflow sumps	Intermittent
c. Non-chemical metal cleaning wastes	Intermittent
d. South area runoff collection basin effluent	Intermittent
i. Trona Mill Wash	400 gpd
2. North area runoff collection basin effluent	Intermittent
3. Chemical and control building floor drainage	Intermittent
4. Coal Pile Runoff	Intermittent

PARAMETER	30 DAY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)	30 DAY AVERAGE (mg/l)	DAILY MAXIMUM (mg/l)	SAMPLE FREQUENCY	SAMPLE TYPE
Flow(MGD)	See Special Condition 1				Daily	Continuous
pH	See Special Condition 2				1/Week	Grab
Total Suspended Solids			15	30	1/Week	24-Hour Composite
Oil and Grease			15	20	1/Week	Grab

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Effluent Limitations and Monitoring

From the modification date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall: A02 Non-Chemical Metal Cleaning Wastes (Intermittent Discharge)

	LOAD LIMITS lbs/day DAF (DMF)		CONCENTRATION LIMITS mg/l			
PARAMETER	30 DAY AVERAGE	DAILY MAXIMUM	30 DAY AVERAGE	DAILY MAXIMUM	SAMPLE FREQUENCY	SAMPLE TYPE
Flow (MGD)	See Special Condition 1				Daily	Continuous
Total Suspended Solids			30	100	Daily	Grab
Oil and Grease			15	20	Daily	Grab
Iron			1.0	1.0	Daily	24-Hour Composite
Copper			1.0	1.0	Daily	24-Hour Composite

Sampling is only required when discharging.

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Effluent Limitations and Monitoring

From the modification date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall: 003 Sewage Treatment Plant Effluent (DAF = 0.015 MGD, DMF = 0.03125 MGD)

	LOAD LIMITS lbs/day DAF (DMF)		CONCENTRATION LIMITS mg/l			
PARAMETER	30 DAY AVERAGE	DAILY MAXIMUM	30 DAY AVERAGE	DAILY MAXIMUM	SAMPLE FREQUENCY	SAMPLE TYPE
Flow (MGD)	See Special Condition 1				Daily	Continuous
pH	See Special Condition 2				1/Week	Grab
Total Suspended Solids	3.1	13	25	50	1/Week	24-Hour Composite
BOD_5	2.5	10	20	40	1/Week	24-Hour Composite
Total Residual Chlorine	See Special Condition 3			0.05	Daily when Chlorinating	Grab

Special Conditions

SPECIAL CONDITION 1. Flow shall be measured in units of Million Gallons per Day (MGD) and reported as a monthly average and a daily maximum value on the monthly Discharge Monitoring Report.

SPECIAL CONDITION 2. The pH shall be in the range 6.0 to 9.0. The monthly minimum and monthly maximum values shall be reported on the DMR form.

SPECIAL CONDITION 3. All samples for TRC shall be grab samples and analyzed by an applicable method contained in 40 CFR 136, equivalent in accuracy to low-level amperometric titration. Any analytical variability of the method used shall be considered when determining the accuracy and precision of the results obtained.

SPECIAL CONDITION 4. Pursuant to Illinois Pollution Control Board Order AS 96-10, dated October 3, 1996 and amended March 16, 2000 the facility shall comply with the following temperature limitations:

A. At the point of discharge the receiving waters are designated as Secondary Contact and Indigenous Aquatic Life Waters by Section 302.408, Illinois Administration Code, Title 35, Chapter 1, Subtitle C, as amended. In the Chicago Sanitary and Ship Canal at the edge of the 26-acre mixing zone, temperatures shall not exceed 93°F (34°C) more than 5% of the time, or 100°F (37.8°C) at any time.

B. In the main channel of the Lower Des Plaines River, at the I-55 Bridge, the effluent shall not alone or in combination with other sources cause temperatures to exceed the temperatures set forth in the following table, except in accordance with the allowable monthly excursions detailed below:

	Jan	Feb	Mar	Apr 1-15	Apr 16-30	May 1-15	May 16-31	June 1-15	June 16-30	July	Aug	Sept	Oct	Nov	Dec
°F	60	60	65	73	80	85	90	90	91	91	91	90	85	75	65

These standards are in lieu of the requirements of 35 Ill. Adm. Code 302.211(d) and (e) and may be exceeded by no more than 3°F during 2% of the hours in the 12-month period ending December 31, except that at no time shall Midwest Generation's plants cause the water temperature at the I-55 Bridge to exceed 93°F.

C. When it appears that discharges from Outfall 001 have the reasonable potential to cause either the water temperatures at the downstream modeled compliance point to exceed the values set forth in Part (A) and/or the main channel of the Lower Des Plaines River at the I-55 Bridge to exceed the values set forth in Part (B), the permittee shall determine whether, and the extent to which, station operations must be restricted to avoid violating the above-stated limits.

D. Compliance Monitoring
   1. For compliance monitoring of the temperature limitations set fourth in Part (A) above, the permittee shall develop and submit to the Agency within six months of the issuance date, a thermal model taking into account upstream flow characteristics and temperature in the receiving stream, effluent flow, temperature and any other factors required, for the purposes of predicting downstream river temperatures at points up to and including the edge of the mixing zone and for monitoring the use of excursion hours under all conditions of temperature and flow reasonably likely to occur.
   2. For compliance monitoring of the temperature limitations set forth in Part (B) above, the permittee shall maintain and operate a water temperature monitor and a suitable back-up monitor at the I-55 Bridge downstream monitoring location.

E. Reporting
   1.
      a. From the effective date of the permit until approval by the Agency of a thermal model for determining the temperature at the edge of the allowed mixing zone in the Chicago Sanitary and Ship Canal in accordance with Part (D)(1) above, the permittee is required to report on the DMR the monthly maximum temperature at the point of discharge for outfall 001.
      b. Upon the approval by the Agency of a thermal model for determining the temperature at the edge of the allowed mixing zone in the Chicago Sanitary and Ship Canal in accordance with Part (D)(1) above, the permittee is required to report on the DMR the monthly maximum temperature and the cumulative number of hours used in a 12 month calendar period in which temperatures exceed the thermal standards (the "excursion hours") set forth in Part (A) above.
   2. For the I-55 Bridge adjusted thermal standards set fourth in Part (B) above, the cumulative number of excursion hours used in a 12 month calendar period shall be reported separately on the monthly DMR in accordance with Part (B).

SPECIAL CONDITION 5. The Agency has determined that the effluent limitations in this permit constitute BAT/BCT for storm water which is treated in the existing treatment facilities for purposes of this permit reissuance, and no pollution prevention plan will be required for such storm water. In addition to the chemical specific monitoring required elsewhere in this permit, the permittee shall conduct an annual inspection of the facility site to identify areas contributing to a storm water discharge associated with industrial activity, and determine whether any facility modifications have occurred which result in previously-treated storm water discharges no longer receiving treatment. If any such discharges are identified the permittee shall request a modification of this permit within 30 days after the inspection. Records of the annual inspection shall be retained by the permittee for the term of this permit and be made available to the Agency on request.

SPECIAL CONDITION 6. There shall be no discharge of polychlorinated biphenyl compounds.

SPECIAL CONDITION 7. The bypass provisions of 40 CFR 122.41(m) and upset provisions of 40 CFR 122.41(n) are hereby incorporated by reference.

SPECIAL CONDITION 8. Samples taken in compliance with the effluent monitoring requirements of outfalls 001, 002 and 003 shall be taken at a point representative of the discharge, but prior to entry into the receiving stream.

Samples taken in compliance with the effluent monitoring requirements of outfall A01, B01, and A02 shall be taken at a point representative of the discharge, but prior to comingling with other wastestreams.

SPECIAL CONDITION 9. The Permittee shall record monitoring results on Discharge Monitoring Report (DMR) Forms using one such form for each outfall each month.

In the event that an outfall does not discharge during a monthly reporting period, the DMR Form shall be submitted with no discharge indicated.

The Permittee will be required to submit electronic DMRs (NetDMRs) instead of mailing paper DMRs to the IEPA beginning December 21, 2016 unless a waiver has been granted by the Agency. More information, including registration information for the NetDMR program, can be obtained on the IEPA website, http://www.epa.state.il.us/water/net-dmr/index.html.

The completed Discharge Monitoring Report forms shall be submitted to IEPA no later than the 28th day of the following month, unless otherwise specified by the permitting authority.

Permittees that have been granted a waiver shall mail Discharge Monitoring Reports with an original signature to the IEPA at the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Attention: Compliance Assurance Section, Mail Code # 19
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

SPECIAL CONDITION 10. Cooling Water Intake Structure. This Permit may be modified with public notice to establish cooling water intake structure limitations and/or operating conditions if appropriate, based on information obtained from this condition or to comply with State or Federal law.

A. The permittee shall submit the following information/studies within 180 days from the permit effective date:

1. Source Water Physical Data to include:

   a. A narrative description and scaled drawings showing the physical configuration of all source water bodies used by the facility including aerial dimensions, depths, salinity and temperature regimes;

   b. Identification and characterization of the source waterbody's hydrological and geomorphological features, as well as the methods used to conduct any physical studies to determine the intake's area of influence and the results of such studies; and

   c. Location maps.

2. Source Waterbody Flow Information

   The permittee shall provide the annual mean flow of the waterbody, any supporting documentation and engineering calculations to support the analysis of whether the design intake flow is greater than five percent of the mean annual flow of the river or stream for purposes of determining applicable performance standards. Representative historical data (from a period of time up to 10 years) shall be used, if available.

3. Impingement Mortality and Entrainment Characterization Study

   The permittee shall submit an Impingement Mortality and Entrainment Characterization Study whose purpose is to provide information to support the development of a calculation baseline for evaluating impingement mortality and entrainment and to characterize current impingement mortality and entrainment. The Study shall include the following in sufficient detail to support establishment of baseline conditions:

a. Taxonomic identification of all life stages of fish and shellfish and any species protected under Federal, State, or Tribal law (including threatened or endangered species) that are in the vicinity of the cooling water intake structure(s) and are susceptible to impingement and entrainment;

b. A characterization of all life stages of fish and shellfish, and any species protected under Federal, or State law, including a description of the abundance and temporal and spatial characteristics in the vicinity of the cooling water intake structure(s). These may include historical data that are representative of the current operation of the facility and of biological conditions at the site; and

c. Documentation of the current impingement mortality and entrainment of all life stages of fish, shellfish, and any species protected under Federal , State, or Tribal Law (including threatened or endangered species) and an estimate of impingement mortality and entrainment to be used as the calculation baseline. The documentation may include historical data that are representative of the current operation of the facility and of biological conditions at the site. Impingement mortality and entrainment samples to support the calculations required must be collected during periods of representative operational flows for the cooling water intake structure and the flows associated with the samples must be documented.

B. The permittee shall comply with the following requirements:

1. At all times properly operate and maintain the intake equipment.

2. Inform IEPA of any proposed changes to the cooling water intake structure or proposed changes to operations at the facility that affect impingement mortality and/or entrainment.

3. Debris collected on intake screens is prohibited from being discharged back to the canal. Debris does not include living fish or other living aquatic organisms.

4. Compliance Alternatives. The permittee must evaluate each of the following alternatives for establishing best available technology for minimizing adverse environmental impacts at the facility due to operation of the intake structure:

   a. Evaluate operational procedures and/or propose facility modifications to reduce the intake through-screen velocity to less than 0.5 ft/sec. The operational evaluation may consider modified circulating water pump operation; reduced flow associated with capacity utilization, recalculation or determination of actual total water withdrawal capacity. The evaluation report and any implementation plan for the operational changes and/ or facility modification shall be submitted to the Agency with the renewal application for this permit.

   b. Complete a fish impingement and entrainment mortality minimization alternatives evaluation. The evaluation may include an assessment of modification of the traveling screens, consideration of a separate fish and debris return system and include time frames and cost analysis to implement these measures. The evaluation report and implementation plan for any operational changes and/ or facility modifications shall be submitted to the Agency with the renewal application for this permit.

C. All required reports shall be submitted to the Permit Section and Compliance Assurance Section at the address in special condition 9.

SPECIAL CONDITION 11. The Permittee shall monitor the effluent from outfalls 001 and 002 for the following parameters on a semi-annual basis. This Permit may be modified with public notice to establish effluent limitations if appropriate, based on information obtained through sampling. The sample shall be a 24-hour effluent composite except as otherwise specifically provided below and the results shall be submitted to the address in special condition 9 in June and December. The parameters to be sampled and the minimum reporting limits to be attained are as follows:

STORET CODE	PARAMETER	Minimum reporting limit
01002	Arsenic	0.05 mg/L
01007	Barium	0.5 mg/L
01027	Cadmium	0.001 mg/L
01032	Chromium (hexavalent) (grab)	0.01 mg/L
01034	Chromium (total)	0.05 mg/L
01042	Copper	0.005 mg/L
00718	Cyanide (grab) (weak acid dissociable)	5.0 ug/L
00720	Cyanide (grab not to exceed 24 hours) (total)	5.0 ug/L
00951	Fluoride	0.1 mg/L

Special Conditions

01045	Iron (total)	0.5 mg/L
01046	Iron (Dissolved)	0.5 mg/L
01051	Lead	0.05 mg/L
01055	Manganese	0.5 mg/L
71900	Mercury (grab)**	1.0 ng/L*
01067	Nickel	0.005 mg/L
00556	Oil (hexane soluble or equivalent) (Grab Sample only)	5.0 mg/L
32730	Phenols (grab)	0.005 mg/L
01147	Selenium	0.005 mg/L
01077	Silver (total)	0.003 mg/L
01092	Zinc	0.025 mg/L

Unless otherwise indicated, concentrations refer to the total amount of the constituent present in all phases, whether solid, suspended or dissolved, elemental or combined, including all oxidation states.

*1.0 ng/L = 1 part per trillion.
**Utilize USEPA Method 1631E and the digestion procedure described in Section 11.1.1.2 of 1631E. Mercury shall be monitored monthly for the first two years and quarterly thereafter. This Permit may be modified with public notice to establish effluent limitations if appropriate, based on information obtained through sampling. The quarterly monitoring results shall be submitted on the March, June, September and December DMRs.

SPECIAL CONDITION 12. The use or operation of this facility shall be by or under the supervision of a Certified Class K operator.

SPECIAL CONDITION 13. In the event that the permittee shall require a change in the use of water treatment additives, the permittee must request a change in this permit in accordance with the Standard Conditions -- Attachment H.

SPECIAL CONDITION 14. The permittee shall notify the Agency within 30 days of decommissioning or permanently removing from service any generating units. The notice shall identify which units were removed from service and any changes to the discharge quality, including temperature or quantity.

SPECIAL CONDITION 15. The cooling water prior to entering the intake structure and at outfall 001 shall be sampled once per week as a grab sample at the same time of day within ½ hour of each other between 9:00 a.m. and 3:00 p.m. in a random fashion for dissolved oxygen. The results in mg/l and the time of day the influent and effluent sample was taken shall be reported to the Agency as an attachment to the DMR. After 2 years of data has been submitted to the Agency, the permittee may apply to Agency to have the monitoring reduced or eliminated.

SPECIAL CONDITION 16. The effluent, alone or in combination with other sources, shall not cause a violation of any applicable water quality standard outlined in 35 Ill. Adm. 302.

Attachment H

Standard Conditions

Definitions

Act means the Illinois Environmental Protection Act, 415 ILCS 5 as Amended.

Agency means the Illinois Environmental Protection Agency.

Board means the Illinois Pollution Control Board.

Clean Water Act (formerly referred to as the Federal Water Pollution Control Act) means Pub. L 92-500, as amended. 33 U.S.C. 1251 et seq.

NPDES (National Pollutant Discharge Elimination System) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318 and 405 of the Clean Water Act.

USEPA means the United States Environmental Protection Agency.

Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Maximum Daily Discharge Limitation (daily maximum) means the highest allowable daily discharge.

Average Monthly Discharge Limitation (30 day average) means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Discharge Limitation (7 day average) means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Aliquot means a sample of specified volume used to make up a total composite sample.

Grab Sample means an individual sample of at least 100 milliliters collected at a randomly-selected time over a period not exceeding 15 minutes.

24-Hour Composite Sample means a combination of at least 8 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period.

8-Hour Composite Sample means a combination of at least 3 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over an 8-hour period.

Flow Proportional Composite Sample means a combination of sample aliquots of at least 100 milliliters collected at periodic intervals such that either the time interval between each aliquot or the volume of each aliquot is proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot.

(1) **Duty to comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.

(2) **Duty to reapply.** If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. If the permittee submits a proper application as required by the Agency no later than 180 days prior to the expiration date, this permit shall continue in full force and effect until the final Agency decision on the application has been made.

(3) **Need to halt or reduce activity not a defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(4) **Duty to mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

(5) **Proper operation and maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up, or auxiliary facilities, or similar systems only when necessary to achieve compliance with the conditions of the permit.

(6) **Permit actions.** This permit may be modified, revoked and reissued, or terminated for cause by the Agency pursuant to 40 CFR 122.62 and 40 CFR 122.63. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

(7) **Property rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.

(8) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency upon request, copies of records required to be kept by this permit.

(9) **Inspection and entry.** The permittee shall allow an authorized representative of the Agency or USEPA (including an authorized contractor acting as a representative of the Agency or USEPA), upon the presentation of credentials and other documents as may be required by law, to:
   (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
   (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
   (d) Sample or monitor at reasonable times, for the purpose of assuring permit compliance, or as otherwise authorized by the Act, any substances or parameters at any location.

(10) **Monitoring and records.**
   (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
   (b) The permittee shall retain records of all monitoring information, including all calibration and maintenance records, and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of this permit, measurement, report or application. Records related to the permittee's sewage sludge use and disposal activities shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503). This period may be extended by request of the Agency or USEPA at any time.
   (c) Records of monitoring information shall include:
      (1) The date, exact place, and time of sampling or measurements;
      (2) The individual(s) who performed the sampling or measurements;
      (3) The date(s) analyses were performed;
      (4) The individual(s) who performed the analyses;
      (5) The analytical techniques or methods used; and
      (6) The results of such analyses.
   (d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. Where no test procedure under 40 CFR Part 136 has been approved, the permittee must submit to the Agency a test method for approval. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to ensure accuracy of measurements.

(11) **Signatory requirement.** All applications, reports or information submitted to the Agency shall be signed and certified.
   (a) **Application.** All permit applications shall be signed as follows:
      (1) For a corporation: by a principal executive officer of at least the level of vice president or a person or position having overall responsibility for environmental matters for the corporation:
      (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
      (3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official.
   (b) **Reports.** All reports required by permits, or other information requested by the Agency shall be signed by a person described in paragraph (a) or by a duly authorized representative of that person. A person is a duly authorized representative only if:
      (1) The authorization is made in writing by a person described in paragraph (a); and
      (2) The authorization specifies either an individual or a position responsible for the overall operation of the facility, from which the discharge originates, such as a plant manager, superintendent or person of equivalent responsibility; and
      (3) The written authorization is submitted to the Agency.
   (c) **Changes of Authorization.** If an authorization under (b) is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of (b) must be submitted to the Agency prior to or together with any reports, information, or applications to be signed by an authorized representative.
   (d) **Certification.** Any person signing a document under paragraph (a) or (b) of this section shall make the following certification:

   I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

(12) **Reporting requirements.**
   (a) **Planned changes.** The permittee shall give notice to the Agency as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required when:
      (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source pursuant to 40 CFR 122.29 (b); or
      (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements pursuant to 40 CFR 122.42 (a)(1).
      (3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
   (b) **Anticipated noncompliance.** The permittee shall give advance notice to the Agency of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
   (c) **Transfers.** This permit is not transferable to any person except after notice to the Agency.
   (d) **Compliance schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

(e) **Monitoring reports**. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
   (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR).
   (2) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.
   (3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Agency in the permit.

(f) **Twenty-four hour reporting.** The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24-hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and time; and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The following shall be included as information which must be reported within 24-hours:
   (1) Any unanticipated bypass which exceeds any effluent limitation in the permit.
   (2) Any upset which exceeds any effluent limitation in the permit.
   (3) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Agency in the permit or any pollutant which may endanger health or the environment.

   The Agency may waive the written report on a case-by-case basis if the oral report has been received within 24-hours.

(g) **Other noncompliance**. The permittee shall report all instances of noncompliance not reported under paragraphs (12) (d), (e), or (f), at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (12) (f).

(h) **Other information**. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Agency, it shall promptly submit such facts or information.

(13) **Bypass.**
(a) Definitions.
   (1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
   (2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

(b) Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (13)(c) and (13)(d).

(c) Notice.
   (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
   (2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph (12)(f) (24-hour notice).

(d) Prohibition of bypass.
   (1) Bypass is prohibited, and the Agency may take enforcement action against a permittee for bypass, unless:
      (i) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
      (ii) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
      (iii) The permittee submitted notices as required under paragraph (13)(c).
   (2) The Agency may approve an anticipated bypass, after considering its adverse effects, if the Agency determines that it will meet the three conditions listed above in paragraph (13)(d)(1).

(14) **Upset.**
(a) Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

(b) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph (14)(c) are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

(c) Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
   (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
   (2) The permitted facility was at the time being properly operated; and
   (3) The permittee submitted notice of the upset as required in paragraph (12)(f)(2) (24-hour notice).
   (4) The permittee complied with any remedial measures required under paragraph (4).

(d) Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

(15) **Transfer of permits.** Permits may be transferred by modification or automatic transfer as described below:

(a) Transfers by modification. Except as provided in paragraph (b), a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued pursuant to 40 CFR 122.62 (b) (2), or a minor modification made pursuant to 40 CFR 122.63 (d), to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

(b) Automatic transfers. As an alternative to transfers under paragraph (a), any NPDES permit may be automatically transferred to a new permittee if:

(1) The current permittee notifies the Agency at least 30 days in advance of the proposed transfer date;

(2) The notice includes a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage and liability between the existing and new permittees; and

(3) The Agency does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement.

(16) All manufacturing, commercial, mining, and silvicultural dischargers must notify the Agency as soon as they know or have reason to believe:

(a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant identified under Section 307 of the Clean Water Act which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:

(1) One hundred micrograms per liter (100 ug/l);

(2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6 dinitrophenol; and one milligram per liter (1 mg/l) for antimony.

(3) Five (5) times the maximum concentration value reported for that pollutant in the NPDES permit application; or

(4) The level established by the Agency in this permit.

(b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the NPDES permit application.

(17) All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Agency of the following:

(a) Any new introduction of pollutants into that POTW from an indirect discharge which would be subject to Sections 301 or 306 of the Clean Water Act if it were directly discharging those pollutants; and

(b) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

(c) For purposes of this paragraph, adequate notice shall include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

(18) If the permit is issued to a publicly owned or publicly regulated treatment works, the permittee shall require any industrial user of such treatment works to comply with federal requirements concerning:

(a) User charges pursuant to Section 204 (b) of the Clean Water Act, and applicable regulations appearing in 40 CFR 35;

(b) Toxic pollutant effluent standards and pretreatment standards pursuant to Section 307 of the Clean Water Act; and

(c) Inspection, monitoring and entry pursuant to Section 308 of the Clean Water Act.

(19) If an applicable standard or limitation is promulgated under Section 301(b)(2)(C) and (D), 304(b)(2), or 307(a)(2) and that effluent standard or limitation is more stringent than any effluent limitation in the permit, or controls a pollutant not limited in the permit, the permit shall be promptly modified or revoked, and reissued to conform to that effluent standard or limitation.

(20) Any authorization to construct issued to the permittee pursuant to 35 Ill. Adm. Code 309.154 is hereby incorporated by reference as a condition of this permit.

(21) The permittee shall not make any false statement, representation or certification in any application, record, report, plan or other document submitted to the Agency or the USEPA, or required to be maintained under this permit.

(22) The Clean Water Act provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act is subject to a civil penalty not to exceed $25,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both.
Additional penalties for violating these sections of the Clean Water Act are identified in 40 CFR 122.41 (a)(2) and (3).

(23) The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

(24) The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(25) Collected screening, slurries, sludges, and other solids shall be disposed of in such a manner as to prevent entry of those wastes (or runoff from the wastes) into waters of the State. The proper authorization for such disposal shall be obtained from the Agency and is incorporated as part hereof by reference.

(26) In case of conflict between these standard conditions and any other condition(s) included in this permit, the other condition(s) shall govern.

(27) The permittee shall comply with, in addition to the requirements of the permit, all applicable provisions of 35 Ill. Adm. Code, Subtitle C, Subtitle D, Subtitle E, and all applicable orders of the Board or any court with jurisdiction.

(28) The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit is held invalid, the remaining provisions of this permit shall continue in full force and effect.

Exhibit
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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

Midwest Generation, LLC	)	
(Will County Station)	)	PCB 2021-108
	)	
v.	)	
	)	
Illinois Environmental Protection Agency	)	

AFFIDAVIT OF DARIN E. LeCRONE

I, Darin E. LeCrone, certify under penalty of perjury pursuant to Section 1-109 of the Illinois Code of Civil Procedure, 735 ILCS 5/1-109, that the statements set forth in this affidavit are true and correct, and further state that if called upon to testify in this matter, I would competently testify as follows:

1. I am an Illinois Licensed Professional Engineer employed by the Illinois Environmental Protection Agency (the "Illinois EPA") as the Manager of the Permit Section in the Division of Water Pollution Control within the Bureau of Water, and I am located in Springfield, Illinois. I have been employed by the Illinois EPA since May of 1992.

2. As the Manager of the Permit Section in the Division of Water Pollution Control with the Illinois EPA, my duties include but are not limited to the supervision of a staff of engineers responsible for the review and issuance of all permits issued within the Division of Water Pollution Control, including construction and operating permits, and NPDES permits for industrial wastewater sources. I also served as the primary witness in support of Illinois EPA's proposed Part 845 throughout the Illinois Pollution Control Board's rulemaking proceedings in R2020-019.

3. In my capacity as Manager of the Permit Section, I have reviewed the Petition for Variance ("Petition") filed by Midwest Generation, LLC ("MWG") requesting extension of certain requirements contained in 35 Ill. Adm. Code 845.

4. I have personal knowledge of the facts set forth in Illinois EPA's Recommendation to the Board as stated below.

5. Attached to the Recommendation as Exhibit I ("Rec. Ex. I") is an April 10, 2009 Illinois EPA letter to MWG requesting the development of a groundwater monitoring plan for the Will County Generating Station. This letter is kept by the Illinois EPA in the regular course of business, and it was the regular course of business of the Illinois EPA to transmit the information thereof to be included in this record. The April 10, 2009 Illinois EPA letter, attached to the Recommendation as Exhibit I, is an exact duplicate of the original.

6. Attached to the Recommendation as Exhibit K ("Rec. Ex. K") is National Pollution Discharge Elimination ("NPDES") Permit #IL0002208, issued to MWG on April 24, 2017. This permit is kept by the Illinois Environmental Protection Agency in the regular course of business, and it was the regular course of business of the Illinois Environmental Protection Agency to transmit the information thereof to be included in this record. NPDES Permit #IL0002208, issued to MWG on April 24, 2017, and attached to the Recommendation as Exhibit K, is an exact duplicate of the original.

7. Illinois EPA records indicate that the Compliance Commitment Agreement executed October 24, 2012, to satisfy Violation Notice W-2012-00058, issued June 11, 2012, for exceedances of Part 620 groundwater quality standards, required MWG to remove Ponds 1N and 1S from service and implement a dewatering system. *See* Rec. Ex. A and Petition, Ex. E. The dewatering system required by the CCA must not allow water to exceed a depth of one foot above the bottom of Ponds 1N and 1S. *See* Petition, Exhibit E. The one-foot water level restriction does not ensure that the CCR surface impoundment is dry. The dewatering system is gravity driven and, by design, does not drain unless the water level is cresting above the one-foot water limit. *See*

Petition, Exhibit F. Therefore, the CCR surface impoundments can, and likely do, contain one foot or more of water much of the time. One foot of water in the impoundment will likely saturate at least a portion any CCR that remains.

8. The Will County Station and its surface impoundments are currently regulated by NPDES Permit No. IL0002208. *See* Rec. Ex. K. MWG timely applied for renewal of NPDES Permit No. IL0002208, which expired April 30, 2019. Therefore, the permit is effective under administrative continuance. At the time of this filing, there are no other Illinois EPA Bureau of Water permits issued to MWG and currently effective for the Will County Station. Granting any of the Petitioner's variance requests will not impact the NPDES Permit.

9. The variance request affects operating and construction permit applications for Ponds 1N and 1S under Part 845, but any relief requested specific to Ponds 1N and 1S will not impact the operating and construction permit applications for any other CCR surface impoundments located at the Will County Station, provided that the facility-wide plans submitted with those applications are complete.

FURTHER AFFIANT SAYETH NOT

DARIN E. LeCRONE

7/1/21

DATE

OFFICIAL SEAL
DAWN A. HOLLIS
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES **03-21-2025**

Dawn A. Hollis