

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the Matter of:)	
)	
SIERRA CLUB, ENVIRONMENTAL)	
LAW AND POLICY CENTER,)	
PRAIRIE RIVERS NETWORK, and)	
CITIZENS AGAINST RUINING THE)	
ENVIRONMENT)	
)	PCB 2013-015
Complainants,)	(Enforcement – Water)
)	
v.)	
)	
MIDWEST GENERATION, LLC,)	
)	
Respondent.)	

NOTICE OF FILING

TO: Don Brown, Assistant Clerk	Attached Service List
Illinois Pollution Control Board	
James R. Thompson Center	
100 West Randolph Street, Suite 11-500	
Chicago, IL 60601	

PLEASE TAKE NOTICE that I have filed today with the Illinois Pollution Control Board Respondent, Midwest Generation, LLC's Response to Complainants' Motion to Designate Substitute Expert Witnesses, a copy of which is hereby served upon you.

MIDWEST GENERATION, LLC

By: /s/ Jennifer T. Nijman

Dated: April 15, 2020

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CERTIFICATE OF SERVICE

The undersigned, an attorney, certifies that a true copy of the foregoing Notice of Filing, Certificate of Service and Respondent, Midwest Generation, LLC's Response to Complainants' Motion to Designate Substitute Expert Witnesses was filed on April 15, 2020 with the following:

Don Brown, Assistant Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite 11-500
Chicago, IL 60601

and that true copies were emailed on April 15, 2020 to the parties listed on the foregoing Service List.

/s/ Jennifer T. Nijman

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**MIDWEST GENERATION, LLC’S RESPONSE TO COMPLAINANTS’
MOTION TO DESIGNATE SUBSTITUTE EXPERT WITNESSES**

Complainants have provided no basis to substitute their two named experts. Since this case was filed in 2013, Complainants and Midwest Generation, LLC (“MWG” and collectively the “Parties”) conducted all their discovery, including expert discovery, to address all aspects of the case - both liability and remedy. It was long after discovery had closed, when the Parties were preparing for a hearing, when the Hearing Officer bifurcated the case into separate liability and remedy phases. The purpose of bifurcating this case was for administrative economy. Allowing new experts with new opinions would nullify that purpose and instead increase the burden on MWG and the Board. MWG will be highly prejudiced by Complainants’ effort to replace two experts at this late stage of the litigation. Even if Complainants can show good cause to substitute an expert, which they cannot, Illinois Supreme Court Rules require that any new expert opinion be limited to the opinions of the substituted expert.

I. Brief Background

On June 9, 2014, the Hearing Officer entered an order establishing the discovery schedule for this matter. Discovery, including expert discovery, was significant and took almost two years in light of the number of stations and the scope of the issues.¹ As part of expert discovery, the Parties identified and submitted expert reports addressing all elements of the litigation, including the condition of the groundwater, the constituents in the groundwater, proposed remedies required (or not), the economic reasonableness of the proposed remedies, and the factors the Board considers for its opinions in Section 33(c) and 42(h) of the Illinois Environmental Protection Act (“Act”).

Specifically, Complainants’ groundwater expert, Dr. James Kunkel (“Kunkel”), prepared a total of five expert reports. He prepared two initial expert reports – an “Expert Report on Groundwater Contamination” (Hearing Ex. 401) and an “Expert Report on Remedy for Groundwater Contamination.” Kunkel’s Remedy report is attached as Exhibit A. In his report on Remedy, Kunkel conducted a detailed assessment of the remedies he stated were required for each of the four stations, including an analysis of costs and site impacts. *Id.* Kunkel also prepared a Rebuttal Expert Report (Hearing Ex. 407), which he later supplemented (Hearing Ex. 412). Kunkel’s Rebuttal Reports included his opinion that the remedy he proposed in his Remedy Report was economically reasonable. (Hearing Ex. 407, p. 11). Finally, Kunkel prepared a specific rebuttal opinion responding to MWG’s expert’s analysis of the effectiveness of MWG’s remedy at the stations (Hearing Ex. 408).

Complainants also identified Mr. David Schlissel (“Schlissel”) as their economic expert. Schlissel prepared a report on the economic reasonableness of the remedies proposed by Kunkel

¹ The “stations” or “MWG stations” are the four MWG stations that are subject to this lawsuit: Joliet 29 Station in Joliet, IL, Will County Station in Romeoville, IL, Waukegan Station in Waukegan, IL, and Powerton Station in Pekin, IL.

and the availability of economic resources of MWG's parent company for the remedy. A copy of the report is attached as Exhibit B. During MWG's deposition of Kunkel, MWG asked questions regarding Kunkel's proposed remedy, and his consideration of the facts and opinions related to the Section 33(c) and 42(h) factors. Relevant excerpts of Kunkel's deposition regarding the remedies and factors is attached as Exhibit C.

MWG presented two experts who specifically opined on all the elements of the litigation, including the remedial measures already taken by MWG and the factors established in Sections 33(c) and 42(h) of the Act. MWG identified John Seymour ("Seymour") as an expert on the ash management and the groundwater conditions at MWG's stations. Seymour prepared a response to Kunkel's proposed remedy and presented his own opinions on appropriate remedies for each of MWG's stations. (Hearing Ex. 903). Specifically, Seymour opined that Kunkel's suggested remedial approach was unnecessary and not consistent with Illinois regulations, that MWG's remedial approach protected human health and the environment in accordance with the Illinois standards, and that Kunkel underestimated the costs to conduct his suggested remedy. (Hearing Ex. 903, pp. 49-53). Seymour's opinion included a description of the location of each of MWG's stations, including the neighboring industries, (*Id.*, pp. 13, 16, 18-19, 21), the absence of harm to the public health and the environment (*Id.*, pp. 44-48, App. B), MWG's due diligence to comply, (*Id.* pp. 25-40), the technical infeasibility of Kunkel's suggested remedy, (*Id.* pp. 63-66), and the unreasonable consequences of Kunkel's proposed remedy to the stations' operations and the neighboring communities. (*Id.* pp. 66-69). MWG also presented David Callen ("Callen") as an expert to respond to Schlissel's opinion. Callen opined on the financial status of MWG and its financial ability to conduct the remedies at the stations.² Complainants deposed both of MWG's

² Because Callen's opinion contains Non-Disclosable Information and is subject to a Confidentiality Agreement between the Parties, MWG is not attaching it here.

experts, evaluating each of the opinions stated in their reports. The depositions were not limited to liability and Complainants questioned the experts about their evaluation of the proposed remedies at the stations, the proper remedial actions that should be taken, and the Section 33(c) and 42(h) factors.

On April 14, 2016, the Parties reported to the Hearing Officer that discovery was complete. (Hearing Officer Order, April 14, 2016). Following the Board's decision on Complainants' motion for summary judgment, the Hearing Officer bifurcated the case on February 9, 2017 ordering that the first hearing would address liability, with a later hearing for remedy/damages. (Hearing Officer Order, Feb. 9, 2017). Accordingly, the Hearing Officer conducted a hearing on liability over ten days in 2017 and 2018. On June 20, 2019, the Board issued an Interim Order regarding liability, which it reconsidered and modified in part on February 6, 2020.

II. Complainants Have No Basis to Substitute Their Experts

Complainants provide little basis to replace Schlissel and no basis to replace Kunkel. In fact, Complainants fail to mention Kunkel in their motion at all. Instead, Complainants include only vague references to substitution of "experts" in their motion and memorandum, revealing only on the last page of their memorandum, in the very end of the final paragraph of their argument, that they are including Kunkel in their request. Complainants provide no reasoning or basis for their request to replace Kunkel.

Complainants have not identified, and MWG has not found, any authority that allows a party to replace their expert without any basis. When substitutions have been allowed, the expert was either unavailable due to a change in roles, a death or illness, or the party could not continue to rely on the expert's opinion. For instance, in *People v. Pruim*, PCB 04-207 (Sept. 24, 2008), the Hearing Officer granted the complainant's request to substitute two original expert witnesses because both men were no longer in their roles as the Illinois EPA. *Id.* at 5. The new expert worked

with the originally named expert to develop the supplemental opinion, indicating that there was little difference between the old and new expert opinions. In *Nelson v. Upadhyaya*, 361 Ill. App. 3d 415, 417-18, 836 N.E.2d 784, 786-87 (1st Dist. 2005), the court allowed the plaintiffs to replace their expert due to the original expert's illness. Similarly, in a case from Indiana, the court allowed the substitution of the expert because the originally named expert had died. *Ind. Ins. Co. v. Valmont Elec., Inc.*, 2001 U.S. Dist. LEXIS 23256, at *4 (S.D. Ind. Dec. 27, 2001). In *United States for the Use & Benefit of Agate Steel, Inc. v. Jaynes Corp.*, 2015 U.S. Dist. LEXIS 45379 (D. Nev. Apr. 6, 2015), the court allowed a party to substitute its expert because the party and their expert became adverse parties in arbitration making it unfeasible for the party to continue to rely on the expert's opinion. *Id.* at 4. The opinions of the newly substituted experts in each of these cases were limited by the original expert's report and deposition testimony.

Here, Complainants do not even attempt to justify why they should be allowed to substitute their experts. Complainants do not state Kunkel is unavailable due to retirement or illness, or that he has refused to continue as their expert. Complainants only state that they no longer believe him to be the "best-placed" expert. Complainants' vague statement about Kunkel creates numerous questions about inconsistent testimony and how to move forward with the next phase of litigation. How will written discovery, which is currently underway, address the remedy factors that the named experts already addressed? Will the Board rescind Kunkel's opinions from his Rebuttal Report that Complainants entered as Exhibit 408 during the first hearing? It appears that Complainants are requesting that their new unnamed expert be allowed to provide a new unknown opinion. As discussed below, allowing such new opinions would be directly contrary to established Illinois law. Substituted experts, when allowed, are limited to the original opinions. If that were

not the case, parties would be faced with new opinions that could conflict with prior opinions, prior case testimony and prior orders.

Complainants' statement that Kunkel is not "best-placed" also suggests that Complainants do not believe Kunkel is qualified to give an expert opinion for the remedy portion of the case. Yet Complainants have already presented Kunkel's expert qualifications (Hearing Ex. 400) and presented Kunkel's Expert Remedy Report (Exhibit A hereto). Complainants have previously stated that Kunkel has decades of relevant experience, and in preparing his expert reports he reviewed thousands of pages of documents, the large volume of data, and analyzed and interpreted all of this information using his unique experience. *See* Citizen Groups' Response Brief, August 30, 2018, p. 62. Complainants cannot have it both ways. Complainants cannot state in one filing that their expert is qualified to state an opinion with his decades of experience and his thorough review of the data and documents and now state in a different filing that his opinion or his experience is not "best-placed."

In their request to substitute their other expert, David Schlissel, Complainants state that Schlissel would like to slow down. However, Schlissel does not appear to be slowing down at all. He is the Director of Resource Planning Analysis for the Institute for Energy Economics & Financial Analysis, and routinely gives speeches and publishes papers. (<https://ieefa.org/author/david/>). His most recent report regarding a power plant in New Mexico was published on February 12, 2020, the same day he conducted a webinar related to the report. Based on the level of detail in Schlissel's expert report, MWG chose not to depose him during expert discovery. Other than appearing at the hearing on remedy, there will be little effort required of him. Without a clear and valid basis for substitution, Complainants' request to replace their experts should be denied.

The authorities Complainants rely on are inapplicable because the cases cited either do not concern whether a party may be allowed to substitute an existing expert for no reason, rely on an outdated rule, or actually support denying Complainants' motion. First, all but one of Complainants' cases address a different issue – that is, whether an expert must be barred due to untimely disclosure.³ These same cases are further distinguished by that fact that the question of a new expert was raised when there was no prior expert report and no prior expert discovery. Here, Complainants are seeking a wholesale replacement of their existing experts, long after extensive expert discovery has taken place. Second, the cases Complainants' cite that pre-date 1996 are irrelevant because they rely upon inapplicable Illinois Supreme Court rules, including Rule 220 and even older rules.⁴ The applicable rule requiring disclosure of expert opinions is Rule 213. Rule 213 is stricter and does not allow a party to name a previously undisclosed expert. "Rule 213 establishes more exacting standards regarding disclosure than did Supreme Court Rule 220...which formerly governed expert witnesses. Trial courts should be more reluctant under Rule 213 than they were under former Rule 220(1) to permit the parties to deviate from the strict disclosure requirements, or (2) not to impose severe sanctions when such deviations occur. Indeed, we believe one of the reasons for new Rule 213 was the need to require stricter adherence to disclosure requirements." *Seef v. Ingalls Mem'l Hosp.*, 311 Ill. App. 3d 7, 21-22, 724 N.E.2d 115, 126 (1st Dist. 1999), quoting *Dept. of Trans. v. Crull*, 294 Ill. App. 3d 531, 538-39 (1st Dist. 1998). In *Seef*, the lower court, following former Rule 220, allowed opinions of an undisclosed expert at

³ *People v. Pruim*, PCB 04-207 (Sept. 24, 2008) is the only case Complainants' rely upon regarding substitution of an expert witness. As explained above, that case does not support Complainants' motion because in that case the moving party provided a basis for the substitution of an expert and the original expert and new expert worked together on the new opinion indicating that the opinions were substantively similar.

⁴ Those cases are: *Appelgren v. Walsh*, 483 N.E.2d 686 (2nd Dist. 1985); *Rosales v. Marquez*, 55 Ill. App. 2d 203 (2nd Dist. 1965); *Miksatka v. Illinois Northern Ry. Co.*, 49 Ill. App. 2d 258 (2nd Dist. 1964); *Hartman v. Pittsburgh Corning Corp.*, 261 Ill. App. 3d 706 (5th Dist. 1994); *Castro v. South Chicago Community Hosp.*, 166 Ill. App. 3d 479 (1st Dist. 1988).

trial because it found that the opposing party would not be prejudiced. *Id.* at 24. The Appellate Court reversed, holding that the disclosure requirements of Rule 213 must be strictly followed, regardless of the absence of prejudice. *Id.* Third, the post-1996 cases relied upon by Complainants, and based on Rule 213, support denying Complainants' motion. In *Smith v. Murphy*, 994 N.E.2d 617, 621 (1st Dist. 2013), the court barred the untimely disclosed expert opinion, finding that unlike Rule 220, Rule 213 requires more exacting, precise standards, and courts should not allow parties to deviate from the strict disclosure requirements. In *Firststar Bank v. Peirce*, 306 Ill. App. 3d 525, 532 (1st Dist. 1999), the First District held that the trial court committed reversible error by allowing undisclosed opinions at the trial. The First District stated that Rule 213 imposes mandatory disclosure requirements for opinion witnesses and that one of the bases for Rule 213 is it "permits litigants to rely on the disclosed opinions of opposing experts and to construct their trial strategy accordingly." *Id.* Rule 213, including Illinois Courts' interpretation and application, equally applies here and precludes Complainants from adding new, previously undisclosed experts long after discovery is closed.

III. MWG Would Be Highly Prejudiced by Expert Substitutions

MWG would be highly prejudiced if Complainants introduced new experts with new opinions at this late stage. Since Complainants filed this action eight years ago and before the Hearing Officer bifurcated the hearing, MWG conducted its litigation strategy, including discovery and expert discovery, to include issues relating to both liability and remedy. Specifically, MWG's expert report specifically responded to the Kunkel Remedy Report, and MWG's deposition of Kunkel included an evaluation of his proposed remedy. Similarly, MWG conducted the hearing on liability with the knowledge that the same experts would appear for the remedy phase. Knowing that for many issues liability and remedy are intertwined, and that the record created in the liability phase would be used during the remedy phase, MWG looked to the expert opinions on remedy as

part of its presentation of its case-in-chief for the liability hearing. Moreover, because the records from both hearings will be the final record for appeal, in preparation for the remedy hearing, MWG will be forced to comb through the liability phase record to determine how these new expert opinions impact the prior opinions and testimony. MWG would be highly prejudiced and its litigation strategy unfairly harmed if Complainants were suddenly allowed to name new experts with presumably new opinions after eight years of litigation and a 10-day hearing on liability. *See Smith v. Murphy*, 994 N.E.2d at 622 (The Court found that allowing the new expert would be prejudicial to the non-moving party because it “would require starting expert discovery all over again for a case that was filed” five years ago).

MWG has also spent considerable time and expended substantial resources defending this lawsuit, including the extensive expert discovery in this case. Virtually all of the evidence entered in this case was produced by MWG, and all but one of the lay witnesses were MWG employees (the non-MWG employee lay witness was MWG’s groundwater consultant). Complainants’ request for two new experts and presumably new opinions will be disproportionately prejudicial to MWG. MWG will be forced, for no reason, to assess these new expert reports, depose new experts, potentially retain its own new experts in response and ultimately redo all the previously conducted expert discovery. This is not a “mere inconvenience” but an entirely new direction of the litigation that would harm MWG and how it prepares for the next phase.

MWG’s immediate prejudice is demonstrated by the written discovery requests due the same day as this Response. Pursuant to the Hearing Officer’s March 30, 2020 Order, the Parties are to submit the interrogatories and discovery requests they would like updated for the remedy phase. MWG evaluated its earlier requests and focused on the requests that addressed the factors in Sections 33(c) and 42(h) of the Act. The answers to the requests should be easy for each party

because discovery on all issues is completed and everyone should have all the information, including expert opinions, needed to prepare answers. However, if Complainants are allowed to replace all of their experts, then their answers to the interrogatories will likely be delayed or ambiguous due to a claim that they require their new expert to evaluate the factors, further prejudicing MWG's preparation for the remedy hearing.

Complainants' claim that *they* might suffer prejudice if they cannot have new experts rings hollow. Complainants rely upon *Sullivan v. Eichmann*, 213 Ill.2d 82 (2004) and *McDonagh v. Michelin*, PCB 08-76 (Feb. 3, 2009), yet neither case bolsters Complainants' unsupported claims of prejudice. In *Sullivan v. Eichmann*, the Illinois Supreme Court found that the plaintiff was prejudiced because the lower court denied her request *for substitution of her counsel* due to her first attorney's failure to prosecute the case, which prevented her from calling an expert witness. *Sullivan v. Eichmann*, 213 Ill.2d at 92-93. The case of *McDonagh v. Michelin*, PCB 08-76 (Feb. 3, 2009) slip op. *2, did not concern substitution of existing experts, as here, but addressed a request by complainants to bar an untimely submitted expert report. The Hearing Officer allowed the expert's report even though it was untimely because it was respondent's only expert and the Hearing Officer found that precluding respondent from submitting its sole expert's report would be prejudicial to the respondent and perhaps even the complainants.

Here, unlike *Sullivan* or *McDonagh*, Complainants have not requested a substitution of counsel, they are not prevented from calling Kunkel or Schlissel as their expert witnesses, and because all of the reports are completed, they are not prevented from submitting reports. Complainants' only claim of "harm" is that they are no longer satisfied with their experts, specifically Kunkel. But that does not justify the prejudice to MWG and to the procedural administration of the case. When Complainants filed their lawsuit, they could have named an

expert on liability and a separate expert on remedy, but they chose not to. MWG should not be punished for Complainants' strategic decisions. This was exactly the case in *People ex rel. DOT v. Firststar Ill.*, 365 Ill. App. 3d 936, 942, 851 N.E.2d 682, 687-88 (2nd Dist. 2006), where the Court upheld the decision to not allow IDOT identify a new expert after its first expert was discredited. The Court found that IDOT could have named more than one expert, but it chose not to and “[a]s it was IDOT that took that risk, the trial court could have reasonably determined that Goebel should not be made to pay for it.” *Id.* The same is true here.

IV. Allowing New Experts Would Foil the Purpose of Bifurcation

Substituting experts and allowing new opinions negates the benefits of bifurcating a case. The Hearing Officer's order to bifurcate the hearing was to ensure administrative economy. However, redoing all the expert discovery negates that purpose. In other cases before the Board that were bifurcated, there was either no new discovery for the second phase or the Board allowed only specific, targeted discovery. In *Charter Hall Homeowner's Assoc. and Jeff Cohen v. Overland Transportation System, Inc. and D.P. Cartage, Inc.*, the case was bifurcated shortly before hearing to separate liability from remedy “in the interest of administrative economy.” PCB 98-81, Hearing Officer Order (May 12, 1998). Following, the liability hearing, the parties went straight to the second hearing without any additional discovery. In *Johns Manville v. Illinois Department of Transportation*, PCB 14-3, following a full hearing where the Board found liability, the Board ordered a second phase to address three specific issues related to the remedy of cost reimbursement. Interim Order, at 22 (Dec. 15, 2017). The Hearing Officer allowed additional discovery, including additional expert discovery, because it was needed to address the three specific issues identified by the Board. Order, at 2 (Feb. 28, 2017).⁵

⁵ If a case is bifurcated *before* discovery occurs, certainly discovery could be separated and conducted before each phase. This occurred in a case filed by one of the Complainants. In *Sierra Club v. Illinois Power Generating Company*,

Here, both Complainants and MWG presented opinions for the remedy phase of the litigation before the Hearing Officer bifurcated the case, thus both parties were ready to proceed with a hearing on liability and remedy. While MWG can agree to supplement discovery with the sampling data collected since discovery closed and to update the experts' opinions accordingly, expanding discovery to any further extent is simply "administrative waste." Complainants' request to substitute their experts will increase the time and resources for MWG, Complainants, and the Board and will further delay the remedy hearing. Any new expert opinion will require evaluation of whether the opinion contradicts or goes beyond the original experts' opinions. Depending upon the new opinions, additional motion practice likely will be required, further delaying proceeding to hearing. Much of the record in the liability phase of this matter will be relied upon for the remedy phase. However, if a new expert with a new opinion is allowed, many portions of that record will no longer be applicable, including Kunkel's Rebuttal opinion (Ex. 407) that provided his opinion on a remedy for the stations and Kunkel's specific rebuttal opinion regarding the analysis of the effectiveness of MWG's remedy at the stations (Hearing Ex. 408). In short, allowing a new expert with a new opinion at this late stage would only increase the time, expense, and drain on resources for MWG and the Board, and delay resolution of this case, thereby foiling the very purpose of bifurcation.

V. Any New Experts Must Have Substantially the Same Opinions

If Complainants are allowed to replace their experts despite having no basis and despite the prejudice to MWG and the delays, any new expert must maintain substantially the same opinions

et al., PCB19-78 (Oct. 3, 2019), the Board bifurcated the hearings *before* discovery began in the interest of administrative economy and ordered that for the first phase "expert discovery is limited to issues of violation." Accordingly, in that case Sierra Club would be entitled to name a new expert for the remedy hearing because no such expert discovery had previously taken place.

as the original experts. Although the Board's procedural rules do not have a provision regarding presentment of experts and their opinions, the Board's may look to Illinois Supreme Court Rules. 35 Ill. Adm. Code 101.100(b). Supreme Court Rule 213 governs the disclosure of expert witnesses and their opinions and does not allow new or additional opinions beyond those previously disclosed.

The purpose of discovery rules governing the "disclosure of expert witnesses, their opinions, and the bases for those opinions[,] is to avoid surprise and to discourage strategic gamesmanship." *Thomas v. Johnson Controls Inc.*, 344 Ill. App. 3d 1026, 1032, 801 N.E.2d 90, (1st Dist. 2003). Supreme Court Rule 213 disclosures are mandatory and strict compliance is required. *Sullivan v. Edward Hospital*, 209 Ill. 2d 100, 109, 806 N.E.2d 645 (2004). Supreme Court Rule 213(f)(3) requires parties to furnish, among other things, the subject matter, conclusions, and opinions of controlled expert witnesses who will testify at trial. Supreme Court Rule 213(g) limits expert opinions at trial to "[t]he information disclosed in answer to a Rule 213(f) interrogatory, or at deposition." ILSC 213(g). The committee comments to Rule 213 explain that, "in order to avoid surprise, the subject matter of all opinions must be disclosed pursuant to this rule... and that no new or additional opinions will be allowed unless the interests of justice require otherwise." 177 Ill. 2d R. 213 (g), Committee Comments. Accordingly, pursuant to Rule 213, parties' expert opinions are limited to the opinions expressed in the written report and depositions and no new opinions are allowed.

Complainants have not identified, and MWG has not found, a case in which a party was given *carte blanche* to substitute their expert following close of discovery. Instead, in the cases described above in which a party was allowed to substitute an expert, the courts also ordered that the new expert's opinions and expertise should be the same and barred the new expert's opinions that were

not. In *Nelson v. Upadhyaya*, after allowing the expert substitution, the court barred the new expert from testifying at trial because the new expert reviewed far more material than the original expert and held opinions the original expert had not expressed. *Nelson*, 361 Ill. App. 3d at 418. In *Ind. Ins. Co. v. Valmont Elec., Inc.*, when the court allowed the substitution of plaintiff's expert, the court specifically ordered that the opinions and expertise of the new experts were to be the same and stated "allowing this supplement is NOT an invitation to Plaintiffs (sic) to introduce new and different theories in this case." *Ind. Ins. Co.*, 2001 U.S. Dist. LEXIS 23256, at *4. The plaintiff in that case failed to follow the court's directive, and the court barred the new expert from testifying on the four new opinions stated in his deposition. *Id.* at *4.⁶ Similarly, in *United States for the Use & Benefit of Agate Steel, Inc. v. Jaynes Corp.*, the court limited the new expert's opinion to the previously provided opinion stating that "the purpose of allowing substitution of an expert is to put the movant in the same position it would have been in but for the need to change experts; it is not an opportunity to designate a better expert. 2015 U.S. Dist. LEXIS 45379, at *5-6 (emphasis added).

Even though MWG disputes that Complainants may be allowed to substitute their experts without legitimate basis, if Complainants are allowed a substitution, then the new experts' opinions must be limited to the opinions established by Kunkel and Schlissel. Complainants cannot be allowed to create new opinions at such a late stage of the litigation simply because they seek to "designate a better expert." Also, as explained above, allowing a new expert opinion regarding liability after the opinions have already been entered into the record is prejudicial to MWG and will only create confusion for the next phase of the litigation.

⁶ Later, the Court granted in part a motion to reconsider, finding that the original expert had opined on one of the issues, and limiting another new opinion to rebuttal testimony only, but reaffirmed his opinion to bar the two other new opinions. *Ind. Ins. Co. v. Valmont Elec., Inc.*, 2003 U.S. Dist. LEXIS 17176, at *9 (S.D. Ind. July 31, 2003).

VI. Conclusion

For the foregoing reasons, Complainants' motion must be denied. The Board has ordered the Parties and the Hearing Officer to proceed to the remedy hearing. To accomplish that directive, all that is required is to allow the experts to update their opinions based on data collected since discovery closed, if necessary, and nothing more.

Respectfully submitted,
Midwest Generation, LLC

By: /s/ Jennifer T. Nijman
One of Its Attorneys

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EXHIBIT A



In the Matter of:)	
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Expert Report on Remedy for Ground-water Contamination

James R. Kunkel, Ph.D., P.E.

July 1, 2015



This expert report provides my professional technical analyses of possible remedy opinions and costs related to stopping or minimizing on-going ground-water contamination caused by leaky ash ponds and coal ash deposition on the ground surface outside the ash ponds at four coal-fired power plants (Joliet #29, Powerton, Waukegan, and Will County) in Illinois owned by Midwest Generation, LLC (MWG). My professional analyses and opinions are presented in the following paragraphs for each of the four power plants with emphasis on remedy options which, if implemented, would stop or minimize the continuing ground-water contamination from MWG's ash ponds and/or other coal ash disposal areas at the four power plant sites.

SUMMARY OF CONCLUSIONS

- The remedy at all four power plant sites is the removal, hauling and backfilling of the existing ash ponds and selected areas of ash-impacted soils in order to reduce the ground-water contamination source terms;
- At Joliet #29, the remedy includes the ash ponds and the northeast ash landfill comprising approximately 393,000 tons of material. This remedy is estimated to cost between approximately \$11.6 and \$16.9 million;
- At Powerton, the remedy includes the ash ponds comprising approximately 1,354,000 tons of material. This remedy is estimated to cost between approximately \$39.7 and \$58.2 million;
- At Waukegan, the remedy includes the ash ponds and the ash/slag storage area comprising approximately 967,000 tons of material. This remedy is estimated to cost between approximately \$28.3 and \$41.5 million;
- At Will County, the remedy includes the ash ponds comprising approximately 186,000 tons of material. This remedy is estimated to cost between approximately \$5.5 and \$8.0 million; and
- For all four sites combined, the total remedy cost range is between approximately \$84.9 and \$124.6 million.

INTRODUCTION

General

The remedy for continued long-term ground-water contamination at the four power plant sites is removal of the leaking ash ponds as well as all or a portion of the coal ash which has been deposited outside the ash ponds. The conclusions in my previous report (Kunkel, 2015) form the bases for this remedy report. Those conclusions were that continued use of the ash ponds results in liner leaks due primarily to liner damage from dredging of the coal ash, liner leaks due to high ground-water tables in the vicinity of the ash ponds cause hydrostatic uplift when the pond water levels are below the water table, and ash deposits leached by rainfall, snowmelt and rising/falling ground-water levels. Poor liner construction is an initial cause of liner defects which results in leaking ponds and release of contaminated fluids into the underlying ground water. Existing unlined or Poz-o-Pac lined ash ponds also have caused ground-water contamination.

Also, coal ash was utilized in the construction of roadways, pond dikes and also for general land leveling at all four power plants (Kunkel, 2015). Coal ash also was stored or disposed of outside the ash ponds as a method of temporary or final coal ash disposal and placed on the ground surface. This coal ash is subject to leaching by rainfall and snowmelt, rising and falling ground-water levels, and this leachate is transported downward causing contamination of the ground water.

Methodology

Based on existing soil borings and written documentation by MWG at the four power plant sites, I have been able to compile a database of estimated coal ash-impacted soil thickness for coal ash outside the ash ponds. I utilized this database to estimate the quantities of coal ash subject to leaching for each site. At



some sites the areal extent and depth of coal ash outside the ash ponds is extensive, as discussed below. I calculated the volumes of coal ash-impacted soil outside the ash ponds at each site by multiplying the total area defined by soil borings times the average thickness of coal ash-impacted soils based on those borings. If the ash ponds were removed, removal of the area outlined by the soil borings adjacent to the ash ponds, except at the Joliet #29 and Waukegan sites, would constitute a minimal remedy for those sites. At Joliet, the remedy is removal of not only the ash ponds, but also the northeast ash landfill. At Waukegan, the remedy is removal of not only the ash ponds, but also additional ash outside the ash ponds.

Continued use of ash ponds at the Joliet #29, Powerton, Waukegan and Will County generating stations is limited due to geographical restrictions contained in the USEPA (2014) coal combustion residual rule. That rule, in part, states that existing ash ponds must have their "base located no less than five feet above the uppermost aquifer" and "that there will not be an intermittent, recurring, or sustained hydraulic connection between any portion of the base of the pond and uppermost aquifer due to normal fluctuations in groundwater elevations (including groundwater elevations during the wet season)." Ash ponds constructed without a composite (or alternative composite) liner that meets the USEPA (2014) rule must either be retrofitted with an acceptable composite liner or closed. None of the MWG ash ponds at the four sites of interest meet either of the above requirements.

In-place capping of existing ash ponds is not a remedy due to the high likelihood that the existing ash pond liners at all four sites are either leaking, likely to leak due to high water table elevations, or do not meet the geographical restrictions of USEPA (2014). Rather, adequately addressing the contamination at the four sites requires the complete removal of the existing ash ponds and selected areas of coal ash deposited outside the ash ponds as the remedy. Coal ash from the ash ponds, coal ash used in construction activities at each site and the coal ash deposited on the ground surface outside the existing ash ponds must be placed in an appropriate landfill for the four MWG power plant sites.

The cost of removing the coal ash at each site, whether site-wide or only for the ash ponds, was based on local bid tabulations for removal and disposal of contaminated soils in northern Illinois and southern Wisconsin. Eleven different contractor bids were utilized for the years 2013 and 2014 which are representative of current soil removal and disposal costs. The unit costs utilized include the cost for a volume of uncontaminated soil equal to the volume of coal ash-impacted soil that would replace the contaminated soil removed. Pond removal costs at the four MWG power plant sites were estimated as though the ponds were coal ash-impacted soil having the same thickness defined by nearby soil borings. These soil borings were typically at the pond sites.

At all of the sites, I recommend that additional soil borings be done to better define the areal extent and thickness of coal ash-impacted soils. The number and locations of additional soil borings are based on engineering judgement. The unit cost of these additional soil borings assumes a geoprobe with a two-person crew. Additional monitoring also is recommended at the four MWG power plant sites as part of the remedies. The cost of these additional monitoring wells also assumed a drill rig with a two person crew.

Cost Bases

Local Bid Tabulations for Removal Existing Coal Ash-Impacted Soils and Ash Ponds. The cost basis for excavation, hauling, and backfilling with uncontaminated soil is based on 11 bid tabulations for northern Illinois and southern Wisconsin in 2013 and 2014 as shown in Table 1. The average unit cost from the bid tabulations is \$29.27 per ton of material excavated, hauled and backfilled. The average unit cost for similar excavation and hauling of coal ash/soil estimated for MWG by Patrick Engineering, Inc. (Bates Nos. 6823-6843) was given as \$42.95 per ton for loading and hauling only to a municipal solid waste (MSW) landfill in Illinois. The Patrick unit cost of \$42.95 per ton is credible based on the off-site disposal at a MSW facility. The average bid tabulation unit cost of \$29.27 per ton for soil contaminated with coal ash was utilized as a



reasonable value in estimating the cost to remove and dispose of coal ash-impacted soils from the four power plant sites; whereas, the Patrick unit cost of 42.95 was utilized as a higher estimate. Therefore, a range of unit costs from \$29.27 to \$42.95 per ton were utilized at each power plant site to estimate the costs to remove the existing ash ponds and ash-impacted soils at each site, haul the material removed to an existing landfill and backfill the excavated areas. An additional contractor mobilization cost of approximately \$25,000 was added to the total excavation, hauling and backfilling cost at each site, although this mobilization cost is small compared to the excavation, hauling and backfilling cost.

Additional Soil Borings. The cost of additional soil borings at each site was assumed based on the existing soil borings already completed at the site as well as the locations of suspected or known site coal ash disposal which had not been well documented either in its areal extent or thickness. I assumed that a daily geoprobe cost was \$1,500.00 per day for a two-person crew. No mobilization or de-mobilization costs were assumed in addition to this daily rate. I assumed that 8 geoprobe soil borings per day could be completed. This cost also is small compared to the excavation, hauling and backfilling costs for ash-impacted soils at each site.

Additional Ground-water Monitoring Wells. The cost of additional ground-water monitoring wells is not estimated in this report, because the numbers and locations of these monitoring wells are unknown at this time. However, additional ground-water monitoring is not a necessary prerequisite for the minimal remedy discussed above.

JOLIET #29

Coal Ash-Impacted Soil Estimates

The quantity of coal ash impacted soils at the Joliet site is based on the total land area inside the solid red perimeter line shown on Figure 1. This total area was estimated to be 251 ac including the areas described for the ponds and the old coal ash landfills (Bates Nos. 48403-48414). Within this 251-ac site area is a smaller pond area located inside the dashed red perimeter line. This pond area was estimated to be 15 ac. Additionally, within the 251-ac site area, there are two old coal ash landfill areas northeast and southwest of the power plant and ponds as shown on Figure 1. These two coal ash landfills are estimated to have areas of 44 and 34 ac respectively. The coal ash-impacted soil area for the pond area and northeast landfill is summarized for the Joliet #29 site on Table 6. An estimate of the coal ash-impacted soil volumes for the site area and the ash pond area was made from existing soil borings shown on Figure 1 and the average estimated thickness of coal ash-impacted soils from the borehole logs summarized in Table 2. Because no definitive soil borings showing coal ash thickness are available for the northeast coal ash landfill, it is not possible to make precise estimates of the coal ash volumes at that site. However, it was assumed that, on average, the coal ash-impacted soil thickness at the northeast ash landfill was 4 ft. This assumption is based upon spreading dump truck loads of ash using a dozer.

Utilizing the site area (251 ac) and its average coal ash thickness of 1.4 ft as shown in Table 2, the total site-wide coal ash-impacted soils is calculated to be on the order of 567,000 yds³ as shown in Table 6. However, there may be over 281,000 yds³ in just the old northeast coal ash landfill depending on future soil boring data. The ash pond area of 15 ac is estimated to have approximately 33,880 yds³ of coal ash-impacted soils (Table 6). The total volume of coal ash-impacted soils at the Joliet #29 power plant site may range from approximately 33,900 to 567,200 yds³. Approximately 314,000 yds³ may be in the pond area and northeast landfill areas. Removal of the coal ash-impacted soils and the ash ponds in these two areas would significantly reduce the potential ground-water contamination source-term at the Joliet #29 plant site in my opinion.



Additional Soil Borings

Visual inspection of Figure 1 indicates that only about one-half of the Joliet #29 total site area has soil borings which could characterize the thickness of coal ash-impacted soils. Thus, I conclude that additional soil borings are required at the site, especially in the northeast coal ash landfill area. I recommend that at least one geoprobe soil boring per two acres be completed with 20 around the perimeter of the northeast coal ash landfill and 22 in the interior of the landfill for a total of 42 soil borings. An additional 15 soil borings should be completed in the area north and east of the existing coal pile at the Joliet #29 site. A minimum 57 total additional soil borings for the Joliet #29 site are necessary to assess the thickness of coal ash-impacted soils in areas without any soil borings.

Additional Ground-water Monitoring

Leaching of coal ash at the old northeast coal ash landfill is most likely partly responsible for the ground-water contamination seen in the Joliet #29 ground-water monitoring wells. Additionally, it is likely that ground-water contamination from leaching of coal ash at the old southwest coal ash landfill also is occurring but is not monitored by the existing up-gradient ground-water monitoring wells. To confirm this, additional ground-water monitoring wells should be installed in the northeast coal ash landfill area. The number and cost of these additional ground-water monitoring wells are not estimated.

Coal Ash-Impacted Soil Remedy Cost for Joliet #29

For the Joliet #29 power plant site, the remedy is the removal of coal ash-impacted soil as well as the existing ash ponds. The cost of this remedy is the cost of coal ash-impacted soil excavation and hauling to an approved off-site landfill and backfilling with soil to achieve the pre-removal ground-surface contours. This remedy also would include 57 additional soil borings to better characterize the coal ash-impacted soil thickness of the northeast coal ash landfill as well as the area north and east of the existing coal storage area.

The volume of coal ash-impacted soils is the volume shown in Table 6 for the northeast coal ash landfill and the pond areas (a total of 59 ac) totaling approximately 314,000 yds³. Assuming a dry unit weight per yd³ of 1.25 tons and a low unit cost of \$29.27 per ton, the estimated cost to excavate, haul and backfill this volume of coal ash-impacted soil is approximately \$11.5 million as shown in Table 6. If the high unit cost of \$42.95 per ton is used, the estimated cost to excavate, haul and backfill this volume of coal ash-impacted soil is approximately \$16.9 million, also as shown in Table 6.

The cost of 57 additional geoprobe soil borings at the site, assuming 8 borings per day and \$1,500 per day for a geoprobe unit, is estimated to be \$11,000. The average mobilization cost for the coal ash-impacted soil equipment is estimated to be approximately \$25,000, also as shown in Table 1. Therefore the total estimated cost for the coal ash-impacted soil remedy ranges from approximately \$11.6 to \$16.9 million for the Joliet #29 site. If only the pond areas are reclaimed, the coal ash-impacted soil remedy ranges from approximately \$1.3 to \$1.8 million. These estimates are highly dependent on the coal ash-impacted soil thickness assumed for the northeast coal ash landfill. A rather small change in this thickness will significantly change the total estimated cost for this remedy.

POWERTON

Coal Ash-Impacted Soil Estimates

The quantity of coal ash impacted soils at the Powerton site is based on the total land area inside the solid blue perimeter line shown on Figure 2. The total land area of the Powerton site is 2,314 ac (Bates Nos. 48415-48426) which includes Powerton Lake. Only the land area shown in the solid blue perimeter line was utilized as the site area where coal ash-impacted soils may be present. This site area was estimated to be 349 ac, which includes the area described for the ponds and the former ash pond shown inside the solid



red line. Within this 349-ac area is a smaller pond area located inside the dashed blue line. This pond area was estimated to be 73 ac. Additionally, within the 73-ac total area, there is the unlined Former Ash Pond area shown inside the solid red line on Figure 2. These coal ash-impacted areas are summarized for the Powerton site on Table 6.

From existing soil borings shown on Figure 2 and the average estimated thickness of ash-impacted soils from the borehole logs summarized in Table 3, an estimate of the coal ash-impacted soil volumes for the site area and the ash pond area was made. Because no definitive soil borings showing coal ash thickness are available for the northeast and southwest areas of the site, it is not possible to make precise estimates of the coal ash volumes at these two sites. However, it was assumed that the average coal ash-impacted soil thickness shown in Table 3 for the site area is representative and is equal to 6.6 ft.

Utilizing the average total site area (349 ac) and its average coal ash thickness of 6.6 ft, as shown in Table 3, the total site-wide coal ash-impacted soils is calculated to be on the order of 3,720,000 yds³ as shown in Table 6. The ash pond area of 73 ac is estimated to have approximately 1,084,000 yds³ of coal ash-impacted soils (Table 6) based on an average coal ash-impacted soil thickness of 9.2 ft for the pond area. The total volume of coal ash-impacted soils at the Powerton power plant site may range from approximately 1,084,000 to 3,720,000 yds³. Removal of the 1,084,000 yds³ of coal ash-impacted soils and the ash ponds at Powerton would reduce the ground-water contamination source-term at the Powerton plant site.

Additional Soil Borings

Visual inspection of Figure 2 indicates that only the extreme northeast and southwest portions of the Powerton total site area lack soil borings which could characterize the thickness of coal ash-impacted soils. Thus, additional soil borings are required at the site especially in these two areas. I recommend that at least one geoprobe soil boring be completed every 300 ft around the perimeter of the northeast and southwest extremes of the site for a total of 15 soil borings. These would be the minimum total additional soil borings for the Powerton site in order to assess the thickness of coal ash-impacted soils in those areas.

Additional Ground-water Monitoring

Monitoring Well MW-16 is an up-gradient ground-water monitoring well. However, to better assess potential down-gradient ground-water quality impacts and to establish whether removal of the existing ash ponds is an acceptable remedy at the Powerton site, I recommend that at least one or more ground-water monitoring wells be located north of the site between MW-4 and the Illinois River and at least one ground-water monitoring well be located southwest of soil boring B-31. Additional ground-water monitoring also should be located near the location of soil boring GT-2. Figure 2 shows the locations of the existing ground-water monitoring wells and soil borings. The number and cost of these additional ground-water monitoring wells are not estimated in this report.

Coal Ash-Impacted Soil Remedy Cost for Powerton

For the Powerton site, the remedy is the removal of coal ash-impacted soil as well as the existing ash ponds. The cost of this remedy is the cost of coal ash-impacted soil excavation and hauling to an approved off-site landfill and backfilling with soil to achieve the pre-removal ground-surface contours. This remedy also would include 15 additional soil borings to better characterize the coal ash-impacted soil thickness of the northeast and southwest areas of the site as well as the area north and east of the existing coal storage area.

I assumed that the volume of coal ash-impacted soils is the volume shown in Table 6 for the pond areas (73 ac) totaling approximately 1,084,000 yds³. Assuming a dry unit weight per yd³ of 1.25 tons and a low unit cost of \$29.27 per ton, the estimated cost to excavate, haul and backfill this volume of coal ash-impacted soil is approximately \$39.6 million as shown in Table 6. If the high unit cost of \$42.95 per ton is



used, the estimated cost to excavate, haul and backfill this volume of coal ash-impacted soil is approximately \$58.2 million, also as shown in Table 6.

The cost of 15 additional geoprobe soil borings at the site, assuming 8 borings per day and \$1,500 per day for a geoprobe unit, is estimated to be \$3,000. The average mobilization cost for the coal ash-impacted soil equipment is estimated to be approximately \$25,000 also as shown in Table 1. Therefore, the total estimated cost for the coal ash-impacted soil remedy ranges from approximately \$39.7 to \$58.2 million for the Powerton site. These estimates are highly dependent on the assumed coal ash-impacted soil thickness estimated for the ash pond area.

WAUKEGAN

Coal Ash-Impacted Soil Estimates

The quantity of coal ash-impacted soils at the Waukegan site is based on the total land area inside the red perimeter line shown on Figure 3. This site area was estimated to be 249 ac (Bates Nos. 48427-48432), including the area described for the ponds and the former coal ash/slag storage area shown inside the solid blue line. Within this 249-ac area is a smaller pond and coal ash/slag storage area located inside the dashed red and solid red perimeter line. This pond and coal ash/slag area was estimated to be 44 ac, as shown on Figure 3. These coal ash-impacted areas are summarized for the Waukegan site on Table 6.

I calculated the coal ash-impacted soil volumes for the site area and the ash pond area from existing soil borings shown on Figure 3 and the average estimated thickness of coal ash-impacted soils from the borehole logs summarized in Table 4. The average coal ash-impacted soil thickness for the site area, based on the available soil borings, is 5.3 ft. Utilizing the average site area (249 ac) and its average coal ash thickness of 5.3 ft as shown in Table 4, the site-wide coal ash-impacted soils is calculated to be on the order of 2,129,000 yds³, as shown in Table 6. The ash pond and coal ash/slag storage areas of 44 ac is estimated to have approximately 774,000 yds³ of coal ash-impacted soils (Table 6), based on an average coal ash-impacted soil thickness of 10.9 ft for these areas. The total volume of coal ash-impacted soils at the Waukegan power plant site may range from approximately 774,000 to 2,129,000 yds³. Removal of the 774,000 yds³ of coal ash-impacted soils, the ash ponds and coal ash/slag storage area would significantly reduce the ground-water contamination source-term at the Waukegan plant site.

Additional Soil Borings

Visual inspection of Figure 3 indicates that the Waukegan total site area most likely has sufficient soil borings to adequately characterize the thickness of coal ash-impacted soils. Thus, no additional soil borings are required at the site.

Additional Ground-water Monitoring

Visual inspection of Figure 3 indicates that the Waukegan total site area likely has sufficient ground-water monitoring to adequately monitor the impacts of removal of the ash ponds and the coal ash/slag storage area. Thus, no additional ground-water monitoring wells are required at the Waukegan site.

Coal Ash-Impacted Soil Remedy Cost for Waukegan

For the Waukegan power plant site, the removal of coal ash-impacted soils in the coal ash/slag storage area as well as the existing ash ponds is assumed to be the remedy. The cost of this remedy is the cost of coal ash-impacted soil excavation and hauling to an approved off-site landfill and backfilling with soil to achieve the pre-removal ground-surface contours.



I assumed that the volume of coal ash-impacted soils is the volume shown in Table 6 for the coal ash/slag and ash pond areas (a total of 44 ac) totaling approximately 774,000 yds³. Assuming a dry unit weight per yd³ of 1.25 tons and a unit cost of \$29.27 per ton, the estimated cost to excavate, haul and backfill this volume of coal ash-impacted soil is approximately \$28.3 million, as shown in Table 6. If the high unit cost of \$42.95 per ton is used, the estimated cost to excavate, haul and backfill this volume of coal ash-impacted soil is approximately \$41.5 million, also as shown in Table 6.

The average mobilization cost for the coal ash-impacted soil equipment is estimated to be approximately \$25,000, also as shown in Table 1. Therefore, the total estimated cost for the coal ash-impacted soil remedy ranges from approximately \$28.3 to \$41.5 million for the Waukegan site. This estimate is highly dependent on the assumed coal ash-impacted soil thickness.

WILL COUNTY

Coal Ash-Impacted Soil Estimates

The quantity of coal ash-impacted soils at the Will County site is based on the total land area inside the red perimeter line shown on Figure 4. This total area was estimated to be approximately 215 ac (Bates Nos. 48433-48438) including the area described for the ponds shown inside the dashed red line. Within this 215-ac area is a smaller pond area located inside the dashed red and solid red perimeter line. This pond area was estimated to be 20 ac, as shown on Figure 4. These coal ash-impacted areas are summarized for the Will County site on Table 6.

From existing soil borings shown on Figure 4 and the average estimated thickness of coal ash-impacted soils from the borehole logs summarized in Table 5, I made an estimate of the coal ash-impacted soil volumes for the total area and the ash pond area. The average coal ash-impacted soil thickness for the site area, based on the available soil borings, is 2.1 ft. Utilizing the average total site area (215 ac) and its average coal ash thickness of 2.1 ft, as shown in Table 5, the total site-wide coal ash-impacted soils are calculated to be on the order of 728,000 yds³, as shown in Table 6. The ash pond area of 20 ac is estimated to have approximately 148,000 yds³ of coal ash-impacted soils (Table 6) based on an average coal ash-impacted soil thickness of 4.6 ft for that area. The total volume of coal ash-impacted soils at the Will County power plant site may range from approximately 148,000 to 728,000 yds³. Removal of the 148,000 yds³ of coal ash-impacted soils and the ash ponds would significantly reduce the ground-water contamination source-term at the Will County plant site.

Additional Soil Borings

Visual inspection of Figure 4 indicates that the Will County total site area most likely has sufficient soil borings to adequately characterize the thickness of coal ash-impacted soils. Thus, no additional soil borings are required at the site.

Additional Ground-water Monitoring

Visual inspection of Figure 4 indicates that the Will County total site area most likely has ground-water monitoring to adequately assess the impacts of removal of the ash ponds area. I recommend that one up-gradient ground-water monitoring well be installed at the north boundary of the site near East Romeo Road and the Des Plaines River to assess overall ground-water flow direction at the site. However, this is not a prerequisite for the remedy discussed above.

Coal Ash-Impacted Soil Remedy Cost for Will County

For the Will County site, the remedy is the removal of coal ash-impacted soils in the existing ash pond area. The cost of this remedy is the cost of coal ash-impacted soil excavation and hauling to an approved off-site landfill and backfilling with soil to achieve the pre-removal ground-surface contours.



For purposes of this report, the volume of coal ash-impacted soils is assumed to be the volume shown in Table 6 for the ash pond area (a total of 20 ac) totaling approximately 148,000 yds³. Assuming a dry unit weight per yd³ of 1.25 tons and a low unit cost of \$29.27 per ton, the estimated cost to excavate, haul and backfill this volume of coal ash-impacted soil is approximately \$5.4 million, as shown in Table 6. If the high unit cost of \$42.95 per ton is used, the estimated cost to excavate, haul and backfill this volume of coal ash-impacted soil is approximately \$8.0 million, also as shown in Table 6.

The average mobilization cost for the coal ash-impacted soil equipment is estimated to be approximately \$25,000, also as shown in Table 1. Therefore, the total estimated cost for the coal ash-impacted soil remedy would range from approximately \$5.5 to \$8.0 million for the Will County site. This estimate is highly dependent on the assumed coal ash-impacted soil thickness.

CONCLUSIONS

- The remedy at all four power plant sites is the removal, hauling and backfilling of the existing ash ponds and selected areas of ash-impacted soils in order to reduce the ground-water contamination source terms;
- At Joliet #29, the remedy includes the ash ponds and the northeast ash landfill comprising approximately 393,000 tons of material. This remedy is estimated to cost between approximately \$11.6 and \$16.9 million;
- At Powerton, the remedy includes the ash ponds comprising approximately 1,354,000 tons of material. This remedy is estimated to cost between approximately \$39.7 and \$58.2 million;
- At Waukegan, the remedy includes the ash ponds and the ash/slag storage area comprising approximately 967,000 tons of material. This remedy is estimated to cost between approximately \$28.3 and \$41.5 million;
- At Will County, the remedy includes the ash ponds comprising approximately 186,000 tons of material. This remedy is estimated to cost between approximately \$5.5 and \$8.0 million; and
- For all four sites combined, the total remedy cost range is between approximately \$84.9 and \$124.6 million.

REFERENCES

- ENSR Consulting. 1998b. Phase II Environmental Site Assessment of the Commonwealth Edison Joliet #29 Generating Station, 1800 Channahon Road, Joliet, Illinois. Report prepared for Commonwealth Edison Company. December. 4 Sections. 5 tables. 6 figs. 3 appendices. (MWG13-15_2459-2495)
- ENSR Consulting. 1998c. Phase I Environmental Site Assessment of the ComEd Powerton Generating Station, Manito Road, Pekin, Illinois. Report prepared for Commonwealth Edison Company. October. 7 Sections. 2 figs. (MWG13-15_143-176)
- ENSR Consulting. 1998d. Phase II Environmental Site Assessment of the ComEd Waukegan Generating Station, 10 Greenwood Avenue, Waukegan, Illinois. Report prepared for Commonwealth Edison Company. November 16. 4 Sections. 5 tabs. 6 figs. 3 appendices. (MWG13-15_5058-5092) (MWG13-15_11966-12002)
- ENSR Consulting. 1998e. Commonwealth Edison Company, Phase II Environmental Site Assessment, Will County Generating Station, 529 East Romeo Road, Romeoville, Illinois. Report prepared for Commonwealth Edison Company. December 7. 4 Sections. 5 tabs. 6 figs. 3 appendices. (MWG13-15_5699-6039)



- KPRG and Associates, Inc. 2005a. Summary Letter, Geotechnical Analysis of Soil Surrounding Settling Basins/Ponds. Report prepared for Midwest Generation EME, LLC. October 13. 6 p. 1 table, 4 Attachments. (MWG13-15_24264-24386)
- KPRG and Associates, Inc. 2005b. Coal Ash and Slag Removal Summary Letter, Coal Ash and Slag Removal, Joliet Station #29. Report prepared for Midwest Generation, LLC. December. 3 p. 1 figure, 1 table, 3 Attachments. (MWG13-15_18823-19015)
- KPRG and Associates, Inc. 2005c. Inspection Summary Letter, Liner Inspection West and East Ash Pond at the Waukegan Generation Station. Report prepared for Midwest Generation EME, LLC. 4 p., Attachment 1, Photographs. (MWG13-15_12828-12845)
- KPRG and Associates, Inc., 2009a. Inspection Summary Letter, Joliet #29 Former Ash Burial Area Runoff Inspection 2009. Report prepared for Midwest Generation, LLC. August 27. 3 p. 1 Attachment. (MWG13-15_19442-19452)
- KPRG and Associates, Inc. 2009b. Erosion Repair Documentation, Joliet #29 Former Ash Burial Area Runoff Erosion Repair Documentation. Report prepared for Midwest Generation, LLC. September 26. 3 p. Attachments. (MWG13-15_19430-19441)
- KPRG and Associates, Inc., 2010. Erosion Repair Documentation, Joliet #29 Former Ash Burial Area Runoff Erosion Repair Documentation 2010. Report prepared for Midwest Generation, LLC. September 16. 3 p. 1 Attachment. (MWG13-15_19461-19468)
- KPRG and Associates, Inc. 2012a. Inspection Summary Letter and Repair Cost Estimate, Joliet #29 Former Ash Burial Area Runoff Inspection 2012. Report prepared for Midwest Generation, LLC. September 19. 3 p. 1 Attachment. (MWG13-15_19470-19473)
- KPRG and Associates, Inc. 2012b. Joliet #29 Former Ash Burial Area Runoff Erosion Repair Documentation 2012. Report prepared for Midwest Generation, LLC. September 26. 3 p. 1 Attachment. (MWG13-15_19474-19481)
- KPRG and Associates, Inc. 2013. 2013 Inspection Summary Letter, Joliet #29 Former Ash Burial Area Runoff Inspection 2013. Report prepared for Midwest Generation, LLC. August 21. 1 p. (MWG13-15_19483-19483)
- Kunkel, J.R., 2015. Case Number PCB 2013-015. Expert Report on Ground-water Contamination. June 1. 42 p. 8 tables, 31 figures.
- Patrick Engineering, Inc. (Patrick) 2011a. Hydrogeologic Assessment Report, Joliet Generating Station No. 29, Joliet, Illinois. Report submitted to the Illinois Environmental Protection Agency. February, Patrick Project No. 21053.070. 9 p., 3 tabs. 5 figs, Apps. A through D. (Comp. 003487-003609)
- Patrick Engineering, Inc. (Patrick) 2011b. Hydrogeologic Assessment Report, Powerton Generating Station, Pekin, Illinois. Report submitted to the Illinois Environmental Protection Agency. February, Patrick Project No. 21053.070. 9 p., 3 tabs, 5 figs, Apps. A through D. (Comp. 003611-003683)
- Patrick Engineering, Inc. (Patrick) 2011c. Hydrogeologic Assessment Report, Waukegan Generating Station, Waukegan, Illinois. Report submitted to the Illinois Environmental Protection Agency. February, Patrick Project No. 21053.070. 9 p., 3 tabs, 5 figs, Apps. A through D. (Comp. 003684-003775)



Patrick Engineering, Inc. (Patrick) 2011d. Hydrogeologic Assessment Report, Will County Generating Station, Romeoville, Illinois. Report submitted to the Illinois Environmental Protection Agency. February, Patrick Project No. 21053.070. 9 p., 3 tabs, 5 figs, Apps. A through D. (Comp. 003776-003886)

U.S. Environmental Protection Agency (USEPA). 2010. 2010 Questionnaire for the Steam Electric Generating Effluent Guidelines ("the 2010 EPA survey"). Questionnaires for Joliet #29, Powerton, Waukegan, and Will County. (MWG13-15_823-2458)

U.S. Environmental Protection Agency (USEPA). 2014. Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities [RIN-2050-AE81; FRL-9149-4]. December 10. 745 p. (Comp. 018103-018847)

ATTACHMENTS

Table 1	Summary of Bid Tabulation Unit Costs for Removal of Contaminated Soils
Table 2	Summary of Joliet #29 Ash Deposits Located Outside the Ash Ponds Based on Monitoring Well and Soil Boring Logs
Table 3	Summary of Powerton Ash Deposits Located Outside the Ash Ponds Based on Monitoring Well and Soil Boring Logs
Table 4	Summary of Waukegan Ash Deposits Located Outside the Ash Ponds Based on Monitoring Well and Soil Boring Logs
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Figure 4	Will County Soil Boring Locations

Table 1

**Summary of Bid Tabulation Unit Costs for Removal of Contaminated Soils
(Case No. PCB 2013-015)**

Contractor	Unit Cost (\$) ⁽³⁾		Contractor Location (State)	Source
	Item 1	Item 2		
	Mobilization (Lump Sum)	Contaminated Soil Excavation, Hauling & Backfilling (\$/Ton)		
1	6,829.00	18.50	WI	(1)
2	44,000.00	40.00	WI	(1)
3	12,000.00	25.07	WI	(1)
4	17,750.00	25.00	WI	(1)
5	45,000.00	26.40	WI	(1)
6	36,000.00	25.00	WI	(1)
7	23,000.00	41.00	IL	(1)
8	16,800.00	35.00	IL	(1)
9	--	26.00	WI	(2)
10	--	31.00	WI	(2)
11	--	29.05	WI	(2)
Average	\$25,172.38	\$29.27		
Std. Dev	\$14,661.66	\$6.91		
Max.	\$45,000.00	\$41.00		
Min.	\$6,829.00	\$18.50		
N	8	11		
Patrick ⁽⁴⁾	--	\$42.95	Illinois	Bates Nos. 6823-6843

(1) Project 13-2032 KEP Interim Action Soil Remediation. Bid Date: October 16, 2013.

(2) Project 14-2033 Soil Remediation. Bid Date: November 12, 2014.

(3) The unit cost includes the cost of contaminated soil excavation, hauling, and backfilling.

(4) Not included in the statistics and does not include backfilling.

Table 2

**Summary of Joliet #29 Ash Deposits Located Outside the Ash Ponds
Based on Monitoring Well and Soil Boring Logs (Case No. PCB 2013-015)**

Boring or Monitoring Well ID ⁽¹⁾	Depths of Ash ⁽²⁾ (ft. bgs)	Thickness of Ash ⁽³⁾ (ft)	Source ⁽⁴⁾
MW-1	N/A ⁽⁵⁾	--	Patrick (2011a)
MW-2	N/A	--	Patrick (2011a)
MW-3	N/A	--	Patrick (2011a)
MW-4	N/A	--	Patrick (2011a)
MW-5	N/A	--	Patrick (2011a)
MW-6	N/A	--	Patrick (2011a)
MW-7	N/A	--	Patrick (2011a)
MW-8	N/A	--	Patrick (2011a)
MW-9	N/A	--	Patrick (2011a)
MW-10	N/A	--	Patrick (2011a)
MW-11	N/A	--	Patrick (2011a)
B-1	N/A	--	ENSR (1998b)
B-3	A ⁽⁶⁾	Unknown	ENSR (1998b)
B-4	A	Unknown	ENSR (1998b)
B-6	A	--	ENSR (1998b)
B-8	N/A	--	ENSR (1998b)
B-9	A	Unknown	ENSR (1998b)
B-10	A	Unknown	ENSR (1998b)
B-11	A	Unknown	ENSR (1998b)
B-12	N/A	--	ENSR (1998b)
B-13	A	Unknown	ENSR (1998b)
B-14	N/A	--	ENSR (1998b)
B-15	N/A	--	ENSR (1998b)
B-16	A	Unknown	ENSR (1998b)
B-17	A	Unknown	ENSR (1998b)
B-18	N/A	--	ENSR (1998b)
B-19	A	Unknown	ENSR (1998b)
B-20	N/A	--	ENSR (1998b)
JS29-GT-1	0 - 1	1	KPRG (2005a)
JS29-GT-2	0 - 1	1	KPRG (2005a)
JS29-GT-3	0 - 1	1	KPRG (2005a)
JS29-GT-4	N/A	--	KPRG (2005a)
JS29-GT-5	N/A	--	KPRG (2005a)
JS29-GT-6	0 - 2.5	2.5	KPRG (2005a)
Former Ash Disposal Area (Northeast of Plant Site and Ash Ponds)	Unknown	Unknown	KPRG (2009a, b), KPRG (2010), KPRG (2012a, b), KPRG (2013), ENSR (1998b)
Former Ash Disposal Area (Southwest of Plant Site and Ash Ponds)	Unknown	Unknown	ENSR (1998b)
	Mean	1.4	
	Std. Dev.	0.75	
	Max.	2.5	
	Min.	1	
	N	4	

(1) MW designates a monitoring well. All other designations are borings.

(2) Depth below ground surface from boring logs.

(3) Difference in maximum and minimum depth bgs.

(4) Reference or Bates Numbers.

(5) N/A = no ash in boring log.

Table 3

**Summary of Powerton Ash Deposits Located Outside the Ash Ponds
Based on Monitoring Well and Soil Boring Logs (Case No. PCB 2013-015)**

Boring or Monitoring Well ID ⁽¹⁾	Depths of Ash ⁽²⁾ (ft. bgs)	Thickness of Ash ⁽³⁾ (ft)	Source ⁽⁴⁾
MW-1	N/A ⁽⁵⁾	0	Patrick (2011b)
MW-2	N/A	0	Patrick (2011b)
MW-3	N/A	--	Patrick (2011b)
MW-4	N/A	--	Patrick (2011b)
MW-5	0 - 12.5	12.5	Patrick (2011b)
MW-6	0 - 18	18	Patrick (2011b)
MW-7	0 - 13.5	13.5	Patrick (2011b)
MW-8	0 - 24.5	24.5	Patrick (2011b)
MW-9	0 - 17	17	Patrick (2011b)
MW-10	N/A	0	Patrick (2011b)
MW-11	0 - 16	16	Bates Nos. 40059-40062
MW-12	0 - 18.5	18.5	Bates Nos. 40059-40062
MW-13	0 - 15	15	Patrick (2011e)
MW-14	0 - 18.5	18.5	Patrick (2011e)
MW-15	0 - 20	20	Patrick (2011e)
MW-16	N/A	0	REF?
B-1	N/A	0	ENSR (1998c)
B-4	N/A	0	ENSR (1998c)
B-5	N/A	0	ENSR (1998c)
B-6	N/A	0	ENSR (1998c)
B-9	0 - 8	8	ENSR (1998c)
B-10	0 - 6	6	ENSR (1998c)
B-11	0 - 7	7	ENSR (1998c)
B-12	0 - 6	6	ENSR (1998c)
B-13	0 - 8	8	ENSR (1998c)
B-14	4 - 16	12	ENSR (1998c)
B-15	N/A	0	ENSR (1998c)
B-16	N/A	0	ENSR (1998c)
B-17	N/A	0	ENSR (1998c)
B-18	N/A	0	ENSR (1998c)
B-19	0 - 12	12	ENSR (1998c)
B-21	0 - 3.5	3.5	ENSR (1998c)
B-22	0 - 4	4	ENSR (1998c)
B-23	0 - 12	12	ENSR (1998c)
B-25	0 - 4	4	ENSR (1998c)
B-26	4 - 8	4	ENSR (1998c)
B-27	8 - 20	12	ENSR (1998c)
B-30	0 - 0.5	0.5	ENSR (1998c)
B-31	4 - 20	16	ENSR (1998c)
B-32	N/A	0	ENSR (1998c)
B-33	16 - 20	4	ENSR (1998c)
B-34	N/A	0	ENSR (1998c)
B-35	N/A	0	ENSR (1998c)
B-36	N/A	0	ENSR (1998c)
PS-GT-1	N/A	0	KPRG (2005a)
PS-GT-2	N/A	0	KPRG (2005a)
PS-GT-3	0 - 1	1	KPRG (2005a)
PS-GT-4	N/A	0	KPRG (2005a)

Table 3

**Summary of Powerton Ash Deposits Located Outside the Ash Ponds
Based on Monitoring Well and Soil Boring Logs (Case No. PCB 2013-015)**

Boring or Monitoring Well ID ⁽¹⁾	Depths of Ash ⁽²⁾ (ft. bgs)	Thickness of Ash ⁽³⁾ (ft)	Source ⁽⁴⁾
PS-GT-5	2 - 4	2	KPRG (2005a)
PS-GT-6	1 - 6	5	KPRG (2005a)
PS-GT-7	2 - 13	11	KPRG (2005a)
PS-GT-8	2.5 - 15	12.5	KPRG (2005a)
PS-GT-9	3 - 14	11	KPRG (2005a)
AP-3	0 - 2	2	Bates Nos. 14225-14269
AP-4	0 - 19	19	Patrick (2008)
AP-5	0 - 9.7	9.7	Patrick (2008)
AP-6	0 - 10	10	Patrick (2008)
AP-8	0 - 5.3	5.3	Patrick (2008)
AP-9	0.5 - 10	9.5	Patrick (2008)
AP-10	0.5 - 10	9.5	Patrick (2008)
AP-11	N/A	0	Patrick (2008)
AP-12	0 - 3	3	Patrick (2008)
AP-13	0 - 8	8	Patrick (2008)
AP-14	0 - 7.5	7.5	Patrick (2008)
AP-15	0 - 5	5	Patrick (2008)
AP-16	0 - 9.5	9.5	Patrick (2008)
APB-1-08	1 - 31	30	Patrick (2008)
APB-2-08	1 - 23	22	Patrick (2008)
APB-3-08	N/A	0	Patrick (2008)
APB-4-08	N/A	0	Patrick (2008)
APB-5-08	N/A	0	Patrick (2008)
APB-6-08	N/A	0	Patrick (2008)
APB-7-08	N/A	0	Patrick (2008)
APB-8-08	N/A	0	Patrick (2008)
APB-9-08	1 - 4.5	3.5	Patrick (2008)
APB-10-08	N/A	0	Patrick (2008)
	Mean	6.6	
	Std. Dev.	7.30	
	Max.	30	
	Min.	0	
	N	74	

(1) MW designates a monitoring well. All other designations are borings.

(2) Depth below ground surface from boring logs.

(3) Difference in maximum and minimum depth bgs.

(4) Reference or Bates Numbers.

(5) N/A means no ash identified in boring log.

Table 4

**Summary of Waukegan Ash Deposits Located Outside the Ash Ponds
Based on Monitoring Well and Soil Boring Logs (Case No. PCB 2013-015)**

Boring or Monitoring Well ID ⁽¹⁾	Depths of Ash ⁽²⁾ (ft. bgs)	Thickness of Ash ⁽³⁾ (ft)	Source ⁽⁴⁾
MW-1	0 - 20	20	Patrick (2010c)
MW-2	0 - 11	11	Patrick (2010c)
MW-3	0 - 18.5	18.5	Patrick (2010c)
MW-4	0 - 18.5	18.5	Patrick (2010c)
MW-5	0.5 - 17	16.5	Patrick (2010c)
MW-6	N/A ⁽⁵⁾	0	IEPA (2012c)
MW-7	1 - 9.5	8.5	IEPA (2012c)
MW-8	3 - 4.5	1.5	Bates No. 45648
MW-9	6 - 9.5	3.5	Bates No. 45649
MW-10	?	?	?
MW-11	?	?	?
MW-12	?	?	?
MW-13	?	?	?
MW-14	?	?	?
MW-15	0 - 5	5	Bates No. 11932
B-1	0 - 4	4	ENSR (1998d)
B-2	N/A	0	ENSR (1998d)
B-3	N/A	0	ENSR (1998d)
B-4	0 - 4	4	ENSR (1998d)
B-6	0.5 - 1	0.5	ENSR (1998d)
B-7	0 - 1	1	ENSR (1998d)
B-8	0 - 2	2	ENSR (1998d)
B-9	0 - 3	3	ENSR (1998d)
B-10	0 - 2	2	ENSR (1998d)
B-11	0.5 - 3	2.5	ENSR (1998d)
B-12	Borehole not logged		ENSR (1998d)
B-13	0 - 4	4	ENSR (1998d)
B-14	0 - 3	3	ENSR (1998d)
B-15	0 - 2	2	ENSR (1998d)
B-16	0 - 2	2	ENSR (1998d)
B-17	0 - 4	4	ENSR (1998d)
B18	N/A	0	ENSR (1998d)
B19	0 - 4	4	ENSR (1998d)
B20	0 - 6	6	ENSR (1998d)
B-21	N/A	0	ENSR (1998d)
B-22	0 - 1.5	1.5	ENSR (1998d)
B-23	N/A	0	ENSR (1998d)

Table 4

**Summary of Waukegan Ash Deposits Located Outside the Ash Ponds
Based on Monitoring Well and Soil Boring Logs (Case No. PCB 2013-015)**

Boring or Monitoring Well ID ⁽¹⁾	Depths of Ash ⁽²⁾ (ft. bgs)	Thickness of Ash ⁽³⁾ (ft)	Source ⁽⁴⁾
WS-GT-1	1 - 3	2	KPRG (2005a)
WS-GT-2	N/A	0	KPRG (2005a)
WS-GT-3	1.5 - 4	2.5	KPRG (2005a)
WS-GT-4	1 - 19.5	18.5	KPRG (2005a)
WS-GT-5	1 - 22	21	KPRG (2005a)
	Mean	5.3	
	Std. Dev.	6.58	
	Max.	21	
	Min.	0	
	N	36	

(1) MW designates a monitoring well. All other designations are borings.

(2) Depth below ground surface from boring logs.

(3) Difference in maximum and minimum depth bgs.

(4) Reference or Bates Numbers.

(5) N/A means no ash indicated in boring log.

Table 5

**Summary of Will County Ash Deposits Located Outside the Ash Ponds
Based on Monitoring Well and Soil Boring Logs (Case No. PCB 2013-015)**

Boring or Monitoring Well ID ⁽¹⁾	Depths of Ash ⁽²⁾ (ft. bgs)	Thickness of Ash ⁽³⁾ (ft)	Source ⁽⁴⁾
MW-1	0 - 5	5	Patrick (2011d)
MW-2	0 - 12	12	Patrick (2011d)
MW-3	0 - 7.5	7.5	Patrick (2011d)
MW-4	0 - 6	6	Patrick (2011d)
MW-5	N/A ⁽⁵⁾	0	Patrick (2011d)
MW-6	0 - 8	8	Patrick (2011d)
MW-7	N/A	0	Patrick (2011d)
MW-8	N/A	0	Patrick (2011d)
MW-9	N/A	0	Patrick (2011d)
MW-10	N/A	0	Patrick (2011d)
B-1	1 - 3	3	ENSR (1998e)
B-2	0.5 - 3	2.5	ENSR (1998e)
B-3	0 - 1	1	ENSR (1998e)
B-4	1 - 2	1	ENSR (1998e)
B-5	0 - 1.3	1.3	ENSR (1998e)
B-6	N/A	0	ENSR (1998e)
B-7	0 - 1	1	ENSR (1998e)
B-8	N/A	0	ENSR (1998e)
B-9	0 - 0.5	0.5	ENSR (1998e)
B-10	0 - 1	1	ENSR (1998e)
B-11	0 - 0.75	0.75	ENSR (1998e)
B-12	0 - 2	2	ENSR (1998e)
B-13	0 - 1	1	ENSR (1998e)
B-14	N/A	0	ENSR (1998e)
B-15	N/A	0	ENSR (1998e)
B-16	N/A	0	ENSR (1998e)
B-17	Bore Hole not Logged		ENSR (1998e)
B-18	N/A	0	ENSR (1998e)
WC-GT-1	N/A	0	KPRG (2005a)
WC-GT-2	0 - 2.5	2.5	KPRG (2005a)
WC-GT-3	0 - 9.5	9.5	KPRG (2005a)
WC-GT-4	0 - 2	2	KPRG (2005a)
WC-GT-5	N/A	0	KPRG (2005a)
	Mean	2.1	
	Std. Dev.	3.16	
	Max.	12	
	Min.	0	
	N	32	

(1) MW designates a monitoring well. All other designations are borings.

(2) Depth below ground surface from boring logs.

(3) Difference in maximum and minimum depth bgs.

(4) Reference or Bates Numbers.

(5) N/A means no ash indicated in boring log.

Table 6

Summary of Ash-Impacted Soil Volumes and Removal Costs for each MWG Power Plant (Case No. PCB 2013-015)

Plant Site and Area	Potentially Impacted Site Area (ac)	Estimated Depth of Ash-Impacted Soils (ft)	Estimated Volume of Ash-Impacted Soils (yds ³)	Estimated Weight of Ash-Impacted Soils ⁽⁷⁾ (tons)	Low Unit Cost ⁽⁵⁾ (\$/ton)	High Unit Cost ⁽⁸⁾ (\$/ton)	Low Estimated Cost for Excavation, Hauling and Backfilling (\$)	High Estimated Cost for Excavation, Hauling and Backfilling (\$)
Joliet #29⁽¹⁾								
Site-wide	251	1.4	566,925	708,657	\$29.27	\$42.95	\$20,742,381	\$30,436,804
NE Ash Landfill ⁽⁶⁾	44	4	280,916	351,145	\$29.27	\$42.95	\$10,278,011	\$15,081,672
Pond Areas	15	1.4	33,880	42,350	\$29.27	\$42.95	\$1,239,585	\$1,818,933
Powerton⁽²⁾								
Site-wide	349	6.6	3,716,152	4,645,190	\$29.27	\$42.95	\$135,964,711	\$199,510,911
Pond Areas	73	9.2	1,083,515	1,354,393	\$29.27	\$42.95	\$39,643,093	\$58,171,194
Waukegan⁽³⁾								
Site-wide	249	5.3	2,129,116	2,661,395	\$29.27	\$42.95	\$77,899,032	\$114,306,915
Pond Areas	44	10.9	773,755	967,193	\$29.27	\$42.95	\$28,309,749	\$41,540,954
Will County⁽⁴⁾								
Site-wide	215	2.1	728,420	910,525	\$29.27	\$42.95	\$26,651,067	\$39,107,049
Pond Areas	20	4.6	148,427	185,533	\$29.27	\$42.95	\$5,430,561	\$7,968,657

(1) Figure 1 and Table 2

(2) Figure 2 and Table 3

(3) Figure 3 and Table 4

(4) Figure 4 and Table 5

(5) The unit cost includes the cost of contaminated soil excavation, hauling, and backfilling based on 11 bid tabulations in northern Illinois and southern Wisconsin for 2013 and 2014.

(6) Assumed 4 ft ash thickness.

(7) Assumed 1.25 tons per yd³.

(8) From Patrick (Bates Nos. 6823-6843).

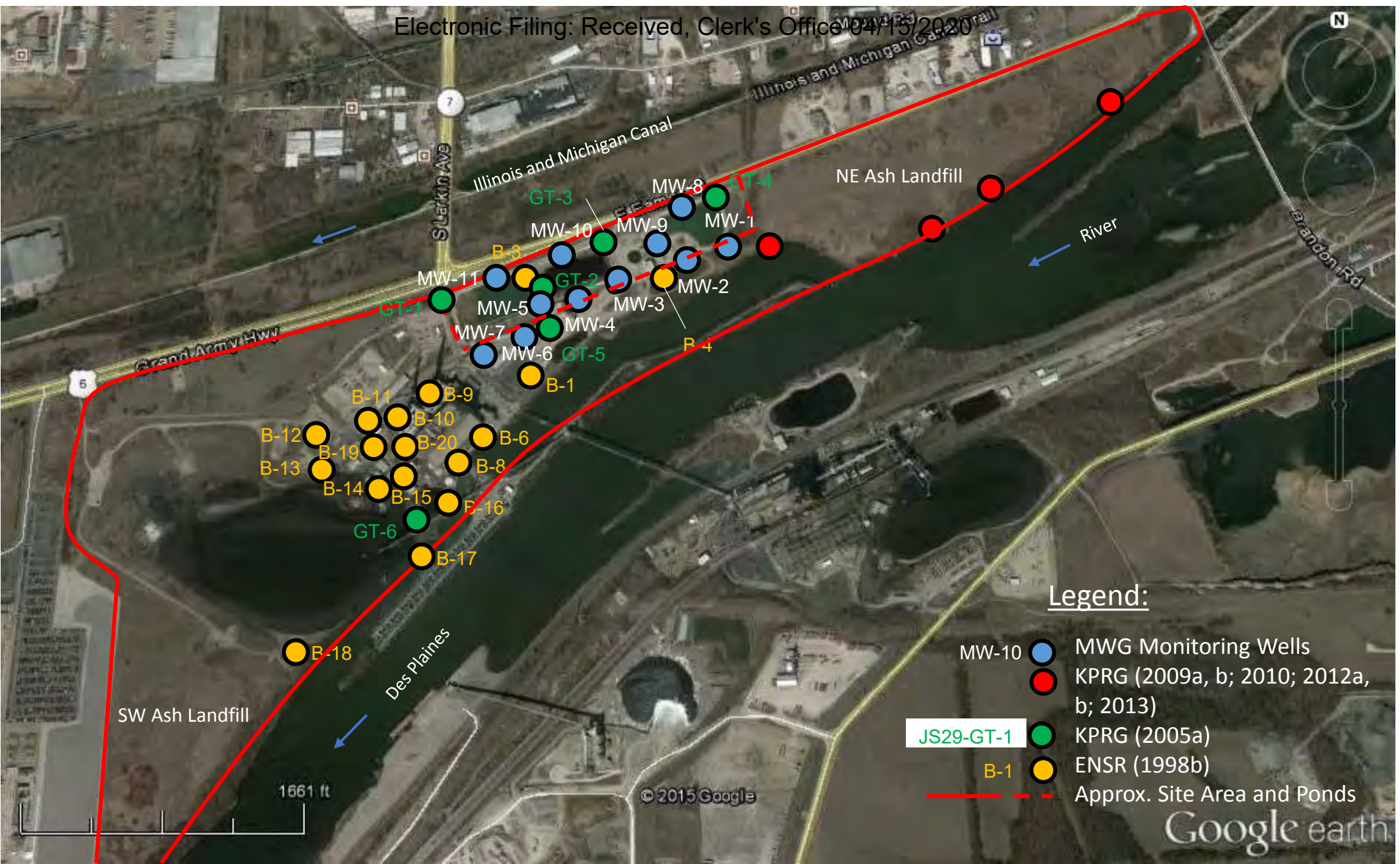


Figure 1 Joliet #29 Soil Boring Locations (PCB 2013-015)

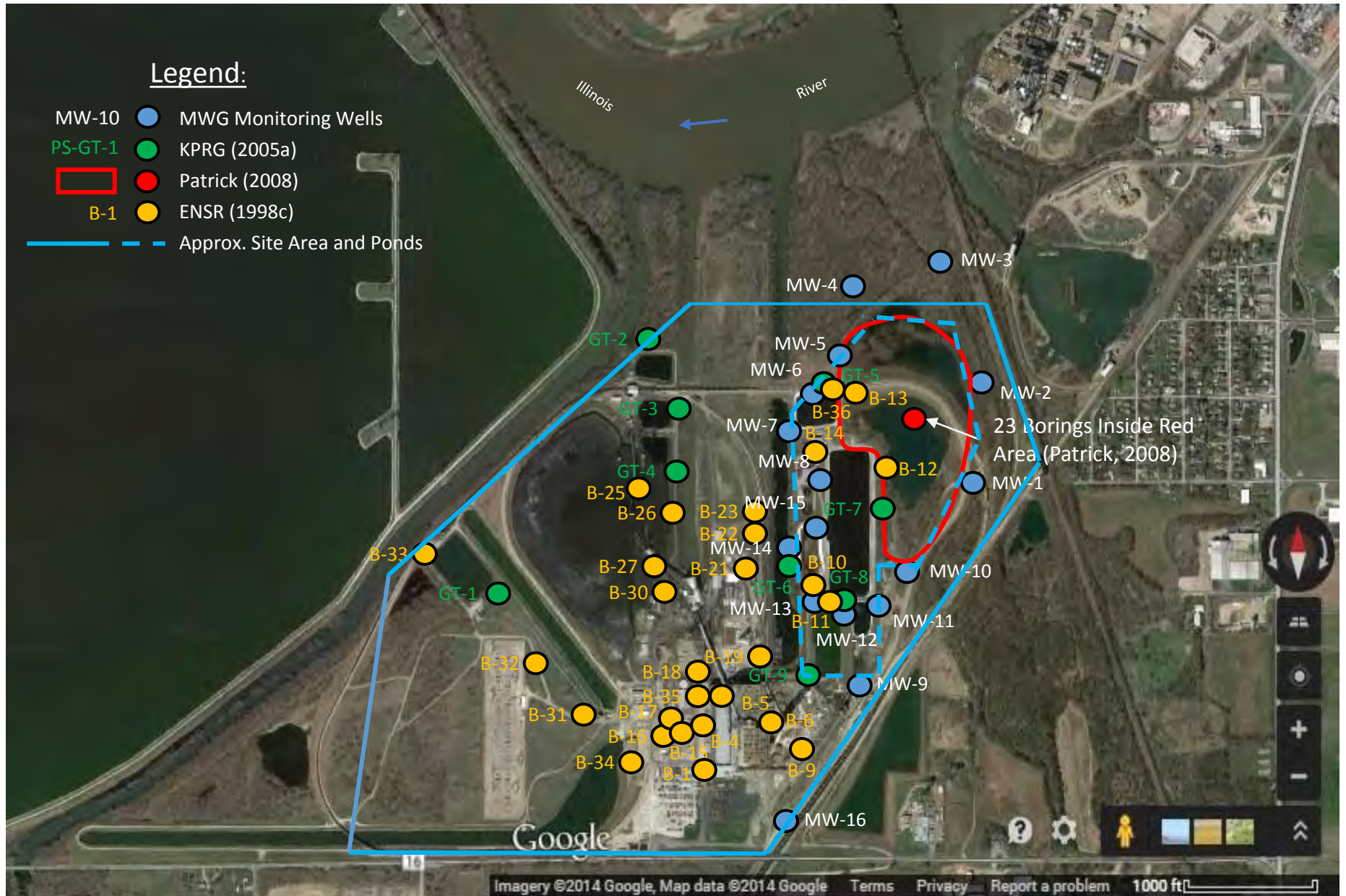


Figure 2 Powerton Soil Boring Locations (PCB 2013-015)

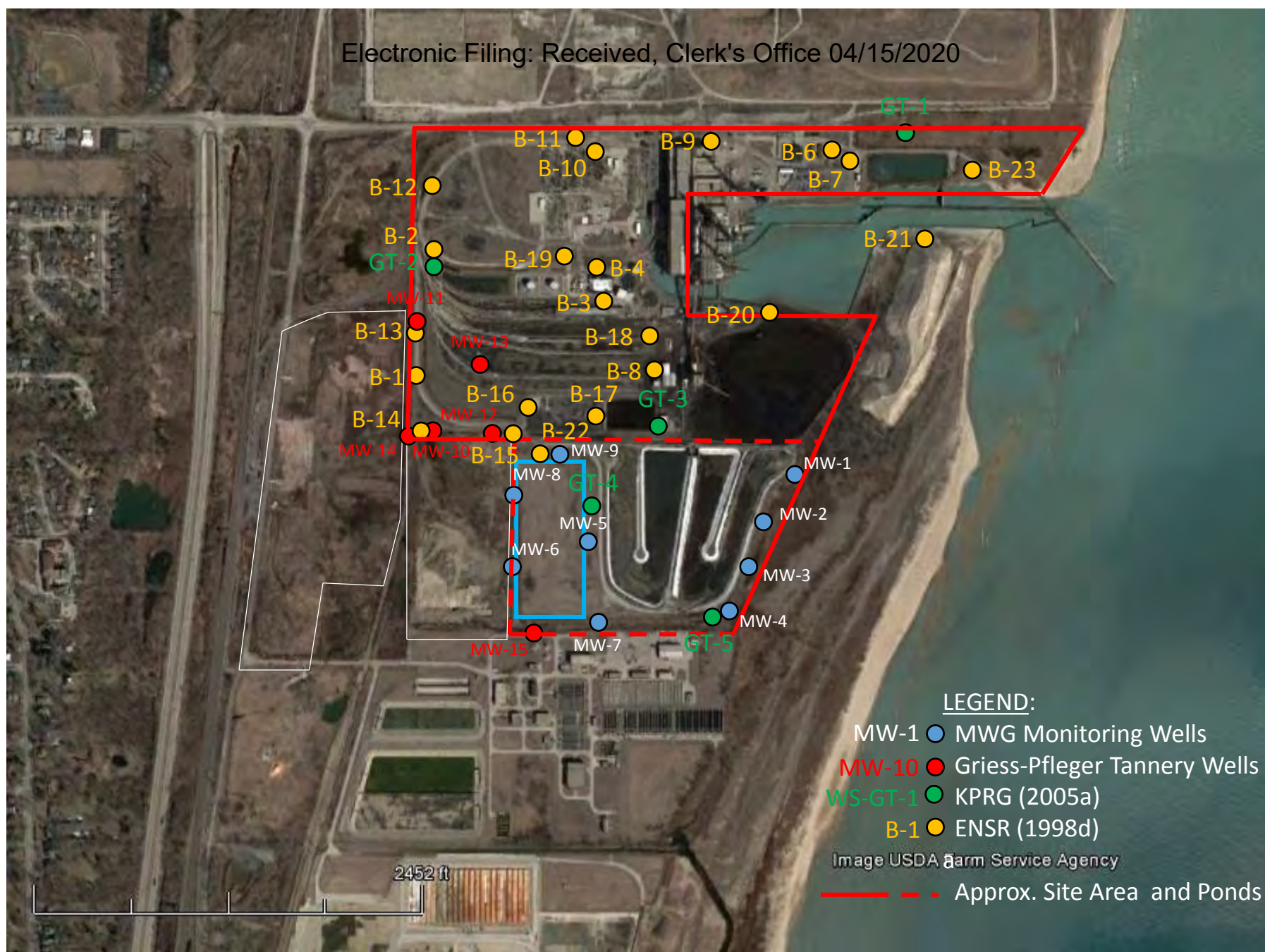


Figure 3 Waukegan Soil Boring Locations (PCB 2013-015)

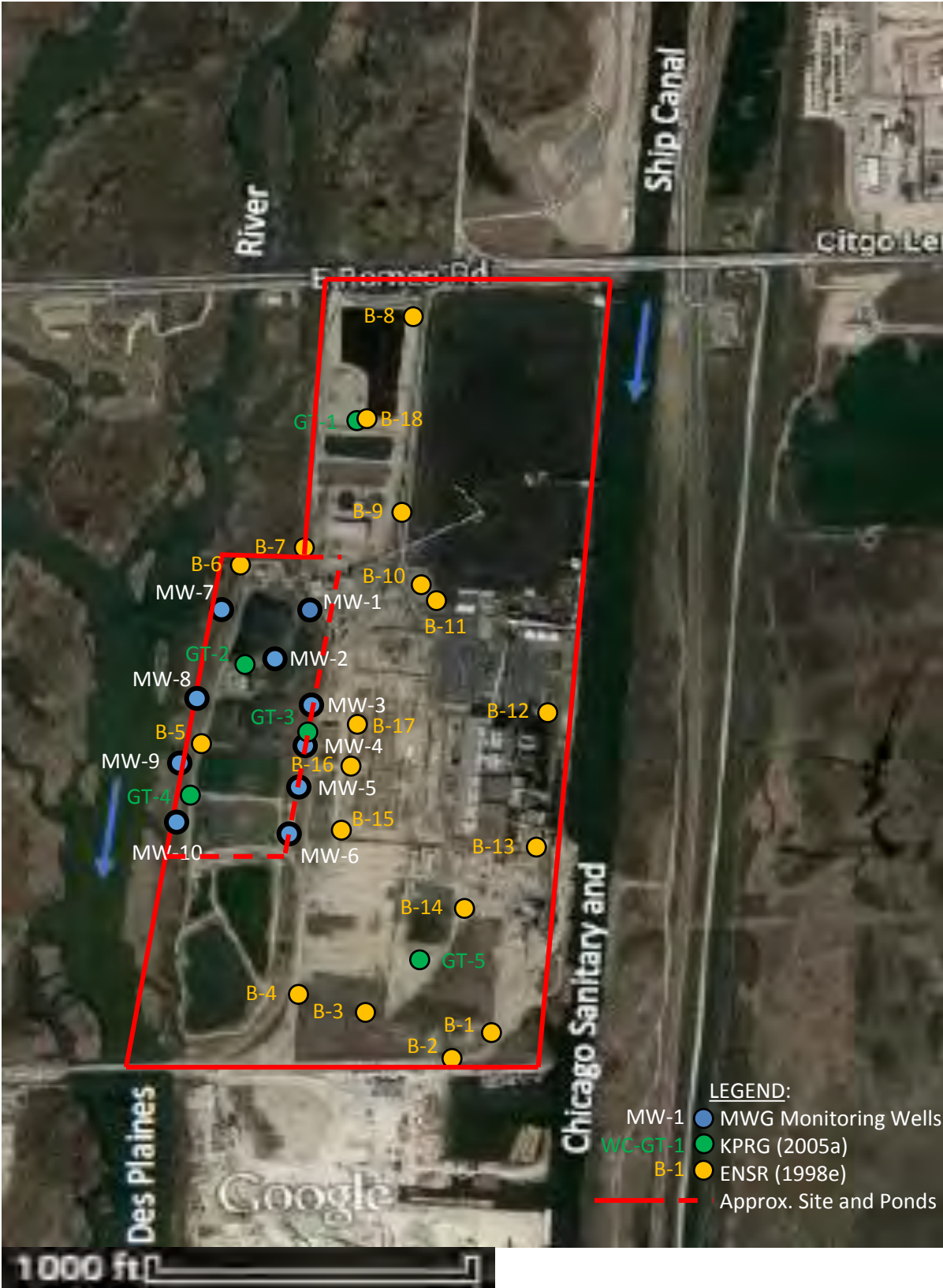


Figure 4 Will County Soil Boring Locations (PCB 2013-015)

EXHIBIT B



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EXPERT REPORT OF DAVID A. SCHLISSEL

Conclusions

NRG Energy and its subsidiaries are well positioned to provide the needed financial resources to cover an estimated \$84,901,018 to \$261,257,191 cost of cleaning up the coal ash sites at the Joliet 29, Powerton, Will County and Waukegan sites. The Company can develop a financial plan to cover these costs over a period of years that combines (1) cash resources from operating flows, (2) other sources of liquidity, and (3) borrowings from the capital markets. Prudent management of these financial resources would allow NRG to undertake the cleanup without any material and lasting impact on its financial performance, especially if the cleanup costs are spread over several years.

Background

NRG Energy is the second largest power generator in the U.S., with over 51,000 megawatts (MW) of generation capacity at 93 fossil and nuclear plants, 14 utility scale solar facilities, 35 wind farms, and multiple distributed solar facilities, as of December 31, 2014.¹ In addition to its domestic generation assets, NRG also has a relatively small amount of capacity (749 MW) outside the U.S.

As of December 31, 2014, approximately 31 percent (16,734 MW) of its generation capacity was coal-fired, 48 percent (25,301 MW) was gas-fired, 11 percent (6,008 MW) was oil-fired, 2 percent (1,176 MW) was nuclear, and 8 percent (4,259 MW) was from renewables.²

According to NRG, many of its generation assets are located within densely populated areas that tend to have “more robust wholesale pricing as a result of relatively favorable

¹ NRG Energy, Inc., 2014 Annual Report (Form 10-K), 14 (Feb. 27, 2015).

² *Id.* at 13.

local supply-demand balance.”³ NRG has generation assets located in or near Houston, New York City, Chicago, Washington, D.C., New Jersey, southwestern Connecticut, Pittsburg, Cleveland, and the Los Angeles, San Diego, and San Francisco metropolitan areas.⁴

The majority of the Company’s conventional generation capacity is located in Eastern markets (ISO-NE and PJM) with forward capacity markets that extend three years into the future. As NRG has explained in its 10-K filing for the year ending December 31, 2014, these capacity revenues “not only enhance the reliability of future cash flows but are not correlated to natural gas prices.”⁵

NRG’s Asset Diversification

The company has made substantial investments and acquisitions in recent years to reposition its generation portfolio and diversify beyond what had been its core merchant business selling power from traditional fossil and nuclear power plants. This diversification has positioned, and can be expected in the coming years to increasingly position, NRG to manage its commodity price risks⁶, to reduce its merchant exposure from fossil-fired assets,⁷ and to profit financially from what NRG Energy’s President and Chief Executive Officer David Crane has described as “the early but unmistakable stage of a technology-driven disruption of historic proportion” and a power plant retirement “tsunami washing across [NRG’s] core markets that will benefit [NRG] as one of the last men standing...”⁸ The major changes impacting the energy industry include: low commodity prices, development of a clean energy economy with increasing reliance on

³ *Id.* at 9.

⁴ *Id.*

⁵ *Id.* at 14.

⁶ NRG Energy, Inc., *Fourth Quarter 2014 Results Presentation 4* (Feb. 27, 2015); TheStreet Transcripts, *NRG Energy (NRG) Earnings Report: Q4 2014 Conference Call Transcript* (Feb. 27, 2015).

⁷ *Id.*

⁸ TheStreet Transcripts, *NRG Energy (NRG) Earnings Report: Q4 2014 Conference Call Transcript* (Feb. 27, 2015).

distributed wind and solar resources,⁹ and thousands of megawatts of, mainly, coal plant retirements. According to NRG, its portfolio diversification and its commercial operations hedging strategy provide it with reliable future cash flows.¹⁰

NRG's investment in renewable resources more than tripled between December 31, 2012, and December 31, 2014, from 1,270 to 4,259 MW.¹¹ As a result of this increase, renewable resources increased from three percent to eight percent of NRG's total capacity in the two-year period. This diversification has made NRG one of the nation's largest domestic wind operators, and has reduced its merchant exposure from financially risky coal-fired assets.

NRG also has undertaken to optimize its generation portfolio by converting some coal-fired assets to burn natural gas instead of coal, retrofitting other coal-fired assets in its generation fleet with required environmental controls, and repowering dormant fossil-fired capacity. As of June 15, 2015, NRG reported that it planned to complete approximately 7,100 MW of planned environmental retrofits and 4,400 MW of fuel conversions by the fall of 2016.¹² The Company also reported that it planned to add another 1,155 MW of new gas-fired capacity in Texas and California between 2016 and 2020.¹³

As well as being a power provider, NRG's Home Retail subsidiary provides retail electric service to more than 3.2 million recurring customers in Texas and the Northeast. This makes NRG the largest energy retailer in Texas and one of the largest retailers in the

⁹ See, e.g., Galen Barbose, Samantha Weaver and Naim Darghouth, *Tracking the Sun VII: An Historical Summary of the Installed Price of Photovoltaics in the United States from 1998 to 2013* Lawrence Berkeley National Laboratory and United States Department of Energy, 5 and 10 (Sept. 2014); the American Wind Association website at <http://www.awea.org/>; the Solar Energy Industries Association website at <http://www.seia.org/>.

¹⁰ NRG Energy, Inc., 2014 Annual Report (Form 10-K), 14 (Feb. 27, 2015).

¹¹ NRG Energy, Inc., 2012 Annual Report (Form 10-K), 8 (Feb. 27, 2013); NRG Energy, Inc., 2014 Annual Report (Form 10-K), 13 (Feb. 27, 2015).

¹² NRG Energy, Inc., *Investor Presentation* 25 (June 2015).

¹³ *Id.*

U.S., with sales in Connecticut, Delaware, Illinois, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, Ohio and Texas.¹⁴

NRG's 2014 and First Quarter 2015 Financial Performance

NRG Energy reported total assets of \$40.33 billion as of March 31, 2015, down slightly from \$40.665 billion it reported as of December 31, 2014.¹⁵ Recent acquisitions include Gen-On in 2012, Edison Mission Energy in 2014, and Alta Wind, also in 2014.

NRG Energy and its subsidiaries had \$15.868 billion in total operating revenues in 2014, up from \$11.295 billion in 2013. The estimated \$84,901,018 to \$261,257,191 cost of cleaning up the coal ash sites at the Joliet 29, Powerton, Will County and Waukegan sites would represent 0.5 percent to 1.7 percent of the 2014 total operating revenues of NRG Energy and its subsidiaries, or even less if these cleanup expenditures were spread over more than one year. The U.S. EPA has determined that "The cost-to-revenue ratios provide screening level indicators of potential economic impacts. Entities incurring costs below 1 percent of revenue are unlikely to face economic impacts."¹⁶

The Company's total interest expense of \$1.119 billion in 2014 represented approximately 7 percent of its total operating revenues. This meant that the annual interest expenses in 2014 were a lower percentage of total operating revenues than they were in either 2012 or 2013.

NRG had Adjusted EBITDA (earnings before interest, taxes, depreciation and amortization) of \$3.128 billion in 2014¹⁷ and anticipates earning between \$3.2 billion and \$3.4 billion in Adjusted EBITDA in 2015.¹⁸ The estimated \$84,901,018 to \$261,257,191 cost of cleaning up the coal ash sites at the Joliet 29, Powerton, Will

¹⁴ *Id.* at 10.

¹⁵ NRG Energy, Inc., *NRG Energy, Inc. Reports Full Year and Fourth Quarter Results, Reaffirms 2015 Guidance* (Feb. 27, 2015).

¹⁶ U.S. EPA, *Effluent Limitations Guidelines for the Steam Electric Power Generating Point Source Category*, 78 Fed. Reg. 34,432, 34,495 (Proposed June 7, 2013) (to be codified at 40 C.F.R. 423).

¹⁷ NRG Energy, Inc., *Fourth Quarter 2014 Results Presentation 17* (Feb. 27, 2015).

¹⁸ NRG Energy, Inc., *Investor Presentation 31* (June 2015).

County and Waukegan sites would represent 2.7 percent to 8.4 percent of NRG's 2014 Adjusted EBITDA, or even less if these cleanup expenditures were spread over more than one year.

NRG's operations have provided a substantial cash flow for the Company, producing \$951 million in Free Cash Flow before Growth in 2014¹⁹ and a projected \$1.1 billion to \$1.3 billion in 2015.²⁰ The estimated \$84,901,018 to \$261,257,191 cost of cleaning up the coal ash sites at the Joliet 29, Powerton, Will County and Waukegan sites would represent 8.9 percent to 27.5 percent of NRG Energy's 2014 Free Cash before Growth, or even less if these cleanup expenditures were spread over more than one year.

NRG's total corporate liquidity was \$3.94 billion at the end of 2014, of which \$2.573 billion represented cash and cash equivalents, and \$1.367 billion reflected funds that were available from an NRG Corporate Credit Facility (e.g., line of credit).²¹ NRG's total Liquidity at the end of March 2015 was \$4.031 billion or slightly higher than it had been at the end of 2014.²² The estimated \$84,901,018 to \$261,257,191 cost of cleaning up the coal ash sites at the Joliet 29, Powerton, Will County and Waukegan sites would represent 2.2 percent to 6.6 percent of NRG Energy's 2014 total corporate liquidity, or even less if these cleanup expenditures were spread over more than one year.

This recent performance demonstrates that NRG Energy would have the current financial capability to fund the estimated cleanup costs at the Joliet 29, Powerton, Will County and Waukegan sites.

Recent Developments

There are a number of important recent developments that individually and together suggest that NRG Energy will have an enhanced capability in coming years to fund

¹⁹ NRG Energy, Inc., *Fourth Quarter 2014 Results Presentation* 17 (Feb. 27, 2015).

²⁰ NRG Energy, Inc., *Investor Presentation* 31 (June 2015).

²¹ NRG Energy, Inc., *NRG Energy, Inc. Reports Full Year and Fourth Quarter Results, Reaffirms 2015 Guidance* (Feb. 27, 2015).

²² *Id.*

\$84,901,018 to \$261,257,191 in coal ash cleanup costs at the Joliet 29, Powerton, Will County and Waukegan sites:

1. The creation of the new Lower Hudson Valley Capacity Zone in NYISO that will result in higher capacity prices for the generation in the zone. For example, a representative for NRG Energy has been quoted as saying that “NRG is prepared to bring 385 MW back online and this is in great part responsive to the creation of the Lower Hudson Valley capacity zone” and that the Company will make a significant investment in Unit 2 at its Bowline plant which was not justified by the price signals sent before the creation of the new capacity zone.²³
2. FERC’s approval of the ISO-New England Pay-for-Performance capacity program and the PJM Capacity Performance Plan that are expected to lead to higher capacity market prices, and thus to substantially higher capacity revenues in coming years from NRG’s 2.9 gigawatts (GW) of capacity in ISO-New England and its 17.6 GW of capacity in PJM.²⁴

For example, the clearing price for existing capacity in ISO-New England’s first auction after FERC approved the Pay-for-Performance plan in May 2014 (that is, the February 2015 Forward Capacity Auction (FCA) 9) was \$9.55 per kilowatt-month for capacity for the 2018/2019 capacity-year.²⁵ This was approximately \$2.52 per kilowatt-month (or 36 percent) higher than the clearing price in ISO-New England’s previous FCA 8 auction.²⁶ FERC’s recent approval of PJM’s Capacity Performance Plan also is expected to increase capacity prices for many independent power producers like NRG in PJM’s upcoming August 2015 forward capacity auction and for “years to come.”²⁷ These capacity market changes have

²³ Platts McGraw Hill Financial, *New capacity zone in New York boosting power generation picture: ISO*, (Dec. 17, 2014).

²⁴ NRG Energy, Inc., *Fourth Quarter 2014 Results Presentation* 10 (Feb. 27, 2015).

²⁵ ISO New England, *Forward Capacity Market (FCA 9) Result Report 1* (Feb. 4, 2015).

²⁶ ISO New England, *Forward Capacity Market (FCA 8) Result Report* (Feb. 5, 2014).

²⁷ UBS Securities, *US Electric Utilities & IPPs: Poised to Perform with PJM* (June 11, 2015).

the potential to increase NRG's annual revenues from its generation capacity in ISO-NE and PJM by hundreds of millions of dollars.

3. The tripling of NRG's home solar customers in just one year, from 4,349 in 2013 to 13,390 in 2014.²⁸ NRG has set as a priority achieving further growth to 35,000 to 40,000 cumulative customers in 2015.²⁹ I expect NRG will experience further increases as customer interest in distribution solar rises due to continued declines in installed solar system prices.³⁰
4. NRG's planned conversions of the Dunkirk, Big Cajun and Joliet Units 6-8 to burn natural gas, which can be expected to improve NRG's economics from operating those plants given the relative prices of natural gas and coal.
5. NRG is projecting a greater than \$500 million decline in its annual committed capital expenditures beyond 2016, which I expect will clear up funds for other expenditures.³¹ The estimated \$84,901,018 to \$261,257,191 cost of cleaning up the coal ash sites at the Joliet 29, Powerton, Will County and Waukegan sites would represent 17 percent to slightly more than one-half of this projected \$500 million in capital expenditures, or even less if these cleanup expenditures costs were spread over more than one year.

These developments demonstrate that NRG not only has the current financial capability to fund the estimated cleanup costs, but also will be even better positioned to do so in the coming years.

²⁸ NRG Energy, Inc., *Fourth Quarter 2014 Results Presentation* 14 (Feb. 27, 2015).

²⁹ *Id.* at 15.

³⁰ See, e.g., Galen Barbose, Samantha Weaver and Naim Darghouth, *Tracking the Sun VII: An Historical Summary of the Installed Price of Photovoltaics in the United States from 1998 to 2013* Lawrence Berkeley National Laboratory and United States Department of Energy, 1-3 and 13 (Sept. 2014).

³¹ NRG Energy, Inc., *Investor Presentation* 19 (June 2015).

EXHIBIT C

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

- - -

SIERRA CLUB, ENVIRONMENTAL)
LAW AND POLICY CENTER,)
PRAIRIE RIVERS NETWORK, and)
CITIZENS AGAINST RUINING THE)
ENVIRONMENT,)

Complainants,)

vs.) No. PCB 2013-015

MIDWEST GENERATION, LLC,)

Respondent.)
-----)

DEPOSITION OF

JAMES R. KUNKEL, Ph.D., P.E.

CHICAGO, ILLINOIS

MARCH 17, 2016

ATKINSON-BAKER, INC.
COURT REPORTERS
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REPORTED BY: HEATHER PERKINS, CSR NO. 84-3714

FILE NO.: AA02A71

1	years based on your CV, right?	09:40:51	1	driven either by a state or federal agency.	09:42:18
2	A. Yes.	09:40:53	2	Q. So when you said no, that was to	09:42:20
3	Q. And you would say your experience	09:40:53	3	Illinois. You have never taken --	09:42:22
4	reviewing cases with -- you are experienced in	09:40:55	4	A. Illinois, yes.	09:42:24
5	reviewing cases with groundwater?	09:40:58	5	Q. I'm sorry, we can't talk over each	09:42:25
6	A. Yes.	09:41:00	6	other.	09:42:27
7	Q. And you have experience determining	09:41:00	7	You have never taken a property through	09:42:27
8	appropriate remedy for a site with groundwater	09:41:04	8	the Illinois --	09:42:29
9	impact?	09:41:07	9	A. No.	09:42:29
10	A. Yes.	09:41:07	10	Q. -- site remediation program?	09:42:30
11	Q. When you assess a remedy for a site,	09:41:08	11	A. No.	09:42:31
12	one of the factors you would want to look at is	09:41:10	12	Q. Your CV also notes a lot of experience	09:42:33
13	the groundwater use?	09:41:12	13	with modeling, correct?	09:42:36
14	A. Yes.	09:41:14	14	A. Yes.	09:42:38
15	Q. And groundwater receptors?	09:41:14	15	Q. And you didn't do a model in this case,	09:42:39
16	A. Yes.	09:41:18	16	correct?	09:42:41
17	Q. And groundwater pathways?	09:41:18	17	A. Ah, no.	09:42:41
18	A. Correct.	09:41:20	18	Q. You are familiar with the organization	09:42:42
19	Q. And when you consider a remedy, you	09:41:21	19	the Electric Power Research Institute?	09:42:45
20	want to look at all the available data you have	09:41:22	20	A. Yes.	09:42:47
21	in front of you as well, correct?	09:41:24	21	MS. BUGEL: Objection, foundation.	09:42:49
22	A. Yes.	09:41:26	22	MS. NIJMAN: We can refer -- well, he is an	09:42:50
23	Q. And you wouldn't want to rely on, for	09:41:27	23	expert. I would hope he has foundation for the	09:42:54
24	instance, a single data point?	09:41:29	24	materials that he has cited in his report.	09:42:56
		Page 18			Page 20
1	A. Correct.	09:41:31	1	THE WITNESS: Yes.	09:42:57
2	Q. When it is available, you want data	09:41:33	2	BY MS. NIJMAN:	09:42:59
3	specific to your site?	09:41:35	3	Q. We can refer to that as "EPRI"?	09:42:59
4	A. Yes.	09:41:37	4	A. Yes.	09:43:02
5	Q. You are aware of state voluntary	09:41:38	5	Q. Okay. You cite several EPRI papers in	09:43:02
6	remediation programs?	09:41:41	6	support of your opinions, correct?	09:43:06
7	A. No.	09:41:42	7	A. Correct.	09:43:07
8	Q. You have never taken a property through	09:41:43	8	Q. And you therefore find them to be a	09:43:07
9	a state voluntary remediation program?	09:41:44	9	reliable source?	09:43:09
10	MS. BUGEL: Objection, asked and answered.	09:41:47	10	A. Yes.	09:43:10
11	MS. NIJMAN: Go ahead.	09:41:50	11	MS. NIJMAN: I'm going to, let's see, mark	09:43:14
12	THE WITNESS: Ah, no.	09:41:51	12	this as Kunkel Exhibit 7.	09:43:21
13	You are talking about state of	09:41:52	13	(Kunkel Exhibit 7 marked for	09:43:21
14	Illinois?	09:41:57	14	identification.)	09:43:21
15	MS. NIJMAN: I am speaking more generally,	09:41:57	15	BY MS. NIJMAN:	09:43:21
16	any state.	09:41:59	16	Q. This is a series of pages of an e-mail	09:43:43
17	THE WITNESS: And what would you call -- can	09:42:00	17	beginning with Comp. 049492 from James Kunkel to	09:43:48
18	you repeat what that is called again, a	09:42:03	18	Faith Bugel and others, Friday, November 7th,	09:43:58
19	voluntary?	09:42:06	19	2014. Do you see this?	09:44:03
20	BY MS. NIJMAN:	09:42:06	20	A. Yes.	09:44:04
21	Q. A voluntary remediation program?	09:42:06	21	Q. Do you recognize this document?	09:44:05
22	A. Possibly. It is not called that. I've	09:42:08	22	A. I do.	09:44:05
23	certainly done remediation programs, both	09:42:10	23	Q. And in this e-mail, you describe some	09:44:06
24	voluntary and involuntary, that is they are	09:42:15	24	differences between fly ash and bottom ash,	09:44:10
		Page 19			Page 21

1	A. It is.	09:56:20	1	Q. Now, one thing you have disagreed with	09:58:17
2	Q. And that you sent to one of the	09:56:20	2	was Mr. Hennet's conclusion that pump and treat	09:58:20
3	attorneys for the Complainants here?	09:56:22	3	was an appropriate remedy for groundwater at the	09:58:23
4	A. Yes.	09:56:25	4	four facilities, correct?	09:58:26
5	Q. If you turn to Page 5, under "Summary,"	09:56:26	5	A. That's correct.	09:58:27
6	do you see that?	09:56:39	6	Q. And, in fact, you point out that pump	09:58:28
7	A. Uh-huh, yes.	09:56:39	7	and treat is technically impracticable, correct?	09:58:30
8	Q. You state that "Overall, I agree with	09:56:40	8	A. Yes.	09:58:33
9	Dr. Remy Hennet's analyses and conclusions	09:56:42	9	Q. And then you then state on Page 5, if	09:58:34
10	regarding hydrogeologic groundwater quality	09:56:45	10	you want to look at it, that the pond should be	09:58:37
11	issues," naming the four facilities. Do you see	09:56:49	11	closed. Do you remember that?	09:58:39
12	that?	09:56:52	12	A. Yes.	09:58:40
13	A. Yes.	09:56:52	13	Q. And you didn't propose any other remedy	09:58:40
14	Q. And you still agree with that today?	09:56:53	14	at this time?	09:58:43
15	A. Yes.	09:56:55	15	A. Not at that time because I had --	09:58:43
16	Q. Okay. And do you recall how much time,	09:56:56	16	Q. That's fine.	09:58:47
17	approximately, you spent looking at this report?	09:57:03	17	A. -- I had very limited information.	09:58:48
18	A. Looking at --	09:57:05	18	Q. Okay. For your expert reports that you	09:58:50
19	Q. Making this agreement, this overall	09:57:09	19	prepared in 2015, you have opined that the	09:58:56
20	statement, where you agreed with his analyses,	09:57:12	20	remedy for contamination in groundwater at the	09:59:10
21	how many hours you spent.	09:57:15	21	four Midwest Gen facilities is to remove the	09:59:13
22	A. Well, was it a -- I don't think it was	09:57:16	22	ponds and remove areas that contain -- certain	09:59:17
23	a report. Wasn't it a PowerPoint presentation	09:57:17	23	areas that contain ash, correct?	09:59:20
24	or not? I have to refresh my memory.	09:57:20	24	A. Correct.	09:59:22
		Page 30			Page 32
1	Yes, it was a PowerPoint presentation.	09:57:25	1	Q. And Illinois EPA doesn't generally	09:59:23
2	Q. Uh-huh.	09:57:27	2	agree with ash pond removal as a remedy at power	09:59:27
3	A. Okay. Well, that's different than a	09:57:27	3	plant sites; does it?	09:59:32
4	report because there aren't a lot of words,	09:57:29	4	A. I have no idea what Illinois agrees or	09:59:34
5	so...	09:57:32	5	disagrees with.	09:59:37
6	Q. Sure.	09:57:32	6	(Kunkel Exhibit 11 marked for	10:00:14
7	How much time did you spend coming to	09:57:34	7	identification.)	10:00:15
8	your conclusion?	09:57:36	8	BY MS. NIJMAN:	10:00:15
9	A. I can't remember.	09:57:37	9	Q. Showing you what has been marked as	10:00:15
10	Q. Does seven hours sound about right?	09:57:40	10	Kunkel Exhibit 11, for the record, that begins	10:00:17
11	A. Probably.	09:57:43	11	at Comp. 041681, an e-mail from James Kunkel to	10:00:21
12	MS. BUGEL: Objection, asked and answered.	09:57:43	12	Faith Bugel and others dated August 20th, 2014,	10:00:30
13	The witness said he couldn't remember.	09:57:44	13	attaching minutes of a teleconference and a	10:00:39
14	THE WITNESS: Yes, I couldn't remember.	09:57:46	14	guidance document. Do you see that?	10:00:44
15	BY MS. NIJMAN:	09:57:47	15	A. Yes.	10:00:47
16	Q. And I'm refreshing your recollection.	09:57:48	16	Q. Do you recognize this document?	10:00:48
17	A. Thank you.	09:57:49	17	A. Yes.	10:00:49
18	Q. So you cited to various documents you	09:57:52	18	Q. It is an e-mail you sent, correct?	10:00:55
19	used in your review of this PowerPoint, correct?	09:57:57	19	A. Yes.	10:00:57
20	A. Yes.	09:58:00	20	Q. And if you turn to the second page of	10:00:57
21	Q. And those, as with your other reports,	09:58:10	21	the document, Comp. 41682 --	10:01:01
22	those are the documents you relied upon to make	09:58:12	22	A. Yes.	10:01:12
23	your conclusions?	09:58:16	23	Q. -- at the bottom, on No. 6, you have a	10:01:13
24	A. Yes.	09:58:16	24	notation that has got the initials "JK" next to	10:01:30
		Page 31			Page 33

1	it. That's you, correct?	10:01:34	1	EPA's definition.	10:03:25
2	A. Yes.	10:01:36	2	Q. Well, we will get to that in a second,	10:03:26
3	Q. And you are saying that "Pump and treat	10:01:36	3	but for the purposes of your report, when you	10:03:28
4	is not a technically practicable option," which	10:01:39	4	say "ash," you mean all those three types of	10:03:30
5	we have already discussed, and then you say,	10:01:42	5	ash?	10:03:33
6	"IEPA prefers natural attenuation for	10:01:44	6	A. Yes.	10:03:33
7	groundwater contaminants at power plant sites,"	10:01:47	7	Q. Okay. So you raise a good question	10:03:34
8	correct?	10:01:51	8	with the citations. You have got three or four	10:03:37
9	A. Yes.	10:01:51	9	different definitions on the next two pages	10:03:43
10	Q. So you do have an understanding of what	10:01:51	10	where you cite to USEPA 2014?	10:03:45
11	IEPA does or is interested in?	10:01:54	11	A. Yes.	10:03:50
12	MS. BUGEL: Objection. Objection --	10:01:56	12	Q. And USEPA 2014, if you need to look at	10:03:50
13	THE WITNESS: That's not clear to me at all.	10:01:57	13	it on your index, is the proposed CCR rule,	10:03:54
14	MS. BUGEL: Objection; form of the question,	10:01:59	14	which later became adopted, right?	10:03:57
15	vague.	10:02:01	15	A. Yes.	10:03:59
16	THE WITNESS: It is not clear to me at all.	10:02:01	16	Q. So we can refer to it as, actually, the	10:04:00
17	BY MS. NIJMAN:	10:02:03	17	2015 rule?	10:04:03
18	Q. What is not clear to you, sir?	10:02:04	18	A. As long as the definitions haven't	10:04:04
19	A. Natural attenuation, in my opinion, in	10:02:05	19	changed in the final rule, yes.	10:04:06
20	the eyes of IEPA, would mean that the source	10:02:07	20	Q. Okay.	10:04:06
21	term has been removed and now we let whatever	10:02:11	21	A. They probably haven't.	10:04:08
22	the contamination is naturally decay away. But	10:02:14	22	Q. Right.	10:04:09
23	if the source term stays in place, there will be	10:02:19	23	So here's my issue, is one of the	10:04:10
24	no natural attenuation in a reasonable amount of	10:02:22	24	reasons I wanted your file here today, is	10:04:13
		Page 34			Page 36
1	time.	10:02:24	1	because we looked all through the document you	10:04:15
2	Q. And you believe that's IEPA's position?	10:02:24	2	cite and provided in your file, as well as in	10:04:18
3	A. It better be their position because it	10:02:26	3	the final rule, and those definitions are not	10:04:20
4	is, in fact, the truth.	10:02:28	4	there. So where did you get them from?	10:04:23
5	Q. That's not my question.	10:02:30	5	A. Probably from EPA's website.	10:04:25
6	Do you believe that's IEPA's position?	10:02:31	6	Q. So it is not USEPA 2014 then?	10:04:28
7	A. I don't know whether that's their	10:02:33	7	A. Possibly not, but it is definitely	10:04:33
8	position.	10:02:34	8	USEPA. They are the same definitions, as I	10:04:35
9	Q. Okay.	10:02:34	9	presented in my exhibit -- what is it?	10:04:40
10	A. That's my position.	10:02:34	10	Q. Well, it doesn't really matter where	10:04:48
11	Q. Understood.	10:02:35	11	else you presented them. I'm trying to figure	10:04:51
12	Turning to your -- what we have marked	10:02:36	12	out where you got them from.	10:04:53
13	as Deposition Exhibit 3, your report on	10:02:43	13	A. From EPA's website.	10:04:54
14	groundwater contamination, it is over here.	10:02:47	14	Q. All right. We are going to request a	10:05:05
15	A. Yes, got it.	10:02:51	15	follow up on that to give us the correct	10:05:07
16	Q. If you would look at Page 4 of that	10:03:03	16	citation because, obviously, we believe this is	10:05:08
17	exhibit.	10:03:07	17	incorrect, it is an error.	10:05:10
18	A. Yes.	10:03:08	18	A. All of them?	10:05:16
19	Q. At the bottom of the page, you define	10:03:11	19	Q. Every one where you cite EPA 2014.	10:05:17
20	the term "ash"?	10:03:13	20	A. The EPA 2014?	10:05:17
21	A. Yes.	10:03:15	21	Q. To be fair to you, the only one we	10:05:22
22	Q. And so -- and you define it as meaning	10:03:15	22	could find was hydraulic conductivity, but not	10:05:24
23	boiler slag, bottom ash, and fly ash, correct?	10:03:18	23	the definition you provide, only the first part	10:05:28
24	A. Yes. That's not my definition. That's	10:03:21	24	of the sentence. You added more to it.	10:05:32
		Page 35			Page 37

1	sulfate, if they occur together, are a unique	10:09:06	1	A. Uh-huh, yes.	10:11:09
2	indicator of coal ash pollution.	10:09:11	2	Q. The second sentence states, "Indicator	10:11:10
3	Q. And that's in these articles; is it	10:09:15	3	constituents are ideally based on site specific	10:11:12
4	not, that you cite to?	10:09:17	4	leachate analysis." Do you see that?	10:11:16
5	A. Yes, in part.	10:09:18	5	A. Yes.	10:11:17
6	Q. Okay.	10:09:20	6	Q. Do you agree with that statement?	10:11:18
7	A. I mean, I could have used other	10:09:20	7	A. I'm having trouble reading this. Let's	10:11:20
8	indicators, but those are the ones I chose.	10:09:22	8	see.	10:11:30
9	Q. So those three indicators.	10:09:24	9	Yes, I see it, uh-huh.	10:11:33
10	And so you would want to see those	10:09:27	10	Q. Okay. And then it goes on to cite	10:11:35
11	three indicators together?	10:09:29	11	seven different constituents of coal ash,	10:11:40
12	A. Yes.	10:09:30	12	correct?	10:11:42
13	Q. One of the documents you cite to is	10:09:32	13	A. Correct.	10:11:42
14	Kosson 2009?	10:09:34	14	Q. That coal ash may include any one of	10:11:42
15	A. Yes.	10:09:37	15	those or more --	10:11:45
16	Q. Do you recall that?	10:09:37	16	A. Correct.	10:11:46
17	It is a very long article, sir.	10:09:42	17	Q. -- correct?	10:11:46
18	A. Yes, it is.	10:09:44	18	Okay. Now, manganese is not cited in	10:11:46
19	Q. I did not make copies of it because I	10:09:46	19	this list, correct?	10:11:49
20	just have a very quick question. You may not	10:09:49	20	A. Not by EPRI.	10:11:49
21	even need to look at it, but if you do, I have	10:09:51	21	Q. This document also suggests a	10:11:52
22	it here.	10:09:54	22	three-tier analysis?	10:11:55
23	Kosson 2009 did not actually consider	10:09:55	23	A. Yes.	10:11:56
24	bottom ash, correct?	10:09:58	24	Q. And you didn't conduct a	10:11:57
		Page 42			Page 44
1	A. That's correct.	10:09:59	1	three-tiered -- this three-tiered analysis; did	10:11:58
2	Q. You also cite, let's see, to EPRI 2012	10:10:02	2	you?	10:12:01
3	in this paragraph, right?	10:10:15	3	A. No.	10:12:01
4	A. Yes.	10:10:16	4	Q. Still on Page 7 of your report, if you	10:12:06
5	(Kunkel Exhibit 12 marked for	10:10:16	5	want to look back at your report -- so now I'm	10:12:09
6	identification.)	10:10:16	6	looking at the bottom paragraph, carrying over	10:12:17
7	BY MS. NIJMAN:	10:10:30	7	to Page 8 then -- you compared groundwater	10:12:20
8	Q. Okay. I have marked as Kunkel	10:10:30	8	sample results to drinking water standards,	10:12:25
9	Exhibit 12 your citation, which is Comp. 17473.	10:10:33	9	correct?	10:12:28
10	You recognize this document?	10:10:43	10	A. And IEPA groundwater protection	10:12:28
11	A. Yes, uh-huh.	10:10:44	11	standards.	10:12:32
12	Q. This is the document you cited to?	10:10:45	12	Q. Right.	10:12:32
13	A. Yes.	10:10:47	13	But you also compared them to drinking	10:12:34
14	Q. Now, you identify this in your	10:10:48	14	water standards, right?	10:12:36
15	citations as a single-page abstract, correct?	10:10:51	15	A. Yes.	10:12:37
16	A. Yes.	10:10:53	16	Q. And then on the very top of Page 8, the	10:12:37
17	Q. And you cited just to this page?	10:10:54	17	carryover sentence, you state that you wanted to	10:12:45
18	A. Yes.	10:10:55	18	assess whether water treatment may be required	10:12:49
19	Q. Do you have the rest of the document in	10:10:56	19	for the intended use of the groundwater. Do you	10:12:52
20	your file?	10:10:57	20	see that?	10:12:55
21	A. No.	10:10:58	21	A. Yes, uh-huh.	10:12:55
22	Q. Okay. In the second paragraph, under	10:10:58	22	Q. You are not proposing any water	10:12:56
23	the paragraph that starts "Tier 1," do you see	10:11:06	23	treatment, correct?	10:12:58
24	that?	10:11:09	24	A. No.	10:12:59
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1	Q. And you are not suggesting anyone is	10:13:00	1	assessment, and let me identify it for the	10:15:29
2	drinking water near the stations; are you?	10:13:02	2	record, this is a Human and Ecological Risk	10:15:33
3	A. But it is potentially available as a	10:13:05	3	Assessment of Coal Combustion Wastes dated April	10:15:36
4	drinking water source.	10:13:08	4	2010 from your file, marked Comp. 16136.	10:15:41
5	Q. But you are not suggesting anyone is	10:13:09	5	In this document, one of EPA's	10:15:51
6	actually drinking water near the stations; are	10:13:11	6	approaches here was to model potential risks	10:15:55
7	you?	10:13:13	7	from coal ash impoundments in landfills. Do you	10:15:58
8	A. I don't think so, no.	10:13:14	8	recall that?	10:16:02
9	Q. And there aren't any portable wells	10:13:15	9	A. Yes.	10:16:02
10	near the station, in fact?	10:13:19	10	Q. Looking at Page ES-10 of this document	10:16:03
11	A. No, not that I am aware of.	10:13:21	11	that you cite to, the top paragraph under	10:16:18
12	Q. Okay. In the second paragraph in	10:13:23	12	"Conclusions" --	10:16:22
13	Page 8, you identify -- the second full	10:13:25	13	A. Yes.	10:16:22
14	paragraph that starts with the heading "Coal Ash	10:13:27	14	Q. -- that states that composite liners	10:16:23
15	Leachate Quality Characterization," do you see	10:13:30	15	effectively reduce risk below risk criteria from	10:16:27
16	that?	10:13:32	16	both landfills and impoundments, correct?	10:16:30
17	A. Uh-huh.	10:13:32	17	A. Yes.	10:16:33
18	Q. You identify the coal used by the	10:13:33	18	Q. Do you agree with that statement?	10:16:34
19	stations as Wyoming coal, correct?	10:13:36	19	A. Let's see. Yes, I agree with it.	10:16:35
20	A. Yes.	10:13:38	20	Q. Okay.	10:16:40
21	Q. And then you present laboratory data in	10:13:39	21	A. None of the ponds at the four	10:16:45
22	Table 2 of what you state is Wyoming coal ash	10:13:42	22	sites have --	10:16:50
23	data?	10:13:46	23	THE REPORTER: I'm sorry?	10:16:50
24	A. Yes.	10:13:46	24	THE WITNESS: None of the ponds at the four	10:16:50
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1	Q. Now, Table 2, we already established	10:13:48	1	sites --	10:16:50
2	earlier, is from the Kosson report, right?	10:13:50	2	MS. NIJMAN: There is no question pending,	10:16:50
3	A. Yes, I believe so, but it is also	10:13:53	3	sir.	10:16:51
4	confirmed by EPA 2010, yes.	10:13:58	4	THE WITNESS: Yes, okay.	10:16:51
5	Q. Right. Thank you. I was just going to	10:14:02	5	-- have composite liners.	10:16:52
6	ask you that.	10:14:03	6	BY MS. NIJMAN:	10:17:00
7	This is, then, you also cite to the	10:14:04	7	Q. Looking back at Table 2 in your report,	10:17:00
8	USEPA Risk Assessment 2010, right?	10:14:07	8	so Table 2 is headed "Landfill Leachate	10:17:36
9	A. Uh-huh.	10:14:11	9	Concentrations For Wyoming Coal Ash," correct?	10:17:39
10	Q. And you also cite to the EPRI abstract	10:14:13	10	A. Yes.	10:17:42
11	again here?	10:14:16	11	Q. And you state that you got this from	10:17:43
12	A. Uh-huh.	10:14:17	12	Kosson?	10:17:45
13	Q. Now, I have the USEPA Risk Assessment,	10:14:18	13	A. That was my understanding, uh-huh --	10:17:46
14	also a very large document, so it is here if you	10:14:22	14	Q. Right.	10:17:47
15	need to look at it.	10:14:25	15	A. -- is it came from Kosson.	10:17:48
16	That document does not specify Wyoming	10:14:27	16	Q. So the Kosson report that we talked	10:17:49
17	ash, correct?	10:14:31	17	about earlier does not contain this leachate	10:17:53
18	A. Ah, no.	10:14:31	18	data.	10:17:59
19	Q. I'm going to ask you some questions	10:15:14	19	A. It is in a separate spreadsheet.	10:17:59
20	about this article. I know it is really long.	10:15:16	20	Q. And so it was not in your file. So	10:18:03
21	If you don't remember, don't worry. I will	10:15:18	21	where is this spreadsheet?	10:18:07
22	either move on or we will try to point you to	10:15:21	22	A. You have it electronically, or you	10:18:08
23	the right place.	10:15:23	23	should have it electronically, because I put it	10:18:11
24	One of USEPA's approaches in this risk	10:15:25	24	on a stick for the attorneys on	10:18:16
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1	that I think is an error in your report.	11:43:21	1	A. I can't answer that for sure.	11:45:23
2	One of your citations here is to the	11:43:24	2	Q. Okay. Take a look at Table 6. Take	11:45:28
3	Answer -- it is on the very bottom of the page,	11:43:46	3	your time.	11:45:30
4	you refer to Answer 1998-D.	11:43:49	4	A. Well, I had another Table 2 in the	11:45:30
5	A. Yes.	11:43:52	5	remedy report that was more complete. These	11:45:33
6	Q. That's not right?	11:43:53	6	tables are not as complete as the remedy report	11:45:36
7	A. That's for Waukegan.	11:43:54	7	tables, but I'm looking at Table 6 now.	11:45:38
8	No, that's incorrect.	11:43:56	8	Q. Okay. So you are saying that tables in	11:45:41
9	Well, either that, or I didn't put in	11:43:58	9	the remedy report are actually different than	11:45:43
10	the Phase 2 report because I didn't have it, I	11:43:59	10	this?	11:45:45
11	think, probably initially, and whether I	11:44:05	11	A. Yes.	11:45:45
12	received it later, I can't remember.	11:44:07	12	Q. How were they different?	11:45:46
13	Q. But clearly citing to the Waukegan	11:44:09	13	A. They are different because they cover	11:45:47
14	report wasn't right?	11:44:11	14	the whole site, and this report covers,	11:45:49
15	A. No, that's not right.	11:44:12	15	primarily, areas around the ash ponds and within	11:45:52
16	Q. Okay.	11:44:14	16	a reasonable distance of the ash ponds. In	11:45:55
17	A. Let's see. I think that Powerton, I	11:44:18	17	other words, it doesn't include the plant site	11:45:58
18	only had the Phase 1 report.	11:44:22	18	itself, the buildings, the actual power plant,	11:46:00
19	Q. Uh-huh. Have you since found the	11:44:24	19	because those are -- while they may be causing	11:46:03
20	Phase 2?	11:44:28	20	contamination, I typically didn't have any wells	11:46:07
21	A. I can't remember. I would have to go	11:44:29	21	there, see, any groundwater wells.	11:46:10
22	back and look.	11:44:30	22	Q. Well, what I'm trying to understand is	11:46:11
23	But if it shows ash thicknesses, most	11:44:32	23	what's your basis for what should be removed? I	11:46:14
24	likely I did, eventually, get the Phase 2 report	11:44:35	24	thought this was the chart that told you what	11:46:17
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1	that showed the soil borings because I didn't	11:44:37	1	you suggested should be removed.	11:46:19
2	make that stuff up.	11:44:39	2	A. Probably, it is, basically, but I	11:46:21
3	Q. So, in fact, you must have had it at	11:44:40	3	included in the remedy report all the wells.	11:46:24
4	the time you wrote this?	11:44:42	4	Q. Yes, I understand.	11:46:26
5	A. I must have had it at the time I wrote	11:44:43	5	A. Because I do have a section in the	11:46:27
6	this and it just didn't get into the list.	11:44:44	6	remedy report that says if you took the whole	11:46:30
7	Q. And it is not in your citations either?	11:44:46	7	site, this is how much soil and ash you have to	11:46:32
8	A. It is not in the citations, and it is	11:44:48	8	remove.	11:46:34
9	incorrectly referenced, that's correct.	11:44:51	9	Q. Right.	11:46:35
10	Q. Now, you are not suggesting the	11:44:52	10	A. That was only as a comparison to what	11:46:36
11	presence of historic ash is causing --	11:44:55	11	the actual remedy was so that you could see that	11:46:38
12	A. Yes, I am, completely.	11:44:58	12	I was being reasonable in the remedy report.	11:46:42
13	Q. Okay. Okay.	11:44:58	13	Q. By only selecting some of the areas to	11:46:46
14	A. The mere presence is part of the	11:45:00	14	be removed?	11:46:48
15	problem at all of the sites.	11:45:02	15	A. Yes, but they were the important areas	11:46:49
16	Q. And that would mean at any site that	11:45:03	16	as it turns out.	11:46:51
17	contains coal ash, you would have the same	11:45:07	17	But anyway --	11:46:52
18	opinion?	11:45:10	18	Q. The important areas why?	11:46:54
19	A. Where it was used as a construction	11:45:10	19	A. They were the areas that had the most	11:46:55
20	material or a leveling material, and it's, yes,	11:45:12	20	ash, as far as I could tell, and the areas where	11:46:58
21	absolutely available for leaching.	11:45:14	21	it was physically possible to go in and remove	11:47:01
22	Q. Now, you identified all of the areas	11:45:17	22	the ash without tearing down the power plant or	11:47:04
23	outside of the ponds that have ash in your	11:45:20	23	the switchyard or any of those kinds of	11:47:06
24	Table 6, right?	11:45:23	24	facilities.	11:47:10
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1	Q. Which would be impractical?	11:47:10	1	Well, they both show the bottom of the ash	11:49:33
2	A. Yes. Plus, as I said before, I didn't	11:47:12	2	ponds, and they both show the elevation of the	11:49:36
3	have any groundwater monitoring, typically, in	11:47:14	3	Illinois River. And given the short time	11:49:38
4	the plant site proper where the buildings were,	11:47:17	4	series, there is, at least, one or two Illinois	11:49:42
5	for the most part. I didn't have any of that.	11:47:20	5	River stages which are above the bottoms of all	11:49:45
6	Q. Looking at Page 18, in the second	11:47:22	6	the ash ponds -- well, maybe not all of them.	11:49:48
7	paragraph, the second full -- under "Results and	11:47:35	7	There could be one. It is above -- well, I	11:49:54
8	Evaluation" --	11:47:41	8	can't remember which ones it was. Maybe there	11:49:59
9	A. Yes.	11:47:41	9	is one or two, you are right, that the Illinois	11:50:01
10	Q. -- in "C," you say, "The groundwater	11:47:43	10	River doesn't touch. Yes, you are right.	11:50:08
11	elevations surrounding coal ash ponds is higher	11:47:44	11	Q. Do you know which ponds? Can you tell?	11:50:10
12	than the ash pond bottoms, subjecting all the	11:47:48	12	A. I can't remember off the top of my	11:50:11
13	ash ponds at Powerton to hydrostatic uplift and	11:47:52	13	head.	11:50:13
14	reduction supports."	11:47:58	14	Q. So that's an error in your report?	11:50:13
15	A. Yes.	11:48:00	15	A. Thank you.	11:50:19
16	Q. And you say this is true for all the	11:48:01	16	Q. You state in "D" that "Poor dredging	11:50:20
17	ponds?	11:48:03	17	practices have been used and continue to be	11:50:25
18	A. And it depends, on Powerton, on the	11:48:04	18	used," and then there is no citation. What are	11:50:27
19	elevation of the Illinois River.	11:48:08	19	you referencing?	11:50:32
20	Q. I'm asking -- you say it is for all the	11:48:10	20	A. I'm referencing the dredging that's	11:50:33
21	ponds, correct, at Powerton?	11:48:13	21	done by the two contractors, Lafarge and the	11:50:35
22	A. I need to refer to -- to the	11:48:16	22	other one I can't remember. I don't know them.	11:50:40
23	groundwater elevation table.	11:48:24	23	Q. I'm sorry, what document are you	11:50:42
24	The short answer that I see is yes.	11:48:45	24	referring to?	11:50:44
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1	Q. And what are you basing that on?	11:48:49	1	A. Just a compilation of many documents	11:50:44
2	A. On the elevations of the Illinois	11:48:51	2	that would give you a list of Bates numbers. It	11:50:51
3	River.	11:48:53	3	would be, probably, impossible to discern.	11:50:55
4	Q. So in your view, all -- under C here,	11:48:54	4	Q. Well, that's kind of hard to figure out	11:50:58
5	you say it is subjecting all the ash ponds at	11:48:58	5	how you reached that opinion; isn't it?	11:51:00
6	Powerton.	11:49:01	6	A. No. I think if one reads through the	11:51:02
7	When you say "all the ash ponds" --	11:49:02	7	documents that were provided, that removal -- or	11:51:05
8	A. Yes, all the ash ponds.	11:49:02	8	the dredging of the ash with a track hoe is very	11:51:11
9	Q. -- that's because of the elevation of	11:49:04	9	dangerous, and if the equipment is running	11:51:17
10	the Illinois River?	11:49:06	10	around on the bottom of the ponds, that's not an	11:51:20
11	A. Yes.	11:49:07	11	acceptable way to dredge ash.	11:51:23
12	Q. And that's elevation over time, or what	11:49:08	12	Q. And I'm asking what's the basis for	11:51:25
13	are you looking at?	11:49:10	13	saying that that happened at Powerton?	11:51:26
14	A. Well, I'm looking at a bunch of	11:49:11	14	A. I assume that your two contractors	11:51:28
15	discrete points, every three months for the	11:49:12	15	either -- that serve all four power plants. I	11:51:34
16	groundwater elevations, but continuous data for	11:49:15	16	mean, one serves two, and the other one serves	11:51:36
17	the Illinois River, and those canals are a	11:49:17	17	two.	11:51:38
18	reflection of the elevation of the Illinois	11:49:22	18	Q. So you are assuming that that's what	11:51:39
19	River.	11:49:24	19	Lafarge did?	11:51:40
20	Q. And what exactly are you referring to	11:49:24	20	A. Yes.	11:51:41
21	on your report?	11:49:26	21	Q. That Lafarge uses poor practices?	11:51:42
22	A. I'm referring --	11:49:27	22	A. Yes, yes.	11:51:45
23	Q. Tell me the figure.	11:49:28	23	Q. Okay. Under "Water Surface	11:51:45
24	A. I'm looking at Figures 11 and 12.	11:49:29	24	Elevations" --	11:51:47
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1	gradient is down this way (indicating), which,	13:38:50	1	coal ash's construction material."	13:41:46
2	on this other figure, translates to down river.	13:38:51	2	A. Yes.	13:41:46
3	Do you see what I'm saying?	13:38:54	3	Q. "Leaks in the ash pond liners."	13:41:49
4	Q. Even though it can go between those two	13:38:56	4	A. Yes, those three.	13:41:52
5	wells, it can go up and down and up and down?	13:38:58	5	Q. And then you continue and say, "Spikes	13:41:53
6	A. Well, it does go up and down and up and	13:39:00	6	in your indicator concentrations could be	13:41:56
7	down, but MW-2 is nearly always the highest	13:39:02	7	results" -- are -- you say "are the result of	13:42:01
8	water level elevation in the bedrock. And MW-10	13:39:05	8	leachate from liner leaks, leachate from coal	13:42:02
9	is clearly the lowest, the lowest everywhere.	13:39:10	9	ash deposited in the past outside the ponds,	13:42:05
10	And MW-6, which is the green line on the other	13:39:13	10	and/or changes in groundwater elevations as a	13:42:08
11	side, is typically one of the lowest. And	13:39:16	11	result of changes primarily in Des Plaines."	13:42:11
12	MW -- which was the other upgradient well? 1,	13:39:22	12	A. Yes.	13:42:13
13	again, is way up high. It is right at or below	13:39:26	13	Q. Yes?	13:42:13
14	MW-2. So the gradients in the bedrock are	13:39:30	14	A. Yes, any and all at the same time or	13:42:15
15	always this way (indicating), down river.	13:39:35	15	individually.	13:42:17
16	Q. So when you find in between those	13:39:38	16	Q. It could be any of them, it could be	13:42:18
17	wells --	13:39:41	17	one of them?	13:42:21
18	A. In between the wells?	13:39:42	18	A. Yes. We have no way to determine.	13:42:21
19	Q. In between -- go back to your drawing.	13:39:47	19	Q. Let's turn to your remedy report.	13:42:25
20	Go back to your figure.	13:39:50	20	A. Remedy, yes.	13:42:36
21	A. No, I understand. Between the wells,	13:39:50	21	Am I'm missing Page 1 of 11? I am	13:42:43
22	say these wells or these wells --	13:39:52	22	missing Page 1 of -- no, I'm missing Page 1 of	13:42:48
23	Q. Yes.	13:39:54	23	11 in Exhibit 4.	13:42:51
24	A. -- at all the sites, some of those	13:39:55	24	Do you want to check it?	13:42:57
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1	lines cross. What do you do with a groundwater	13:40:00	1	MS. BUGEL: Here.	13:42:59
2	level that crosses another groundwater level	13:40:03	2	THE WITNESS: It probably doesn't make a lot	13:43:00
3	that is different? And I think the one I see	13:40:07	3	of difference.	13:43:03
4	that's obvious is -- what is that black? MW-9.	13:40:15	4	Well, it does. It is the introductory	13:43:05
5	And it crosses just about all the wells, and	13:40:21	5	stuff.	13:43:08
6	that's potentially due to measurement errors or	13:40:24	6	MS. NIJMAN: I think this is Page 1.	13:43:08
7	anisotropy in the bedrock.	13:40:30	7	MS. BUGEL: Page 1 is the cover page.	13:43:10
8	Bedrock is very -- this fractured	13:40:32	8	THE WITNESS: Oh, I'm sorry. The cover page,	13:43:10
9	bedrock or weathered dolomite is very difficult	13:40:34	9	okay, fine.	13:43:10
10	to interpret. So all I can talk about is	13:40:38	10	MS. NIJMAN: Yes, that's how your report was	13:43:11
11	generalities, that is gradients this way	13:40:40	11	provided.	13:43:13
12	(indicating), but cross-gradients are going to	13:40:42	12	THE WITNESS: Sorry about that.	13:43:15
13	vary with time depending on how that extra	13:40:45	13	MS. NIJMAN: That's okay.	13:43:17
14	bedrock responds to the river water levels.	13:40:49	14	THE WITNESS: Sorry about that.	13:43:23
15	Q. Turning to Page 34, I think we have	13:40:58	15	BY MS. NIJMAN:	13:43:23
16	done this a couple of times, but this is already	13:41:22	16	Q. So if I understand -- not a specific	13:43:23
17	another site in the third full paragraph?	13:41:24	17	question yet with regard to your remedy report,	13:43:26
18	A. Yes.	13:41:28	18	but I want to understand, generally, the steps	13:43:28
19	Q. Where you start with "After my review"?	13:41:28	19	one would take in this kind of ash or soil	13:43:30
20	A. Yes.	13:41:30	20	removal project.	13:43:35
21	Q. You, again, provide a series of	13:41:30	21	So you are saying dig up the material	13:43:37
22	different possibilities, "Groundwater	13:41:33	22	that's removable, right?	13:43:41
23	contamination, results of current and former	13:41:37	23	A. Uh-huh.	13:43:42
24	coal ash/slag storage in the ash ponds, using	13:41:41	24	Q. You would transport the material to a	13:43:43
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1	landfill?	13:43:45	1	A. I'm looking at Table 3 -- or, I'm	13:45:24
2	A. Yes.	13:43:45	2	sorry, Table 1.	13:45:26
3	Q. That's hauling.	13:43:46	3	Q. Right.	13:45:28
4	You dispose of the material in the	13:43:47	4	So where does that say "disposal"?	13:45:28
5	landfill?	13:43:48	5	A. I'm sorry, just a minute.	13:45:30
6	A. Yes.	13:43:49	6	Well, you know, disposal is included in	13:45:36
7	Q. And then you would backfill?	13:43:49	7	the whole thing of soil excavation, hauling, and	13:45:39
8	A. With clean material, yes, from	13:43:52	8	backfill. That's my interpretation of that.	13:45:46
9	somewhere.	13:43:53	9	Q. And what's your basis for saying that?	13:45:48
10	Q. So those are the steps we are talking	13:43:54	10	A. These are from Patrick.	13:45:50
11	about?	13:43:56	11	Q. Well, one of them is from Patrick?	13:46:01
12	A. Yes.	13:43:56	12	A. Right. One of them is from Patrick.	13:46:03
13	Q. Okay. And you have stated here	13:43:57	13	The other ones are from BidTabs where they	13:46:06
14	that -- and we have talked about this	13:43:59	14	actually dug up the soil, hauled it to a	13:46:08
15	already -- that the remedy that you propose is	13:44:00	15	landfill, and then backfilled, and I have given	13:46:11
16	the removal, hauling, and backfilling of the	13:44:02	16	those -- I have given those documents that I	13:46:14
17	ponds and certain areas around the ponds, right?	13:44:05	17	used, those BidTabs.	13:46:17
18	A. Uh-huh.	13:44:08	18	Q. Well, we will get to the BidTabs in a	13:46:18
19	Q. Okay. Mr. Seymour pointed out to you	13:44:09	19	second. Let's talk about the Patrick that you	13:46:21
20	that disposal costs don't appear to be included,	13:44:14	20	just mentioned.	13:46:23
21	and I think in your rebuttal report, you state	13:44:17	21	Patrick, you cite a cost of 42.95, and	13:46:24
22	that that's part of hauling?	13:44:19	22	you note in the footnote that that does not	13:46:28
23	A. Well, if I take it to a landfill,	13:44:21	23	include backfilling.	13:46:30
24	that's the disposal, yes. So it is	13:44:24	24	A. That's correct.	13:46:31
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1	either -- hauling, yes.	13:44:26	1	Q. So you use that as a high cost?	13:46:32
2	Q. But hauling is different than disposal?	13:44:28	2	A. Yes.	13:46:32
3	A. Let's not get into semantics because	13:44:30	3	Q. Even though it doesn't include a large	13:46:34
4	the idea, and we just went through those --	13:44:34	4	portion of what it would cost to remedy this	13:46:37
5	Q. Yes.	13:44:34	5	property?	13:46:40
6	A. -- is we dig it up, we haul it to a	13:44:37	6	A. I don't know whether I would use a	13:46:40
7	landfill --	13:44:40	7	large portion, but it does include a portion,	13:46:42
8	Q. Right.	13:44:40	8	possibly, yes. But backfilling could be on-site	13:46:44
9	A. -- and then we backfill. So hauling to	13:44:40	9	soils, too. We don't know -- I don't know that	13:46:48
10	the landfill is disposal.	13:44:43	10	for sure.	13:46:49
11	Q. Understood, except you have detailed a	13:44:45	11	Q. Do you believe there are on-site soils	13:46:50
12	certain level of costs, and I do not believe	13:44:47	12	available for backfilling?	13:46:54
13	that you have included disposal costs in your	13:44:50	13	A. Maybe one site, Powerton.	13:46:56
14	assertions.	13:44:54	14	Q. Which would that be?	13:46:57
15	A. That's your opinion. That's your	13:44:55	15	A. Powerton.	13:46:57
16	opinion. I think I have.	13:44:56	16	Q. So your high figure does not include	13:47:02
17	Q. I would like you to show me where you	13:44:57	17	backfilling?	13:47:04
18	have included disposal costs.	13:45:00	18	A. Correct. But, remember, the idea here	13:47:04
19	A. Okay. Well, I used two sets of -- two	13:45:02	19	was to compare the sites and kind of compare	13:47:07
20	sets of costs -- unit costs, I'm sorry.	13:45:05	20	what it would cost.	13:47:13
21	One -- actually, I lumped a lot of things	13:45:17	21	Q. Right.	13:47:14
22	together; excavation, hauling, and backfill.	13:45:19	22	But using a high of 42.95, that doesn't	13:47:15
23	Q. So tell me what you are looking at,	13:45:21	23	include the component of backfilling. It is	13:47:18
24	sir.	13:45:23	24	not, then, the high.	13:47:21
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1	A. Right.	13:47:22	1	agree?	13:49:19
2	Q. Now, the Patrick report -- we can pull	13:47:23	2	A. I don't think so. I don't think that	13:49:20
3	it out -- also doesn't include costs for	13:47:26	3	they bid on a project if they weren't going to	13:49:23
4	excavation, correct?	13:47:30	4	charge the client for disposing.	13:49:26
5	A. I don't think so. I don't know	13:47:31	5	Q. So it is your assumption that it is in	13:49:31
6	why -- I don't know why it wouldn't. What	13:47:33	6	there?	13:49:41
7	doesn't it include at \$42.95?	13:47:35	7	A. Yes.	13:49:41
8	Q. Tipping, the landfill costs.	13:47:38	8	MS. NIJMAN: Okay. We will take a look at	13:49:42
9	A. Oh, it is just the tipping costs?	13:47:38	9	those once Kristen gets back.	13:49:44
10	Q. That's the disposal costs.	13:47:42	10	MS. CASSEL: This was Exhibit 19.	13:49:53
11	A. Okay.	13:47:45	11	THE WITNESS: Well, in fact, hauling and	13:49:55
12	MS. NIJMAN: So let me show you Kunkel	13:47:45	12	backfill.	13:49:57
13	Exhibit 19. And, I'm sorry, I don't have any	13:47:45	13	BY MS. NIJMAN:	13:50:03
14	copies of it.	13:47:45	14	Q. Okay. Let me show you your bid	13:50:03
15		13:47:47	15	documents that you referred to.	13:50:06
16	(Kunkel Exhibit 19 marked for	13:47:47	16	A. I have it here, and it clearly says	13:50:07
17	identification.)	13:48:01	17	soil excavation, hauling, and backfilling, but	13:50:10
18	MS. GALE: We're printing it right now.	13:48:01	18	they have to haul it somewhere and dump it.	13:50:13
19	BY MS. NIJMAN:	13:48:06	19	They can't just haul it.	13:50:16
20	Q. Okay. Do you recognize that document	13:48:06	20	Q. They do have to haul it somewhere, and	13:50:17
21	as the document you relied upon?	13:48:07	21	then they have to pay for it to be disposed of	13:50:19
22	A. Yes, yes.	13:48:09	22	when they get to that location, correct?	13:50:21
23	Q. And you refer to the 42.95 cost, which	13:48:11	23	A. Why wouldn't they include that in a	13:50:23
24	is on Page 6824, right, in the chart Figure E-2?	13:48:17	24	BidTab? That's -- that's my question.	13:50:24
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1	A. I don't think I rely on a chart.	13:48:24	1	Q. Well, isn't it true for hauling, it is	13:50:25
2	Wasn't there a number somewhere?	13:48:28	2	going to depend upon the distance of the	13:50:29
3	Q. The second page of the document.	13:48:32	3	landfill, correct? The hauling costs are the	13:50:31
4	A. Oh, here, the 42.95, yes.	13:48:34	4	transportation costs of how far you have to	13:50:33
5	Q. Do you see that?	13:48:39	5	travel to the landfill?	13:50:35
6	A. Yes.	13:48:39	6	A. But these are final bid tabulations	13:50:36
7	Q. And do you see how it says "Disposal at	13:48:40	7	that were presented to the client, and the	13:50:39
8	Third-Party MWS Landfills" for 42.95?	13:48:43	8	client would certainly like to know what it is	13:50:41
9	A. Yes, yes.	13:48:46	9	going to cost him.	13:50:43
10	Q. And then if you look in the starred	13:48:47	10	Q. And isn't it true that in many cases	13:50:44
11	footnote below, it says those costs include the	13:48:48	11	the client pays the disposal costs directly to	13:50:48
12	estimated transportation and landfill disposal	13:48:51	12	the landfill?	13:50:51
13	costs.	13:48:54	13	A. It is possible, yes.	13:50:52
14	A. Okay.	13:48:55	14	Q. So you can't assume, then, that	13:50:53
15	Q. So that doesn't include excavation?	13:48:55	15	disposal costs are included in these bids?	13:50:54
16	A. Okay.	13:48:58	16	A. Possibly not.	13:50:57
17	Q. So that high number you used of 42.95	13:48:59	17	Q. Turning to Page 4 of your	13:51:22
18	is missing both backfilling and excavation.	13:49:02	18	rebuttal -- excuse me, I'm turning now to your	13:51:26
19	Does that make you question, then, the	13:49:08	19	rebuttal report. I am on Page 4 of that report,	13:51:30
20	low, the very low numbers you reached?	13:49:10	20	and we have marked this Deposition Exhibit 5.	13:51:48
21	A. No, because the low number, I know,	13:49:12	21	All right. On Page 4, you say on the	13:51:53
22	includes excavation from the BidTabs.	13:49:14	22	first line, under "Leachate Tests That Seymour	13:52:07
23	Q. But does it include disposal?	13:49:15	23	Utilized" -- do you see that heading in the	13:52:11
24	Probably not, right? Wouldn't you	13:49:18	24	middle of the page?	13:52:13
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