MWG
Midwest Generation, LLC

Midwest Generation, LLC
Waukegan Generating Station
401 E. Greenwood Ave.
Waukegan, Illinois 60087

January 27, 2022

Illinois Environmental Protection Agency
DWPC – Permits Section (MC 15)
Attn: Part 845 Coal Combustion Residual Rule Submittal
1021 North Grand Avenue East
Springfield, IL 62702

Re: Midwest Generation, LLC – Waukegan Generating Station
Account No. W0971900021
CCR Surface Impoundment Annual Consolidated Report

Dear Sir or Madam:

In accordance with the requirements of Title 35 of the Illinois Administrative Code ("35 IAC") Section 845.550, the Annual Consolidated Report is attached for the following CCR surface impoundments at Waukegan Generating Station:

Pond ID	CCR Surface Impoundment Description
W0971900021-01	East Ash Pond
W0971900021-02	West Ash Pond

The certification pages from the Hazard Potential Classification Assessment, Structural Stability Assessment, Safety Factor Assessment, and Inflow Design Flood Control System Plan have been provided in Attachment B. Full copies of these assessments can be found on our public website at www.midwestgenerationllc.com. If you have any questions or require additional information regarding this submittal, please contact Jill Buckley at Jill.Buckley@nrg.com.

Sincerely,

Paulo Rocha
Plant Manager, Waukegan Generating Station

Attachment

2021 ANNUAL CONSOLIDATED REPORT
WAUKEGAN GENERATING STATION

EAST ASH POND – W0971900021-01
WEST ASH POND – W0971900021-02

ATTACHMENT A – ANNUAL CCR FUGITIVE DUST CONTROL REPORT
ATTACHMENT B – ANNUAL INSPECTION REPORT
- ATTACHMENT B.1 – HAZARD POTENTIAL CLASSIFICATION ASSESSMENT CERTIFICATION
- ATTACHMENT B.2 – STRUCTURAL STABILITY ASSESSMENT CERTIFICATION
- ATTACHMENT B.3 – SAFETY FACTOR ASSESSMENT CERTIFICATION
- ATTACHMENT B.4 – INFLOW DESIGN FLOOD CONTROL PLAN

ATTACHMENT C – ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

ATTACHMENT A
2021 ANNUAL CCR FUGITIVE DUST CONTROL REPORT

Annual CCR Fugitive Dust Control Report
Waukegan Generating Station
401 East Greenwood Avenue, Waukegan, Illinois

1.0 Introduction

On April 15, 2021, the Illinois Pollution Control Board adopted a new part of its waste disposal regulations creating state-wide standards for the disposal of coal combustion residuals (CCR) in surface impoundments, created by the generation of electricity by coal-fired power plants (the IL CCR Rule). These requirements include air criteria specified in Title 35 of the Illinois Administrative Code, §845.500, to address the potential pollution caused by windblown dust from CCR units.

The Waukegan Generating Station, operated by Midwest Generation, LLC (MWG), is located at 401 East Greenwood Avenue, Waukegan, Lake County, Illinois. The facility is a coal-fired electric power generating station currently occupying approximately 200 acres. There are currently two operating units, Units 7 and 8. There are four peaker units at the site, fired primarily by fuel oil. Electrical power is transmitted from the site to the area grid through overhead transmission power lines. The Rule applies to this facility due to the disposal management of CCR that is generated from the combustion of coal. CCR units associated with the station include the East Ash Pond and West Ash Pond.

According to the IL CCR Rule, owners or operators of CCR units must adopt measures that will effectively minimize CCR from becoming airborne at the facility by developing and operating in accordance with a Fugitive Dust Control Plan (Plan) with adequate dust control measures. In this regard, a Plan was prepared that complies with the requirements as specified in §845.500(b)(1-7) of the IL CCR Rule and placed in the Waukegan facility's operating record on October 31, 2021 per §845.800(d)(7). As required, the Plan was also posted to the publicly accessible internet site per §845.810(e).

In addition to the above and per §845.500(c), an Annual Fugitive Dust Control Report (Annual Report) must be completed that includes the following:

- Description of actions taken to control CCR fugitive dust and
- The four quarterly fugitive dust complaint reports submitted under subsection (b)(2)(B)

The Annual Report must be submitted as part of the annual consolidated report required by §845.550. This document represents the 2021 Annual Report for Waukegan and will also be appropriately placed in the facility's operating record per §845.800(d)(7) and posted to the publicly accessible internet site per §845.810(e).

2.0 Actions Taken to Control CCR Fugitive Dust

As detailed in the facility's CCR Fugitive Dust Control Plan and reiterated below, the station has established procedures and inspection requirements which are implemented to minimize/eliminate airborne emissions from the potential fugitive dust sources. The results from inspections conducted and associated observations made during CCR handling activities are documented on logs maintained in the station's Environmental Department, including those specific to the reporting period (October through December 2021) relevant to this Annual Report.

2.1 Bottom Ash and Slag Distribution System

Bottom ash and slag are in a liquid mixture within a closed system until the point of discharge at the East Ash Pond. A significant portion of the piping system is contained within a building, which eliminates dust emissions to the outside environment. An assessment of the exterior distribution system is performed on a quarterly basis to verify the integrity of the system or when a breach in the system is detected. If a leak is noted, resulting in the release of bottom ash and slag, the affected area is restored to original conditions and repair of the pipe is performed as soon as feasible. The ash is sent off site to a licensed landfill.

2.2 West Ash Pond and East Ash Pond

During normal operations, the East Ash Pond is filled with water thereby suppressing any potential fugitive dust emissions. The West Ash Pond has been dewatered and the majority of ash removed. As needed, the East Ash Pond will need to be dewatered and the sediment removed offsite to a licensed landfill. While the bottom ash and slag residue is drying, there is the potential for this material to become airborne especially during excessively dry and windy conditions. Loading of this material under these conditions also has the potential for generating fugitive dust. Dewatered ponds are assessed on a quarterly basis or more frequently during excessively dry and windy conditions. To minimize fugitive dust emissions from exposed dry bottom ash and slag, the height of the staged material is minimized, and the material piles are either sprayed with water or covered. Loading activities also are limited during such occasions. Haul trucks are covered with tarps once they have been loaded. Haul trucks are covered with tarps once they have been loaded.

2.3 Ash Handling Equipment

Fly ash from the mechanical separators is sent to the silos within enclosed piping. At the silos, the fly ash is drop loaded into a tank truck through a drop chute. This loading mechanism minimizes the potential for fly ash to become airborne during the loading process. The loading of trucks also occurs within a partial enclosure. At the completion of loading, the truck moves a

short distance to an elevated truck stand where it is broom swept to remove any accumulated fly ash. Accumulated ash is promptly transferred to the Maintenance Storage Area.

This process is covered by the facility's fugitive dust operating program. Under the program, the facility maintains control measures, including enclosures, covers and dust collection devices. Additionally, the facility conducts weekly inspections of the process to confirm compliance. A record of the inspections is maintained at the facility.

2.4 Maintenance Storage Area

The roll-off boxes in the Maintenance Storage Area only periodically contain bottom ash and slag, fly ash and other ash-related materials generated from routine maintenance activities. Typically, the bottom ash and slag is in a wet state when placed into the containers but fly ash is in a dry state. When the roll-off boxes are filled, the material is promptly removed to an off-site licensed landfill. The Maintenance Storage Area is assessed on a quarterly basis or more frequently during excessively dry and windy conditions. If ash material is observed outside a roll-off box, it is collected and placed into the container. All roll-off boxes are covered while staged in the Maintenance Storage Area and during removal off site.

2.5 Ash Transport Roadways

Truck drivers are instructed on the proper procedure for cleaning trucks and roll-off boxes before removal and a vehicle speed limit is enforced at the facility. Ash material that may not have been adequately removed from the trucks or roll-off boxes has the potential to become airborne and ultimately be deposited on haul roads. To minimize fugitive dust emissions, these roads are assessed on a quarterly basis and any observed accumulated ash material is promptly cleaned up and collected for off-site removal to a licensed landfill.

3.0 Fugitive CCR Dust Assessments

Pursuant to §845.500(b)(3), assessments of the potential fugitive dust emission sources identified in the Waukegan facility's CCR Fugitive Dust Control Plan (Plan) are conducted to assess the effectiveness of the Plan. The assessment includes observation of ash removal from ponds, temporary storage and transport activities at the facility to confirm the adequacy of the control measures. The assessments are conducted on a quarterly basis by an individual designated by the contact identified below. Observations made during each assessment will be recorded on a form similar to the one included in Appendix B of the Waukegan facility's CCR Fugitive Dust Control Plan.

If the results of the assessment determine that ash-related equipment has malfunctioned or the integrity of the equipment has been compromised, the necessary repairs or replacement will be

performed as soon as feasible. If the assessment finds that the Plan does not effectively minimize the CCR from becoming airborne, the Plan will be amended to include additional control measures. No issues were identified during this Annual Report's period of record covering October through December 2021.

Owner Representative/Responsible Person Contact Information:

Mr. Paulo Rocha
Plant Manager
847-599-2212

4.0 Record of Citizen Complaints

Per the Rule, the Annual Report must include copies of the four quarterly fugitive dust complaint reports submitted under §845.500(b)(2)(B). The quarterly fugitive dust complaint reports contain a record of all citizen complaints that were received by the Waukegan station with regard to fugitive dust emission incidents. In line with established protocols and within 24 hours of receipt, the station's environmental coordinator enters the citizen complaint into MWG's Environmental Management Information System (EMIS) database. The EMIS database would then automatically forwards notice of the complaint to the station manager, MWG's regional environmental manager, and MWG's corporate environmental department. Following initial evaluation of the complaint, MWG would then conducts a thorough investigation to confirm the reported incident/conditions and implement corrective actions as may be warranted.

No complaints were registered during this Annual Report's period of record covering October through December 2021.

5.0 Summary of Corrective Actions Taken

For the October through December 2021 period of record and based on continued monitoring and inspections as outlined in Section 2.0 and 3.0 and as required under the CCR rules, the established control measures remain effective in minimizing potential fugitive dust emissions. Moreover, this assertion is further validated by the lack of citizen complaints logged over this same period. Accordingly, no corrective actions were required during the past year, either as a result of internally identified deficiencies or from resolution of citizen complaints.

QUARTERLY FUGITIVE DUST COMPLAINT REPORTS

MWG
Midwest Generation, LLC

Midwest Generation, LLC
Waukegan Generating Station
401 E. Greenwood Ave.
Waukegan, Illinois 60087

January 11, 2022

Illinois Environmental Protection Agency
DWPC – Permits Section (MC 15)
Attn: Part 845 Coal Combustion Residual Rule Submittal
1021 North Grand Avenue East
Springfield, IL 62702

Re: Midwest Generation, LLC – Waukegan Generating Station
Account No. W0971900021
Pond IDs: W0971900021-01, W0971900021-02
CCR Surface Impoundment Quarterly Fugitive Dust Complaint Report

Dear Sir or Madam:

In accordance with the requirements of Title 35 of the Illinois Administrative Code ("35 IAC") Section 845.500(b)(2)(B), this letter serves as the fugitive dust complaint report for Fourth Quarter 2021 at Waukegan Generating Station. There were no complaints received from members of the public during the period October 1, 2021 through December 31, 2021.

If you have any questions or require additional information regarding this submittal, please contact Jill Buckley at Jill.Buckley@nrg.com.

Sincerely,

Paulo Rocha
Plant Manager, Waukegan Generating Station

ATTACHMENT B
2021 ANNUAL INSPECTION REPORT

ANNUAL INSPECTION REPORT
EAST ASH POND AND WEST ASH POND
WAUKEGAN STATION
OCTOBER 2021

This annual inspection report has been prepared pursuant to both Title 35 IAC Part 845 Subpart E, Section 845.540(b) and Title 40 CFR Part 257.83(b) for the East Ash Pond and West Ash Pond at Waukegan Station (Station) in Waukegan, Illinois. The purpose of this project is to perform the annual inspection of the East and West Ash Ponds by a licensed professional engineer to ensure that the design, construction, operation, and maintenance of the coal combustion residuals (CCR) unit is consistent with recognized and generally accepted good engineering standards. Civil & Environmental Consultants, Inc. (CEC) completed the following scope of services in preparing this annual inspection report:

- CEC reviewed the weekly and monthly inspection reports completed by a qualified person employed by MWG, and the previous annual inspection report.

- CEC performed the annual inspection in accordance with the requirements of 35 IAC Part 845.540 and 40 CFR 257.83(b) including observations pertaining to the following:

    - Changes in Geometry: Observations of changes in the geometry of the East and West Ash Ponds since the previous annual inspection.

    - Instrumentation: Inspection of the location and type of existing instrumentation and documentation of the maximum recorded readings of each instrument since the previous annual inspection from records provided by the Station.

    - Capacity and Impounded Volume: Inspection observations for the approximate minimum, maximum, and present depth and elevation of the impounded water and CCR; storage capacity of the impounding structure at the time of the inspection; and the approximate volume of the impounded water and CCR at the time of the inspection.

    - Structural/Operational Observations: Estimation of the approximate volume of the impounded water and CCR at the time of the inspection.

    - Other Changes: Inspection including change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

The East Ash Pond and West Ash Pond are both CCR surface impoundments with each pond approximately 10 acres in size. On October 11, 2021, CEC inspected both the East Ash Pond and West Ash Pond and our observations showed no signs of distress that would suggest the stability or operation of the impounding structure is compromised. At the time of the inspection, the West Ash Pond was drained and undergoing maintenance to remove bottom ash. The East Ash Pond was in operation and unchanged from the previous inspection.

1.0 CHANGES IN GEOMETRY

Both the East Ash Pond and West Ash Pond geometry was observed to be unchanged since the October 2020 inspection.

2.0 INSTRUMENTATION

Instrumentation associated with East Ash Pond and West Ash Pond includes a water level monitoring device in the outlet structure for both ponds. Our interview of station personnel and review of weekly inspection reports concluded that the water level monitors are operating properly. No other instrumentation was reported or observed that would be associated with the hydraulic structures, impoundment embankments, and/or slope performance.

3.0 CAPACITY AND IMPOUNDED VOLUME

Capacity and impounded volumes for the East Ash Pond and West Ash Pond and estimated depth of impounded water and CCR are represented in Table 1 and 2, attached. Volumes and depths for the West Ash Pond were determined by reviewing inspection reports, construction drawings, and from modeling using existing topographic data.

4.0 STRUCTURAL/OPERATIONAL OBSERVATIONS

Both the East Ash Pond and West Ash Pond were inspected for signs of distress that would have the potential to disrupt operation and safety of the ponds. None were observed. Prior to inspection, CEC reviewed the previous annual inspection reports, which did not identify conditions that indicate an actual or potential structural weakness. Weekly inspection reports were also reviewed and did not indicate an actual or potential structural weakness.

5.0 OTHER CHANGES

The East Ash Pond and West Ash Pond were inspected for other signs of other changes or distress that would have the potential to disrupt operation and safety of the ponds. Our inspection showed no distresses that would affect the operation and/or stability of either the East Ash Pond or West Ash Pond.

6.0 LIMITATIONS AND CERTIFICATION

This annual inspection report was prepared to meet the requirements of Section 845.540(b) and Part 257.83(b) and was prepared under the direction of Mr. M. Dean Jones, P.E.

By affixing my seal to this, I do hereby certify to the best of my knowledge, information, and belief that the information contained in this report is true and correct. I further certify I am licensed to practice in the State of Illinois and that it is within my professional expertise to verify the correctness of the information. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

Seal:

Signature: _____

Name: M. Dean Jones, P.E.

Date of Certification: October 13, 2021

Illinois Professional Engineer No.: 062-051317

Expiration Date: November 30, 2021

Table 1: Inspection Summary - East Ash Pond

Category	Regulation Reference	Evaluation	Recommended Action
Change in Geometry	§845.450(b)(2)(A) §257.83(b)(2)(i)	None	None
Instrumentation	§845.450(b)(2)(B) §257.83(b)(2)(ii)	Water level at outlet structure	None
Water Depth	§845.450(b)(2)(C) §257.83(b)(2)(iii)	1 to 2 Feet	None
CCR Depth	§845.450(b)(2)(C) §257.83(b)(2)(iii)	6.8 Feet	None
Estimated Storage Capacity	§845.450(b)(2)(D) §257.83(b)(2)(iv)	113.7 Acre Feet	None
Impounded Water Volume	§845.450(b)(2)(E) §257.83(b)(2)(v)	6 Acre Feet	None
Impounded CCR Volume	§845.450(b)(2)(E) §257.83(b)(2)(v)	44 Acre Feet	None
Structural/Operational Observations	§845.450(b)(2)(F) §257.83(b)(2)(vi)	None	None
Other Changes	§845.450(b)(2)(G) §257.83(b)(2)(vii)	None	None

Table 2: Inspection Summary - West Ash Pond

Category	Regulation Reference	Evaluation	Recommended Action
Change in Geometry	§845.450(b)(2)(A) §257.83(b)(2)(i)	None	None
Instrumentation	§845.450(b)(2)(B) §257.83(b)(2)(ii)	Water level at outlet structure	None
Water Depth	§845.450(b)(2)(C) §257.83(b)(2)(iii)	2 Feet	None
CCR Depth	§845.450(b)(2)(C) §257.83(b)(2)(iii)	2.9 to 12.2 Feet	None
Estimated Storage Capacity	§845.450(b)(2)(D) §257.83(b)(2)(iv)	138.5 Acre Feet	None
Impounded Water Volume	§845.450(b)(2)(E) §257.83(b)(2)(v)	12 Acre Feet	None
Impounded CCR Volume[1]	§845.450(b)(2)(E) §257.83(b)(2)(v)	8 Acre Feet	None
Structural/Operational Observations	§845.450(b)(2)(F) §257.83(b)(2)(vi)	None	None
Other Changes	§845.450(b)(2)(G) §257.83(b)(2)(vii)	None	None

ATTACHMENT B.1
2021 ANNUAL HAZARD POTENTIAL CLASSIFICATION CERTIFICATION

7.0 CERTIFICATION

I certify that:

- This hazard potential classification assessment was prepared by me or under my direct supervision.
- The work was conducted in accordance with the requirements of 35 Ill. Adm. Code 845.440 and with the requirements of 40 CFR 257.73(a)(2).
- I am a registered professional engineer under the laws of the State of Illinois.

Certified By: Thomas J. Dehlin Date: October 14, 2021

Seal:

Th. Dehlin
10/14/2021
Exp. 11/30/2021

ATTACHMENT B.2
2021 ANNUAL STRUCTURAL STABILITY ASSESSMENT CERTIFICATION

regarding the stability of the ponds' southern dikes during low pool conditions at the unnamed channel south of the ponds remain valid for this 2021 assessment (see Appendix A).

3.0 RECOMMENDED CORRECTIVE MEASURES

(35 Ill. Adm. Code 845.450(b)(1); 40 CFR 257.73(d)(1)(2))

Based on the findings documented in this 2021 structural stability assessment, the following corrective measures are recommended:

- Mow vegetation that is greater than 12-inches tall along the East and West Ash Ponds' downstream slopes,
- Remove woody vegetation in accordance with 35 Ill. Adm. Code 845.430(b)(4),
- Conduct a visual surveillance program to verify that the hydraulic structures passing through the West Ash Pond's northern dikes are in good, working condition and are free of significant material defects that could compromise the structures' integrities prior to repurposing the pond as a new low volume waste pond, and
- Remove the hydraulic structures passing through the East Ash Pond's northern dikes as part of the pond's closure construction activities.

4.0 CERTIFICATION

I certify that:

- This structural stability assessment was prepared by me or under my direct supervision.
- The work was conducted in accordance with the requirements of 35 Ill. Adm. Code 845.450 and with the requirements of 40 CFR 257.73(d).
- I am a registered professional engineer under the laws of the State of Illinois.

Certified By: Thomas J. Dehlin Date: October 14, 2021

Seal:

Th. Dehlin
10/14/2021
Exp. 11/30/2021

ATTACHMENT B.3
2021 ANNUAL SAFETY FACTOR ASSESSMENT CERTIFICATION

Table 6-1 – 2021 Illinois & Federal CCR Rule Factors of Safety for the East and West Ash Ponds at the Waukegan Generating Station

Loading Condition	East Ash Pond	West Ash Pond	Min. Allowable Factor of Safety
Long-Term, Maximum Storage Pool	≥ 1.50	≥ 1.50	**1.50**
Maximum Surcharge Pool	≥ 1.40	≥ 1.40	**1.40**
Seismic	≥ 1.00	≥ 1.00	**1.00**
Liquefaction	Note 1	Note 1	**1.20**

Notes: 1) The embankment soils for the Ponds are not considered susceptible to liquefaction because saturation of the embankment soils is unlikely based on the installed geomembrane liner system. A limited portion of the bottom of the embankments may become saturated with groundwater based on the design phreatic surface. Liquefaction triggering analyses of these saturated soils show that liquefaction and associated post-liquefaction shear strength loss is unlikely for the design seismic event (Ref. 3). Thus, liquefaction safety factors are not reported.

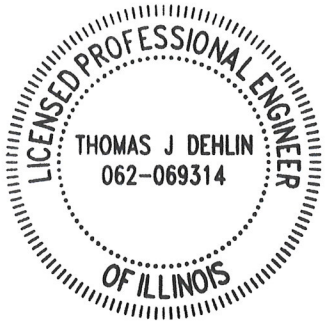
7.0 CERTIFICATION

I certify that:

- This safety factor assessment was prepared by me or under my direct supervision.
- The work was conducted in accordance with the requirements of 35 Ill. Adm. Code 845.460 and with the requirements of 40 CFR 257.73(e).
- I am a registered professional engineer under the laws of the State of Illinois.

Certified By: Thomas J. Dehlin Date: October 15, 2021

Seal:



Th. Dehlin
10/15/2021
Exp. 11/30/2021

ATTACHMENT B.4
2021 ANNUAL INFLOW DESIGN FLOOD CONTROL SYSTEM PLAN CERTIFICATION

6.0 CERTIFICATION

I certify that:

- This inflow design flood control system plan was prepared by me or under my direct supervision.
- The work was conducted in accordance with the requirements of 35 Ill. Adm. Code 845.510 and with the requirements of 40 CFR 257.82.
- I am a registered professional engineer under the laws of the State of Illinois.

Certified By: Thomas J. Dehlin Date: October 14, 2021

Seal:

Th. Dehlin
10/14/2021
Exp. 11/30/2021

ATTACHMENT C
2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

K P R G

ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG and Associates, Inc.

ILLINOIS CCR COMPLIANCE
ANNUAL GROUNDWATER MONITORING and CORRECTIVE ACTION REPORT - 2021

Midwest Generation, LLC
Waukegan Station
401 E. Greenwood Avenue
Waukegan, Illinois

Prepared By: KPRG and Associates, Inc.
14665 West Lisbon Road, Suite 1A
Brookfield, WI 53005

January 27, 2022

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2 – Summary of Turbidity Measurements
3 – Proposed Statistical Background Concentrations and Site-Specific Groundwater Protection Standards
4 – Summary of Groundwater Elevation Measurements
5 – Groundwater Flow Direction and Estimated Seepage Velocity/Flow Rate
6 – Groundwater Sample Collection Summary

FIGURES

1 – CCR Monitoring Network
2 – Areal Distribution of Concentrations Above Proposed GWPSs

ATTACHMENTS

1 – Monthly Potentiometric Maps

1.0 INTRODUCTION and OVERVIEW

Groundwater monitoring requirements in accordance with the Ill. Adm. Code Title 35, Part 845: Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments dated April 15, 2021 (State CCR Rule) have been completed for the ash pond monitoring wells located at the Midwest Generation, LLC (Midwest Generation) Waukegan Generating Station. The wells sampled were selected to meet the monitoring requirements of the State CCR Rule for the West and East Ash Ponds. The CCR monitoring well network around these ponds consists of eight monitoring wells (MW-01 though MW-04, MW-09, MW-11, MW-14 and MW-16). Wells MW-09, MW-11 and MW-14 are upgradient wells as shown on Figure 1. All CCR groundwater monitoring data available to date, which includes data from previous groundwater monitoring under the Federal CCR Rule, are provided in Tables 1 and 2. As part of the Application for Initial Operating Permit – Waukegan Generating Station submitted on October 31, 2021 (Application), *proposed* statistical background concentration calculations along with *proposed* site-specific Groundwater Protection Standards (GWPSs) for Illinois Environmental Protection Agency (Agency) review/approval. Table 3 summarizes the *proposed* background statistical concentrations for each parameter along with the site-specific *proposed* GWPSs in accordance with Section 845.600(a)(2). These are currently still under review by the Agency and, therefore, have not been finalized. However, for the purposes of evaluations required for the annual report, data comparisons will be presented relative to the "*proposed*" values for statistical background concentrations and site-specific GWPSs.

This overview of the 2021 groundwater monitoring period is provided in accordance with Section 845.610(e)(4). Each required item is discussed separately below.

- Section 845.610(e)(4)(A and B) – Proposed statistical background concentration calculations (see Table 3) were submitted to the Agency as part of the Application for Initial Operating. This Application is currently still under Agency review. However, assuming that the Agency accepts the proposed background calculations, the groundwater monitoring since the enactment of the State CCR Rule in April 2021 has identified the following constituents with potential statistically significant increases (SSIs) above the *proposed* background concentrations:

    - Barium: MW-09 (4th quarter).
    - Boron: MW-09 (2nd through 4th quarters).
    - Combined Radium: MW-11 (2nd and 3rd quarters)
    - Fluoride: MW-02 (2nd through 4th quarters), MW-04 (2nd through 4th quarters), MW-16 (2nd through 4th quarters).
    - Lead: MW-09 (3rd quarter)
    - Molybdenum: MW-09 (2nd through 4th quarters), MW-01 (2nd through 4th quarters), MW-02 (2nd through 4th quarters), MW-03 (2nd through 4th quarters), MW-04 (2nd through 4th quarters), MW-16 (2nd through 4th quarters).
    - pH: MW-01 (2nd through 4th quarters), MW-02 (2nd through 4th quarters).

- Selenium: MW-09 (2nd through 4th quarters), MW-14 (4th quarter).
- Sulfate: MW-09 (2nd quarter), MW-16 (2nd through 4th quarters).

Wells MW-09, MW-11 and MW-14 are upgradient monitoring wells.

- Section 845.610(e)(4)(C and D) – Proposed GWPSs in accordance with Section 845.600(a)(2) (see Table 3) were submitted to the Agency as part of the Application for Initial Operating Permit. This Application is currently still under review by the Agency. However, assuming that the Agency accepts the proposed GWPSs, the groundwater monitoring since the enactment of the State CCR Rule in April 2021 has identified the following constituents above the proposed GWPSs:

  - Boron: MW-09 (2nd through 4th quarters).
  - Lithium: MW-09 (3rd and 4th quarters).
  - Molybdenum: MW-09 (2nd through 4th quarters).
  - Selenium: MW-09 (3rd and 4th quarters)
  - Sulfate: MW-09 (2nd quarter)

  Well MW-09 is an upgradient monitoring point. There were no detections above proposed GWPSs in the five downgradient monitoring wells.

- Section 845.610(e)(4)(E though H) – The East and West Ash Ponds are currently not in corrective action.

2.0 ANNUAL STATUS SUMMARY

As discussed in Section 1.0, the CCR monitoring well network around the East and West Ash Ponds consists of eight monitoring wells (MW-01 though MW-04, MW-09, MW-11, MW-14 and MW-16). Wells MW-09, MW-11 and MW-14 are upgradient wells as shown on Figure 1. All CCR groundwater monitoring data available to date, which includes data from previous groundwater monitoring under the Federal CCR Rule, are provided in Tables 1 and 2. The backup analytical packages have been previously provided as part of the 60-day submittal requirements. Table 3 summarizes the proposed background statistical concentrations for each parameter along with the site-specific Proposed GWPSs in accordance with Section 845.600(a)(2). These are included as part of the Initial Operating Permit Application referenced above. They are currently still under review by the Agency and, therefore, have not been finalized. However, for the purposes of evaluations required for this annual report, data comparisons will be presented relative to the "*proposed*" values for statistical background concentrations and site specific GWPSs.

This section provides the information specified under Section 845.610(e) (2-3).

2.1 Summary of Actions and Submittals (Section 845.610(e)(2))

2021 is the initial year of State CCR Rule implementation starting with the second quarter within which the Rule became effective. The following key actions have been completed:

- Quarterly sampling of all parameters specified in Section 845.600(a) plus calcium and turbidity was completed and the associated 60-day data summary submittals were placed in the facilities operating record in accordance with Section 845.610(b)(3)(D). It is noted that during this time, eight rounds of turbidity measurements were collected for the purposes of statistical background development in accordance with Section 845.650(b)(A).

- Surveyed fixed location/elevation of existing transducers to allow for water level reading conversion to mean sea level reference elevations. Water levels were recorded monthly for the specified CCR monitoring wells and pond water levels were recorded with the existing instrumentation.

- An Application for Initial Operating Permit – Waukegan Generating Station was submitted to the Agency on October 31, 2021 for review in accordance with Section 845.230. As part of that permit application, proposed GWPSs were provided for review/approval. The application is currently under review by the Agency.

- Work has been initiated on the Application for Initial Construction Permit – Waukegan Generating Station during this reporting period. In accordance with Section 845.240, public meetings were held on December 15 and 16, 2021 presenting the results of the closure alternatives analysis and groundwater modeling completed in support of that analysis along with the proposed closure alternative. Public comment was received and is being assessed/considered as part of finalizing the Application for Initial Construction Permit, which is due February 1, 2022.

Key activities for the upcoming year include:

- Receipt of an approved Application for Initial Operating Permit which will facilitate finalization of the proposed statistical background concentrations and the proposed site specific GWPSs. Once these are accepted/finalized by the Agency, formal groundwater data comparisons and evaluations can be made based on quarterly monitoring results relative to these comparison criteria.

- Submittal of the Application for Construction Permit – Midwest Generation Waukegan Station.

- Continued quarterly groundwater monitoring/reporting.

2.2 Groundwater Data Summary (Section 845.610(e)(3)(A-F)

Identification of monitoring wells and associated constituent concentrations above the proposed site specific GWPSs was included in Section 1.0 above. A map showing these wells and constituent concentrations above the proposed GWPSs for the most recent sampling (4th quarter 2021) is provided on Figure 2.

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

Monthly water levels were recorded from the specified CCR monitoring wells. The water levels are summarized in Table 4. Potentiometric surface maps for each round of water levels are provided in Attachment 1. Groundwater flow beneath the East and West Ash Ponds is consistently in an easterly direction. When monthly water levels are taken concurrently with a quarterly groundwater sampling event, groundwater elevations from non-CCR wells are also used in developing the groundwater flow maps. In accordance with Section 845.640(c)(2), groundwater flow direction and seepage velocity estimates for each round of water levels are provided in Table 5.

A summary of the number of groundwater samples collected for analysis for each CCR monitoring well along with sample dates is provided in Table 6.

Proposed statistical background concentration calculations (see Table 3) were submitted to the Agency as part of the Application for Initial Operating. This Application is currently still under Agency review. However, assuming that the Agency accepts the proposed background calculations, the groundwater monitoring since the enactment of the State CCR Rule in April 2021 has identified the following constituents with potential statistically significant increases (SSIs) above the proposed background concentrations:

- Barium: MW-09 (4th quarter).
- Boron: MW-09 (2nd through 4th quarters).
- Combined Radium: MW-11 (2nd and 3rd quarters)
- Fluoride: MW-02 (2nd through 4th quarters), MW-04 (2nd through 4th quarters), MW-16 (2nd through 4th quarters).
- Lead: MW-09 (3rd quarter)
- Molybdenum: MW-09 (2nd through 4th quarters), MW-01 (2nd through 4th quarters), MW-02 (2nd through 4th quarters), MW-03 (2nd through 4th quarters), MW-04 (2nd through 4th quarters), MW-16 (2nd through 4th quarters).
- pH: MW-01 (2nd through 4th quarters), MW-02 (2nd through 4th quarters).
- Selenium: MW-09 (2nd through 4th quarters), MW-14 (4th quarter).
- Sulfate: MW-09 (2nd quarter), MW-16 (2nd through 4th quarters).

Wells MW-09, MW-11 and MW-14 are upgradient monitoring wells.

TABLES

Table 1. Groundwater Analytical Results - Midwest Generation, LLC, Waukegan Station, Waukegan, IL.

Well	Date	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Radium 226 + 228	Selenium	Thallium
MW-09 up-gradient	11/4/2015	13	210	450	0.14	6.60	370	1700	< 0.003	< 0.001	0.015	^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.081	< 0.0002	0.260	0.1818	< 0.0025	< 0.002
	3/2/2016	35	380	720	0.11	7.02	970	2800	< 0.003	0.06	0.05	< 0.001	< 0.0005	0.043	< 0.001	0.00061	0.094	< 0.0002	0.51	< 0.36	0.025	< 0.002
	5/3/2016	16	310	620	0.12	7.02	740	2500	< 0.003	0.0014	0.025	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.083	< 0.0002	0.63	< 0.512	0.024	< 0.002
	8/25/2016	4.5	130	270	0.21	7.13	190	1100	0.0041	0.042	0.024	< 0.001	0.0011	0.056	0.0027	0.0012	0.049	< 0.0002	0.063	0.482	0.039	< 0.002
	12/8/2016	15	200	330	0.18	7.01	270	1300	< 0.003	0.004	0.016	< 0.001	0.00052	< 0.005	< 0.001	< 0.0005	0.077	< 0.0002	0.24	< 0.72	0.038	< 0.002
	2/23/2017	14	190	290	0.12	7.68	320	1300	< 0.003	0.0027	0.014	< 0.001	< 0.0005	0.059	0.0018	< 0.0005	0.068	< 0.0002	0.26	< 0.461	0.016	< 0.002
	5/16/2017	27	160	67	0.29	8.15	420	970	< 0.003	< 0.001	0.0094	^< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.045	< 0.0002	0.51	< 0.342	0.0085	< 0.002
	7/6/2017	21	220	430	0.13	7.18	610	1800	< 0.003	0.002	0.018	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.089	< 0.0002	0.31	< 0.316	0.021	< 0.002
	9/13/2017	21	250	420	0.14	7.17	520	1800	< 0.003	0.0067	0.019	< 0.001	< 0.0005	0.0052	0.0017	< 0.0005	0.069	< 0.0002	0.33	0.944	0.0041	< 0.002
	11/29/2017	26	200	390	0.13	7.05	390	1600	< 0.003	0.0017	0.015	< ^ 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.086	< 0.0002	0.47	0.625	0.042	< 0.002
	5/31/2018	32	200	29	0.1	6.85	490	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/6/2018	30	170	23	0.11	7.33	290	930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/15/2019	26	120	260	0.13	7.53	31	1000	< 0.003	< 0.001	0.0073	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.035	< 0.0002	0.54	< 0.433	< 0.0025	< 0.002
	11/19/2019	22	160	17	0.16	8.04	300	750	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/22/2020	22	140	9.2	0.18	7.81	360	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/18/2020	28	250	290	0.18	7.43	420	1700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/6/2021	31	170	35	0.12	7.51	420	910	< 0.003	< 0.001	0.0075	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.04	< 0.0002	0.47	< 0.614	0.023	< 0.002
	8/19/2021	7.2	150	170	0.13	7.01	210	350	< 0.003	0.0019	0.015	< 0.001	< 0.0005	< 0.005	< ^+ 0.001	0.0015	0.066	< 0.0002	0.12	< 0.457	0.071	< ^+ 0.002
	11/4/2021	10	150	160	0.24	7.07	180	980	< 0.003	0.0026	0.074	< ^1+ 0.001	< 0.0005	< 0.005	0.0011	< 0.0005	0.06	< 0.0002	0.12	< 0.775	0.097	< 0.002
MW-11 up-gradient	11/5/2015	5.2	140	240	0.13	6.51	190	1100	< 0.003	0.77	0.039	^ < 0.001	< 0.0005	< 0.005	< 0.001	0.001	0.055	< 0.0002	< 0.0050	0.656	< 0.0025	< 0.002
	3/2/2016	4.0	170	240	0.1	7.16	210	1200	< 0.003	0.55	0.048	< 0.001	< 0.0005	0.0058	< 0.001	0.0011	0.049	< 0.0002	< 0.0050	1.09	< 0.0025	< 0.002
	5/5/2016	5.0	140	280	0.11	7.17	160	1000	< 0.003	0.51	0.038	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.057	< 0.0002	< 0.005	1.24	< 0.0025	< 0.002
	8/26/2016	3.5	180	240	0.13	6.97	110	1100	< 0.003	1.1	0.05	< 0.001	< 0.0005	0.0055	< 0.001	0.0005	0.055	< 0.0002	< 0.005	1.04	< 0.0025	< 0.002
	12/7/2016	3.0	170	270	0.12	7.06	110	1200	< 0.003	0.87	0.049	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.038	< 0.0002	< 0.005	1.87	< 0.0025	< 0.002
	2/24/2017	2.4	180	220	4.9	6.61	170	1200	< 0.003	0.58	0.047	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.039	< 0.0002	< 0.005	0.982	< 0.0025	< 0.002
	5/18/2017	1.8	160	170	0.12	7.42	120	1000	< 0.003	0.5	0.047	^< 0.001	< 0.0005	0.0056	< 0.001	< 0.0005	0.036	< 0.0002	< 0.005	1.31	< 0.0025	< 0.002
	7/6/2017	2.4	160	190	0.14	7.33	130	1100	< 0.003	0.69	0.056	< 0.001	< 0.0005	0.0057	< 0.001	< 0.0005	0.041	< 0.0002	< 0.005	0.889	< 0.0025	< 0.002
	9/13/2017	1.9	140	150	0.26	7.16	96	870	< 0.003	0.86	0.036	< 0.001	< 0.0005	0.008	< 0.001	0.00071	0.037	< 0.0002	0.0054	0.718	< 0.0025	< 0.002
	11/30/2017	2.2	170	200	0.14	6.99	93	1100	< 0.003	0.59	0.05	< ^ 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.041	< 0.0002	< 0.005	1.21	< 0.0025	< 0.002
	5/31/2018	1.5	210	160	0.1	6.74	130	1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/6/2018	2.3	170	150	0.12	7.21	78	990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/15/2019	3.2	120	260	0.13	7.14	31	1000	< 0.003	0.3	0.048	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.038	< 0.0002	< 0.005	1.5	< 0.0025	< 0.002
	11/19/2019	4.1	130	200	0.15	7.51	29	860	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/22/2020	3.2	110	150	0.15	7.16	47	740	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/19/2020	2.3	140	130	0.2	7.00	28	800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/6/2021	2.4	130	120	0.15	7.13	45	770	< 0.003	0.44	0.044	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.038	< 0.0002	< 0.005	1.7	< 0.0025	< 0.002
	8/19/2021	1.3	140	88	0.16	6.95	45	730	< 0.003	1.1	0.055	< 0.001	< 0.0005	0.0057	< ^+ 0.001	< 0.0005	0.033	< 0.0002	< 0.005	1.89	< 0.0025	< ^+ 0.002
	11/4/2021	1.6	130	100	0.16	6.80	45	740	< 0.003	0.9	0.052	< ^1+ 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.037	< 0.0002	0.006	1.35	<^6+^+ 0.0025	< 0.002
MW-14 up-gradient	11/5/2015	1.4	150	190	0.19	6.78	140	1000	< 0.003	0.19	0.052	^ < 0.001	< 0.0005	0.01	0.0012	< 0.0005	0.025	< 0.0002	< 0.005	0.7087	< 0.0025	< 0.002
	3/2/2016	0.93	150	110	0.17	7.24	150	870	0.015	4.3	0.12	< 0.001	< 0.0005	1.1	0.0036	0.00068	0.019	< 0.0002	< 0.005	1.36	< 0.0025	< 0.002
	5/5/2016	1.2	170	120	0.18	7.17	190	980	< 0.003	0.35	0.054	< 0.001	< 0.0005	0.017	0.0014	< 0.0005	0.021	< 0.0002	< 0.005	< 0.488	< 0.0025	< 0.002
	8/26/2016	1.5	200	210	0.12	7.00	190	1300	< 0.003	1.0	0.058	< 0.001	< 0.0005	0.021	< 0.001	< 0.0005	0.026	< 0.0002	< 0.005	0.75	< 0.0025	< 0.002
	12/7/2016	0.95	240	340	0.25	6.81	120	1100	0.0096	19	0.42	< 0.001	0.00089	4.6	0.0025	0.00084	0.022	< 0.0002	0.0094	< 0.866	0.014	< 0.002
	2/23/2017	0.73	150	99	0.19	6.88	110	730	0.0061	9.3	0.36	< 0.001	0.001	4.6	0.0070	0.00095	0.017	< 0.0002	< 0.005	< 0.514	0.0031	< 0.002
	5/18/2017	0.81	120	130	0.3	7.62	70	590	0.0035	3.3	0.44	^< 0.001	0.002	4.8	0.0041	0.00054	0.013	0.00043	< 0.005	0.779	< 0.0025	< 0.002
	7/6/2017	1.2	190	180	0.13	7.29	190	1300	< 0.003	0.4	0.071	< 0.001	< 0.0005	0.026	0.0013	< 0.0005	0.034	< 0.0002	< 0.005	0.549	< 0.0025	< 0.002
	9/13/2017	2.3	180	190	0.15	7.20	270	1200	< 0.003	0.52	0.065	< 0.001	< 0.0005	0.0078	< 0.0010	< 0.0005	0.025	< 0.0002	< 0.005	< 0.359	< 0.0025	< 0.002
	11/30/2017	0.85	170	130	0.19	7.33	99	940	0.0093	21	0.27	< ^ 0.001	0.00068	3.2	0.0021	< 0.0005	0.023	< 0.0002	0.0055	1.01	0.0072	< 0.002
	6/1/2018	0.54	100	57	0.28	6.89	42	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/6/2018	0.98	160	110	0.24	7.36	53	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/15/2019	0.69	110	190	0.23	7.25	35	780	0.0036	2.7	0.091	< 0.001	< 0.0005	0.71	< 0.0010	< 0.0005	0.014	< 0.0002	< 0.005	0.766	< 0.0025	< 0.002
	11/19/2019	0.62	130	68	0.16	7.58	21	630	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/22/2020	0.43	120	20	0.21	7.16	9.5	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/19/2020	0.71	130	40	0.2	7.09	20	520	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/6/2021	0.45	130	41	0.19	7.16	28	390	< 0.003	0.91	0.05	< 0.001	< 0.0005	0.037	< 0.0010	< 0.0005	0.015	< 0.0002	< 0.005	< 0.739	< 0.0025	< 0.002
	8/19/2021	0.48	130	32	0.13	6.96	34	450	< 0.003	3.3	0.046	< 0.001	< 0.0005	0.045	< ^+ 0.0010	< 0.0005	0.013	< 0.0002	< 0.005	< 0.597	< 0.0025	< ^+ 0.002
	11/4/2021	0.66	120	37	0.21	7.15	72	580	0.0046	0.37	0.036	< ^1+ 0.001	< 0.0005	0.12	< 0.001	< 0.0005	0.014	< 0.0002	0.0078	< 0.798	0.016	< 0.002
MW-01 down-gradient	11/2/2015	1.8	64	71	0.46	10.93	310	560	< 0.003	0.074	0.025	^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.04	0.0683	0.0047	< 0.002
	3/1/2016	V 1.9	58	63	0.26	11.13	270	570	< 0.003	0.1	0.026	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.059	< 0.317	< 0.0025	< 0.002
	5/4/2016	2.0	45	60	0.3	11.09	210	490	< 0.003	0.11	0.017	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.069	< 0.40	< 0.0025	< 0.002
	8/23/2016	2.0	42	60	0.26	10.49	240	550	< 0.003	0.074	0.012	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.065	< 0.478	0.0042	< 0.002
	12/5/2016	2.2	55	65	0.34	10.46	180	560	< 0.003	0.13	0.017	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.07	< 0.465	0.0025	< 0.002
	2/21/2017	2.2	50	61	0.29	11.30	250	540	< 0.003	0.15	0.016	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.069	0.516	< 0.0025	< 0.002
	5/15/2017	2.1	52	59	0.37	10.69	330	570	< 0.003	0.14	0.017	^< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.062	< 0.424	0.0036	< 0.002
	7/5/2017	2.3	44	51	0.34	10.83	320	570	< 0.003	0.066	0.014	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.059	< 0.289	0.0095	< 0.002
	9/14/2017	2.4	71	47	0.24	10.45	430	770	< 0.003	0.04	0.033	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.047	< 0.383	0.0096	< 0.002
	11/27/2017	2.7	84	43	0.11	7.85	330	840	< 0.003	0.021	0.055	< ^ 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.034	0.568	0.023	< 0.002
	5/29/2018	2.4	54	58	0.33	8.44	350	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/5/2018	2.0	38	43	0.25	8.70	210	630	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/14/2019	2.2	56	45	0.18	9.85	250	560	< 0.003	0.067	0.032	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.053	0.36	< 0.0025	< 0.002
	11/19/2019	2.3	38	39	0.24	10.58	240	530	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/21/2020	2.8	55	25	0.22	9.40	240	470	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/17/2020	3.3	120	95	0.14	7.97	250	640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/5/2021	< 5.0	66	67	0.22	9.00	180	430	< 0.003	0.025	0.04	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.016	< 0.602	< 0.0025	< 0.002
	8/18/2021	2.7	72	60	0.17	8.31	170	430	< 0.003	0.023	0.044	< 0.001	< 0.0005	< 0.005	< ^+ 0.001	< 0.0005	< 0.01	< 0.0002	0.021	< 0.471	< 0.0025	< ^+ 0.002
	11/3/2021	2.9	67	60	0.22	8.56	180	440	< 0.003	0.024	0.04	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< ^+ 0.01	< 0.0002	0.026	< 0.553	< 0.0025	< 0.002

Notes: All units are in mg/l except pH is in standard units.
V- Serial dilution exceeds the control limits.
R- Resampling event
NA - Not analyzed.

H - Sample preped or analyzed beyond specific holding time.
^ - Denotes instrument related QC exceeds the control limits
^+ - Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^1+ - Initial Calibration Verification (iCV) is outside acceptance limits, high biased.

^6+ - Interference Check Standard (ICSA and/or ICSAB) is outside acceptance limits, high biased.

Table 1. Groundwater Analytical Results - Midwest Generation, LLC, Waukegan Station, Waukegan, IL.

Well	Date	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Radium 226 + 228	Selenium	Thallium
MW-02 down-gradient	11/2/2015	3.0	32	47	0.78	8.27	230	460	< 0.003	0.014	0.016	^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.0630	0.4628	< 0.0025	< 0.002
	3/1/2016	4.1	39	47	1.3	8.57	220	510	< 0.003	0.011	0.02	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.078	0.529	< 0.0025	< 0.002
	5/4/2016	3.3	34	51	1.5	8.19	180	440	< 0.003	0.0081	0.018	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.069	< 0.425	< 0.0025	< 0.002
	8/23/2016	3.1	42	59	1.3	7.52	250	500	< 0.003	0.0082	0.016	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.010	< 0.0002	0.056	< 0.439	< 0.0025	< 0.002
	12/5/2016	3.1	28	56	1.0	8.62	160	430	< 0.003	0.018	0.015	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.071	0.509	< 0.0025	< 0.002
	2/21/2017	3.3	31	52	0.76	8.75	190	420	< 0.003	0.028	0.012	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.051	< 0.416	0.0038	< 0.002
	5/15/2017	3.6	85	48	0.64	8.33	320	640	< 0.003	0.02	0.029	^< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.047	0.425	0.023	< 0.002
	7/5/2017	4.2	100	52	0.42	7.92	300	710	< 0.003	0.0094	0.031	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.047	< 0.295	0.017	< 0.002
	9/14/2017	2.5	87	54	0.44	8.19	340	780	< 0.003	0.012	0.035	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.049	0.769	0.0052	< 0.002
	11/27/2017	3.4	69	57	0.62	7.34	200	570	< 0.003	0.011	0.022	< ^ 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.048	< 0.442	< 0.0025	< 0.002
	5/29/2018	4.5	160	43	0.40	6.85	420	990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/5/2018	3.1	77	59	0.61	8.06	180	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/14/2019	2.9	47	49	1.0	8.30	140	430	< 0.003	0.0094	0.013	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.069	0.37	< 0.0025	< 0.002
	11/19/2019	4.7	140	43	0.7	7.37	270	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/21/2020	3.4	86	48	1.0	8.02	250	580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/17/2020	4.0	79	20	0.8	7.67	310	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/5/2021	4.6	70	37	0.7	8.39	190	420	< 0.003	0.008	0.03	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.023	0.97	< 0.0025	< 0.002
	8/18/2021	4.1	84	39	0.5	7.92	190	480	< 0.003	0.0088	0.029	< 0.001	< 0.0005	< 0.005	< ^+ 0.001	< 0.0005	< 0.01	< 0.0002	0.021	< 0.525	< 0.0025	< ^+ 0.002
	11/3/2021	4.2	59	43	0.63	7.78	170	410	< 0.003	0.009	0.025	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< ^+ 0.01	< 0.0002	0.03	0.763	< 0.0025	< 0.002
MW-03 down-gradient	11/2/2015	2.3	72	87	0.51	9.26	270	570	< 0.003	0.0068	0.011	^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.0370	0.071	< 0.0025	< 0.002
	3/1/2016	2.9	61	70	0.33	7.33	220	530	< 0.003	0.0069	0.015	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.0560	< 0.332	0.0043	< 0.002
	5/4/2016	2.4	42	74	0.56	7.25	170	470	< 0.003	0.007	0.011	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.058	< 0.48	< 0.0025	< 0.002
	8/24/2016	2.0	70	59	0.3	9.13	200	430	< 0.003	0.010	0.0069	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.042	< 0.428	< 0.0025	< 0.002
	12/5/2016	2.4	57	60	0.41	7.62	120	440	< 0.003	0.0065	0.0094	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.010	< 0.0002	0.044	< 0.526	< 0.0025	< 0.002
	2/21/2017	2.2	56	65	0.33	7.56	180	460	< 0.003	0.011	0.0067	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.010	< 0.0002	0.043	0.437	< 0.0025	< 0.002
	5/16/2017	3.9	110	61	0.27	7.90	320	820	< 0.003	0.0087	0.039	^< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.010	< 0.0002	0.041	< 0.461	0.014	< 0.002
	7/5/2017	3.0	60	60	0.28	7.46	200	470	< 0.003	0.0029	0.017	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.010	< 0.0002	0.058	< 0.304	0.0045	< 0.002
	9/14/2017	2.1	86	57	0.26	7.53	260	680	< 0.003	0.0024	0.026	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.010	< 0.0002	0.056	0.462	0.0081	< 0.002
	11/28/2017	2.6	69	63	0.56	6.96	120	500	< 0.003	0.0025	0.016	< ^ 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.010	< 0.0002	0.057	1.17	< 0.0025	< 0.002
	5/29/2018	2.4	67	61	0.38	6.84	190	480	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/5/2018	2.4	54	54	0.5	8.99	150	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/14/2019	4.2	86	17	0.59	7.21	270	660	< 0.003	0.0059	0.022	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.010	< 0.0002	0.053	0.657	0.0061	< 0.002
	11/19/2019	4.2	130	15	0.25	7.47	300	740	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/21/2020	3.8	120	23	0.29	6.87	270	660	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/17/2020	3.8	120	53	0.29	7.05	240	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/5/2021	3.3	110	43	0.23	7.18	210	550	< 0.003	0.0066	0.035	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.010	< 0.0002	0.016	0.689	0.0065	< 0.002
	8/18/2021	3	150	46	0.17	6.9	250	690	< 0.003	0.0052	0.041	< 0.001	< 0.0005	< 0.005	< ^+ 0.001	< 0.0005	< 0.010	0.00031	0.045	0.656	< 0.0025	< ^+ 0.002
	11/3/2021	3.2	120	40	0.18	7.05	250	600	< 0.003	0.0071	0.036	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< ^+ 0.010	< 0.0002	0.025	< 0.438	0.0093	< 0.002
MW-04 down-gradient	11/3/2015	1.8	66	62	0.51	6.68	240	480	< 0.003	0.0066	0.032	^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.031	0.2732	< 0.0025	< 0.002
	3/1/2016	2.0	58	51	0.5	7.17	170	450	< 0.003	0.0083	0.033	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.048	0.478	< 0.0025	< 0.002
	5/4/2016	1.6	44	49	0.61	6.92	140	340	< 0.003	0.0083	0.017	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.046	< 0.542	< 0.0025	< 0.002
	8/24/2016	2.0	46	58	0.56	7.01	120	370	< 0.003	0.0099	0.019	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.049	< 0.461	< 0.0025	< 0.002
	12/5/2016	3.4	200	60	0.21	7.40	300	1000	< 0.003	0.019	0.13	< 0.001	< 0.0005	< 0.005	< 0.0010	< 0.0005	< 0.01	< 0.0002	0.0097	1.04	0.02	< 0.002
	2/22/2017	2.4	150	41	0.17	7.44	290	850	< 0.003	0.036	0.093	< 0.001	< 0.0005	< 0.005	< 0.0010	< 0.0005	< 0.01	< 0.0002	0.015	0.886	0.0042	< 0.002
	5/16/2017	2.5	170	29	0.32	7.94	400	970	< 0.003	0.024	0.072	^< 0.001	< 0.0005	< 0.005	< 0.0010	< 0.0005	< 0.01	< 0.0002	0.017	0.55	0.032	< 0.002
	7/5/2017	3.6	200	51	0.29	7.09	520	1100	< 0.003	0.0034	0.076	< 0.001	< 0.0005	< 0.005	< 0.0010	< 0.0005	< 0.01	< 0.0002	0.017	0.515	0.062	< 0.002
	9/14/2017	2.5	180	45	0.28	7.04	480	1100	< 0.003	0.0028	0.076	< 0.001	< 0.0005	< 0.005	< 0.0010	< 0.0005	< 0.01	< 0.0002	0.021	0.794	0.026	< 0.002
	11/28/2017	2.3	110	32	0.28	7.04	130	560	< 0.003	0.0027	0.053	< ^ 0.001	< 0.0005	< 0.005	< 0.0010	< 0.0005	< 0.01	< 0.0002	0.032	0.872	0.0069	< 0.002
	5/30/2018	3.0	150	21	0.38	6.57	200	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/6/2018	2.5	150	58	0.37	6.83	240	900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/14/2019	3.3	100	58	0.64	7.30	200	730	< 0.003	0.0026	0.039	< 0.001	< 0.0005	< 0.005	< 0.0010	< 0.0005	< 0.01	< 0.0002	0.07	0.69	0.004	< 0.002
	11/19/2019	2.9	120	44	0.75	7.27	270	680	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/21/2020	2.9	100	33	0.9	7.18	290	670	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/18/2020	3.1	100	18	1.1	7.17	250	690	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/5/2021	3.3	75	17	0.91	7.46	190	530	< 0.003	0.0069	0.032	< 0.001	< 0.0005	< 0.005	< 0.0010	< 0.0005	< 0.01	< 0.0002	0.056	< 0.781	0.0041	< 0.002
	8/18/2021	3.0	92	39	0.8	7.45	200	590	< 0.003	0.0052	0.041	< 0.001	< 0.0005	< 0.005	< ^+ 0.0010	< 0.0005	< 0.01	0.00031	0.045	0.523	< 0.0025	< ^+ 0.002
	11/3/2021	2.7	67	50	0.99	7.36	150	550	< 0.003	0.0094	0.037	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< ^+ 0.01	< 0.0002	0.04	0.572	< 0.0025	< 0.002
MW-16 down-gradient	11/3/2015	4.1	230	87	0.43	6.24	610	1400	< 0.003	0.001	0.047	^ < 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.071	< 0.0002	0.021	0.865	0.0074	< 0.002
	3/2/2016	3.1	360	130	0.35	6.76	990	1700	< 0.003	0.0015	0.035	< 0.001	0.001	< 0.005	< 0.001	< 0.0005	0.13	< 0.0002	0.013	< 0.396	0.0052	0.002
	5/2/2016	4.9	250	150	0.49	6.99	620	1600	< 0.003	0.0011	0.052	< 0.001	0.00053	< 0.005	< 0.001	< 0.0005	0.024	< 0.0002	0.014	0.70	< 0.0025	< 0.002
	8/24/2016	3.6	130	53	0.71	7.00	330	830	< 0.003	< 0.001	0.028	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.014	< 0.0002	0.022	< 0.462	< 0.0025	< 0.002
	12/5/2016	3.8	160	52	0.51	7.03	280	920	< 0.003	0.036	0.062	< 0.001	< 0.0005	< 0.005	0.0012	0.00054	0.011	< 0.0002	0.021	0.791	< 0.0025	< 0.002
	2/24/2017	6.5	200	67	0.2	5.76	570	1100	< 0.003	0.027	0.067	< 0.001	< 0.0005	0.005	0.0011	< 0.0005	0.012	< 0.0002	0.023	0.54	0.0037	< 0.002
	5/16/2017	2.6	340	130	0.15	7.57	760	1700	< 0.003	0.043	0.045	^< 0.001	0.0043	0.0076	< 0.001	0.00057	0.13	< 0.0002	0.016	0.441	0.016	0.0021
	7/6/2017	9.5	190	70	0.57	7.35	480	1100	< 0.003	0.0029	0.029	< 0.001	0.00069	< 0.005	< 0.001	< 0.0005	0.017	< 0.0002	0.017	< 0.382	< 0.0025	< 0.002
	9/13/2017	2.8	190	55	0.61	7.33	460	970	< 0.003	< 0.001	0.024	< 0.001	0.0005	< 0.005	< 0.001	< 0.0005	< 0.01	< 0.0002	0.024	< 0.335	< 0.0025	< 0.002
	11/27/2017	4.2	140	58	0.71	7.16	270	760	< 0.003	0.0031	0.026	< ^ 0.001	0.00097	< 0.005	< 0.001	< 0.0005	0.01	< 0.0002	0.026	0.557	< 0.0025	< 0.002
	6/1/2018	3	380	130	0.32	6.53	890	1900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	8/22/2018 (R)	NA	190	NA	NA	NA	NA	1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/6/2018	3.9	380	150	0.39	6.78	550	1900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/4/2018 (R)	NA	320	NA	NA	NA	NA	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/15/2019	2.9	400	65	0.31	6.67	990	2000	< 0.003	0.0011	0.029	< 0.001	0.003	< 0.005	< 0.001	< 0.0005	0.15	< 0.0002	0.0086	< 0.491	0.0039	< 0.002
	11/19/2019	7.2	410	480	0.46	6.89	680	3100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/27/2019 (R)	NA	NA	NA	NA	NA	NA	2800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/21/2020	7.7	420	200	0.5	6.79	1100	2400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/17/2020	3.2	130	54	0.71	7.22	320	990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	5/6/2021	3.1	120	55	0.68	7.33	300	740	< 0.003	< 0.001	0.024	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.014	< 0.0002	0.019	< 0.919	< 0.0025	< 0.002
	8/18/2021	3.1	140	55	0.66	7.19	320	790	< 0.003	< 0.001	0.024	< 0.001	< 0.0005	< 0.005	< ^+ 0.001	< 0.0005	0.011	< 0.0002	0.02	< 0.422	< 0.0025	< ^+ 0.002
	11/4/2021	3	120	48	0.68	7.32	290	810	< 0.003	0.001	0.023	< ^1+ 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	0.01	< 0.0002	0.02	< 0.457	<^6+^+ 0.0025	< 0.002

Notes: All units are in mg/l except pH is in standard units.
V- Serial dilution exceeds the control limits.
R- Resampling event
NA - Not analyzed.
H - Sample preped or analyzed beyond specific holding time.
^ - Denotes instrument related QC exceeds the control limits.
^+ - Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^1+ - Initial Calibration Verification (iCV) is outside acceptance limits, high biased.
^6+ - Interference Check Standard (ICSA and/or ICSAB) is outside acceptance limits, high biased.

Table 2. Groundwater Turbidity - Midwest Generation, LLC, Waukegan Station, Waukegan, IL.

Well	Date	Turbidity (NTU)
MW-09	3/3/2021	4.70
	3/30/2021	10.15
	5/6/2021	3.44
	5/27/2021	12.41
	6/18/2021	27.7
	7/8/2021	28.77
	8/19/2021	77.36
	9/29/2021	18.41
	11/4/2021	12.66
MW-11	3/2/2021	2.20
	3/30/2021	6.08
	5/6/2021	2.34
	5/27/2021	2.69
	6/18/2021	13.7
	7/8/2021	4.71
	8/19/2021	139.34
	9/29/2021	402.9
	11/4/2021	152.7
MW-14	3/2/2021	2035
	3/30/2021	151.5
	5/6/2021	901.4
	5/27/2021	2385.61
	6/18/2021	69.25
	7/8/2021	73.18
	8/19/2021	77.04
	9/29/2021	8.42
	11/4/2021	7.42
MW-01	3/1/2021	0.59
	3/30/2021	5.72
	5/5/2021	1.42
	5/27/2021	2.02
	6/18/2021	2.33
	7/8/2021	3.6
	8/18/2021	2.33
	9/29/2021	3.03
	11/3/2021	3.05
MW-02	3/1/2021	0.69
	3/30/2021	5.66
	5/5/2021	1.65
	5/27/2021	2.95
	6/18/2021	2.71
	7/8/2021	4.2
	8/18/2021	9.03
	9/29/2021	3.42
	11/3/2021	4.05
MW-03	3/1/2021	0.75
	3/30/2021	5.73
	5/5/2021	1.71
	5/27/2021	2.02
	6/18/2021	2.56
	7/8/2021	3.74
	8/18/2021	2.6
	9/29/2021	2.82
	11/3/2021	3.26
MW-04	3/1/2021	1.30
	3/30/2021	6.21
	5/5/2021	1.77
	5/27/2021	2.73
	6/18/2021	3.69
	7/8/2021	5.36
	8/18/2021	40.61
	9/29/2021	3.48
	11/3/2021	4.26
MW-16	3/1/2021	0.77
	3/30/2021	6.07
	5/6/2021	1.63
	5/27/2021	2.00
	6/18/2021	2.59
	7/8/2021	3.58
	8/18/2021	3.22
	9/29/2021	6.05
	11/4/2021	4.0

Table 3. Proposed Site-Specific Groundwater Protection Standards - Waukegan Generating Station

Upgradient Well(s)	Parameter	Section 845.600 Standards	Interwell Background Prediction Limit	**Proposed GWPS**
MW-14	Antimony	0.006	0.015	**0.015**
MW-11/MW-14 Pooled	Arsenic	0.01	21	**21**
MW-11	Barium	2	0.064	**2**
MW-9/MW-11/MW-14 Pooled	Beryllium	0.004	0.001	**0.004**
MW-11	Boron	2.0	5.965	**5.965**
MW-14	Cadmium	0.005	0.002	**0.005**
MW-11/MW-14 Pooled*	Chloride	200	389	**389**
MW-14	Chromium	0.1	4.8	**4.8**
MW-14	Cobalt	0.006	0.007	**0.007**
MW-14	Combined Radium 226 + 228 (pCi/L)	5.0	1.566	**5.0**
MW-14	Fluoride	4.0	0.334	**4.0**
MW-9/MW-11/MW-14 Pooled	Lead	0.0075	0.0011	**0.0075**
MW-14	Lithium	0.04	0.040	**0.040**
MW-14	Mercury	0.002	0.0004	**0.002**
MW-11/MW-14 Pooled	Molybdenum	0.10	0.009	**0.100**
MW-11/MW-14 Pooled	pH (standard units)	6.5-9.0	6.51-7.74	**6.5-9.0**
MW-11/MW-14 Pooled	Selenium	0.05	0.014	**0.050**
MW-11/MW-14 Pooled*	Sulfate	400	259.1	**400**
MW-9/MW-11/MW-14 Pooled	Thallium	0.002	0.002	**0.002**
MW-11/MW-14 Pooled*	Total Dissolved Solids	1200	1589	**1589**
MW-11	Calcium	NE	225.1	**225.1**
MW-14	Turbidity (NTU)	NE	12,436	**12,436**

All values are in mg/L (ppm) unless otherwise noted.
* - Limited to original 8 background samples.
NE - Not Established
Bold - Site-specific Groundwater Protection Standard based on Section 845.600(a)(2)

Table 4. Groundwater Elevations - Midwest Generation, LLC, Waukegan Station, Waukegan, IL

Well ID	Date	Top of Casing Elevation (ft above MSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft above MSL)
MW-01	11/2/2015	603.12	20.75	582.37
	2/29/2016	603.12	20.71	582.41
	5/2/2016	603.12	20.89	582.23
	8/23/2016	603.12	22.01	581.11
	12/2/2016	603.62	22.27	581.35
	2/21/2017	603.62	22.42	581.20
	5/15/2017	603.62	20.52	583.10
	7/5/2017	603.62	21.81	581.81
	9/11/2017	603.62	21.47	582.15
	11/27/2017	603.62	21.82	581.80
	5/29/2018	603.62	19.43	584.19
	11/5/2018	603.62	20.45	583.17
	5/14/2019	603.62	19.81	583.81
	11/18/2019	603.62	19.89	583.73
	4/21/2020	603.62	20.81	582.81
	11/17/2020	603.62	21.51	582.11
	3/1/2021	603.62	21.19	582.43
	3/30/2021	603.62	21.34	582.28
	5/5/2021	603.62	21.76	581.86
	5/27/2021	603.62	21.78	581.84
	6/18/2021	603.62	21.90	581.72
	7/8/2021	603.62	21.75	581.87
	8/18/2021	603.62	21.82	581.80
	9/29/2021	603.62	22.22	581.40
	10/12/2021	603.62	21.65	581.97
	11/3/2021	603.62	21.45	582.17
	12/14/2021	603.62	21.52	582.10
MW-02	11/2/2015	603.04	20.71	582.33
	2/29/2016	603.04	20.59	582.45
	5/2/2016	603.04	20.82	582.22
	8/23/2016	603.04	22.04	581.00
	12/2/2016	603.39	22.13	581.26
	2/21/2017	603.39	22.24	581.15
	5/15/2017	603.39	20.25	583.14
	7/5/2017	603.39	21.59	581.80
	9/11/2017	603.39	21.21	582.18
	11/27/2017	603.39	21.63	581.76
	5/29/2018	603.39	19.12	584.27
	11/5/2018	603.39	20.19	583.20
	5/14/2019	603.39	19.55	583.84
	11/18/2019	603.39	19.60	583.79
	4/21/2020	603.39	20.57	582.82
	11/17/2020	603.39	21.32	582.07
	3/1/2021	603.39	21.04	582.35
	3/30/2021	603.39	21.13	582.26
	5/5/2021	603.39	21.56	581.83
	5/27/2021	603.39	21.60	581.79
	6/18/2021	603.39	21.65	581.74
	7/8/2021	603.39	21.48	581.91
	8/18/2021	603.39	21.56	581.83
	9/29/2021	603.39	22.00	581.39
	10/12/2021	603.39	21.50	581.89
	11/3/2021	603.39	21.26	582.13
	12/14/2021	603.39	21.40	581.99
MW-03	11/2/2015	602.91	20.37	582.54
	2/29/2016	602.91	20.43	582.48
	5/2/2016	602.91	20.66	582.25
	8/23/2016	602.91	22.12	580.79
	12/2/2016	603.70	22.52	581.18
	2/21/2017	603.70	22.64	581.06
	5/15/2017	603.70	20.55	583.15
	7/5/2017	603.70	21.92	581.78
	9/11/2017	603.70	21.55	582.15
	11/28/2017	603.70	21.96	581.74
	5/29/2018	603.70	19.40	584.30
	11/5/2018	603.70	20.48	583.22
	5/14/2019	603.70	19.80	583.90
	11/18/2019	603.70	20.05	583.65
	4/21/2020	603.70	20.82	582.88
	11/17/2020	603.70	21.60	582.10
	3/1/2021	603.70	21.30	582.40
	3/30/2021	603.70	21.40	582.30
	5/5/2021	603.70	21.83	581.87
	5/27/2021	603.70	21.85	581.85
	6/18/2021	603.70	21.91	581.79
	7/8/2021	603.70	21.71	581.99
	8/18/2021	603.70	21.80	581.90
	9/29/2021	603.70	22.30	581.40
	10/12/2021	603.70	21.70	582.00
	11/3/2021	603.70	21.53	582.17
	12/14/2021	603.70	21.60	582.10

Table 4. Groundwater Elevations - Midwest Generation, LLC, Waukegan Station, Waukegan, IL

Well ID	Date	Top of Casing Elevation (ft above MSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft above MSL)
MW-04	11/2/2015	603.19	20.83	582.36
	2/29/2016	603.19	20.70	582.49
	5/2/2016	603.19	20.94	582.25
	8/23/2016	603.19	22.69	580.50
	12/2/2016	603.17	22.18	580.99
	2/21/2017	603.17	22.36	580.81
	5/15/2017	603.17	20.04	583.13
	7/5/2017	603.17	21.46	581.71
	9/11/2017	603.17	21.05	582.12
	11/28/2017	603.17	21.54	581.63
	5/30/2018	603.17	18.88	584.29
	11/6/2018	603.17	19.96	583.21
	5/14/2019	603.17	19.35	583.82
	11/18/2019	603.17	19.36	583.81
	4/21/2020	603.17	20.40	582.77
	11/18/2020	603.17	21.23	581.94
	3/1/2021	603.17	20.95	582.22
	3/30/2021	603.17	21.02	582.15
	5/5/2021	603.17	21.52	581.65
	5/27/2021	603.17	21.55	581.62
	6/18/2021	603.17	21.62	581.55
	7/8/2021	603.17	21.45	581.72
	8/18/2021	603.17	21.49	581.68
	9/29/2021	603.17	22.08	581.09
	10/12/2021	603.17	21.35	581.82
	11/3/2021	603.17	21.15	582.02
	12/14/2021	603.17	21.40	581.77
MW-09	11/2/2015	594.00	9.78	584.22
	2/29/2016	594.00	9.89	584.11
	5/2/2016	594.00	9.59	584.41
	8/23/2016	594.00	10.58	583.42
	12/2/2016	594.00	10.27	583.73
	2/21/2017	594.00	10.21	583.79
	5/15/2017	594.00	9.57	584.43
	7/6/2017	594.00	9.81	584.19
	9/11/2017	594.00	10.25	583.75
	11/29/2017	594.00	9.98	584.02
	5/31/2018	594.00	9.38	584.62
	11/6/2018	594.00	9.52	584.48
	5/14/2019	594.00	9.50	584.50
	11/18/2019	594.00	9.62	584.38
	4/21/2020	594.00	9.84	584.16
	11/18/2020	594.00	10.83	583.17
	3/1/2021	594.00	9.90	584.10
	3/30/2021	594.00	10.46	583.54
	5/5/2021	594.00	10.80	583.20
	5/27/2021	594.00	10.92	583.08
	6/18/2021	594.00	11.25	582.75
	7/8/2021	594.00	10.82	583.18
	8/18/2021	594.00	10.99	583.01
	9/29/2021	594.00	11.82	582.18
	10/12/2021	594.00	10.94	583.06
	11/3/2021	594.00	10.53	583.47
	12/14/2021	594.00	10.60	583.40
MW-11	11/2/2015	590.35	5.27	585.08
	2/29/2016	590.35	5.54	584.81
	5/2/2016	590.35	5.17	585.18
	8/23/2016	590.35	6.04	584.31
	12/2/2016	590.35	5.86	584.49
	2/21/2017	590.35	5.87	584.48
	5/15/2017	590.35	5.33	585.02
	7/6/2017	590.35	5.62	584.73
	9/11/2017	590.35	5.61	584.74
	11/30/2017	590.35	5.68	584.67
	5/31/2018	590.35	5.41	584.94
	11/6/2018	590.35	5.29	585.06
	5/14/2019	590.35	5.55	584.80
	11/18/2019	590.35	5.80	584.55
	4/21/2020	590.35	5.85	584.50
	11/19/2020	590.35	6.66	583.69
	3/1/2021	590.35	5.46	584.89
	3/30/2021	590.35	6.54	583.81
	5/5/2021	590.35	6.81	583.54
	5/27/2021	590.35	6.76	583.59
	6/18/2021	590.35	6.75	583.60
	7/8/2021	590.35	6.72	583.63
	8/18/2021	590.35	6.90	583.45
	9/29/2021	590.35	7.40	582.95
	10/12/2021	590.35	6.77	583.58
	11/3/2021	590.35	6.61	583.74
	12/14/2021	590.35	6.61	583.74

Table 4. Groundwater Elevations - Midwest Generation, LLC, Waukegan Station, Waukegan, IL

Well ID	Date	Top of Casing Elevation (ft above MSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft above MSL)
MW-14	11/2/2015	590.24	5.17	585.07
	2/29/2016	590.24	5.01	585.23
	5/2/2016	590.24	4.49	585.75
	8/23/2016	590.24	6.07	584.17
	12/2/2016	590.24	5.49	584.75
	2/21/2017	590.24	5.33	584.91
	5/15/2017	590.24	4.67	585.57
	7/6/2017	590.24	5.27	584.97
	9/11/2017	590.24	5.78	584.46
	11/30/2017	590.24	5.19	585.05
	6/1/2018	590.24	4.45	585.79
	11/6/2018	590.24	4.32	585.92
	5/14/2019	590.24	4.20	586.04
	11/18/2019	590.24	4.75	585.49
	4/21/2020	590.24	5.00	585.24
	11/19/2020	590.24	5.98	584.26
	3/1/2021	590.24	4.55	585.69
	3/30/2021	590.24	5.60	584.64
	5/5/2021	590.24	6.20	584.04
	5/27/2021	590.24	6.32	583.92
	6/18/2021	590.24	6.60	583.64
	7/8/2021	590.24	6.15	584.09
	8/18/2021	590.24	6.45	583.79
	9/29/2021	590.24	7.14	583.10
	10/12/2021	590.24	6.72	583.52
	11/3/2021	590.24	5.66	584.58
	12/14/2021	590.24	5.74	584.50
MW-16	11/2/2015	607.41	25.13	582.28
	2/29/2016	607.41	24.91	582.50
	5/2/2016	607.41	25.23	582.18
	8/23/2016	607.41	28.33	579.08
	12/2/2016	607.41	28.22	579.19
	2/21/2017	607.41	27.71	579.70
	5/15/2017	607.41	23.99	583.42
	7/6/2017	607.41	27.03	580.38
	9/11/2017	607.41	26.74	580.67
	11/27/2017	607.41	27.49	579.92
	6/1/2018	607.41	23.22	584.19
	11/6/2018	607.41	23.65	583.76
	5/14/2019	607.41	23.40	584.01
	11/18/2019	607.41	23.60	583.81
	4/21/2020	607.41	25.26	582.15
	11/17/2020	607.41	27.50	579.91
	3/1/2021	607.41	27.25	580.16
	3/30/2021	607.41	26.96	580.45
	5/5/2021	607.41	27.50	579.91
	5/27/2021	607.41	27.35	580.06
	6/18/2021	607.41	27.12	580.29
	7/8/2021	607.41	26.41	581.00
	8/18/2021	607.41	26.92	580.49
	9/29/2021	607.41	27.45	579.96
	10/12/2021	607.41	26.99	580.42
	11/3/2021	607.41	27.04	580.37
	12/14/2021	607.41	27.60	579.81

MSL - Mean Sea Level
TOC - Top of Casing

Table 5. Groundwater Flow Direction and Estimated Seepage Velocity/Flow Rate - Waukegan Generation Station.

DATE	Groundwater Flow Direction	K_{avg} (ft/sec)*	Average Hydraulic Gradient (ft/ft)	Porosity (unitless)**	Estimated Seepage Velocity (ft/day)
5/2021	East-Southeast	1.790E-03	0.0017	0.35	0.75
6/2021	East-Southeast	1.790E-03	0.0016	0.35	0.71
7/2021	East-Southeast	1.790E-03	0.0015	0.35	0.66
8/2021	East-Southeast	1.790E-03	0.0024	0.35	1.06
9/2021	East-Southeast	1.790E-03	0.0014	0.35	0.62
10/2021	East-Southeast	1.790E-03	0.0015	0.35	0.66
11/2021	East-Southeast	1.790E-03	0.0016	0.35	0.71
12/2021	East-Southeast	1.790E-03	0.0019	0.35	0.84

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

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

Table 6. CCR Groundwater Sample Collection Summary for 2021 - Waukegan Generating Station

Well ID	Number of Groundwater Sampling Events	Dates of Groundwater Sampling Events
MW-09 (Background)	3	5/6/2021
		8/19/2021
		11/4/2021
MW-11 (Background)	3	5/6/2021
		8/19/2021
		11/4/2021
MW-14 (Background)	3	5/6/2021
		8/19/2021
		11/4/2021
MW-01 (Downgradient)	3	5/5/2021
		8/18/2021
		11/3/2021
MW-02 (Downgradient)	3	5/5/2021
		8/18/2021
		11/3/2021
MW-03 (Downgradient)	3	5/5/2021
		8/18/2021
		11/3/2021
MW-04 (Downgradient)	3	5/5/2021
		8/18/2021
		11/3/2021
MW-16 (Downgradient)	3	5/6/2021
		8/18/2021
		11/4/2021

FIGURES

ENVIRONMENTAL CONSULTATION & REMEDIATION

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

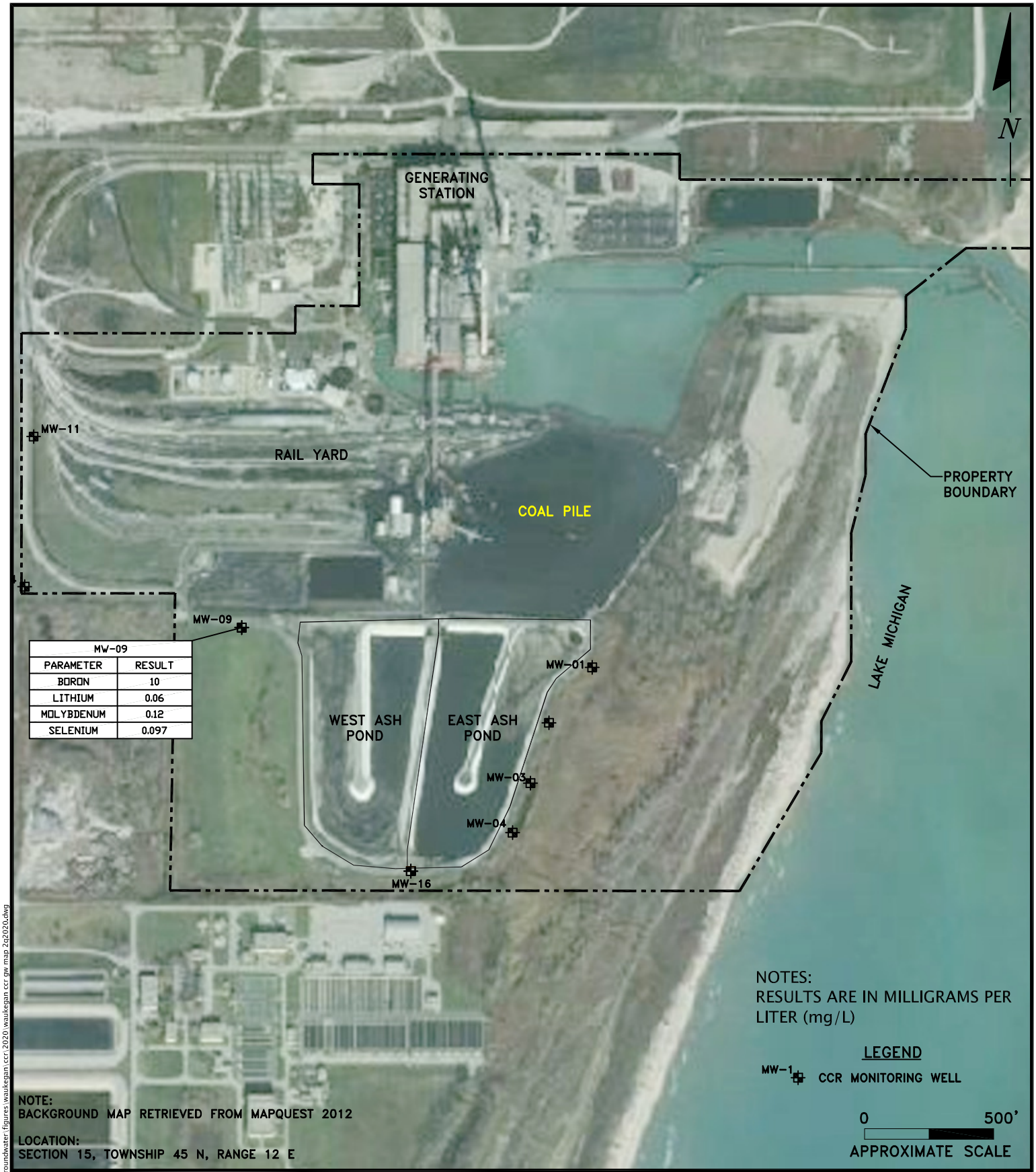
CCR MONITORING WELL SITE MAP

WAUKEGAN STATION
WAUKEGAN, ILLINOIS

Scale: 1" = 550' | Date: January 2, 2018

KPRG Project No. 12313.2 | FIGURE 1

W:\projects\midwest generation\attorney-client privilege\gw evaluations\waukegan map.dwg



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4Q2021 AREAL DISTRIBUTION MAP OF PARAMETERS ABOVE PROPOSED GWPSs

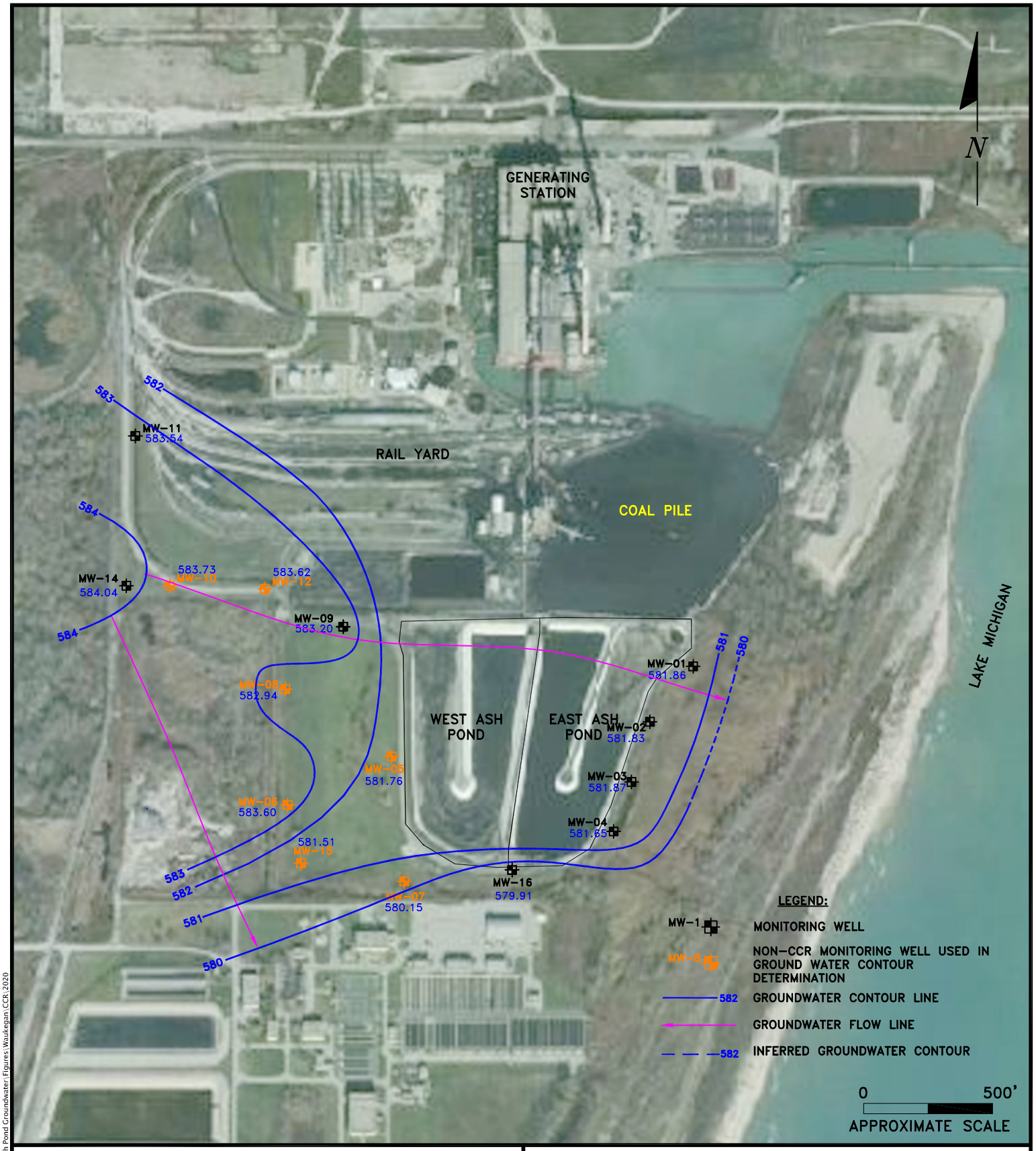
WAUKEGAN STATION
WAUKEGAN, ILLINOIS

Scale: 1" = 500' | Date: January 13, 2022

KPRG Project No. 12313.2 | FIGURE 2

W:\projects\midwest generation\12313 ash pond groundwater figures\waukegan ccr\2020 waukegan ccr gw map 2q2020.dwg

ATTACHMENT 1
Monthly Potentiometric Maps



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POTENTIOMETRIC MAP 05/2021

WAUKEGAN STATION
WAUKEGAN, ILLINOIS

Scale: 1" = 500' | Date: January 05, 2022

KPRG Project No. 12313.2 | ATTACHMENT 1

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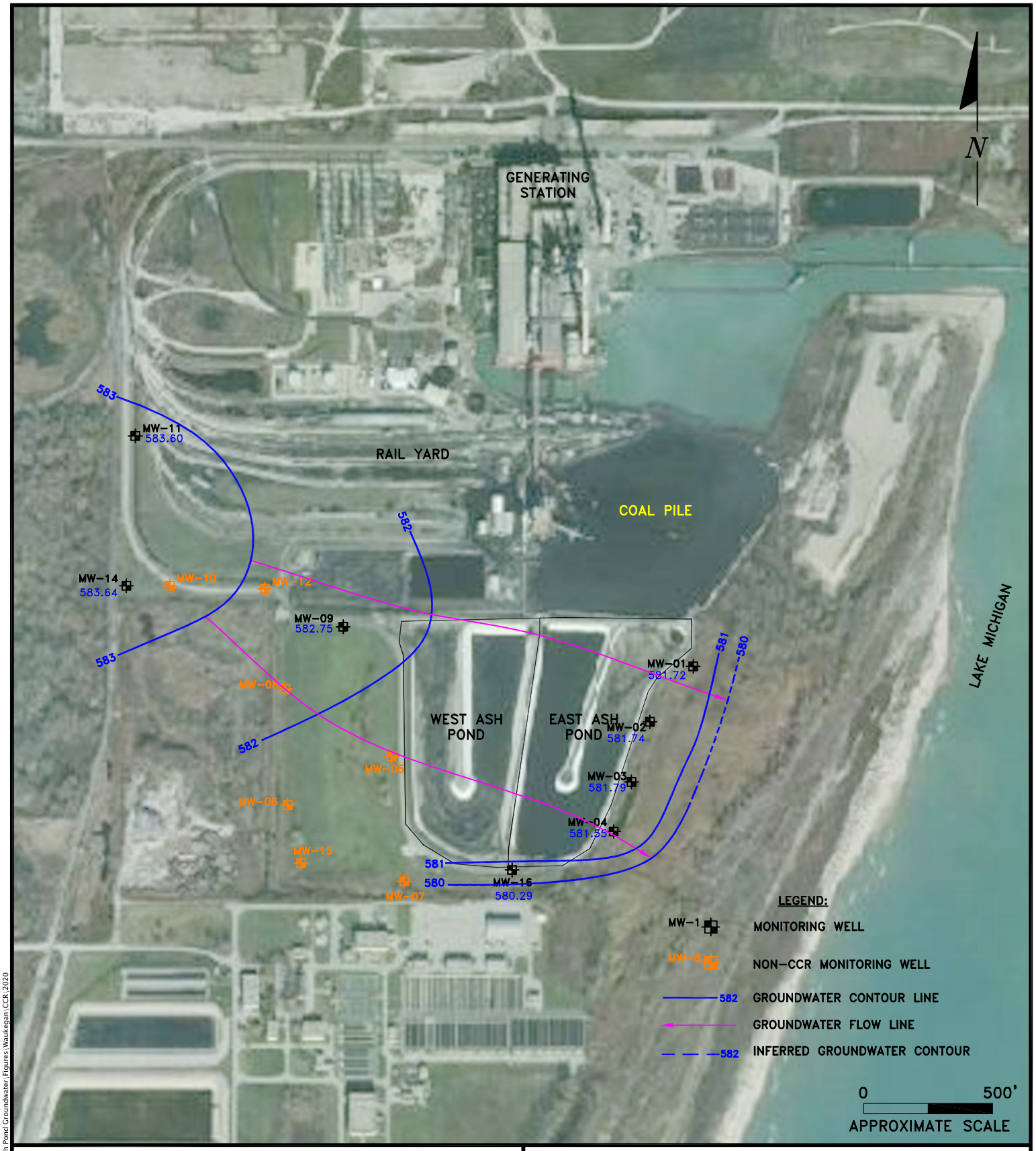

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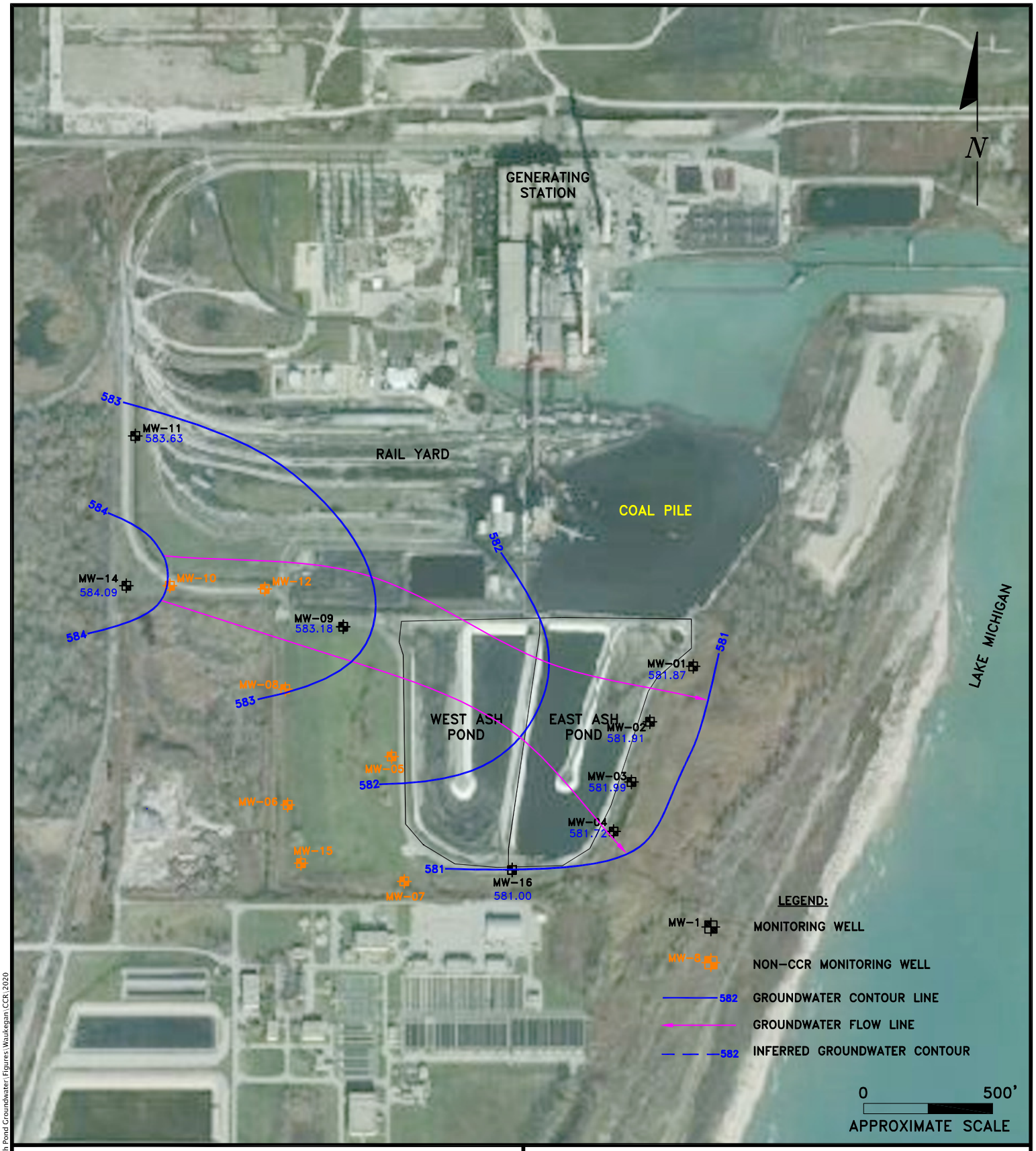
POTENTIOMETRIC MAP 06/2021

WAUKEGAN STATION
WAUKEGAN, ILLINOIS

Scale: 1" = 500'	Date: January 05, 2022
KPRG Project No. 12313.2	ATTACHMENT 1

T:\Common Projects\Midwest Generation\12313 Ash Pond Groundwater\Figures\Waukegan\CCR\2020



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POTENTIOMETRIC MAP 07/2021

WAUKEGAN STATION
WAUKEGAN, ILLINOIS

Scale: 1" = 500'	Date: January 05, 2022
KPRG Project No. 12313.2	ATTACHMENT 1

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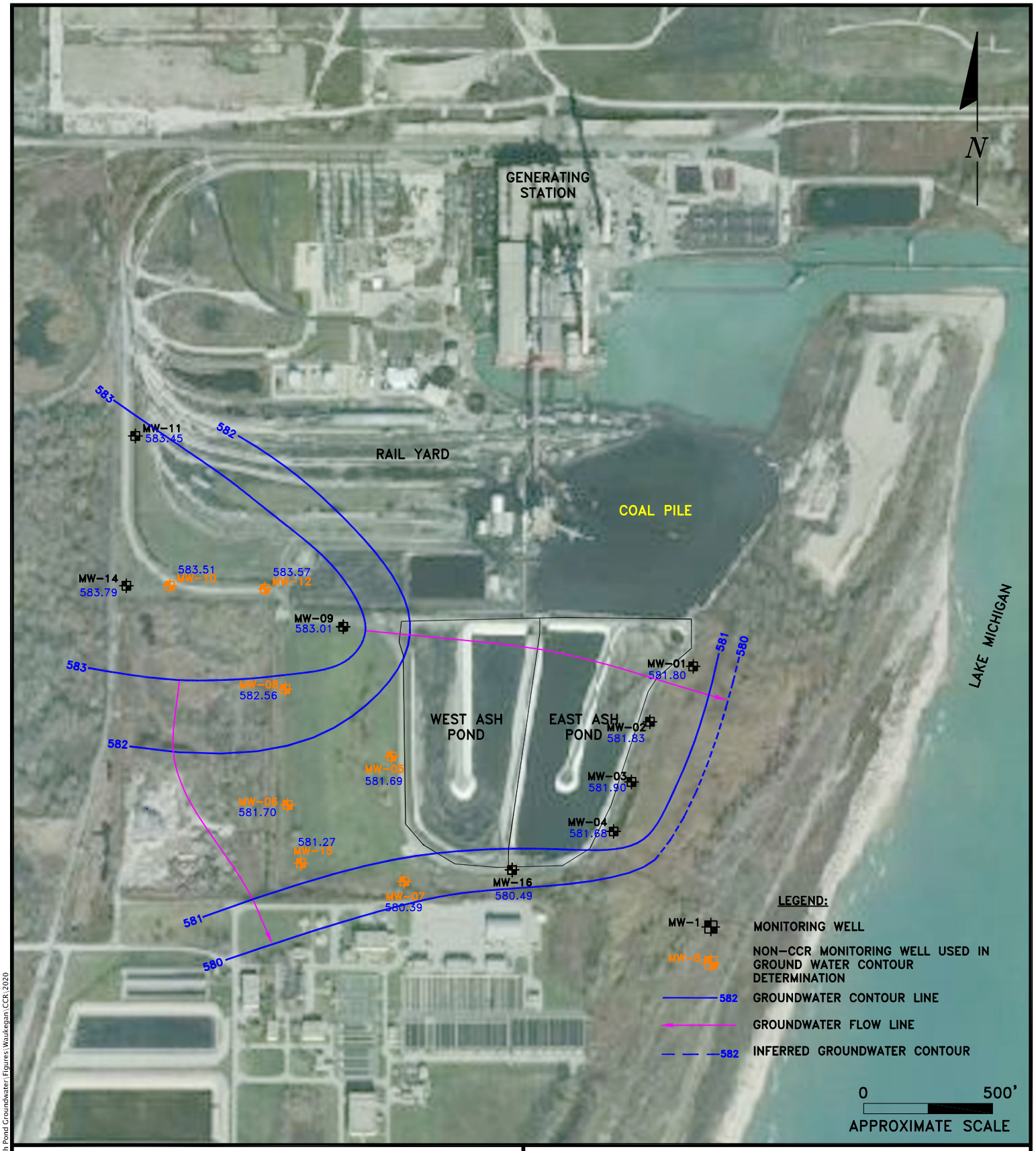

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POTENTIOMETRIC MAP 08/2021

WAUKEGAN STATION
WAUKEGAN, ILLINOIS

Scale: 1" = 500' | Date: January 05, 2022

KPRG Project No. 12313.2 | ATTACHMENT 1

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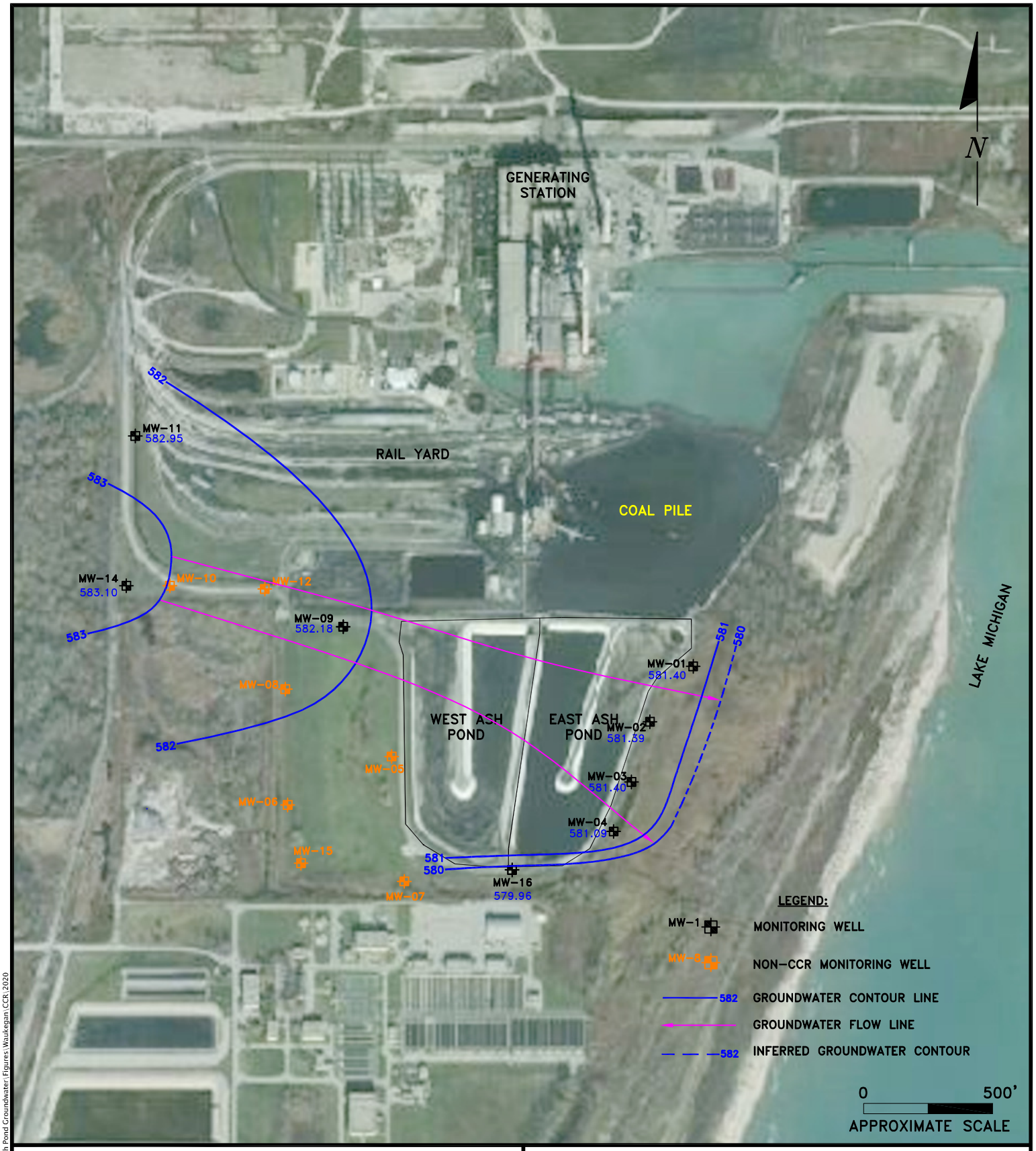

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414 Plaza Drive, Suite 106 Westmont, Illinois 60559 Telephone 630-325-1300 Facsimile 630-325-1593

POTENTIOMETRIC MAP 09/2021

WAUKEGAN STATION
WAUKEGAN, ILLINOIS

Scale: 1" = 500' | Date: January 06, 2022

KPRG Project No. 12313.2 | ATTACHMENT 1

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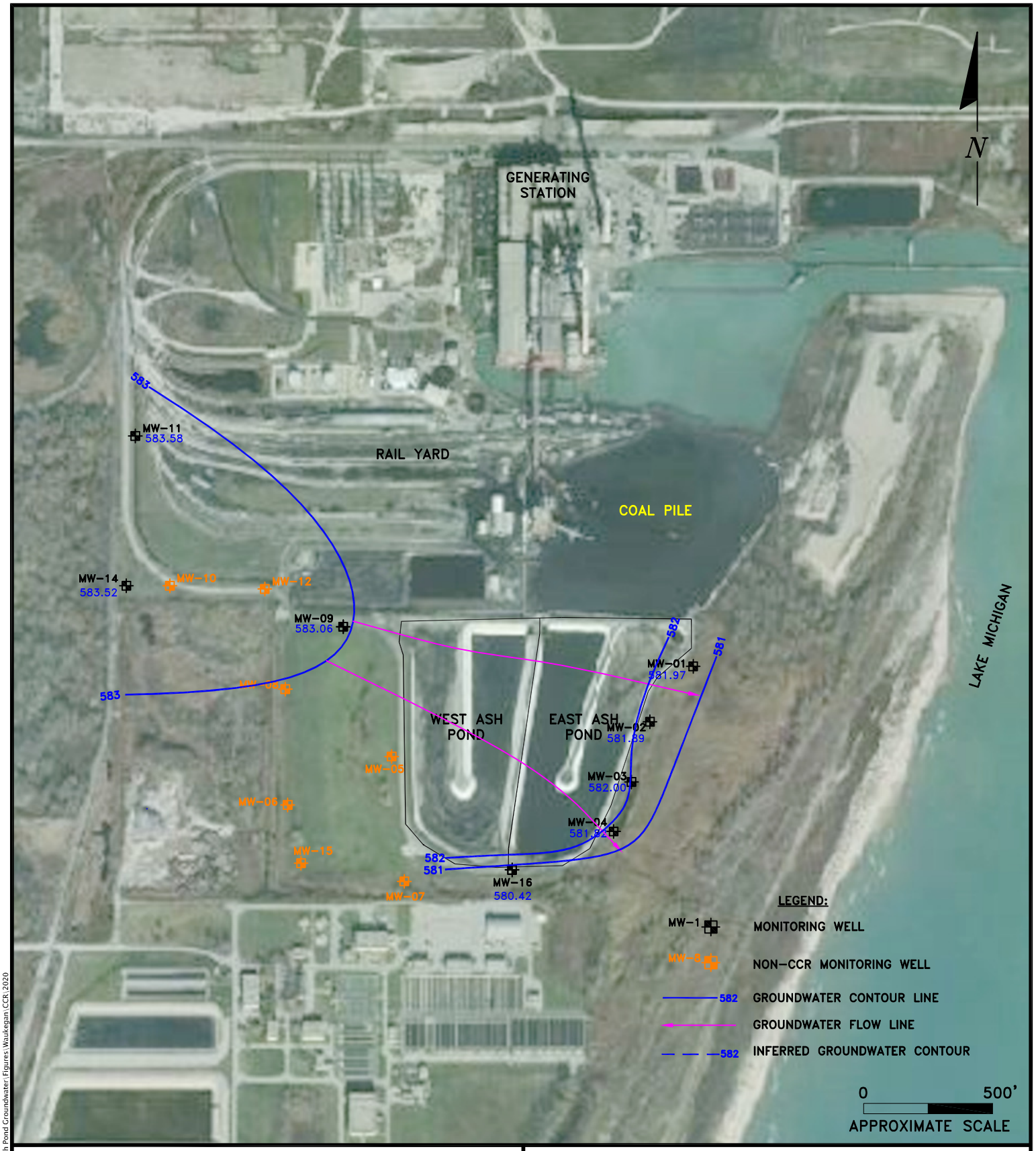

ENVIRONMENTAL CONSULTATION & REMEDIATION

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

POTENTIOMETRIC MAP 10/2021

WAUKEGAN STATION
WAUKEGAN, ILLINOIS

Scale: 1" = 500' | Date: January 06, 2022

KPRG Project No. 12313.2 | ATTACHMENT 1

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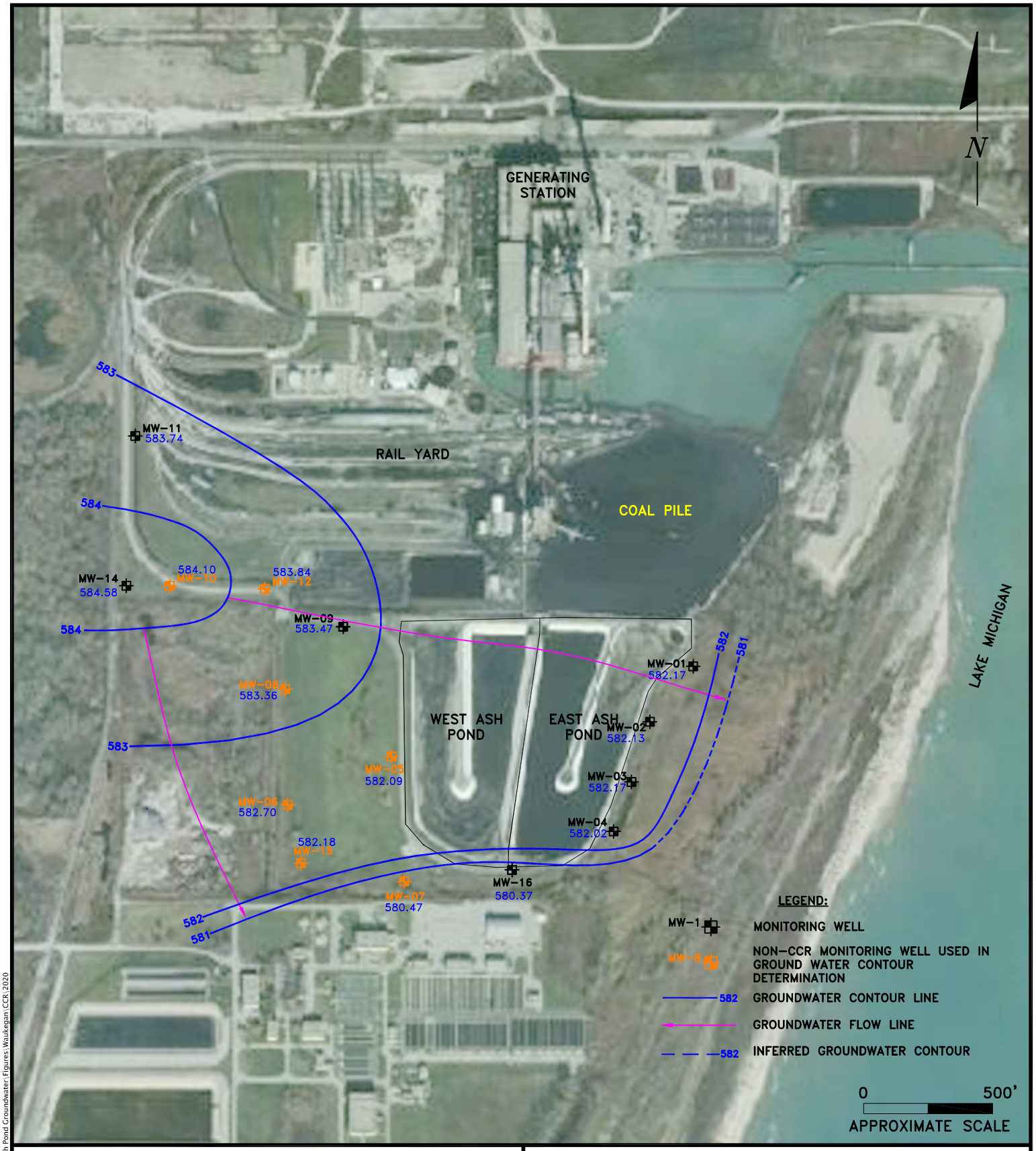

ENVIRONMENTAL CONSULTATION & REMEDIATION

K P R G

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

POTENTIOMETRIC MAP 11/2021

WAUKEGAN STATION
WAUKEGAN, ILLINOIS

Scale: 1" = 500'	Date: January 05, 2022
KPRG Project No. 12313.2	ATTACHMENT 1

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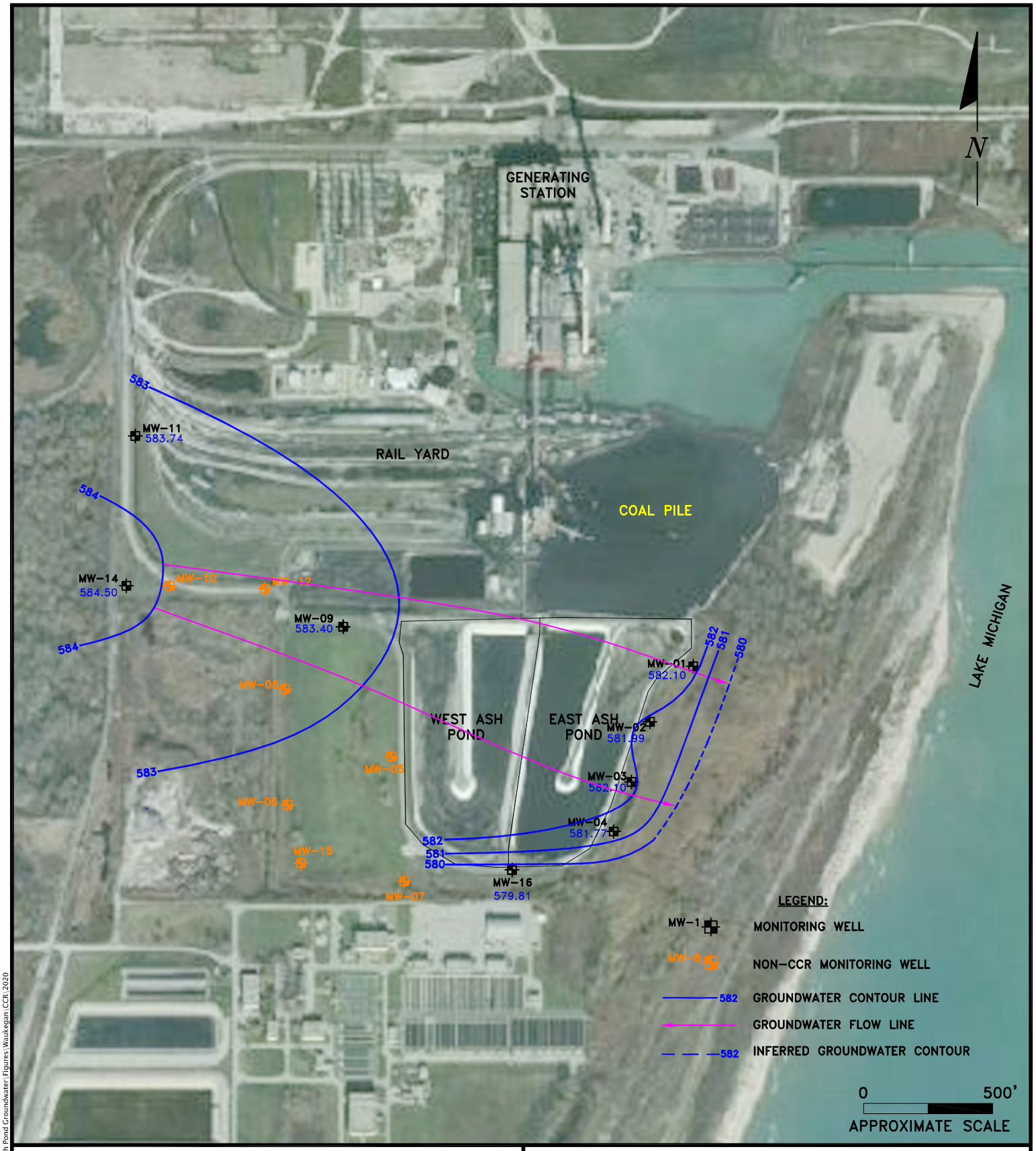

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POTENTIOMETRIC MAP 12/2021

WAUKEGAN STATION
WAUKEGAN, ILLINOIS

Scale: 1" = 500' | Date: January 06, 2022

KPRG Project No. 12313.2 | ATTACHMENT 1

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