BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	AS 2021-001
Petition of Midwest Generation	)	
for an Adjusted Standard from 845.740(a)	)	
and Finding of Inapplicability of Part 845	)	(Adjusted Standard)
(Joliet 29 Station)	)	

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 a RECOMMENDATION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, a copy of which is herewith served upon you.

Respectfully submitted,

Dated: September 22, 2021

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,

Respondent,

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

BY: /s/Christine Zeivel
Christine Zeivel

THIS FILING IS SUBMITTED ELECTRONICALLY

Exhibit 1603

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
Brad Halloran, Hearing Officer
Don Brown, Clerk
James R. Thompson Center
100 W. Randolph, Suite 11-500
Chicago, IL 60601
Brad.Halloran@illinois.gov
Don.Brown@illinois.gov

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	AS 2021-001
Petition of Midwest Generation	)	
for an Adjusted Standard from 845.740(a)	)	
and Finding of Inapplicability of Part 845	)	(Adjusted Standard)
(Joliet 29 Station)	)	

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 Midwest Generation LLC's request for a finding of inapplicability of Part 845 to Pond 1 and Pond 3 at its Joliet 29 Station in Joliet, Will County, Illinois, pursuant to Section 28.1 of the Illinois Environmental Protection Act ("Act"). 415 ILCS 5/28.1, 35 Ill. Adm. Code §104.416. For the reasons stated below, Illinois EPA stipulates that Pond 1 and Pond 3 are not CCR surface impoundments under Part 845 and therefore does not object to the Board granting Petitioner relief, subject to the condition that they not be used to treat, store or dispose of CCR in the future. In support of its Recommendation, Illinois EPA states as follows:

I. INTRODUCTION

1. On April 15, 2021, the Board adopted new regulations providing standards for disposal of 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, Midwest Generation, LLC ("MWG") filed a petition for an adjusted standard from 35 Ill. Adm. Code §845.740(a) and a finding of inapplicability of Part 845 for certain impoundments located at its Joliet 29 Station ("Petition"), in which it requests a hearing on its petition.

3. MWG's Petition concerns three surface impoundments, which Petitioner designates as Pond 1, Pond 2, and Pond 3.

4. Specifically, MWG is seeking the following adjusted standards from the requirements contained in Part 845:

a. Pond 2: MWG seeks an adjusted standard to allow the decontamination and retention of the existing liner rather than the liner's removal as required for closure by removal in Section 845.740(a).

b. Pond 1 and Pond 3: MWG asserts that Pond 1 and Pond 3 do not satisfy the regulatory definition of CCR surface impoundment and seeks an adjusted standard finding that Part 845 of the Board's regulations is inapplicable.

5. Illinois EPA must make a recommendation to the Board as to the disposition of the Petition within 45 days after the filing of the petition or at least 30 days before a hearing, unless otherwise ordered by the hearing officer or Board. 35 Ill. Adm. Code §104.416. On June 3, 2021, in response to a motion for extension of time filed by the Agency, the Board ordered the Agency to file its Recommendation by September 23, 2021.

6. This Recommendation addresses MWG's request for an adjusted standard finding that Part 845 is inapplicable to Pond 1 and Pond 3. Illinois EPA will address MWG's petition for adjusted standard from Section 845.740(a) for Pond 2 in a separate recommendation.

II. NOTICE AND ACCEPTANCE

7. A petitioner must "submit to the Board proof that, within 14 days after filing of the petition, it has published notice of the filing of the petition by advertisement in a newspaper of general circulation in the area likely to be affected by the petitioner's activity that is the subject of the adjusted standard proceeding." 415 ILCS 5/28.1; 35 Ill. Adm. Code §104.408(a).

8. On June 2, 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 §§104.408(a), (b).

9. On June 3, 2021, the Board accepted MWG's petition for adjusted standard.

III. REQUEST FOR FINDING OF INAPPLICABILITY

10. MWG alleges that Pond 1 and Pond 3 do not meet the definition of CCR surface impoundment and is therefore "seeking an adjusted standard finding that the CCR rules are inapplicable to both ponds." *See* Petition, p. 2.

11. MWG cites several previous Board proceedings in support of the Board's authority to grant a petition for an adjusted standard and issue a finding that certain Board regulations are inapplicable. *See* Petition, pp. 14-15 (citing *In the Matter of: Petition of Apex Material Technologies, LLC for an Adjusted Standard from Portions of 35 Ill. Adm. Code 807.104 and 810.103, or, in the Alternative, a Finding of Inapplicability,* AS15-2, slip op. pp. 51-52 (June 18, 2015); *In the Matter of: Petition of Westwood Lands, Inc. for and Adjusted Standard from Portions of 35 Ill. Adm. Code 807.104 and 35 Ill. Adm. Code 810.103 or, in the Alternative, a Finding of Inapplicability,* AS09-3, slip- op at 16 (Oct. 7, 2010); *In the Matter of: Petition of Jo'Lyn Corporation and Falcon Waste and Recycling for an Adjusted Standard from 35 Ill. Adm. Code Part 807 or, in the Alternative, a Finding of Inapplicability*, AS 04-2, slip op. at 13-14 (Apr. 7, 2005).

12. All the petitions subject of the cases cited by Petitioner request findings of inapplicability or, in the alternative, an adjusted standard from the subject regulations. Such an approach is logical since an adjusted standard from a regulation is not necessary where a regulation does not apply. In both *Westwoods* and *Jo'Lyn*, where the Board determined its solid waste regulations inapplicable, it denied the requested adjusted standards as moot. *Westwoods* slip op. at 16, *Jo'Lyn* slip. op. at

14. The Board focused its analysis on applying the facts to the definition of "waste" and not the factors required in an adjusted standard petition contained in 35 Ill. Adm. Code 104.406.

13. Accordingly, Illinois EPA will address Petitioner's request for a finding of inapplicability first, separately from the request for an adjusted standard exempting Pond 1 and Pond 3 from Part 845.

14. In December 2019, Illinois EPA identified Pond 1 and Pond 3 as CCR surface impoundments based on historic records on file. The Agency sent a fee invoice to MWG dated December 16, 2019. *See* Ex. A. MWG did not agree that Pond 1 and Pond 3 were CCR surface impoundments and began discussions with the Agency in response. MWG did not pay the fees as invoiced by the due date of January 31, 2020. In its March 24, 2020 letter, Illinois EPA provided an allowance for MWG to demonstrate that Pond 1 and Pond 3 do not contain CCR; however, the fees were still due at that time. *See* Ex. B. Illinois EPA issued MWG a Violation Notice on July 28, 2020 (VN W-2020-00044) for failure to pay the initial fee. *See* Ex. C. The VN process yielded several meetings and written responses from MWG on the matter of demonstrating that Ponds 1 and 3 are not CCR surface impoundments.

15. MWG submitted several documents in support of its demonstration that Pond 1 and Pond 3 are not CCR surface impoundments. The submittals contained a bathymetric survey, calculation of estimated sediment in the bottom of the ponds, laboratory analysis of samples from the ponds and comparison to CCR from the Joliet 29 Station.

16. Figures from the bathymetric survey, dated February 26, 2021, were submitted per Agency request and are contained in the Petition as Exhibit 20. The bathymetric survey compares the current bottom of Pond 1 and Pond 3 to surveyed contours at the time of cleaning out in 2015 and 2013, respectively. *See* Pet. Ex. 20, Fig. 1 and 2. The Joliet 29 Station ceased burning coal and

converted to gas-fired generation in 2016, thereby ceasing generation of CCR. *See* Pet. Ex. 19, p.1 and Ex. D, encl. p. 1. Pond 1 was cleaned out in 2015 and Pond 3 was cleaned out and relined in 2013. MWG represents that Pond 1 has not received any ash sluice water since it was cleaned out, and that Pond 3 has never been used for direct ash sluicing. Accordingly, there has not been any need to clean either pond since they were last cleaned. *Id.* The bathymetric survey provides no indication of sediment accumulation or delta-like alluvial structures in the basins. If CCR had been sluiced in, even incidentally, since the cleaning of the ponds, the Agency would expect to see some measurable accumulation of sediment and/or delta-like alluvial structures in Pond 1 and Pond 3. *See* Ex. E (Zimmer Affidavit).

17. MWG took two sediment samples from Pond 1, one near the center of the pond and one near the access road. Three samples were taken from Pond 3, one near the center of the pond, one near the pond inlet, and one on the sideslope of the access road. The sediment samples were sent to a geotechnical laboratory to determine (1) grain size, (2) conduct a weight to volume relationship analysis, and (3) compare moisture, inorganic and organic content utilizing ASTM method 2974. CCR from MWG's Joliet 29 Station was also subjected to these analyses for comparison because any CCR present in Pond 1 or Pond 3 would show similar characteristics.

18. The laboratory analyses differed significantly between the sediment in the ponds and the CCR from Joliet 29. Laboratory data and a discussion of sampling methodology is contained in the submittals dated November 25, 2020 (Ex. D) and February 26, 2021 (Pet. Ex. 20).

19. The sediment sampling required multiple attempts in each location combined to yield enough sediment for an adequate sample. Much of the volume of sample attempts was water and needed to be repeated to obtain enough sediment. *See* Pet. Ex. 20.

20. Grain size analysis reports describe the sediment from Pond 1 as black sandy silt. Sediment from Pond 3 was described as black organic silty sand. The Joliet 29 CCR sample was described as brown to dark brown silty sand with gravel. *See* Ex. D, encl. pp. 4-5; Pet. Ex. 19, pp. 4-5. The differences between the sediment and CCR from the Joliet 29 Station are better illustrated in the actual laboratory results provided in tables that contain the sediment and CCR samples quantified by standardized particle sizes. *See* Ex. D, encl. Tables 1 and 2; Pet. Ex. 19, ex. 4. Silt sized particles made up the highest percentage (61.3%) in the samples from Pond 1. Sand (31.2%), clay (6%) and gravel (1.5%) made up the rest in order from greatest to least amounts. Sand sized particles made up the highest percentage (57.8%) in the samples from Pond 3. Silt (23.8%), clay (16.6%) and fine gravel (1.8%) made up the rest in order from greatest to least amounts. In contrast, CCR from the Joliet 29 Station was comprised of mostly sand (66.6%), with course gravel (19%). silt (12.6%) and clay (1.8%).[1] The grain size analysis indicates that the small amount of material in Pond 1 and Pond 3 is not CCR. *See* Ex. E (Zimmer Affidavit).

21. MWG used the weight to volume relationship analysis to determine the amount of solids verses water in the samples. As indicated above, MWG had difficulty obtaining enough solid material to comprise a sample and the weight to volume relationship quantifies the field observation. The data from the geotechnical laboratory shows one combined sample was 86% and the other combined sample was 92% water.[2] The percentages are given as volume as solids or volume of water per cubic foot. *See* Ex. D and Pet. Ex. 19.

[1] The geotechnical results for the Joliet 29 CCR sample are in the November 19, 2020 KPRG Memorandum. *See* Pet. Ex. 19. and Ex. D enclosure.

[2] MWG did not provide a weight to volume relationship analysis for the CCR from the Joliet 29 Station. However, for purposes of comparison, CCR from MWG's Powerton Station was analyzed and, in contrast, only 4% of the Powerton CCR is comprised of water. *See* Ex. F, Table 1.

22. MWG then compared moisture, inorganic and organic content utilizing the ASTM 2974 method to estimate how much of the solids were organic verses inorganic in nature. The ASTM 2974 method reports the non-organic material as "ash." This ASTM method does not determine that a material is coal ash or CCR; rather it is a more general term used to describe something cooked in a furnace and completely burned. *See* Pet. Ex. 20, p. 4. Illinois EPA confirmed this description of the method by obtaining the ASTM 2974 method. *See* Ex. G. MWG used this analysis to estimate the percentage of organic and inorganic material in the ponds in an effort to compare the tonnage of inorganic sediment in the ponds to atmospheric deposition using the Soil Loss Equation. *See* Ex. D, p. 5.

23. It should be noted that MWG uses a Soil Loss Equation based on erosion of farm fields and construction sites as an estimate for atmospheric deposition. *See* Ex. D, pp. 2-3; Pet. Ex. 20, pp. 4-5. Two tons/acre/year of soil loss is appropriately utilized in a soil loss evaluation, but Illinois EPA does not agree with its application to atmospheric deposition in unclosed surface impoundments. Accordingly, the Agency did not rely on the atmospheric deposition estimation during the review of the various submittals; rather, the Agency focused and relied upon the bathymetric survey, the volume of material estimated in Ponds 1 and 3, and grain size distribution to evaluate whether: (1) appreciable amount of material is present in the ponds; and (2) if that material is CCR. *See* Ex. E (Zimmer Affidavit).

24. For the reasons explained above, Illinois EPA agrees that Petitioner has provided sufficient information demonstrating that Pond 1 and Pond 3 are not CCR surface impoundments subject to Part 845's requirements. Accordingly, Petitioner's request for adjusted standard is moot and not evaluated in this Recommendation.

IV. RECOMMENDATION

WHEREFORE, for the above and foregoing reasons, Illinois EPA stipulates that Pond 1 and Pond 3 are not CCR surface impoundments subject to Part 845 and therefore does not object to the Board granting Petitioner relief, subject to the condition that neither Pond 1 nor Pond 3 be used to treat, store, or dispose of CCR in the future.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,

Respondent,

Dated: September 22, 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** with supporting documents (except Exhibit G) 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 Brad Halloran at the e-mail address of Brad.Halloran@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** with supporting documents (including Exhibit G) to those 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 September 23, 2021

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

That the number of pages in the e-mail transmission is eighty-nine (89)

That the e-mail transmission took place before 4:30 p.m. on the date of September 22, 2021.

/s/ Christine Zeivel
September 22, 2021

Exhibit List

Exhibit A – Illinois EPA Initial Invoice, issued for the Joliet 29 Station December 16, 2019.

Exhibit B – Illinois EPA Letter to MWG re: Invoice for CCR Surface Impoundments at the Joliet 29 Station, Waukegan Station, and Will County Station, dated March 24, 2020.

Exhibit C – Illinois EPA Violation Notice No. W-2020-00044, issued July 28, 2020.

Exhibit D – Nijman Franzetti MWG Letter to Illinois EPA, dated November 25, 2020, with KRPG Memorandum re: Evaluation of Sediment Quantities in Joliet Generating Station's Pond 1 and Pond 3 and Powerton Generating Station's Service Water Basin, dated November 19, 2020, enclosed.

Exhibit E – Affidavit of Amy L. Zimmer

Exhibit F – KPRG Memorandum re: Evaluation of Sediment in Powerton Generating Station's Service Water Basin, dated July 27, 2021.

Exhibit G – Standard Test Methods for Determining the Water (Moisture) Content, Ash Content and Organic Material of Peat and Other Organic Soils, ASTM International, Inc., accessed pursuant to License Agreement on March 9, 2021.[1]

Exhibit H – Affidavit of Gabriel Neibergall

[1] Illinois EPA's license agreement with ASTM prohibits electronic reproduction of methods obtained under the agreement. Exhibit G is served to the Board and Petitioner in hard copy with the Recommendation. Exhibit G is redacted for electronic filing.

Exhibit A

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	W1970450047
Facility Name	Joliet 29

Initial Invoice

Pond ID	Pond Description	Amount
W1970450047-01	Pond 1	75,000.00
W1970450047-02	Pond 2	75,000.00
W1970450047-03	Pond 3	75,000.00

Amount Due **$225,000.00**

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	W1970450047
Facility Name	Joliet 29
IEPA Program	COALIN
Billing Date	Mon December 16, 2019

Amount Due

Tue January 31, 2020 **$225,000.00**

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 B

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 C

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

217/785-0561

July 28, 2020

CERTIFIED MAIL # 7019 1120 0001 3038 3438
RETURN RECEIPT REQUESTED

Will County Generating Station
c/o Sharene Shealey
529 East 135th Street
Romeoville, IL 60446

Re: Violation Notice: MIDWEST GENERATION, LLC – JOLIET 29 STATION
Facility Id.: 6284
Violation Notice No.: W-2020-00044

Dear Ms. Shealey:

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, including an estimate of a reasonable time period to complete the necessary activities. 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.

ID NO 6284: MIDWEST GENERATION, LLC – JOLIET 29 STATION
VN W-2020-00044

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-2020-00044.

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

Sincerely,

Mary F. Reed
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

Attachments

BOW ID: W1970450047

ATTACHMENT A

MIDWEST GENERATION, LLC – JOLIET 29 STATION, ID NO 6284
VIOLATION NOTICE NO. W-2020-00044:

Questions regarding the violations identified in this attachment should be referred to Andrea Rhodes at (217) 785-0561.

A review of information available to the Illinois EPA indicates the following 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 including an estimated time period for resolution.

Coal Combustion Residuals Surface Impoundment Fees

The Illinois Environmental Protection Act ("Act") Section 22.59 (j) establishes a fee system for Coal Combustion Residuals ("CCR") surface impoundments. CCR surface impoundments must pay an initial fee of seventy-five thousand dollars for CCR surface impoundments that have not completed closure and fifty thousand dollars for CCR surface impoundments that have completed closure and are in post-closure care.

(j) The owner or operator of a CCR surface impoundment shall pay the following fees:

(1) An initial fee to the Agency within 6 months after the effective date of this amendatory Act of the 101st General Assembly of:

$50,000 for each closed CCR surface impoundment; and

$75,000 for each CCR surface impoundment that have not completed closure.

(2) Annual fees to the Agency, beginning on July 1, 2020, of:

$25,000 for each CCR surface impoundment that has not completed closure; and

$15,000 for each CCR surface impoundment that has completed closure, but has not completed post-closure care.

To achieve compliance payment in full is expected immediately.

ATTACHMENT A

MIDWEST GENERATION, LLC - JOLIET 29 STATION, ID NO 6284
VIOLATION NOTICE NO. W-2020-00044:

Violation Date	Violation Description
02/01/2020	Failure to submit a $75,000 initial fee for Joliet 29 Station, Pond 1 (IEPA ID # W1970450047-01) that was due January 31, 2020. The Agency has determined that Pond 1 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an initial fee.
Rule/Reg	Section 22.59(j)(1) of the Act 415 ILCS 22.59(j)(1).
02/01/2020	Failure to submit a $75,000 initial fee for Joliet 29 Station, Pond 3 (IEPA ID # W1970450047-03) that was due January 31, 2020. The Agency has determined that Pond 3 is a CCR surface impoundment that has not completed closure, and therefore, is subject to an initial fee.
Rule/Reg	Section 22.59(j)(1) of the Act 415 ILCS 22.59(j)(1).

Exhibit D

NIJMAN · FRANZETTI LLP

10 South LaSalle Street · Suite 3600 · Chicago, Illinois 60603
312.251.5250 · fax 312.251.4610 · www.nijmanfranzetti.com

Kristen Laughridge Gale
kg@nijmanfranzetti.com
312.262.5524

November 25, 2020

VIA OVERNIGHT AND EMAIL
Illinois EPA
Division of Public Water Supplies
Attn: Andrea Rhodes, CAS #19
P.O. Box 19276
Springfield, IL 62794-9276

Re: Violation Notice Nos.: W-2020-00035 (Waukegan Generating Station); W-2020-00045 (Will County Generating Station); W-2020-00042 (Powerton Generating Station); W-2020-00044 (Joliet 29 Station).

Dear Ms. Rhodes:

This letter is a supplemental response to the above-referenced Violation Notices ("VNs") following the meeting between the Illinois Environmental Protection Agency ("Illinois EPA or the "Agency") and Midwest Generation, LLC ("MWG") on October 14, 2020.[1] MWG appreciates the opportunity to discuss the VNs and the underlying allegations with the Agency. The participation at the October 14th meeting by Agency personnel was productive and helped clarify key issues. MWG also appreciates the Agency's agreement to extend the date to submit this response to November 25th, which allowed MWG to collect information to respond to the questions the Agency posed on October 14th. This supplemental response does not repeat all of the information contained in MWG's September 2020 responses to the VNs. It focuses on responding to the questions raised by the Agency during the meeting. The additional information presented in this response provides further support for MWG's position that the ponds at issue are not CCR surface impoundments.

This letter constitutes MWG's supplemental response to the Violation Notices W-2020-00035, W-2020-00045, W-2020-00042, W-2020-00044. MWG also reserves the right to raise additional defenses and mitigation arguments as may be necessary, in defense of the allegations listed in the Violation Notices in the event of any future enforcement. By submitting this supplemental response, MWG does not waive any of its original objections to the VNs raised in our September 11, 2020 and September 16, 2020 VN Responses. Moreover, MWG does not, by submitting this supplemental response, make any admissions of fact or law, or waive any of its defenses to those alleged violations.

[1] The August 14, 2012 meeting was held at the request of MWG, pursuant to Section 31(a)(4) of the Illinois Environmental Protection Act. 415 ILCS 5/31(a)(4).

Illinois EPA
Division of Public Water Supplies
November 25, 2020

I. Supplemental Response to Alleged Violations in the VNs

The discussion at the October 14th meeting primarily focused on the three process water ponds located at the Joliet 29 Generating Station ("Joliet 29") and the Powerton Generating Station ("Powerton") given the Agency's stated preference not to discuss in detail the area at Waukegan (the Grassy Field) and the two areas at Will County (1N and 1S). As requested by the Agency, MWG conducted additional analysis and sampling of the contents of the three process water basins at Joliet 29 and Powerton. The results of the analysis demonstrate that none of the process water ponds contain CCR, and are not "CCR surface impoundments" as that term is defined in Section 3.143 of the Act. 415 ILCS 5/3.143.

II. The Materials in the Base of Joliet 29 Pond 1, Joliet 29 Pond 3, and Powerton Service Water Basin are not Coal Combustion Residuals

MWG engaged KPRG & Associates ("KPRG") to conduct an analysis and evaluation of the contents of the Ponds 1 and 3 at Joliet 29 and the Service Water Basin at Powerton. A report of KPRG's analysis and results, which are discussed herein, is attached. Based upon KPRG's analysis, the three ponds contain a small accumulation of material that is not CCR, but rather is material from other station processes that generate flow to the ponds and from stormwater runoff and air dispersion.

a. The Material at the Base of Pond 1 is Sediment and Fines from the Station Operations, Runoff, and Air Dispersion

As MWG stated in its September 16th VN Response letter, MWG removed all of the CCR from Pond 1 and cleaned Pond 1 for reuse as a process water basin in 2015. According to the Joliet 29 NPDES Flow Diagram, various processes at Joliet 29 flow into Pond 1 including the reverse-osmosis ("RO") sand filter backwash, the west area basin runoff, the former coal pile runoff pump discharge, and the plant drains, including the Station floor drains, roof drains and area drains, and the sewage treatment plant. In particular, the RO sand filter backwash contains sand that is used to pull the silt and fines from the well water that the station uses for its processes. When the sand filter is full, the Station backwashes the sand filter to suspend the sediments caught in the filter into the water. The resuspended sediments, likely including some sand, drain into Pond 1. According to the personnel at the Station, the RO sand filter backwash water is very dirty. Similarly, there is little doubt that the sewage treatment plant, the various plant drains and the area storm drains would pick up sediments and silt, including soils and dust, all of which drain into Pond 1. Moreover, stormwater flows from the gravel road and the unpaved areas surrounding the pond also likely contribute to the sediments found at the base of the pond. None of these processes generate or are sources of CCR.

KPRG engaged a surveying company to conduct a bathymetric survey of the pond. One of the many indications that the pond does not contain CCR is that the surveyors could not use a physical survey rod in the pond, because the material at the base was not sufficiently dense to determine an accurate depth. Instead, the surveyors were forced to use an electric depth finder, which found approximately 1.5 feet of material. KPRG also collected a sample of the material in the pond. KPRG observed that the material was very different from CCR, finding that it was "sticky/pasty in consistency" with a silty/clayey feel, and it also had a sewage odor. By comparison, CCR is sandy and does not have a smell. KPRG also calculated the average air dispersion of material that settled into Pond 1 based upon the estimated average of 2

tons/acre/year that falls from the air onto land.[2] Accordingly, from the date Pond 1 was emptied in 2015 until the present, it is estimated that approximately 29.7 tons of material has fallen into the pond from the air.

The Pond 1 sample was analyzed for a weight-to-volume relationship, grain size, and organic and non-organic matter. The weight-to-volume relationship analysis showed that 86% of the material was water, which explains why the surveyors could not use the physical rod to determine the depth. Instead, because the material is 86% water, the material is actually floating at the base on the pond, and the rod passed through the material. Because of the high volume of water in the material and that the material is floating, it is likely that if the pond were emptied, the 1.5 feet depth of floating material would decrease to a depth of less than three inches. Of the 14% solids in the material, 32% was organic solids, which is not CCR. Accordingly, of the volume of material calculated to be at the base of Pond 1 (5,174 CY), only 9.5% (489 CY) is non-organic solids. Using the density of the material, the total tonnage of solid non-organic material in Pond 1 is approximately 136 tons. Based upon the station processes and drains that flow into Pond 1, and stormwater runoff, it is more likely than not that the approximately 136 tons of non-organic solids in Pond 1 are sediments from the station processes and not CCR.

The grain analysis KPRG conducted on the non-organic material also supports the conclusion that the sediment and silt at the base of the pond is not CCR. KPRG compared the grain size of the material taken from Pond 1 to the CCR that had been generated at Joliet 29 when it burned coal. The grain size analysis showed that the Pond 1 material was approximately 91% fine sand and fines and only 7.8% gravel and course to medium sand. In comparison, the grain size of the Joliet 29 CCR was approximately 60% gravel and course to medium sand. The small grain size of the material is also consistent with the observation that the material was floating at the base, as opposed to being so heavy that it falls to the bottom. The material's almost entire composition of fine sand and fines is consistent with Pond 1's non-CCR purpose and function, namely the collection of sediments from the sand filter, the station drains, stormwater and air dispersion.

The sampling and analysis of the Pond 1 material clearly establishes it is not a CCR surface impoundment. The material in Pond 1 is physically different than CCR, including a different smell and texture. The material is composed of fine sand and fines that float in a matrix that is primarily water, which is not characteristic of CCR. The station processes that discharge into the pond and contribute sediments do not generate CCR. This data shows that Pond 1 does not contain CCR.

b. <u>The Material in Pond 3 is Suspended Solids from Station Processes, the Wastewater Treatment Plant, Runoff and Air Dispersion</u>

MWG also conducted a similar analysis to Joliet 29 Pond 1 for Pond 3 at Joliet 29. Not surprisingly, the results of the Pond 3 analysis are substantially the same as those for Pond 1. As MWG has stated (see September 16, 2020 MWG response letter), Pond 3 was never used as a CCR surface impoundment. Instead, it was a finishing pond for Ponds 1 and 2 and also collected wastewater from the wastewater treatment plant.[3] Stormwater from the gravel road and soil surrounding three sides of the pond also flows

[2] KPRG used the 2 t/ac/yr calculation, which is used to offset potential soil erosion calculated for maintenance of landfill covers. The lost soil is replaced by natural processes at a rate that is the same or greater than the tolerance level (2/t/ac/yr).
[3] Pond 2 is currently empty.

into Pond 3. Pond 3 collects so little material that when it was emptied for the first time in 2013, it had been operating since the late 1970's, a period of more than three decades.

Before water enters Pond 3, a coagulant chemical, called "alum", is added as a flocculant to remove smaller suspended solids. The alum neutralizes the negative charge of the non-settleable solids, such as clay, which allows the neutralized particles to stick together. As the particles stick together, they form larger particles, and this continues until large enough particles form that settle out from the water.

Similar to Pond 1, the surveyor could not use a physical rod to estimate the depth of the material at the base of Pond 3 because there was insufficient material. Instead, the surveyor used the electric depth finder and found that there was about 2.4 feet of suspended material at the base of the pond. KPRG also collected a sample of the material and observed that the material was similar to the material in Pond 1. It was black, sticky and pasty, with a silty/clayey feel, unlike the sandy consistency of CCR. The material also had a sewage smell. KPRG calculated the air dispersion that landed in Pond 3 since 2013, using the general applicable calculation of 2 tons/acre/year. KPRG's calculation shows that from 2013 to present, approximately 29.4 tons of material fell into the pond.

KPRG sent the sample from Pond 3 for a weight-to-volume relationship, grain size, and organic and non-organic matter analysis. The weight-to-volume relationship analysis showed that 92% of the material was water. Similar to Pond 1, because the material was primarily water, a physical rod could not be used to determine the depth. Like the material in Pond 1, the very low (8%) solids composition of the material allows it to float at the base of the pond. As KRPG explains in its report, the addition of alum and the flocculation particles explains the nature of the material in Pond 3, particularly that it floats and is primarily composed of water. In fact, KPRG characterizes the material as more like suspended solids contained in a wastewater treatment plant's basins. Because of the volume of water in the material and that the material is floating, it is likely that if MWG emptied Pond 3 of all the water, the 2.5 feet of floating material would decrease to about 1 inch in depth. The analysis of the material showed that of the 8% solid material, 28% was organic solids, which is similar to the organic concentration of the solids in Pond 1. In total, based on the volume of material calculated to be at the base of the pond (7,392 CY), only 5.7% (423 CY) is non-organic solids. Using the density of the material sampled from the base of the pond, the total tonnage of solid non-organic material in Pond 3 is estimated to be approximately 69 tons.

The grain analysis conducted on the Pond 3 material also supports the conclusion that the material at the base of the pond is not CCR but instead is from the wastewater treatment system, the other ponds, stormwater runoff, and fines from air dispersion. Like the Pond 1 analysis, KPRG compared the grain size of the material in Pond 3 to the CCR from Joliet 29. The grain size analysis described the Pond 3 material as black organic silty sand, compared with the Joliet 29 CCR's brown silty sand with gravel grain size characteristics. The Pond 3 material was approximately 73.4% fine sand and fines and only 26% coarse sand and gravel. By comparison, the Joliet 29 CCR was 60% gravel and coarse to medium sand. The small grain size of the material is also consistent with the observation that the material was so lightweight that it was floating, rather than settling, at the base of the pond. That the material is almost entirely composed of fine sand and fines is consistent with Pond 3's purpose and function of collecting sediments from the wastewater treatment plant, runoff from Ponds 1 and 2, stormwater and air dispersion.

In sum, because the material is physically very different from CCR, including having a different smell and texture, a composition of fine sand and fines that float in a matrix consisting primarily of water, and because other non-CCR processes, including the wastewater treatment plant, and stormwater discharge into the pond, the technical data demonstrates that the material in Pond 3 is not CCR.

c. The Material at the Base of the Powerton Service Water Basin is from Air Dispersion and Stormwater Runoff

KPRG also conducted an investigation to determine the presence of any material in the Service Water Basin at Powerton. The investigation found there was little to no material present. The very small amount of material in the basin is to be expected based on a comparison of the calculated volume of material at the base of the Service Water Basin to the expected volume of material that would fall into the Service Water Basin from air dispersion and stormwater flow. Those calculations show that the amount of material present in the basin is almost equal to the contributions of material expected from those two non-CCR sources. Therefore, the evidence shows that this basin is not a CCR surface impoundment because it does not contain CCR.

The Service Water Basin is in the northern area of the Station at the end of a gravel road that runs between the Ash Surge Basin and the Metal Cleaning Basin. A topographic map shows that the surface topography of the Powerton Station gradually slopes towards the north and the road slopes into the Service Water Basin, and all of that stormwater runoff flows into the Service Water Basin.

The bathymetric survey of the Service Water Basin showed that a measurable quantity of material was either marginally present or not present at all at the bottom of the basin. In fact, the average bottom elevation was only 0.2 feet, or about 2.4 inches of material. Based upon the size of the pond, KPRG calculated that the total volume of material in the pond was 52 CY. A sample of the material was taken at the base of the pond; however, the person collecting the sample did not note the consistency or smell. Based upon the guideline that 2 tons/acre/year falls onto the land, KPRG calculated that approximately 23.7 tons of material fell into the basin since it was emptied in 2013.

The weight-to-volume relationship analysis showed that the material in the Service Water Basin was 48% water and 52% solids. Of the 52% solids approximately 92% was non-organic matter. Accordingly, based upon the total volume of 52 CY, 24.8 CY is non-organic material, which is approximately 28.7 tons. Moreover, if MWG were to empty the pond, there would only be on average approximately 1 inch of material (52% of 2.4 inches).

The grain size comparison showed that material at the base of the Service Water Basin was not similar to CCR.[4] The material in the Service Water Basin was black/gray silty sand and 46% fine sand and fines. In comparison, the Joliet 9 CCR was classified as brown sand and was 80% gravel and course to medium sand.

Like the conclusions drawn from the investigation and analysis of the material in Ponds 1 and 3, the results of the investigation and analysis of the Service Water Basin support the conclusion that it is not a CCR surface impoundment. The 23.7 calculated tons of material from air dispersion, coupled with the sediments deposited from stormwater runoff, and the different classification and grain size fully explains the 28.7 tons of material found at the base of the pond and supports the conclusion that none of the material is CCR.

[4] KPRG used Joliet 9 CCR for the analysis. The Joliet 9 coal and burning process are identical, so the CCR would be similar.

III. The Waukegan Grassy Field and Ponds 1N and 1S at Will County Are Not CCR Surface Impoundments

At the October 14, 2020 meeting, MWG briefly discussed why the Grassy Field at the Waukegan Station and Ponds 1N and 1S at Will County are not CCR surface impoundments as defined in Section 3.143 of the Act. 415 ILCS 5/3.143. MWG asked Illinois EPA whether there was any additional information that help Illinois EPA to determine that these areas are not CCR surface impoundments. Illinois EPA indicated that it was not ready to discuss these three areas and so it did not know what information it may require. Since that meeting, in MWG's subsequent outreach on this issue, the Agency confirmed that the status of its review had not changed.

MWG maintains that the Grassy Field at Waukegan is not a CCR Surface Impoundment because it is not a depression or excavation, nor is it designed to hold CCR and liquids. No CCR or CCR slurry water is directed at the Grassy Field, and because it is not a depression, it cannot accumulate liquid. For similar reasons, Pond 1N and 1S are not CCR surface impoundments because they are not designed to hold an accumulation of CCR and liquid. In 2013, MWG redesigned the ponds and the redesign also did not allow them to hold an accumulation of liquid. MWG continues to maintain that before and since 2013, neither of the ponds have accumulated liquids.

IV. The Agency Should Delay Any Further Enforcement Until the Illinois CCR Rulemaking is Finalized

The Illinois Pollution Control Board ("Board") is currently considering new rules to regulate CCR surface impoundments, *In the Matter of: Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Proposed New 35 Ill.Adm.Code 845*, PCB R20-19 ("Illinois CCR Rulemaking"). Depending on the Board's final decision, all of the areas in dispute may not be regulated CCR surface impoundments. Accordingly, the Agency should hold off on making any final decisions on further enforcement until the Board has issued its Final Order in the Illinois CCR Rulemaking.

During the rulemaking, the Board's Chief Environmental Scientist, Anand Rao, asked Dynegy Midwest Generation, LLC, *et al*. (collectively "Dynegy") to suggest language to clarify Part 845's applicability to *de minimis* units. PCB R20-19 9/29/20 Tr. 185:15-186:12. Per Mr. Rao's request, Dynegy proposed a new definition for "*De minimis* Unit" in its Post-Hearing Brief. Dynegy's definition stated that a *de minimis* unit is:

> "including but not limited to process water or cooling water ponds, that only received CCR incidentally and does not contain an amount of CCR and liquid presenting a reasonable probability of adverse effects on human health or the environment. De minimis surface impoundments are not CCR surface impoundments."

Dynegy's Post Hearing Comments, PCB R20-19, Oct. 30, 2020, p. 16. Dynegy further stated that exclusion of units containing *de minimis* quantities of CCR was consistent with the U.S.EPA Federal CCR Rule, because U.S.EPA stated clearly in the preamble that units containing *de minimis* quantities of CCR are unlikely to present significant risks. *Id.* p. 14. Alternatively, if the Board decided not to adopt the definition, Dynegy requested that the Board explain in its final order that Part 845 does not apply to units containing *de minimis* amounts of CCR. *Id.* p. 16. MWG supported Dynegy's proposed definition of a "*de minimis unit*." MWG's Second Post-Hearing Comments, PCB20-19, Oct. 30, 2020, p. 27. Illinois EPA

objected to Dynegy's proposed definition claiming that the proposed definition excluding *de miminis* units from the definition of CCR surface impoundments was inconsistent with the U.S.EPA Federal CCR Rule, but also proposed an alternative. Illinois EPA Response to Final Post Hearing Comments, PCB R20-19, Nov. 6, 2020, pp. 5, 7.

Dynegy also proposed a modification to the definition of "inactive CCR surface impoundment" that could have a direct impact on this dispute. Illinois EPA's proposed definition of "inactive CCR surface impoundment" included any units that contain CCR, regardless of whether the unit contains liquid. PCB R20-19, Proposed 845.120. As Dynegy explained to the Board, the Illinois EPA's definition proposed definition improperly expanded the scope of Part 845 beyond the statutory mandate under Section 22.59 of the Act, 415 ILCS 5/22.59. Dynegy's Post-Hearing Comments, Oct. 30, 2020, p. 8. Because units that contain CCR but do not impound liquid do not pose the type of risks that need to be mitigated, Dynegy proposed that the Board modify the definition to only include units that contain "both CCR and liquid." *Id*. p. 9. Illinois EPA also opposed this modification. Illinois EPA Response to Final Post Hearing Comments, PCB R20-19, Nov. 6, 2020, p. 7.

MWG maintains that Ponds 1 and 3 at Joliet 29 and the Service Water Basin are not CCR surface impoundments because none contain any CCR. Similarly, MWG maintains that the Waukegan Grassy Area and Ponds 1N and 1S at Will County do not fall within the definition of "CCR surface impoundment" because none can accumulate liquid. If the Board were to adopt Dynegy's definition for "*de minimis* unit" or "inactive CCR surface impoundments, then there would be little doubt that all of the MWG units at issue are not regulated CCR surface impoundments. Because the Board may address and resolve some or all of these issues, and do so in a manner that would result in the clear exclusion of one or more of the ponds and areas at issue here, it would be reasonable and prudent for the Illinois EPA to refrain from any further enforcement activity on the subject violation notices until the Board issues its final decision.

V. Conclusion

We believe that this supplemental response is responsive to the Agency's requests for information regarding the process water ponds at Joliet 29 and Powerton. MWG also believes that it has provided Illinois EPA with all the relevant information regarding the Grassy Field at Waukegan and two areas at the Will County Station. However, should you have any additional questions or concerns, please do not hesitate to contact me.

Very truly yours,

Kristen L. Gale
Counsel for Midwest Generation, LLC

Enclosures

cc: Sharene Shealey, Midwest Generation, LLC (via email)
Gabbriel H. Neibergall (via email)

K P R G

ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG and Associates, Inc.

MEMORANDUM

FROM: Joshua D. Davenport, P.E., KPRG and Associates, Inc.

DATE: November 19, 2020

SUBJECT: Evaluation of Sediment Quantities in Joliet Generating Station's Pond 1 and Pond 3 and Powerton Generating Station's Service Water Basin

Pond 1 and Pond 3 at the Joliet 29 Generating Station and the Service Water Basin at the Powerton Generating Station were evaluated the contents and approximate volume of the contents in the ponds.

SECTION 1-INTRODUCTION

Joliet 29 – Pond 1 and Pond 3

The Joliet 29 Generating Station previously burned coal to generate steam to produce electricity. The Joliet 29 station ceased burning coal on March 18, 2016 and began burning natural gas on May 31, 2016.

All of the coal combustion residual ("CCR") material in Pond 1 was cleaned out in the summer of 2015. The CCR material was removed all the way down to the warning layer of the pond, the liner was power-washed, and any damage to the liner was repaired. After it was cleaned out, Pond 1 did not receive any bottom ash sluice water. Rather, the pond only receives service water/low volume wastewater from the RO sand filter backwash, the west area basin, the former coal pile runoff pump discharge, and the plant drains, including the Station floor drains, and roof drains and area drains. (See Joliet 29 Flow Diagram, Ex. 1). None of these processes produce nor discharge coal ash. Pond 3 is a finishing pond for the process water from Ponds 1 and 2. (Ex. 1). Pond 3 also receives water from the wastewater treatment plant. *Id.* Finally, both ponds receive rainwater from the area surrounding the ponds.

All of the water flow processes and stormwater flow contain sand sized and smaller sized particles. The RO sand filter backwash contains the suspended solids removed by the stations water treatment system, which would be sand, silt, and some clay sized because the treatment system is filtering water removed from the ground by the station's water well so it can be used as process water. The RO sand filter backwash has been described as visually 'dirty' by the Station's personnel, which is expected because the backwash is

intended to regenerate the sand filters by removing the solids that accumulate as part of the filtration process. The Station floor drains, roof drains, and area drains, are likely to contain small particles and silt from operations and runoff during storm events. Similarly, the runoff pumped from the coal pile area retention pond contains sand, silt and clay sized particles into Pond 1. These particles would come from the surrounding area through stormwater runoff that drains into the coal pile area retention pond. The areas on the north and east sides of Pond 1 and west, east, and north sides of Pond 3 are slightly elevated and there is a gravel road near the ponds and adjacent soil. Stormwater runoff from the gravel road and soil likely contains sand, silt, and clay sized particles that flow into both ponds. Moreover, the discharge from the wastewater treatment plant drains directly into Pond 3. Based upon sampling directly before discharge into Pond 3, the wastewater treatment plant is also a contributor of solids into Pond 3.

Powerton – Service Water Basin

The Powerton Generating Station burns coal to generate steam to produce electricity. The Service Water Basin (SW Basin) is the end of the wastewater treatment system. The Service Water Basin receives water from the ash surge basin, the ash bypass basin, and rainwater from the property. The CCR material produced by the Powerton coal burning process is the same as what was produced by the Joliet 9 coal burning process because both stations use the same coal and the same coal burning process. Therefore, the CCR material from Joliet 9 was used as the comparison material against the Service Water Basin material.

SECTION 2-EVALUATION PROCESS

The evaluation of each surface impoundment was performed based on the following steps.

The current elevation of the bottom of the surface impoundment was determined with a bathymetric survey. During the bathymetric surveys, samples were collected from the material in each surface impoundment.

The bathymetric surveys were performed by Ruettiger, Tonelli & Associates, Inc (RT&A). RT&A is an Illinois licensed surveying company. The Joliet 29 Pond 1 survey was performed on July 6, 2020, the Pond 3 survey was performed on August 17, 2020, and the SW Basin survey was performed on July 14, 2020. The surveys were performed by navigating each surface impoundment using a boat and electronic depth finder to determine the depth from the water to the bottom of the surface impoundment at the time of the survey. The water elevation in feet above mean sea level at the time of the survey was determined using the appropriate state plane horizontal and vertical data.

The bathymetric surveys were performed using an electronic depth finder instead of a physical survey rod. The physical survey rod was attempted to determine the depth from the water surface to the material in Pond 1, Pond 3, and the SW Basin. However, because the material in the pond lacked sufficient density to create a solid enough surface to place the survey rod and determine an accurate depth, the survey rod was not reliable.

The results of the bathymetric survey was compared to the known existing conditions of the surface impoundment to determine if material had accumulated to a measurable quantity above the known base of the surface impoundment. If a measurable quantity was present, the quantity was calculated.

Samples of the sediment were analyzed for grain size, weight-to-volume relationship of the sediment, and ASTM 2974. The analyses results were used to refine the quantity of the material identified in the surface impoundment.

SECTION 3- SURFACE IMPOUNDMENT EVALUATIONS

JOLIET POND 1

Calculation of the Volume of Material in Pond 1

The bathymetric survey of Pond 1 showed that the water surface elevation was at 532.0 feet above mean sea level (ft amsl) and showed an average depth of material present was 1.5 feet. Based upon the average depth and the contours of Pond 1 from the survey conducted when the pond was relined, the total quantity of material at the base was calculated to be approximately 5,124 cubic yards (CY). The comparison was performed using AutoCAD Civil 3D 2020 to calculate the volume that is occupied between the surface of the survey and the surface of the existing pond conditions.

The material sampled in Pond 1 was black in color, was sticky/pasty in consistency and had a silty/clayey feeling when rubbed between your fingers. Some of the material identified was white in color and was 1/8-inch to ¼-inch in size. It should be noted that the warning layer in Pond 1 consists of limestone screenings. Limestone screenings are typically white in color and consist of material sizes that range from 1/8-inch to ¼-inch in size. The material also had a sewer odor.

The weight-to-volume relationship analysis showed that the material in Pond 1 was fourteen percent (14%) solids and eighty-six percent (86%) water. (See weight-to-volume ratio analysis attached as Exhibit 2). The ASTM 2974 test showed that about thirty-two percent (32%) of the solids in Pond 1 are organic matter and about 68% of the solids are non-organic matter. (See ASTM 2974 results, attached as Exhibit 3). Accordingly, of the volume of the 5,124 CY material in Pond 1, 717 CY is solids (14% of 5,124 CY), and only 489 CY is non-organic matter (68% of 717 CY). The weight-to-volume relationship analysis showed that the density of the material in the pond (not including the water) is 20.6 lbs/cubic feet. (Ex. 2). Based upon that, the tonnage of solid non-organic material in Pond 1 is approximately 136 tons. (*See* Table 1 attached as Ex. 4).

With open topped ponds, about two tons per acre per year (2 tons/acre/year) of matter will accumulate in the bottom of a pond from air dispersion.[1] Pond 1 was last cleaned out during

[1] The 2 t/ac/yr is actually the calculation used to offset potential soil erosion calculated for maintenance of landfill covers. The lost soil is replaced by natural processes at a rate that is the same or greater than the tolerance level (2/t/ac/yr).

the summer of 2015 and the bathymetric survey that determined the volume of material in the pond was performed on July 6, 2020. The amount of time that has passed between these two dates is 1,771.25 days or 4.9 years. The surface area of the pond is approximately 133,372 square feet (3.06 acres) based on the surface area at the top of the pond slope. Based on the above amount of time and above surface area the matter that has accumulated in Pond 1 from air is about 29.7 tons. (Ex. 4).

Grain Size Comparison of the Material In Pond 1

A comparison of the grain size analysis of the material in Pond 1 compared to the grain size of the Joliet 29 CCR shows that the sediments are not the same. (Ex. 4). The analysis shows that the Joliet 29 CCR is described as brown to dark brown silty sand with gravel, whereas the Pond 1 material was black sandy silt. Moreover, the grain size analysis of the material in Pond 1 shows that the material consists primarily of fine sand and silt/clay fines. In comparison, the Joliet 29 CCR is primarily fine gravel and sand. In particular, the Joliet 29 CCR material contains 19% gravel and about 40% course and medium sand, totaling approximately 60% gravel and course to medium sand. In comparison, the material in Pond 1 was approximately 24.9% fine sand and 67.2% fines. In other words, the material in Pond 1 is 92.2% fine sand and fines, and only 7.8% is gravel, and course to medium sand. The difference in the description of the material and in the coarse and medium sand sized particles between the Joliet 29 CCR and the Pond 1 material indicates that the composition of the material in Pond 1 is not CCR material.

JOLIET POND 3

Calculation of the Volume of Material in Pond 3

The bathymetric survey of Pond 3 showed that the water surface elevation was at 526.1 feet above mean sea level (ft amsl), the average depth of material present was 2.4 feet, and the total quantity of material was calculated to be approximately 7,392 cubic yards (CY). The comparison was performed using AutoCAD Civil 3D 2020 to calculate the volume that is occupied between the surface of the survey and the surface of the existing pond conditions.

The material sampled in Pond 3 was black in color, was sticky/pasty in consistency and had a silty/clayey feeling when rubbed between your fingers. The material stuck to the gloves of the sampler during the sampling process. The material also had a sewer odor.

The weight-to-volume relationship analysis showed that the material in Pond 3 was eight percent (8%) solids and ninety-two percent (92%) water. (Ex. 2) Based on the ASTM 2974 test results, about twenty-eight (28%) percent of the solids in Pond 3 are organic matter and about seventy-two percent (72%) of the solids are non-organic matter. (Ex. 3). Accordingly, of the volume of the 7,392 CY material in Pond 3, 591 CY is solids (8% of 7,392 CY), and 423 CY is non-organic matter (72% of 591 CY). The weight-to-volume relationship analysis showed that the density of the material in the pond (not including the water) is 12.1 lbs/cubic feet. (Ex. 2). Based upon that, the tonnage of solid non-organic material in Pond 3 is approximately 69 tons. (Ex. 4).

Using the same calculation to estimate the air dispersion of solids into Pond 3, approximately 29.4 tons of material accumulated in Pond 3 from air dispersion. (Ex. 4).

Grain Size Comparison of the Material in Pond 3

Similar to Pond 1, a comparison of the grain size analysis of the material in Pond 3 compared to the grain size of the Joliet 29 CCR shows that the sediments are not the same. (Ex. 4). The material in Pond 3 was identified as a black organic silty sand, dissimilar from the Joliet 29 CCR, which is brown silty sand with gravel. In addition, the grain size analysis shows that the material in Pond 3 is unlike the Joliet 29 CCR. The material in Pond 3 consists of approximately 73.4% fine sand and fines, and only 26.6% is of coarser material. The Joliet 29 CCR is the opposite.

Prior to the inlet of Pond 3, a coagulant chemical, alum, is added as a flocculant to remove the suspended solids from the Pond 3 influent water. The alum neutralizes the negative charge of the non-settleable solids, such as clay, which allows the neutralized particles to stick together. As the particles stick together, they form larger particles, and this continues until large enough particles form that settle from the water. The addition of alum and the flocculation particles explains the presence and the nature of the material in Pond 3 and why it lacks the density to create a surface against which a survey rod could be placed on. Even with the alum, the density of the particles are not enough to settle completely to the bottom of Pond 3, but are heavy enough to settle and not be passed through the discharge structure. The weight-to-volume relationship of the material also explains this by the fact that the material was identified as only eight percent solids compared to 92% water. It should be noted that the characteristics of the material in Pond 3 are similar to that of suspended solids contained in a wastewater treatment plant.

The nature of the settling of the material in Pond 3 also indicates that the material is not CCR. The material in Pond 3 settles farther away from the inlet when compared to the CCR material in Pond 1 and Pond 2, which settles at the inlet of the pond, which is expected because of the medium sand to gravel particle size. When CCR material was placed in Pond 2 prior to it being cleaned out in 2019, the CCR depth at the inlet extended from the bottom of the pond to about 10 feet in height and lesser heights closer to the pond outlet. The depth of the material in Pond 3 is only 1 feet at the inlet and the depth of the material is about 3 feet on the east side of the pond.

SERVICE WATER BASIN

Calculation of the Volume of Material in the Service Water Basin

The bathymetric survey of the Service Water Basin ("SW Basin") showed that a measurable quantity of material was marginally present or not present. Reviewing the as-built drawings of the basin from when it was re-lined in 2013, the bottom elevation is ±441 ft amsl. The bottom elevations from the bathymetric survey average ±440.80 ft amsl. Based on comparing the bottom elevation from the as-built drawings and the bottom elevations from the bathymetric survey, minimal material is present or not present to a point, which

causes minimal change in the bottom elevation determined during the survey. AutoCAD Civil 3D 2020 was also used to compare the as-built drawings with the survey performed by RT&A. The AutoCAD Civil 3D 2020 comparison was performed with the bottom elevations of the survey and the bottom elevations of the as-built drawings considered equal. This comparison determined a volume of about 52 CY.

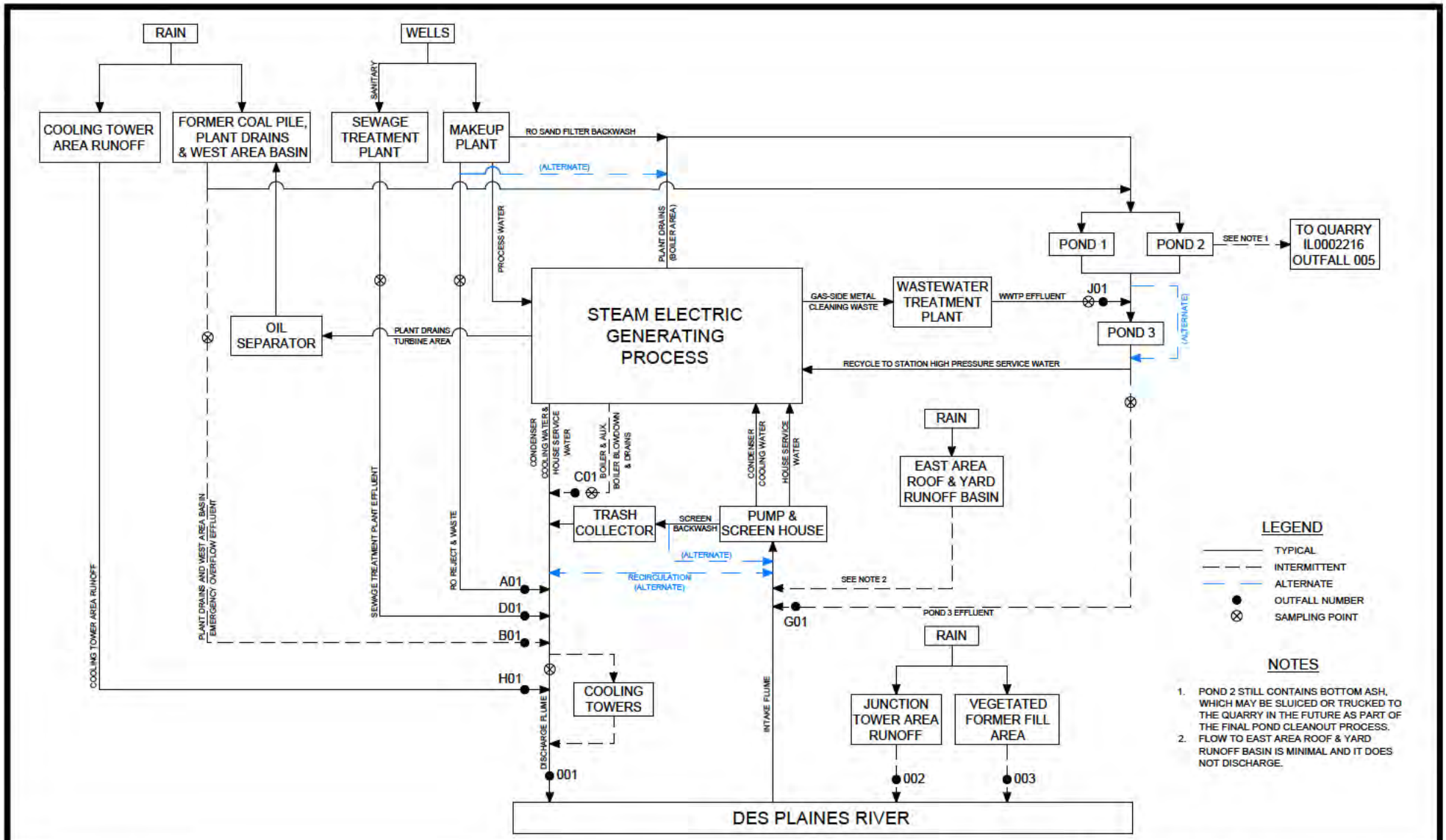
The weight-to-volume relationship analysis showed that the material in the SW Basin was 52% solids. (Ex. 5) Based on the ASTM 2974 test results, about 8.2% of the solids in the SW Basin are organic matter and about 91.8% are non-organic matter. (Ex. 3). Accordingly, of the volume of the 52 CY material, 27 CY is solids and 24.8 CY is non-organic matter. The weigh-to-volume relationship analysis showed that the density of the material in the pond (not including the water) is 85.8 lbs/cubic feet. (Ex. 2). Based upon that, the tonnage of solid non-organic material in SW Basin is approximately 28.7 tons. (*See* Table 3 attached as Ex. 4).

With open topped ponds, about two tons per acre per year (2 tons/acre/year) of matter will accumulate in the bottom of a pond from air dispersion.[2] The SW Basin was last cleaned out during the spring of 2013 and the bathymetric survey that determined the volume of material in the pond was performed on July 14, 2020. The amount of time that has passed between these two dates is 2,257.25 days or 6.2 years. The surface area of the pond is approximately 87,791 square feet (2.02 acres) based on the surface area at the top of the pond slope. Based on the above amount of time and above surface area the matter that has accumulated in SW Basin from air is about 24.9 tons. (Ex. 4, Table 3).

Grain Size Comparison of the Material in SW Basin

Enough material could be collected from the SW Basin to submit a sample for analysis. The sample was analyzed for the grain size, weight–to-volume relationship of the material, and ASTM 2974. The material in the SW Basin was identified as a black/gray silty sand whereas the Joliet 9 CCR was classified as brown sand. The grain size analysis shows that the material in the SW Basin consists of approximately 46.5% fine sand and fines. (Ex. 4, Table 3). By comparison, the grain size of the Joliet 9 CCR consists of approximately 16.9% fine sand and fines and the remainder consists of gravel and coarse to medium sand (approximately 83.1%).

[2] The 2 t/ac/yr is actually the calculation used to offset potential soil erosion calculated for maintenance of landfill covers. The lost soil is replaced by natural processes at a rate that is the same or greater than the tolerance level (2/t/ac/yr).



APTIM Environmental & Infrastructure, Inc.

MIDWEST GENERATION, LLC
JOLIET 29 GENERATING STATION

GENERAL FLOW DIAGRAM WITH NPDES OUTFALLS
NPDES PERMIT NO. IL0064254

DRAWN BY:	ORC	APPROVED BY:	SZF	PROJ. NO.:	631237225	DATE:	APRIL 2019

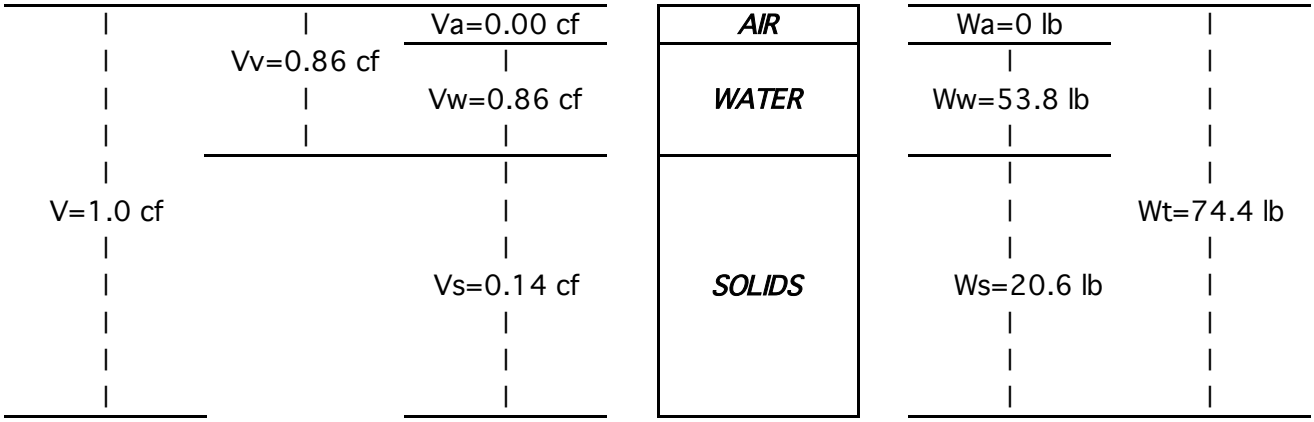
T:\AutoCAD\Projects\NRG\Joliet NPDES\Joliet 29 Flow Diagram - Revised.dwg, 4/22/2019 8:30:52 AM, _AutoCAD PDF (General Documentation).pc3

WEIGHT VOLUME RELATIONSHIPS OF SOIL

PROJECT NAME: Pond 3 Sediments **PROJECT NO:** 20543

SAMPLE LOCATION: Pond 1 Sample 1 **DATE:** 10/23/20

SOIL CLASSIFICATION: Black Sandy SILT **CLIENT:** KPRG Wisconsin

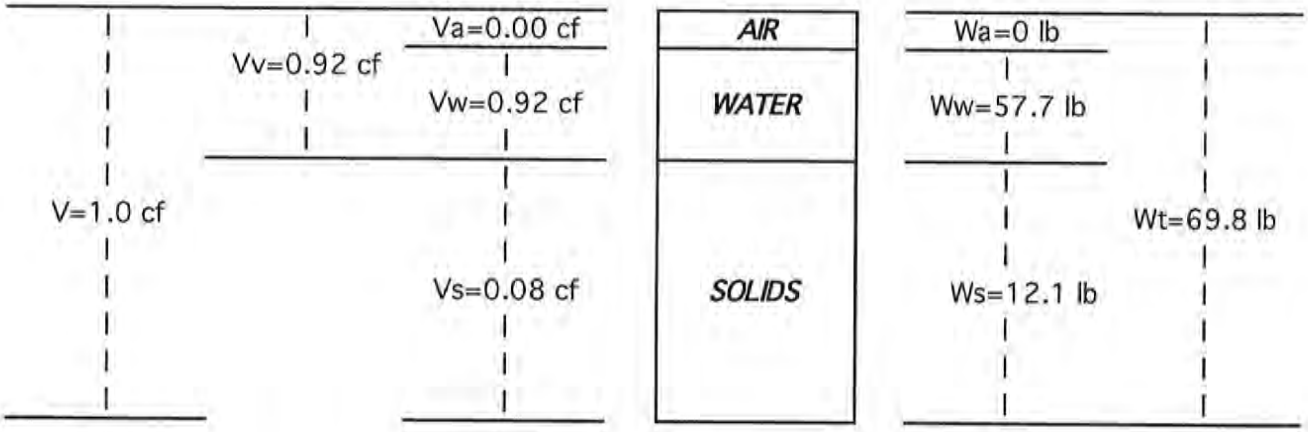


ENTER LABORATORY MOISTURE CONTENT, %- -	Mc=	261.0
ENTER SAMPLE WEIGHT, grams- - - - - - - -	W=	118.58
ENTER SAMPLE DIAMETER, inches- - - - - - -	Ds=	
ENTER SAMPLE LENGTH, inches- - - - - - - -	Ls=	
ENTER ESTIMATED/KNOWN SPECIFIC GRAVITY,Gs	Gs=	2.443
SAMPLE VOLUME, cubic inches- - - - - - - - -	V=	6.07
WET DENSITY, #/cu ft- - - - - - - - - - - -	Wt=	74.4
WEIGHT OF SOLIDS, pounds- - - - - - - - - -	Ws=	20.6
WEIGHT OF WATER, pounds- - - - - - - - - -	Ww=	53.8
VOLUME OF SOLIDS, cubic feet- - - - - - - -	Vs=	0.14
VOLUME OF WATER, cubic feet- - - - - - - -	Vw=	0.86
VOLUME OF AIR, cubic feet- - - - - - - - - -	Va=	0.00
VOLUME OF VOIDS, cubic feet- - - - - - - -	Vv=	0.86
POROSITY, n- - - - - - - - - - - - - -	**n=**	**0.86**
VOID RATIO, e- - - - - - - - - - - - -	**e=**	**6.40**
DEGREE OF SATURATION, Sr- - - - - - -	**Sr=**	**100%**
LOSS ON IGNITION - - - - - - - -	**FOC=**	**15.60%**

((Ds/

WEIGHT VOLUME RELATIONSHIPS OF SOIL

PROJECT NAME:	Pond 3 Sediments	**PROJECT NO:**	20543
SAMPLE LOCATION:	Pond 3 Sample 1	**DATE:**	8/19/20
SOIL CLASSIFICATION:	Black organic Silty SAND	**CLIENT:**	KPRG Wisconsin

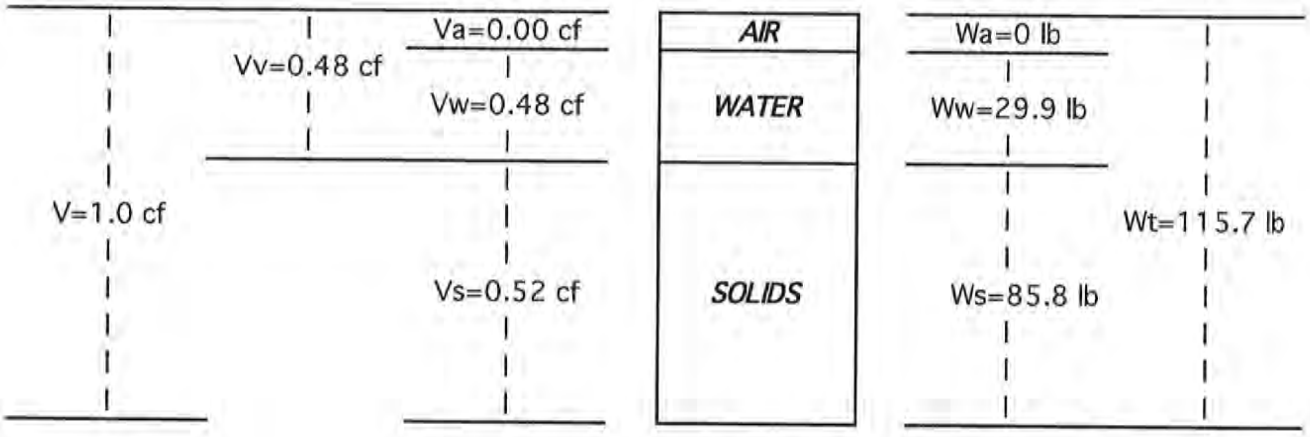


ENTER LABORATORY MOISTURE CONTENT, %- -	Mc=	475.0	
ENTER SAMPLE WEIGHT, grams- - - - - - - -	W=	111.34	
ENTER SAMPLE DIAMETER, inches- - - - - - -	Ds=		
ENTER SAMPLE LENGTH, inches- - - - - - - -	Ls=		
ENTER ESTIMATED/KNOWN SPECIFIC GRAVITY,Gs	Gs=	2.418	
SAMPLE VOLUME, cubic inches- - - - - - - - -	V=	6.07	((Ds/
WET DENSITY, #/cu ft- - - - - - - - - - - -	Wt=	69.8	
WEIGHT OF SOLIDS, pounds- - - - - - - - - -	Ws=	12.1	
WEIGHT OF WATER, pounds- - - - - - - - - -	Ww=	57.7	
VOLUME OF SOLIDS, cubic feet- - - - - - - -	Vs=	0.08	
VOLUME OF WATER, cubic feet- - - - - - - -	Vw=	0.92	
VOLUME OF AIR, cubic feet- - - - - - - - - -	Va=	0.00	
VOLUME OF VOIDS, cubic feet- - - - - - - -	Vv=	0.92	
POROSITY, n- - - - - - - - - - - - - -	**n=**	**0.92**	
VOID RATIO, e- - - - - - - - - - - - -	**e=**	**11.43**	
DEGREE OF SATURATION, Sr- - - - - - -	**Sr=**	**101%**	
LOSS ON IGNITION - - - - - - - - -	**FOC=**	**28.46%**	
pH - - - - - - - - - -	**pH=**		

MWG13-15_120569

WEIGHT VOLUME RELATIONSHIPS OF SOIL

PROJECT NAME:	Powerton Station	**PROJECT NO:**	20588
SAMPLE LOCATION:	Service Water Basin Sludge	**DATE:**	9/24/20
SOIL CLASSIFICATION:	Black / grey Silty SAND	**CLIENT:**	KPRG Wisconsin



ENTER LABORATORY MOISTURE CONTENT, %- -	Mc=	34.9	
ENTER SAMPLE WEIGHT, grams- - - - - - - -	W=	184.55	
ENTER SAMPLE DIAMETER, inches- - - - - - -	Ds=		
ENTER SAMPLE LENGTH, inches- - - - - - - -	Ls=		
ENTER ESTIMATED/KNOWN SPECIFIC GRAVITY,Gs	Gs=	2.625	
SAMPLE VOLUME, cubic inches- - - - - - - - -	V=	6.07	((Ds/
WET DENSITY, #/cu ft- - - - - - - - - - - -	Wt=	115.7	
WEIGHT OF SOLIDS, pounds- - - - - - - - - - -	Ws=	85.8	
WEIGHT OF WATER, pounds- - - - - - - - - - -	Ww=	29.9	
VOLUME OF SOLIDS, cubic feet- - - - - - - - -	Vs=	0.52	
VOLUME OF WATER, cubic feet- - - - - - - - -	Vw=	0.48	
VOLUME OF AIR, cubic feet- - - - - - - - - - -	Va=	0.00	
VOLUME OF VOIDS, cubic feet- - - - - - - - -	Vv=	0.48	
POROSITY, n- - - - - - - - - - - - - - -	**n=**	**0.48**	
VOID RATIO, e- - - - - - - - - - - - - -	**e=**	**0.91**	
DEGREE OF SATURATION, Sr- - - - - - -	**Sr=**	**101%**	
LOSS ON IGNITION - - - - - - - - -	FOC=	8.24%	

MIDLAND STANDARD ENGINEERING TESTING, INC.
410 NOLEN DRIVE, SOUTH ELGIN, IL 60177 P(847) 844-1895 F(847) 844-3875

Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
ASTM 2974

Project # 20543
Project Name: Pond 3- Sediments
Sample Description: Black Sediment

Date Received: 8/19/2020
Date Tested: 8/21/2020
Tested by: JDS

METHOD D, 750°C
METHOD C, 440°C

		SAMPLE ID	Pond 3	Pond 1	
		SPECIMEN #	Sediments	Middle Water	
		TEST DATE:	8/21/2020	8/21/2020	
		TEST TEMP:	440°C	440°C	
1. wt of crucible, no cover	1		53.79	49.42	
2. wt. of crucible & unburnt sample, no	2		68.69	56.20	
3. wt. of crucible & burned sample, no c	3		64.45	54.04	
4. wt. of dry sample at start	B		14.9	6.78	
5. net wt. of ash	C		10.66	4.62	
6. ash content, %	D		71.54	68.22	
7. organic matter, %	OM,%		28.46	31.78	

SPF013

MIDLAND STANDARD ENGINEERING TESTING, INC.
410 NOLEN DRIVE, SOUTH ELGIN, ILLINOIS 60177 P (847) 844-1895 F(847) 844-3875

Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
ASTM 2974

Project # 20588
Project Name: Powerton Station
Sample Description: Black/grey Silty SAND
Location: Pekin, Illinois

Date Received: 9//2020
Date Tested: 9//2020
Tested by: JDS

METHOD D, 750°C
METHOD C, 440°C

SAMPLE ID		SWB		
SPECIMEN #				
TEST DATE:				
TEST TEMP:		440°C	440°C	440°C
1. wt of crucible, no cover	1	151.92		
2. wt. of crucible & unburnt sample, no cover	2	187.25		
3. wt. of crucible & burned sample, no cover	3	184.34		
4. wt. of dry sample at start	B	35.33		
5. net wt. of ash	C	32.42		
6. ash content, %	D	91.76337		
7. organic matter, %	OM,%	8.24		

SPF013

MWG13-15_120572

EXHIBIT 4: Table 1: Comparison of Distribution of Particle Sizes for Joliet 29 CCR and Joliet's Pond 1 Material

Sample	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
Joliet 29 CCR	0.0	0.0	19.0	14.2	25.6	26.8	12.6	1.8
Pond 1 Material	0.0	0.0	1.5	2.7	3.6	24.9	61.3	6.0

Pond 1 surface at top of slope = 133,372 Sq.ft = 3.0618 acres

Material Quantities Based on 2 tons/ac/yr

Pond 1 surface at top of slope = 133,372 Sq.ft

Last clean out occurred between May and September 2015

Time between Clean out and survey is from 9/1/2015 and 7/6/2020 for a total of 1,771.75 days

Pond 1 top slope surface

3.0618 acres 2 tons / ac/yr 1771.75 days / 365 days/yr = 29.7 tons

EXHIBIT 4: Table 2: Comparison of Distribution of Particle Sizes for Joliet 29 CCR and Joliet's Pond 3 Material

Sample	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
Joliet 29 CCR	0.0	0.0	19.0	14.2	25.6	26.8	12.6	1.8
Pond 3 Material	0.0	0.0	1.8	10.1	14.7	33.0	23.8	16.6

Pond 3 surface at top of slope = 105578 Sq.ft = 2.42 acres

Material Quantities Based on 2 tons/ac/yr

Pond 3 surface at top of slope = 105578 Sq.ft

Last clean out occurred between May and September 2013

Time between Clean out and survey is from 9/1/2013 and 8/17/2020 for a total of 2,213.25 days

Pond 3 top slope surface

2.4237 acres 2 tons ac/yr 2213.25 days 365 days/yr = 29.4 tons

EXHIBIT 4: Table 3: Comparison of Distribution of Particle Sizes for Joliet 9 CCR and Powerton's Service Water Bas

Sample	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
Joliet 9 CCR	0.0	0.0	1.6	11.4	70.1	13.6	3.3	
SW Basin Material	0.0	0.0	2.0	8.0	43.5	23.8	18.7	4.0

SW Basin surface at top of slope = 87791.14 Sq.ft = 2.0154 acres

Material Quantities Based on 2 tons/ac/yr

Surface of SW Basin survey = 0 Sq.ft

SW Basin surface at top of slope = 87791.14 Sq.ft

Last clean out occurred between March and June 2013

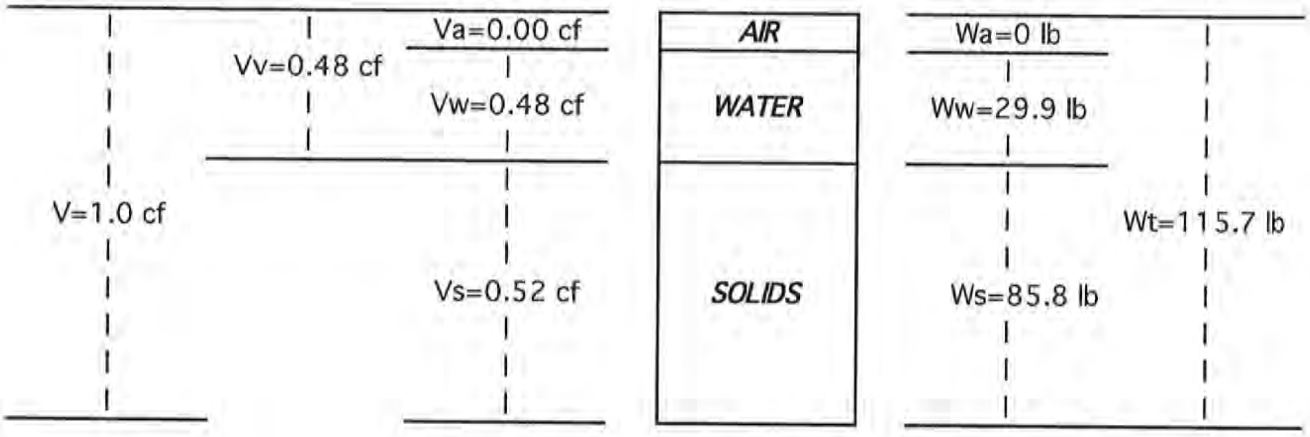
Time between Clean out and survey is from 6/15/2013 and 7/14/2020 for a total of 2,257.25 days

SW Basin top slope surface

2.0154 acres × 2 tons/ac/yr × 2257.25 days / 365 days/yr = 24.9 tons

WEIGHT VOLUME RELATIONSHIPS OF SOIL

PROJECT NAME:	Powerton Station	**PROJECT NO:**	20588
SAMPLE LOCATION:	Service Water Basin Sludge	**DATE:**	9/24/20
SOIL CLASSIFICATION:	Black / grey Silty SAND	**CLIENT:**	KPRG Wisconsin



ENTER LABORATORY MOISTURE CONTENT, %- -	Mc=	34.9	
ENTER SAMPLE WEIGHT, grams- - - - - - - -	W=	184.55	
ENTER SAMPLE DIAMETER, inches- - - - - - -	Ds=		
ENTER SAMPLE LENGTH, inches- - - - - - - -	Ls=		
ENTER ESTIMATED/KNOWN SPECIFIC GRAVITY,Gs	Gs=	2.625	
SAMPLE VOLUME, cubic inches- - - - - - - - -	V=	6.07	((Ds/
WET DENSITY, #/cu ft- - - - - - - - - - - -	Wt=	115.7	
WEIGHT OF SOLIDS, pounds- - - - - - - - - - -	Ws=	85.8	
WEIGHT OF WATER, pounds- - - - - - - - - - -	Ww=	29.9	
VOLUME OF SOLIDS, cubic feet- - - - - - - - -	Vs=	0.52	
VOLUME OF WATER, cubic feet- - - - - - - - -	Vw=	0.48	
VOLUME OF AIR, cubic feet- - - - - - - - - - -	Va=	0.00	
VOLUME OF VOIDS, cubic feet- - - - - - - - -	Vv=	0.48	
POROSITY, n- - - - - - - - - - - - - - -	**n=**	**0.48**	
VOID RATIO, e- - - - - - - - - - - - - -	**e=**	**0.91**	
DEGREE OF SATURATION, Sr- - - - - - -	**Sr=**	**101%**	
LOSS ON IGNITION - - - - - - - - -	FOC=	8.24%	

Exhibit E

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	AS 2021-001
Petition of Midwest Generation	)	
for an Adjusted Standard from 845.740(a)	)	
and Finding of Inapplicability of Part 845	)	(Adjusted Standard)
(Joliet 29 Station)	)	

AFFIDAVIT OF AMY L. ZIMMER

I, Amy L. Zimmer, 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, Hydrogeology and Compliance Unit (HCU), and I am located in Springfield, Illinois. I have worked for the Illinois EPA in the Groundwater Section for more than twenty years.

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 an Adjusted Standard from Section 845.740(a) and Finding of Inapplicability of Part 845 for the Joliet 29 Station ("Petition") filed by Midwest Generation, LLC ("MWG").

4. I have personal knowledge of the facts set forth in Illinois EPA's Recommendation to the Board as to Petitioner's request for a finding that Part 845 does not apply to Pond 1 and Pond 3 located at the Joliet 29 Station.

5. Attached to the Recommendation as Exhibit A ("Rec. Ex. A") is an Illinois EPA Division of Water Pollution Control invoice related to Joliet 29 Generating Station, dated December 16, 2019. This invoice is kept by the Illinois EPA in the regular course of business, and it is the regular course of business of the Illinois EPA to transmit the information thereof to be included in this record. Illinois EPA Division of Water Pollution Control invoice related to Joliet 29 Generating Station, dated December 16, 2019, and attached to the Recommendation as Exhibit A, is an exact duplicate of the original.

6. Attached to the Recommendation as Exhibit B ("Rec. Ex. B") is a March 24, 2020 Illinois EPA letter to MWG. The March 24, 2020 letter is kept by the Illinois EPA in the regular course of business, and it is 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 B, is an exact duplicate of the original.

7. Attached to the Recommendation as Exhibit C ("Rec. Ex. C) is Violation Notice ("VN") W-2020-00044. 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-2020-00044, attached to the Recommendation as Exhibit C, is an exact duplicate of the original.

8. Attached to the Recommendation as Exhibit D ("Rec. Ex. D) is a MWG letter to Illinois EPA, dated November 25, 2020, with a KRPG Memorandum re: Evaluation of Sediment Quantities in Joliet Generating Station's Pond 1 and Pond 3 and Powerton Generating Station's

Service Water Basin, dated November 19, 2020, enclosed.. This letter was submitted to Illinois EPA as written response to Rec. Ex. C. It is kept by the Illinois EPA in the regular course of business, and it is the regular course of business of the Illinois EPA to transmit the information thereof to be included in this record. The November 25, 2020 letter, including its enclosures, attached to the Recommendation as Exhibit D, is an exact duplicate of the original.

9. Attached to the Recommendation as Exhibit G ("Rec. Ex. G") is the Standard Test Methods for Determining the Water (Moisture) Content, Ash Content and Organic Material of Peat and Other Organic Soils, ASTM International, Inc., accessed by Illinois EPA pursuant to License Agreement on March 9, 2021. The ASTM Methods, attached to the Recommendation as Exhibit G[1], is an exact duplicate of the original obtained by Illinois EPA on March 9, 2021.

10. In December 2019, Illinois EPA identified Pond 1 and Pond 3 as CCR surface impoundments based on historic records on file. The Agency sent a fee invoice to MWG dated December 16, 2019. *See* Rec. Ex. A. MWG did not agree that Pond 1 and Pond 3 were CCR surface impoundments and began discussions with the Agency in response. MWG did not pay the fees as invoiced by the due date of January 31, 2020. In its March 24, 2020 letter, Illinois EPA provided an allowance for MWG to demonstrate that Pond 1 and Pond 3 do not contain CCR; however, the fees were still due at that time. *See* Rec. Ex. B.

11. Illinois EPA issued MWG a Violation Notice on July 28, 2020 (VN W-2020-00044) for failure to pay the initial fee. *See* Rec. Ex. C. The VN process yielded several meetings and written responses from MWG on the matter of demonstrating that Ponds 1 and 3 are not CCR surface impoundments.

[1] Illinois EPA's license agreement with ASTM prohibits electronic reproduction of methods obtained under the agreement. Rec. Ex. G is served to the Board and Petitioner in hard copy with the Recommendation. Rec. Ex. G is redacted for electronic filing.

12. MWG submitted several documents in support of its demonstration that Pond 1 and Pond 3 are not CCR surface impoundments. The submittals contained a bathymetric survey, calculation of estimated sediment in the bottom of the ponds, laboratory analysis of samples from the ponds and comparison to CCR from the Joliet 29 Station.

13. I have reviewed the Agency's Recommendation, as well as the submittals and information upon which the Recommendation is based, and further state the following in support.

14. The bathymetric survey provides no indication of sediment accumulation or delta-like alluvial structures in the basins. If CCR had been sluiced in, even incidentally, since the cleaning of the ponds, the Agency would expect to see some measurable accumulation of sediment and/or delta-like alluvial structures in Pond 1 and Pond 3.

15. MWG took two sediment samples from Pond 1, one near the center of the pond and one near the access road. Three samples were taken from Pond 3, one near the center of the pond, one near the pond inlet, and one on the sideslope of the access road. The sediment samples were sent to a geotechnical laboratory to determine (1) grain size, (2) conduct a weight to volume relationship analysis, and (3) compare moisture, inorganic and organic content utilizing ASTM method 2974. CCR from MWG's Joliet 29 Station was also subjected to these analyses for comparison because any CCR present in Pond 1 or Pond 3 would show similar characteristics.

16. The laboratory analyses differed significantly between the sediment in the ponds and the CCR from Joliet 29. I reviewed the laboratory data and discussion of sampling methodology contained in the submittals dated November 25, 2020 (Rec. Ex. D) and February 26, 2021 (Pet. Ex. 20).

17. Grain size analysis reports describe the sediment from Pond 1 as black sandy silt. Sediment from Pond 3 was described as black organic silty sand. The Joliet 29 CCR sample was

described as brown to dark brown silty sand with gravel. *See* Rec. Ex. D, encl. pp. 4-5; Pet. Ex. 19, pp. 4-5. The differences between the sediment and CCR from the Joliet 29 Station are better illustrated in the actual laboratory results provided in tables that contain the sediment and CCR samples quantified by standardized particle sizes. *See* Rec. Ex. D, encl. Tables 1 and 2; Pet. Ex. 19, ex. 4. The grain size analysis indicates that the small amount of material in Pond 1 and Pond 3 is not CCR.

18. MWG compared moisture, inorganic and organic content utilizing the ASTM 2974 method to estimate how much of the solids were organic verses inorganic in nature. The ASTM 2974 method reports the non-organic material as "ash." This ASTM method does not determine that a material is coal ash or CCR; rather it is a more general term used to describe something cooked in a furnace and completely burned. *See* Pet. Ex. 20, p. 4. Illinois EPA confirmed this description of the method by obtaining the ASTM 2974 method. *See* Rec. Ex. G. MWG used this analysis to estimate the percentage of organic and inorganic material in the ponds in an effort to compare the tonnage of inorganic sediment in the ponds to atmospheric deposition using the Soil Loss Equation. *See* Rec. Ex. D, p. 5.

19. MWG uses a Soil Loss Equation based on erosion of farm fields and construction sites as an estimate for atmospheric deposition. *See* Rec. Ex. D, pp. 2-3; Pet. Ex. 20, pp. 4-5. Two tons/acre/year of soil loss is appropriately utilized in a soil loss evaluation, but Illinois EPA does not agree with its application to atmospheric deposition in unclosed surface impoundments. Accordingly, I did not rely on the atmospheric deposition estimation during the review of the various submittals; rather, I focused and relied upon the bathymetric survey, the volume of material estimated in Ponds 1 and 3, and grain size distribution to evaluate whether: (1) appreciable amount of material is present in the ponds; and (2) if that material is CCR.

FURTHER AFFIANT SAYETH NOT

Amy L. Zimmer

AMY L. ZIMMER

9/22/21

DATE

State of Illinois
County of Sangamon

Subscribed and Sworn to before
me this 22nd day of September 2021.

Dawn A. Hollis

Notary Public

OFFICIAL SEAL
DAWN A. HOLLIS
NOTARY PUBLIC. STATE OF ILLINOIS
MY COMMISSION EXPIRES **03-21-2025**

Exhibit F

K P R G

ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG and Associates, Inc.

MEMORANDUM

FROM: Joshua D. Davenport, P.E., KPRG and Associates, Inc.

DATE: July 27, 2021

SUBJECT: Evaluation of Sediment in Powerton Generating Station's Service Water Basin

Additional sampling was performed at the Service Water Basin at the Powerton Generating Station and the content of those samples were evaluated.

SECTION 1-INTRODUCTION

The Powerton Generating Station burns coal to generate steam to produce electricity. The Service Water Basin (SW Basin) is the end of the wastewater treatment system. The Service Water Basin receives water from the ash surge basin, the ash bypass basin, and rainwater from the property. The coal combustion residual ("CCR") material produced by the Powerton coal burning process was sampled and submitted to the same geotechnical laboratory as the SW Basin samples. The samples were analyzed for grain size analysis, weight-to-volume relationship, and ASTM 2974. The results of these analyses were used as the comparison material against the Service Water Basin material.

A previous evaluation of material from the SW Basin. Initially only one sample was evaluated from the SW Basin; however, in discussions with IEPA, only one sample was considered insufficient for them to make a determination that the SW Basin is not a CCR surface impoundment. It was proposed that up to three additional samples would be collected and evaluated in the same manner as the original SW Basin sample.

SECTION 2-EVALUATION PROCESS

The evaluation of the additional SW Basin samples was performed based on the following steps.

Previously, the estimated quantity in the SW Basin was determined to be approximately 52 cubic yards (CY). The quantity was based on comparing the bottom elevation from the as-built drawings and the bottom elevations from the bathymetric survey. A further discussion of this comparison was previously submitted to IEPA.

KPRG in cooperation with Ruettiger, Tonelli & Associates, Inc (RT&A) collected the additional SW Basin samples on June 14, 2021. The samples were collected by RT&A

navigating a boat around the surface impoundment and KPRG collecting the samples in the identified locations using a clamshell sampler. The sample locations are shown on Figure 1. The sampling procedure was the same as what was described in the previous document discussing the proposed sampling locations. It was originally proposed to collect up to three samples, but it was decided to collect samples from the west side of the basin and adjacent to the southwest outlet of the basin for comparison purposes. The five (5) individual samples were collected and submitted to the same geotechnical laboratory that performed the analyses on the original SW Basin sample. The submitted samples of the sediment were analyzed for grain size, weight-to-volume relationship of the sediment, and ASTM 2974. The analyses results were used to evaluate the material identified in the surface impoundment.

SECTION 3- SURFACE IMPOUNDMENT EVALUATIONS

On the day of the sampling, the water level within the basin was lower than its typical operating water level and it was estimated that approximately four (4) to five (5) feet of water was in the basin. KPRG asked that the water level be lowered because it was thought the sampling process would be easier with less water for the clamshell sampler to pass through both before and after collecting the sample. As stated above, the five (5) additional samples were collected from the SW Basin at the locations shown on Figure 1 along with the location for the original SW Basin sample.

The samples were collected from the east, north, center, west, and near the southwest outlet locations in the basin. The collected samples were classified by the sampling results as the following soil types:

- SW Basin East = Black Silty SAND;
- SW Basin North = Black SILT with Sand;
- SW Basin Center = Black SILT
- SW Basin West = Black SILT
- SW Basin South Outlet = Black SILT

The following observations were noted during the sampling:

- The material associated with each sample was black, very soft/mucky and smelled like rotting material. No sand texture was noted in the samples.
- The sample material was so soft that it would slip through your fingers.
- The material seemed organic in nature.

With the lower water level, material was visible along the edge of the liner above the waters' edge. This material was collected by hand and included as part of the east, north, and west samples submitted to the geotechnical laboratory. This material was a brown silty sand with some black sandy silt. The black sandy silt did not appear to be CCR but appeared to be colored sand based on total dissolved solids that are black in color. This material was

the only sandy material observed in the basin and was not visible in the center of the basin because water was still present. Sandy material was not noted in the center sample.

A gravel road is present along the perimeter of the SW Basin situated adjacent to the crest of the basin's embankment; the gravel road location is noted on Figure 1. The appearance of the sand used to construct the gravel road has the same color and particle size as the sand noted along the perimeter of the SW Basin. The elevations surrounding the SW Basin are such that runoff from the adjacent gravel road would run into the basin.

CCR material from Powerton was collected and submitted for analysis for grain size, weight-to-volume relationship, and ASTM 2974. The Powerton CCR was identified as black sand with silt.

Calculation of the Volume of Material in the Service Water Basin

The bathymetric survey of the SW Basin showed that a measurable quantity of material was marginally present or not present. Reviewing the as-built drawings of the basin from when it was re-lined in 2013, the bottom elevation is ±441 ft amsl. The bottom elevations from the bathymetric survey average ±440.80 ft amsl. Based on comparing the bottom elevation from the as-built drawings and the bottom elevations from the bathymetric survey, minimal material is present or not present to a point, which causes minimal change in the bottom elevation determined during the survey. AutoCAD Civil 3D 2020 was also used to compare the as-built drawings with the survey performed by RT&A. The AutoCAD Civil 3D 2020 comparison was performed with the bottom elevations of the survey and the bottom elevations of the as-built drawings considered equal. This comparison determined a volume of about 52 CY.

The five additional samples were used to provide additional analysis of the material to the original SW Basin sample. Attached are Tables of the results, which include the original SW Basin sample collected along the south side of the basin and is labeled as "SW Basin South". The weight-to-volume relationship analyses from the samples showed that the material in the SW Basin ranged from 31% to 44% solids as shown in Table 1. (Ex. 1) Based on the ASTM 2974 test results (included as Ex. 2), the organic content in the soils ranged from 16% to 40% and the non-organic matter ranged from 59% to 83% as shown in Table 2. (Ex. 1) Accordingly, of the volume of the 52 CY of material, the additional samples collected show that the solids quantity throughout the basin ranges from 15 CY to 22 CY of which 3.8 CY to 6.7 CY are organic matter and 9.5 CY to 19.1 CY is non-organic matter. The weight-to-volume relationship analysis showed that the density of the materials in the basin (not including the water) ranged from 85.3 lbs/cubic feet (lbs/ft^3) to 104.4 lbs/ft^3. (Ex. 3). Based upon that, the tonnage of solid non-organic material in the SW Basin ranges from approximately 11.3 tons to 22.1 tons.

With open topped basins/ponds, about two tons per acre per year (2 tons/acre/year) of matter will accumulate in the bottom of a basin/pond from air dispersion.[1] The SW Basin

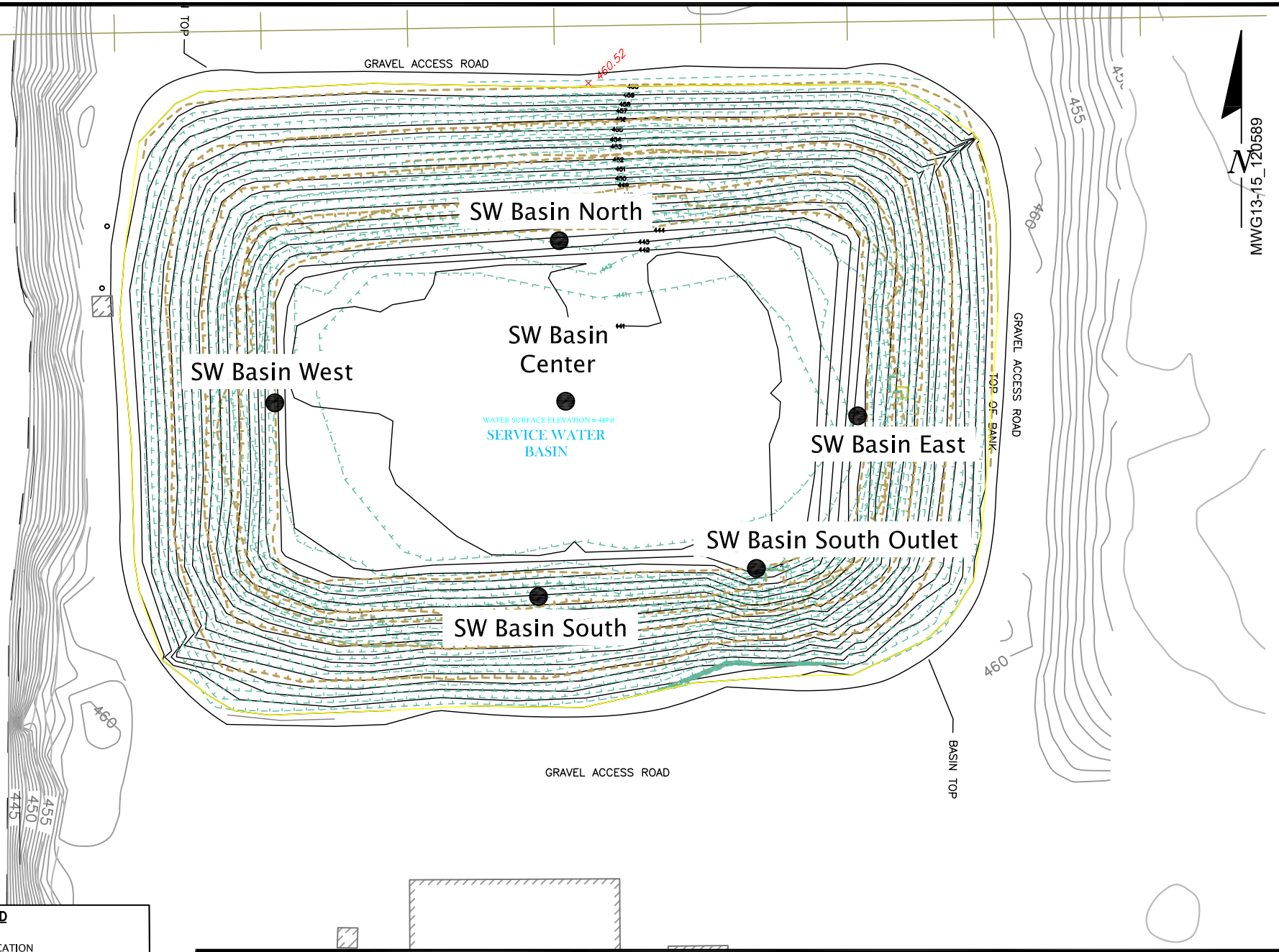
[1] The 2 t/ac/yr is actually the calculation used to offset potential soil erosion calculated for maintenance of landfill covers. The lost soil is replaced by natural processes at a rate that is the same or greater than the tolerance level (2/t/ac/yr).

was last cleaned out during the spring of 2013 and the bathymetric survey that determined the volume of material in the basin was performed on July 14, 2020. The amount of time that has passed between these two dates is 2,257.25 days or 6.2 years. The surface area of the basin is approximately 87,791 square feet (2.02 acres) based on the surface area at the top of the basin embankment. Based on the above amount of time and above surface area the matter that has accumulated in the SW Basin from air dispersion is about 24.9 tons. (Ex. 1, Table 3).

Grain Size Comparison of the Material in SW Basin

Enough material could be collected from the SW Basin center area to submit a sample for analysis. The center area sample was submitted and analyzed for the grain size, weight–to-volume relationship of the material, and ASTM 2974 along with the other samples. The material in the SW Basin was identified as black silt in the west, center, and south outlet samples, black silty sand in the east sample, and black silt with sand in the north sample. These results were compared to the Powerton CCR sample that was classified as black sand. This comparison shows that the material in the SW Basin samples is not CCR material. The grain size analyses of the five additional samples (included as Ex. 4) shows that the material in the SW Basin consists of 1.6% to 45.1% fine sand and 25.8% to 95.0% fines. (Ex. 1, Table 3). The highest percentage of fines in the additional samples was noted in the center sample, which consisted of 84.2% silt and 10.8% clay. By comparison, the grain size of the Powerton CCR consists of approximately 10.8% fine sand and 5.9% fines and the remainder consists of coarse to medium sand (approximately 83.3%).

Reviewing the grain size analyses of the additional samples shows that the majority of the material in the basin is silt, with the total percentage of the material classified as greater than 73% silt for four of the five samples. This is in contrast to the Powerton CCR that is predominantly sand with the total percentage of the CCR classified as 94.1% combined coarse, medium, and fine sand. The only sample with a silt percentage less than 73% is the east sample. The east sample has about the same percentage of silt at 20.2% compared to the previously collected south sample at 18.7%. This is notable because the adjacent contours surrounding the SW Basin, specifically on the east and south side consists of a gravel road with sand. It was observed that the color and size of the sand along the east and south side slopes of the SW Basin are similar to the sand observed as part of the gravel road that surrounds the basin. Based upon the contours of the surrounding land at the southeast corner of the SW Basin slope towards the basin, it is more likely than not that the sand on the east and south side is due to stormwater runoff and subsequent erosion flowing into the basin.



LEGEND

- Sample — BASIN SAMPLE LOCATION
- 1-FOOT INCREMENT CONTOUR FROM AS-BUILT DRAWINGS
- 5-FOOT INCREMENT CONTOUR FROM SURVEY
- 1-FOOT INCREMENT CONTOUR FROM SURVEY

0 60'

APPROXIMATE SCALE

ENVIRONMENTAL CONSULTATION & REMEDIATION

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

ADDITIONAL SERVICE WATER BASIN SAMPLE LOCATIONS

POWERTON GENERATING STATION
PEKIN, ILLINOIS

Scale: 1" = 60' | Date: July 27, 2021

KPRG Project No. 15020.1 | FIGURE 1

EXHIBIT 1: Table 1: Weight Volume Relationships of Soil

	Powerton CCR		SW Basin South		SW Basin East		SW Basin North		SW Basin Center		SW Basin West		SW Basin S. Outlet	
	Weight	Volume	Weight	Volume	Weight	Volume	Weight	Volume	Weight	Volume	Weight	Volume	Weight	Volume
	(lbs)	(ft^3)	(lbs)	(ft^3)	(lbs)	(ft^3)	(lbs)	(ft^3)	(lbs)	(ft^3)	(lbs)	(ft^3)	(lbs)	(ft^3)
Density	62	--	115.7	--	104.4	--	85.5	--	85.4	--	84.4	--	85.3	--
Air	0	0.58	0	0	0	-0.01	0	-0.02	0	0.11	0	-0.02	0	-0.02
Water	2.2	0.04	29.9	0.48	35.4	0.57	44.2	0.71	35.9	0.58	45.3	0.73	44.8	0.72
Solids	59.8	0.38	85.8	0.52	69.1	0.44	41.2	0.31	49.4	0.32	39.0	0.29	40.5	0.30

Note: Volume quantity based on a total of 1 cubic foot

EXHIBIT 1: Table 2: Weight Volume Relationships of Soil

	Powerton CCR	SW Basin South	SW Basin East	SW Basin North	SW Basin Center	SW Basin West	SW Basin S. Outlet
Ash content %	81.10	91.76	83.57	60.87	59.69	62.00	62.71
organic matter %	18.90	8.24	16.43	39.13	40.31	38.00	37.29

EXHIBIT 4: Table 3: Comparison of Distribution of Particle Sizes for Joliet 9 CCR and Powerton's Service Water Basin Material

Sample	% +3"	% Gravel		% Sand			% Fines		Soil Classification
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay	
Powerton CCR	0.0	0.0	0.0	13.2	70.1	10.8	3.3	2.6	Black SAND w/ silt
SW Basin South	0.0	0.0	2.0	8.0	43.5	23.8	18.7	4.0	Black/gray silty SAND
SW Basin East	0.0	0.0	0.7	5.1	45.1	23.3	20.2	5.6	Black Silty SAND
SW Basin North	0.0	0.0	1.5	1.7	6.9	7.7	73.4	8.8	Black SILT with sand
SW Basin Center	0.0	0.0	0.0	0.3	1.6	3.1	84.2	10.8	Black SILT
SW Basin West	0.0	0.0	0.0	0.7	3.2	4.3	81.0	10.8	Black SILT
SW Basin S. Outlet	0.0	0.0	0.5	0.4	3.7	6.2	78.8	10.4	Black SILT

SW Basin surface at top of slope = 87,791.1 Sq.ft = 2.0154 acres

Material Quantities Based on 2 tons/ac/yr
SW Basin surface at top of slope = 87791.14 Sq.ft

Last clean out occurred between March and June 2013

Time between Clean out and survey is from 6/15/2013 and 7/14/2020 for a total of 2,257.25 days

SW Basin top slope surface

2.0154 acres 2 tons / ac/yr 2257.25 days / 365 days/yr = 24.9 tons

6.2 years

MIDLAND STANDARD ENGINEERING TESTING, INC.
410 NOLEN DRIVE, SOUTH ELGIN, IL 60177 P(847) 844-1895 F(847) 844-3875

Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
ASTM 2974

Project # 21448
Project Name: Powerton Station 15020.1
Sample Description: Black Silty SAND to SILT

Date Received: 6/14/21
Date Tested: 6/22/21
Tested by: JDS

Southwest Basin

	SAMPLE ID	East	North	West
METHOD D, 750°C	SPECIMEN #	1	2	3
METHOD C, 440°C	TEST DATE:	6/22/21	6/22/21	6/22/21
	TEST TEMP:	440°C	440°C	440°C
1. wt of crucible, no cover	1	26.07	28.78	26.05
2. wt. of crucible & unburnt sample, r	2	44.02	38.44	35.73
3. wt. of crucible & burned sample, n	3	41.07	34.66	32.12
4. wt. of dry sample at start	B	17.95	9.66	9.68
5. net wt. of ash	C	15.00	5.88	6.07
6. ash content, %	D	83.57	60.87	62.71
7. organic matter, %	OM,%	**16.43**	**39.13**	**37.29**

MIDLAND STANDARD ENGINEERING TESTING, INC.
410 NOLEN DRIVE, SOUTH ELGIN, IL 60177 P(847) 844-1895 F(847) 844-3875

Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
ASTM 2974

Project # 21448
Project Name: Powerton Station 15020.1
Sample Description: Black Silty SAND to SILT

Date Received: 6/14/21
Date Tested: 6/22/21
Tested by: JDS

Southwest Basin

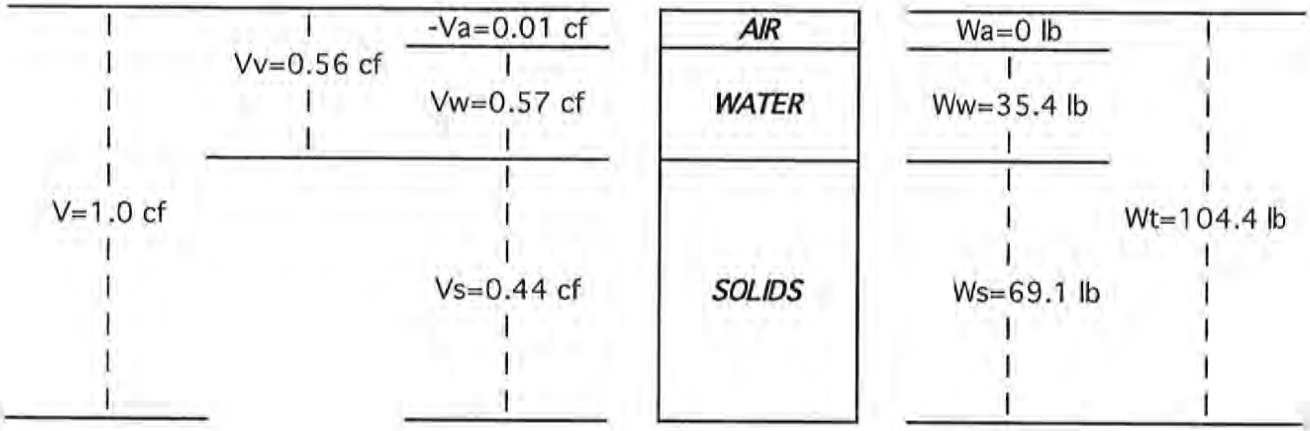
METHOD D, 750°C
METHOD C, 440°C

	SAMPLE ID	S. Outlet	Center	
	SPECIMEN #	4	5	
	TEST DATE:	6/22/21	6/22/21	
	TEST TEMP	440°C	440°C	
1. wt of crucible, no cover	1	25.78	29.11	
2. wt. of crucible & unburnt sample,	2	35.7	40.15	
3. wt. of crucible & burned sample,	3	31.93	35.7	
4. wt. of dry sample at start	B	9.92	11.04	
5. net wt. of ash	C	6.15	6.59	
6. ash content, %	D	62.00	59.69	
7. organic matter, %	OM,%	**38.00**	**40.31**	

EXHIBIT 3

WEIGHT VOLUME RELATIONSHIPS OF SOIL

PROJECT NAME:	Powerton Station	**PROJECT NO:**	21448
SAMPLE LOCATION:	SW Basin - East	**DATE:**	6/14/21
SOIL CLASSIFICATION:	Black Silty SAND, SM	**CLIENT:**	KPRG Wisconsin



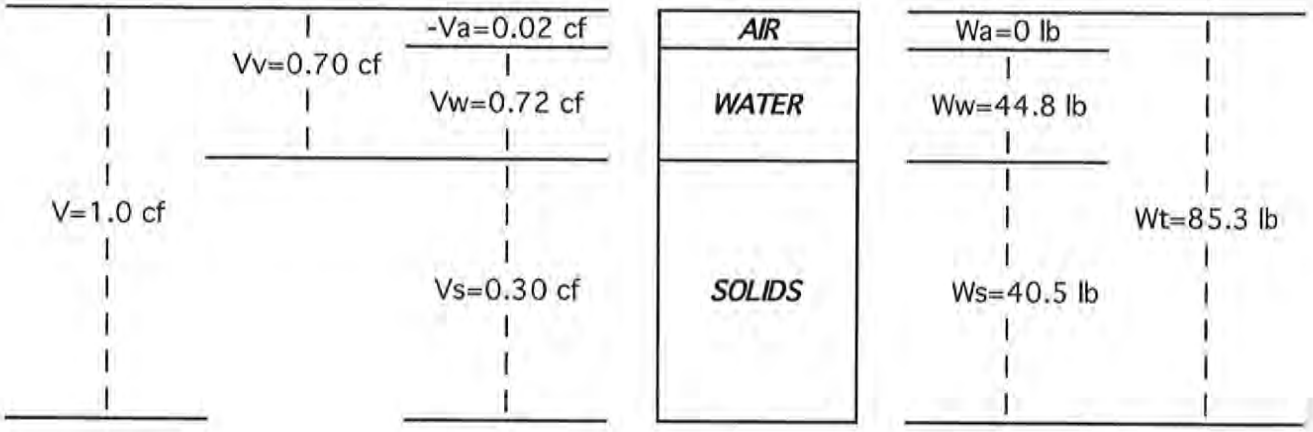
ENTER LABORATORY MOISTURE CONTENT, %- -	Mc=	51.2
ENTER SAMPLE WEIGHT, grams- - - - - - - -	W=	133.35
ENTER SAMPLE DIAMETER, inches- - - - - - -	Ds=	
ENTER SAMPLE LENGTH, inches- - - - - - - -	Ls=	
ENTER ESTIMATED/KNOWN SPECIFIC GRAVITY,Gs	Gs=	2.494
SAMPLE VOLUME, cubic inches- - - - - - - - -	V=	4.86
WET DENSITY, #/cu ft- - - - - - - - - - - -	Wt=	104.4
WEIGHT OF SOLIDS, pounds- - - - - - - - - - -	Ws=	69.1
WEIGHT OF WATER, pounds- - - - - - - - - - -	Ww=	35.4
VOLUME OF SOLIDS, cubic feet- - - - - - - - -	Vs=	0.44
VOLUME OF WATER, cubic feet- - - - - - - - -	Vw=	0.57
VOLUME OF AIR, cubic feet- - - - - - - - - - -	Va=	-0.01
VOLUME OF VOIDS, cubic feet- - - - - - - - -	Vv=	0.56
POROSITY, n- - - - - - - - - - - - - -	**n=**	**0.56**
VOID RATIO, e- - - - - - - - - - - - -	**e=**	**1.25**
DEGREE OF SATURATION, Sr- - - - - - -	**Sr=**	**102%**
LOSS ON IGNITION - - - - - - - - -	FOC=	16.4%

((Ds/

EXHIBIT 3

WEIGHT VOLUME RELATIONSHIPS OF SOIL

PROJECT NAME:	Powerton Station	**PROJECT NO:**	21448
SAMPLE LOCATION:	SW Basin - South Outlet	**DATE:**	6/14/21
SOIL CLASSIFICATION:	Black SILT, ML	**CLIENT:**	KPRG Wisconsin

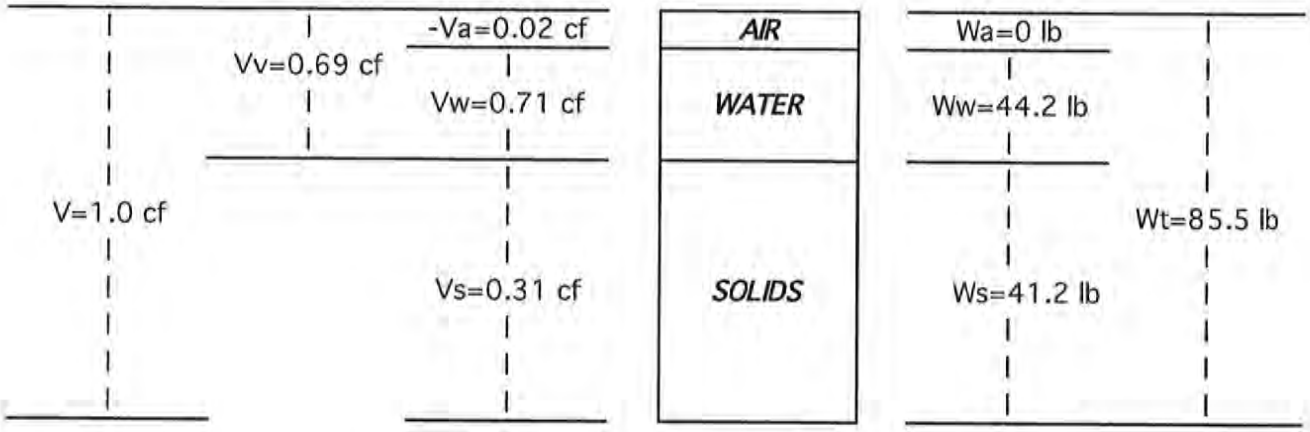


ENTER LABORATORY MOISTURE CONTENT, %- -	Mc=	110.7	
ENTER SAMPLE WEIGHT, grams- - - - - - - -	W=	108.90	
ENTER SAMPLE DIAMETER, inches- - - - - - -	Ds=		
ENTER SAMPLE LENGTH, inches- - - - - - - -	Ls=		
ENTER ESTIMATED/KNOWN SPECIFIC GRAVITY,Gs	Gs=	2.136	
SAMPLE VOLUME, cubic inches- - - - - - - - -	V=	4.86	((Ds/
WET DENSITY, #/cu ft- - - - - - - - - - - -	Wt=	85.3	
WEIGHT OF SOLIDS, pounds- - - - - - - - - -	Ws=	40.5	
WEIGHT OF WATER, pounds- - - - - - - - - -	Ww=	44.8	
VOLUME OF SOLIDS, cubic feet- - - - - - - -	Vs=	0.30	
VOLUME OF WATER, cubic feet- - - - - - - -	Vw=	0.72	
VOLUME OF AIR, cubic feet- - - - - - - - - -	Va=	-0.02	
VOLUME OF VOIDS, cubic feet- - - - - - - -	Vv=	0.70	
POROSITY, n- - - - - - - - - - - - - -	**n=**	**0.70**	
VOID RATIO, e- - - - - - - - - - - - -	**e=**	**2.29**	
DEGREE OF SATURATION, Sr- - - - - - -	**Sr=**	**103%**	
LOSS ON IGNITION - - - - - - - - -	FOC=	38.0%	

EXHIBIT 3

WEIGHT VOLUME RELATIONSHIPS OF SOIL

PROJECT NAME:	Powerton Station	**PROJECT NO:**	21448
SAMPLE LOCATION:	SW Basin - North	**DATE:**	6/14/21
SOIL CLASSIFICATION:	Black SILT with Sand, ML	**CLIENT:**	KPRG Wisconsin

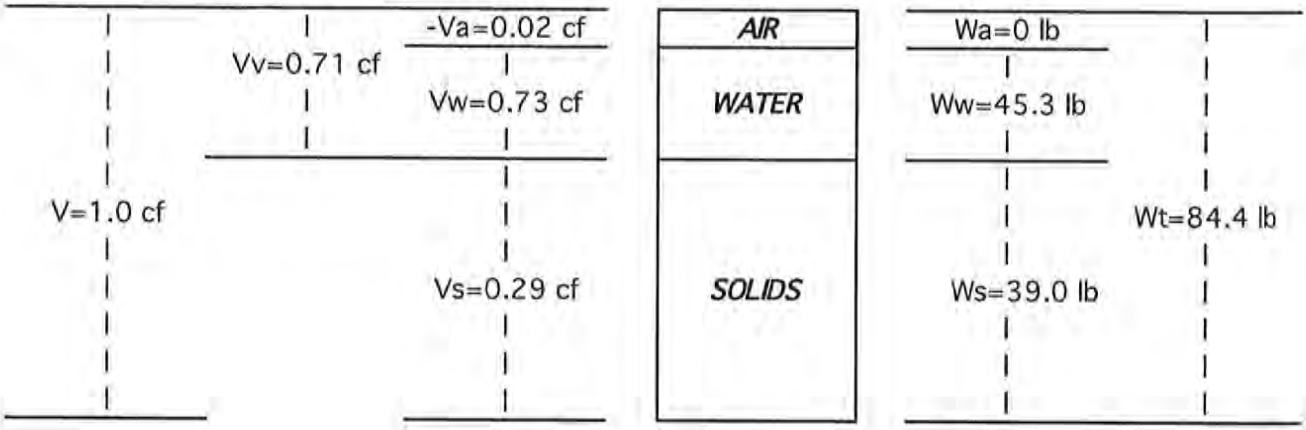


ENTER LABORATORY MOISTURE CONTENT, %- -	Mc=	107.3	
ENTER SAMPLE WEIGHT, grams- - - - - - - -	W=	109.13	
ENTER SAMPLE DIAMETER, inches- - - - - - -	Ds=		
ENTER SAMPLE LENGTH, inches- - - - - - - -	Ls=		
ENTER ESTIMATED/KNOWN SPECIFIC GRAVITY,Gs	Gs=	2.136	
SAMPLE VOLUME, cubic inches- - - - - - - - -	V=	4.86	((Ds/
WET DENSITY, #/cu ft- - - - - - - - - - - -	Wt=	85.5	
WEIGHT OF SOLIDS, pounds- - - - - - - - - -	Ws=	41.2	
WEIGHT OF WATER, pounds- - - - - - - - - -	Ww=	44.2	
VOLUME OF SOLIDS, cubic feet- - - - - - - -	Vs=	0.31	
VOLUME OF WATER, cubic feet- - - - - - - -	Vw=	0.71	
VOLUME OF AIR, cubic feet- - - - - - - - - -	Va=	-0.02	
VOLUME OF VOIDS, cubic feet- - - - - - - -	Vv=	0.69	
POROSITY, n- - - - - - - - - - - - - -	**n=**	**0.69**	
VOID RATIO, e- - - - - - - - - - - - -	**e=**	**2.23**	
DEGREE OF SATURATION, Sr- - - - - - -	**Sr=**	**103%**	
LOSS ON IGNITION - - - - - - - - -	FOC=	37.3%	

EXHIBIT 3

WEIGHT VOLUME RELATIONSHIPS OF SOIL

PROJECT NAME:	Powerton Station	**PROJECT NO:**	21448
SAMPLE LOCATION:	SW Basin - West	**DATE:**	6/14/21
SOIL CLASSIFICATION:	Black SILT, ML	**CLIENT:**	KPRG Wisconsin

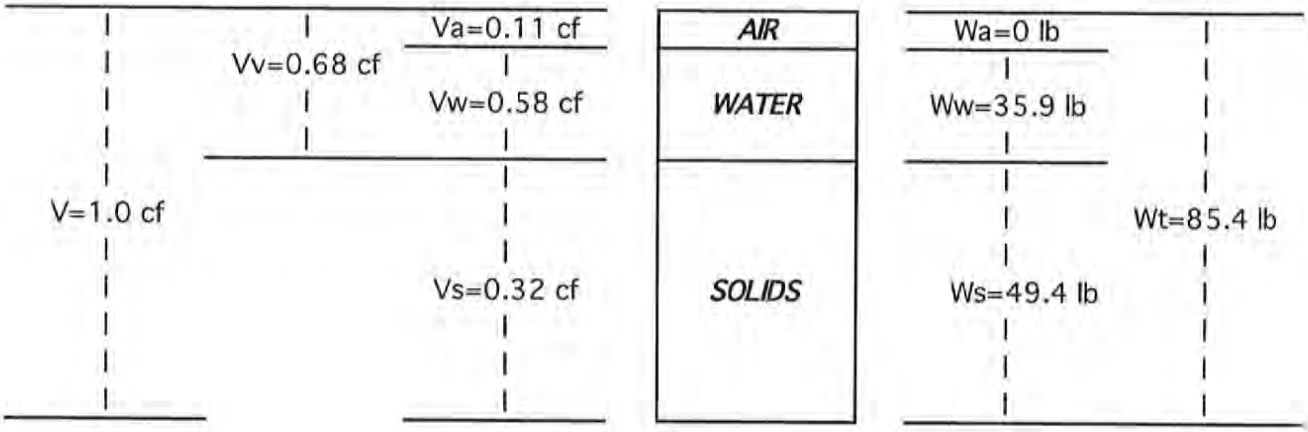


ENTER LABORATORY MOISTURE CONTENT, %- -	Mc=	116.1	
ENTER SAMPLE WEIGHT, grams- - - - - - - -	W=	107.73	
ENTER SAMPLE DIAMETER, inches- - - - - - -	Ds=		
ENTER SAMPLE LENGTH, inches- - - - - - - -	Ls=		
ENTER ESTIMATED/KNOWN SPECIFIC GRAVITY,Gs	Gs=	2.136	
SAMPLE VOLUME, cubic inches- - - - - - - - -	V=	4.86	((Ds/
WET DENSITY, #/cu ft- - - - - - - - - - - -	Wt=	84.4	
WEIGHT OF SOLIDS, pounds- - - - - - - - - - -	Ws=	39.0	
WEIGHT OF WATER, pounds- - - - - - - - - - -	Ww=	45.3	
VOLUME OF SOLIDS, cubic feet- - - - - - - - -	Vs=	0.29	
VOLUME OF WATER, cubic feet- - - - - - - - -	Vw=	0.73	
VOLUME OF AIR, cubic feet- - - - - - - - - - -	Va=	-0.02	
VOLUME OF VOIDS, cubic feet- - - - - - - - -	Vv=	0.71	
POROSITY, n- - - - - - - - - - - - - - -	**n=**	**0.71**	
VOID RATIO, e- - - - - - - - - - - - - -	**e=**	**2.41**	
DEGREE OF SATURATION, Sr- - - - - - -	**Sr=**	**103%**	
LOSS ON IGNITION - - - - - - - - -	FOC=	39.1%	

EXHIBIT 3

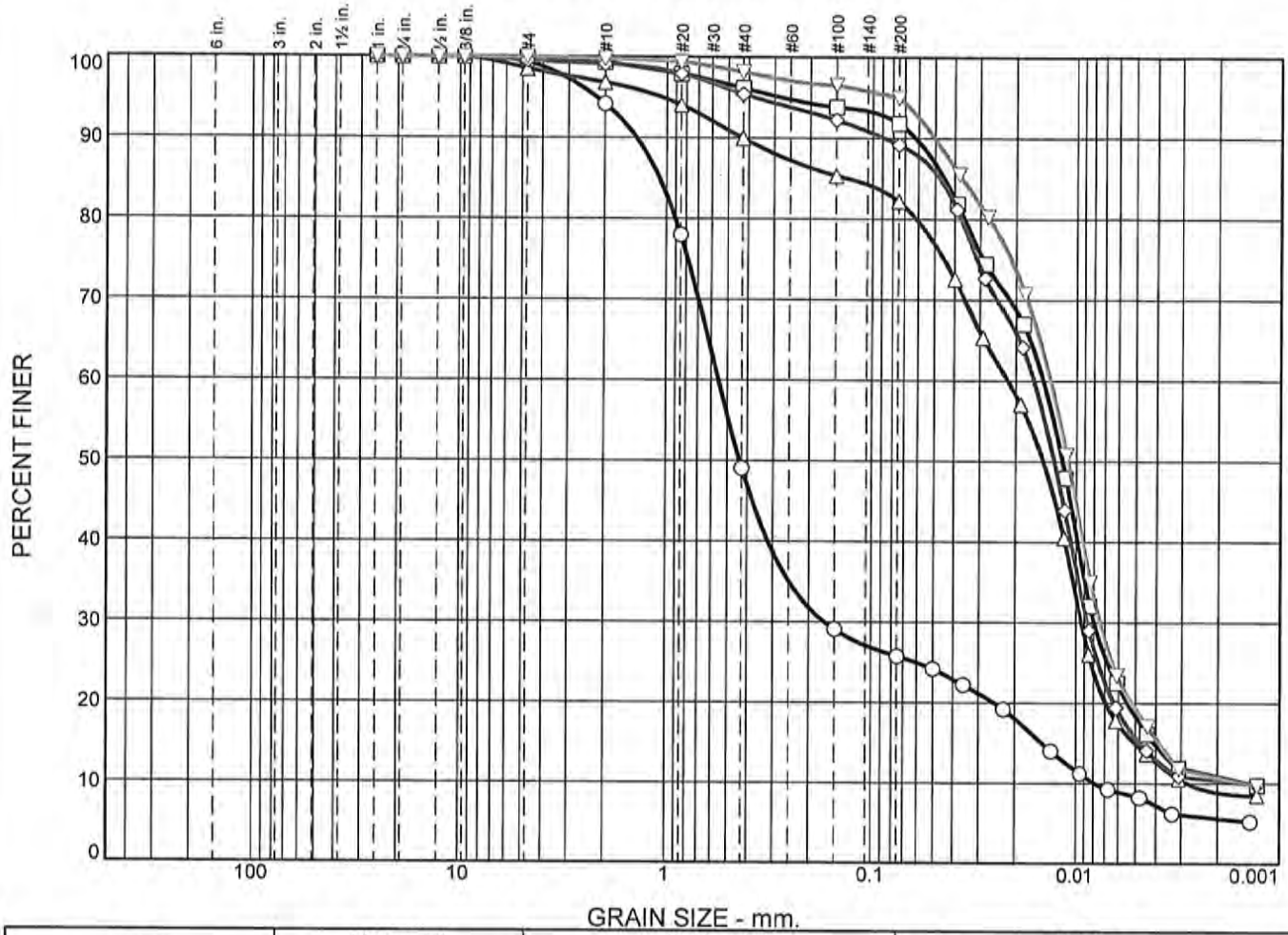
WEIGHT VOLUME RELATIONSHIPS OF SOIL

PROJECT NAME:	Powerton Station	**PROJECT NO:**	21448
SAMPLE LOCATION:	SW Basin - Center	**DATE:**	6/14/21
SOIL CLASSIFICATION:	Black SILT, ML	**CLIENT:**	KPRG Wisconsin



ENTER LABORATORY MOISTURE CONTENT, %- -	Mc=	72.7	
ENTER SAMPLE WEIGHT, grams- - - - - - - -	W=	109.02	
ENTER SAMPLE DIAMETER, inches- - - - - - -	Ds=		
ENTER SAMPLE LENGTH, inches- - - - - - - -	Ls=		
ENTER ESTIMATED/KNOWN SPECIFIC GRAVITY,Gs	Gs=	2.494	
SAMPLE VOLUME, cubic inches- - - - - - - - -	V=	4.86	((Ds/
WET DENSITY, #/cu ft- - - - - - - - - - - -	Wt=	85.4	
WEIGHT OF SOLIDS, pounds- - - - - - - - - -	Ws=	49.4	
WEIGHT OF WATER, pounds- - - - - - - - - -	Ww=	35.9	
VOLUME OF SOLIDS, cubic feet- - - - - - - -	Vs=	0.32	
VOLUME OF WATER, cubic feet- - - - - - - -	Vw=	0.58	
VOLUME OF AIR, cubic feet- - - - - - - - - -	Va=	0.11	
VOLUME OF VOIDS, cubic feet- - - - - - - -	Vv=	0.68	
POROSITY, n- - - - - - - - - - - - - -	**n=**	**0.68**	
VOID RATIO, e- - - - - - - - - - - - -	**e=**	**2.15**	
DEGREE OF SATURATION, Sr- - - - - - -	**Sr=**	**84%**	
LOSS ON IGNITION - - - - - - - - -	FOC=	40.3%	

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

MATERIAL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○		SW Basin		Black Silty SAND	SM
		East			
□		SW Basin		Black SILT	ML
		West			
△		SW Basin		Black SILT with Sand	ML
		North			
◇		SW Basin		Black SILT	ML
		South Outle			
▽		SW Basin		Black SILT	ML

Client: KRPG And Associates, Inc.
Project: Powerton Station 15020.1
Project No.: 21448
Figure

MWG13-15_120599

GRAIN SIZE DISTRIBUTION TEST DATA

7/15/2021

Client: KRPG And Associates, Inc.
Project: Powerton Station 15020.1
Project Number: 21448
Location: South West Basin - East
Sample Number: SW Basin East
Material Description: Black Silty SAND
USCS: SM

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
274.46	0.00	0.00	1"	0.00	100.0
			3/4"	0.00	100.0
			1/2"	0.00	100.0
			3/8"	0.00	100.0
			#4	1.89	99.3
			#10	16.03	94.2
51.04	0.00	0.00	#20	8.77	78.0
			#40	24.45	49.1
			#100	35.28	29.1
			#200	37.08	25.8

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 94.2
Weight of hydrometer sample =51.04
Hygroscopic moisture correction:
Moist weight and tare = 103.36
Dry weight and tare = 100.44
Tare weight = 31.37
Hygroscopic moisture = 4.2%
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -5.5
Meniscus correction only = 0.0
Specific gravity of solids = 2.494
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	24.5	16.5	12.1	0.0136	16.5	13.6	0.0501	24.2
2.00	24.5	15.5	11.1	0.0136	15.5	13.8	0.0356	22.2
5.00	24.5	14.0	9.6	0.0136	14.0	14.0	0.0227	19.2
15.00	24.5	11.4	7.0	0.0136	11.4	14.4	0.0133	14.0
30.00	24.5	10.0	5.6	0.0136	10.0	14.7	0.0095	11.2
60.00	24.5	9.0	4.6	0.0136	9.0	14.8	0.0067	9.2
120.00	24.5	8.5	4.1	0.0136	8.5	14.9	0.0048	8.2
250.00	24.5	7.5	3.1	0.0136	7.5	15.1	0.0033	6.2
1440.00	24.5	7.0	2.6	0.0136	7.0	15.1	0.0014	5.2

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.7	0.7	5.1	45.1	23.3	73.5	20.2	5.6	25.8

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0079	0.0147	0.0252	0.1682	0.3168	0.4358	0.5531	0.9030	1.0814	1.4018	2.1988

Fineness Modulus	C_u	C_c
1.87	69.76	6.45

GRAIN SIZE DISTRIBUTION TEST DATA

7/15/2021

Client: KRPG And Associates, Inc.
Project: Powerton Station 15020.1
Project Number: 21448
Location: South West Basin - North
Sample Number: SW Basin North
Material Description: Black SILT with Sand
USCS: ML

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
176.62	0.00	0.00	1"	0.00	100.0
			3/4"	0.00	100.0
			1/2"	0.00	100.0
			3/8"	0.00	100.0
			#4	2.59	98.5
			#10	5.66	96.8
50.58	0.00	0.00	#20	1.44	94.0
			#40	3.58	89.9
			#100	5.98	85.4
			#200	7.64	82.2

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 96.8
Weight of hydrometer sample =50.58
Hygroscopic moisture correction:
Moist weight and tare = 52.47
Dry weight and tare = 50.69
Tare weight = 31.36
Hygroscopic moisture = 9.2%
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -5.5
Meniscus correction only = 0.0
Specific gravity of solids = 2.136
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	24.5	39.5	35.1	0.0156	39.5	9.8	0.0488	85.9
2.00	24.5	36.0	31.6	0.0156	36.0	10.4	0.0355	77.3
5.00	24.5	32.0	27.6	0.0156	32.0	11.0	0.0231	67.5
15.00	24.5	24.0	19.6	0.0156	24.0	12.4	0.0141	48.0
30.00	24.5	17.0	12.6	0.0156	17.0	13.5	0.0104	30.8
60.00	24.5	13.0	8.6	0.0156	13.0	14.2	0.0076	21.1
120.00	24.5	11.0	6.6	0.0156	11.0	14.5	0.0054	16.2
250.00	24.5	9.5	5.1	0.0156	9.5	14.7	0.0038	12.5
1440.00	24.5	8.5	4.1	0.0156	8.5	14.9	0.0016	10.1

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.5	1.5	1.7	6.9	7.7	16.3	73.4	8.8	82.2

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0028	0.0050	0.0070	0.0093	0.0114	0.0146	0.0219	0.0613	0.1327	0.4290	1.0567

Fineness Modulus	C_u	C_c
0.43	7.77	1.42

GRAIN SIZE DISTRIBUTION TEST DATA

7/15/2021

Client: KRPG And Associates, Inc.
Project: Powerton Station 15020.1
Project Number: 21448
Location: South West Basin - West
Sample Number: SW Basin West
Material Description: Black SILT
USCS: ML

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
163.65	0.00	0.00	1"	0.00	100.0
			3/4"	0.00	100.0
			1/2"	0.00	100.0
			3/8"	0.00	100.0
			#4	0.00	100.0
			#10	1.21	99.3
50.72	0.00	0.00	#20	0.70	97.9
			#40	1.59	96.1
			#100	2.78	93.8
			#200	3.81	91.8

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.3
Weight of hydrometer sample =50.72
Hygroscopic moisture correction:
- Moist weight and tare = 51.03
- Dry weight and tare = 49.30
- Tare weight = 31.24
- Hygroscopic moisture = 9.6%

Automatic temperature correction
- Composite correction (fluid density and meniscus height) at 20 deg. C = -5.5

Meniscus correction only = 0.0
Specific gravity of solids = 2.136
Hydrometer type = 152H
- Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	24.5	43.0	38.6	0.0156	43.0	9.2	0.0473	96.9
2.00	24.5	39.5	35.1	0.0156	39.5	9.8	0.0345	88.1
5.00	24.5	36.0	31.6	0.0156	36.0	10.4	0.0224	79.4
15.00	24.5	27.0	22.6	0.0156	27.0	11.9	0.0138	56.8
30.00	24.5	19.5	15.1	0.0156	19.5	13.1	0.0103	37.9
60.00	24.5	15.0	10.6	0.0156	15.0	13.8	0.0075	26.6
120.00	24.5	12.0	7.6	0.0156	12.0	14.3	0.0054	19.1
250.00	24.5	10.0	5.6	0.0156	10.0	14.7	0.0038	14.1
1440.00	24.5	9.0	4.6	0.0156	9.0	14.8	0.0016	11.6

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.7	3.2	4.3	8.2	81.0	10.8	91.8

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0014	0.0041	0.0054	0.0080	0.0098	0.0118	0.0147	0.0358	0.0448	0.0620	0.2758

Fineness Modulus	C_u	C_c
0.16	10.34	3.08

GRAIN SIZE DISTRIBUTION TEST DATA

7/15/2021

Client: KRPG And Associates, Inc.
Project: Powerton Station 15020.1
Project Number: 21448
Location: South West Basin - South Outlet
Sample Number: SW Basin South Outle
Material Description: Black SILT
USCS: ML

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
169.33	0.00	0.00	1"	0.00	100.0
			3/4"	0.00	100.0
			1/2"	0.00	100.0
			3/8"	0.00	100.0
			#4	0.77	99.5
			#10	1.52	99.1
50.56	0.00	0.00	#20	0.60	97.9
			#40	1.88	95.4
			#100	3.51	92.2
			#200	5.06	89.2

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.1
Weight of hydrometer sample =50.56
Hygroscopic moisture correction:
Moist weight and tare = 53.43
Dry weight and tare = 51.44
Tare weight = 31.43
Hygroscopic moisture = 9.9%
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -5.5
Meniscus correction only = 0.0
Specific gravity of solids = 2.136
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	24.5	42.5	38.1	0.0156	42.5	9.3	0.0475	96.1
2.00	24.5	38.5	34.1	0.0156	38.5	10.0	0.0348	86.1
5.00	24.5	34.5	30.1	0.0156	34.5	10.6	0.0227	76.0
15.00	24.5	25.0	20.6	0.0156	25.0	12.2	0.0140	52.0
30.00	24.5	18.0	13.6	0.0156	18.0	13.3	0.0104	34.3
60.00	24.5	13.5	9.1	0.0156	13.5	14.1	0.0075	23.0
120.00	24.5	11.0	6.6	0.0156	11.0	14.5	0.0054	16.7
250.00	24.5	9.5	5.1	0.0156	9.5	14.7	0.0038	12.9
1440.00	24.5	9.0	4.6	0.0156	9.0	14.8	0.0016	11.6

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.5	0.5	0.4	3.7	6.2	10.3	78.8	10.4	89.2

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0015	0.0048	0.0063	0.0087	0.0107	0.0129	0.0163	0.0371	0.0470	0.0880	0.3760

Fineness Modulus	C_u	C_c
0.19	10.89	3.09

GRAIN SIZE DISTRIBUTION TEST DATA

7/15/2021

Client: KRPG And Associates, Inc.
Project: Powerton Station 15020.1
Project Number: 21448
Location: South West Basin - Center
Sample Number: SW Basin Center
Material Description: Black SILT
USCS: ML

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
160.94	0.00	0.00	1"	0.00	100.0
			3/4"	0.00	100.0
			1/2"	0.00	100.0
			3/8"	0.00	100.0
			#4	0.00	100.0
			#10	0.42	99.7
51.93	0.00	0.00	#20	0.20	99.4
			#40	0.83	98.1
			#100	1.66	96.6
			#200	2.48	95.0

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.7
Weight of hydrometer sample =51.93
Hygroscopic moisture correction:
- Moist weight and tare = 52.35
- Dry weight and tare = 50.28
- Tare weight = 31.28
- Hygroscopic moisture = 10.9%

Automatic temperature correction
- Composite correction (fluid density and meniscus height) at 20 deg. C = -5.5

Meniscus correction only = 0.0
Specific gravity of solids = 2.494
Hydrometer type = 152H
- Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	24.5	45.0	40.6	0.0136	45.0	8.9	0.0405	89.9
2.00	24.5	42.5	38.1	0.0136	42.5	9.3	0.0293	84.4
5.00	24.5	38.0	33.6	0.0136	38.0	10.1	0.0193	74.4
15.00	24.5	28.5	24.1	0.0136	28.5	11.6	0.0120	53.4
30.00	24.5	21.0	16.6	0.0136	21.0	12.9	0.0089	36.8
60.00	24.5	15.5	11.1	0.0136	15.5	13.8	0.0065	24.6
120.00	24.5	12.5	8.1	0.0136	12.5	14.2	0.0047	17.9
250.00	24.5	10.0	5.6	0.0136	10.0	14.7	0.0033	12.4
1440.00	24.5	9.0	4.6	0.0136	9.0	14.8	0.0014	10.2

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.3	1.6	3.1	5.0	84.2	10.8	95.0

D_5	D_{10}	D_{15}	D_{20}	D_{30}	D_{40}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0015	0.0039	0.0052	0.0074	0.0092	0.0110	0.0135	0.0271	0.0368	0.0502	0.0757

Fineness Modulus	C_u	C_c
0.08	9.29	2.80

Exhibit G

Exhibit G
REDACTED

Exhibit H

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	AS 2021-001
Petition of Midwest Generation	)	
for an Adjusted Standard from 845.740(a)	)	
and Finding of Inapplicability of Part 845	)	(Adjusted Standard)
(Joliet 29 Station)	)	

AFFIDAVIT OF GABRIEL NEIBERGALL

I, Gabriel Neibergall, 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 serve as an Assistant Counsel (Technical Advisor III) in the enforcement unit of the Division of Legal Counsel for the Bureau of Water at the Illinois Environmental Protection Agency (the "Illinois EPA"), and I am located in Springfield, Illinois. Cumulatively, I have worked Division of Legal Counsel for the Illinois EPA for approximately three years and nine months.

2. As Assistant Counsel for the Bureau of Water, my duties include, but are not limited to, working with the Compliance Assurance Section, Field Operations Section, Permits Section, and other technical staff employed in the Division of Water Pollution Control and Division of Public Water Supplies in matters of non-compliance with the Illinois Environmental Protection Act ("Act") and associated Board regulations.

3. As part of my duties, I issued a Notice of Intent to Pursue Legal Action ("NIPLA") to Midwest Generation, LLC ("MWG" or "Petitioner") regarding Violation Notice W-2020-00044 ("VN"), attached to the Recommendation as Exhibit C ("Rec. Ex. C"), and handled communications between Illinois EPA staff and MWG regarding the VN and NIPLA.

4. I have reviewed the Petition for an Adjusted Standard from Section 845.740(a) and Finding of Inapplicability of Part 845 for the Joliet 29 Station ("Petition") filed by MWG.

5. I have also reviewed Illinois EPA's Recommendation to the Board as to Petitioner's request for a finding that Part 845 does not apply to Pond 1 and Pond 3 located at the Joliet 29 Station, along with the Recommendation's attached exhibits.

6. Attached to the Recommendation as Exhibit F ("Rec. Ex. F") is a KPRG Memorandum re: Evaluation of Sediment in Powerton Generating Station's Service Water Basin, dated July 27, 2021. I received this memorandum on July 27, 2021, via email from Petitioner's counsel. This memorandum is kept by the Illinois EPA in the regular course of business, and it is the regular course of business of the Illinois EPA to transmit the information thereof to be included in this record. The July 27, 2021 KPRG Memorandum, attached to the Recommendation as Exhibit F, is an exact duplicate of the original submitted to me and maintained in Illinois EPA records.

FURTHER AFFIANT SAYETH NOT

Gabriel Neibergall

GABRIEL NEIBERGALL

09/21/2021

DATE

State of Illinois
County of Sangamon

Subscribed and Sworn to before
me this 21st day of September 2021.

Dawn A. Hollis

Notary Public

OFFICIAL SEAL
DAWN A. HOLLIS
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 03-21-2025