GEI Consultants

Consulting Engineers and Scientists

December 19, 2023
Project 2103683

Mr. Eric Kovatch, P.G.
WEC Energy Group – Business Services
333 W. Everett Street, A231
Milwaukee, Wisconsin 53203

Re: 2023 Landfill Inspection Report
Presque Isle Power Plant Ash Landfill No. 3
We Energies
Marquette Township, Michigan

Dear Mr. Kovatch:

GEI Consultants of Michigan, P.C. (GEI) is pleased to provide this landfill inspection report for the We Energies Presque Isle Power Plant (PIPP) Ash Landfill No. 3. The inspection was completed to comply with *40 CFR 257 Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments* and specifically with *§ 257.84(b) Annual inspections by a qualified professional engineer.*

§ 257.84 Inspection Requirements for CCR Landfills

(b) *Annual inspections by a qualified professional engineer.*

(1) Existing and new CCR landfills and any lateral expansion of a CCR landfill must be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and accepted good engineering standards. The inspection must, at a minimum, include:

(i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspections by a qualified person and results of previous annual inspections); and

(ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

(2) *Inspection report.* The qualified professional engineer must prepare a report following each inspection that addresses the following:

(i) Any changes in geometry of the structure since the previous annual inspection;

(ii) The approximate volume of CCR contained in the unit at the time of the inspection;

(iii) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit; and

(iv) Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.

GEI Consultants of Michigan, P.C.
3159 Voyager Drive, Green Bay, WI 54311
920.455.8200

Background

We Energies owns and operates the PIPP Ash Landfill No. 3, located in the NW 1/2 of the SE 1/4 of Section 6, Township 48 North, Range 25 West, approximately 4 miles west of the decommissioned Presque Isle Power Plant in Marquette Township, Marquette County, Michigan. The landfill is permitted by the Michigan Department of Environmental Quality (MDEQ) under Construction Permit No. 0400 dated February 27, 2002, and the current Operating License. Figure 1 – Site Location Figure shows the location of the landfill relative to the decommissioned Presque Isle Power Plant and the City of Marquette, Michigan.

Cell 1 of Landfill No. 3 was constructed in the 2003 construction season and placed into service on October 8, 2005. Cell 2 was constructed during the 2007 construction season and placed into service on October 10, 2008. The perimeter slopes of Cell 1 were closed in 2014 and the remainder of the landfill was closed in 2019. With the issuance of the Cell 2 closure construction documentation report approval from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) on October 21, 2019, PIPP Ash Landfill No. 3 began the 30-year post-closure care period.

GEI was retained to perform an annual inspection of the landfill in compliance with *§ 257.84(b) Annual inspections by a qualified professional engineer*. The inspection was performed on November 13, 2023. Copies of the site location figure, landfill inspection form, and landfill inspection photo log are appended to this letter-report and constitute the entirety of the report.

Site Inspections

The landfill site inspection was performed on November 13, 2023. The inspection included a discussion with landfill operation personnel to discuss the daily operation of the facility including leachate hauling, operation of the leachate collection and removal system, and stormwater management; review of the leachate hauling and landfill operating records; observation of the existing site conditions including the access road and cell entrance, and the Landfill No. 3 final cover slopes.

Based on review of the site and discussion with the landfill operation personnel, post-closure landfill operations are running smoothly and consistently. Leachate hauling has been consistent with operators keeping the volume in the tank under 30,000 gallons. Leachate levels in the sumps are being maintained with less than 1-foot of head on the liner. We Energies began transporting and disposing of leachate at the Marquette Area Wastewater Treatment Facility on April 23, 2019.

Following the discussion with the operation personnel, GEI performed a site walk and inspected the landfill. Overall, the landfill is in good condition. The perimeter slopes of Cell 1 closed in 2014 and the Cell 2 perimeter slopes closed in 2019 are in good condition. The vegetation was well established on most areas of the cover, with bare spots observed periodically on the top of the cover in addition to the west, south, and east slopes. We Energies will be notified of these bare spots and will be reseeded next growing season. Despite these bare spots, no significant erosion, no woody vegetation, no animal burrows, no signs of differential settlement, and no areas of instability were observed on Landfill No. 3.

The We Energies PIPP Ash Landfill No. 3 is a double lined landfill with a primary leachate collection system and secondary leachate detection system. The leachate collection system is a network of perforated collection pipes running east-west across the landfill within a 12-inch sand

drainage layer. The pipes drain to the leachate collection sumps along the east perimeter berm of the landfill. The sump in Cell 2 gravity drains to the sump in Cell 1 where it is extracted by sump pumps installed in sideslope riser pipes. The sump in Cell 1 has two extraction pumps that are individually controlled by pressure transducers installed inside each side slope riser pipe. The pumps are powered on when the leachate head level in the side slope riser reaches 36 inches and power off when the level reaches 18 inches. In the event of a pump failure a high-level alarm is activated when the sump level reaches 54 inches of leachate head. In accordance with Part 115, Solid Waste Management of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, We Energies is obligated to maintain the leachate head level to less than 12 inches on the landfill liner system, excluding the sump area. The leachate head level in the sump would need to 62.4 inches of head in the sump to reach 12 inches at any location on the landfill liner system.

The leak detection system consists of a geocomposite drainage layer between the primary composite liner system and a secondary geomembrane liner. A secondary sump with a side slope riser pipe and leachate extraction pump is installed in each cell. Head level in the primary and secondary sumps are included on the inspection forms. At the time of the inspection, the head level for the secondary sump in Cell 2 was not reading on the leachate sump master board. We Energies has been notified of this so the problem, and the electrical issue will be resolved as soon as possible.

Closing

On November 13, 2023, the annual inspection of the We Energies PIPP Ash Landfill No. 3 was completed in compliance with *§ 257.84(b) Annual inspections by a qualified professional engineer*. Overall, the landfill is in good condition. The leachate system is functioning as designed and the landfill operators are keeping up with leachate hauling. Based on observations and discussions with the landfill personnel, the landfill is being operated in accordance with Construction Permit No. 0400 dated February 27, 2002; the current Operating License; the requirements of Part 115, Solid Waste Management of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended; and 40 CFR 257 Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments.

The inspection was completed by John, M. Trast, P.E, D.GE.

"I am a licensed professional engineer in the State of Michigan in accordance with Article 20 of the Occupational Code, Public Act 299 of 1980, as amended. This document has been prepared in accordance with the Michigan Administrative Rules, Department of Licensing and Regulatory Affairs, Professional Engineers – General Rules, Part 3 – Standards of Practice and Professional Conduct; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements of Part 115 of PA 451, as amended and 40 CFR 257."

If you have any questions regarding this landfill inspection, please contact John Trast at 920-455-8299.

Sincerely,

GEI CONSULTANTS OF MICHIGAN, P.C.

STATE OF MICHIGAN
JOHN M. TRAST
ENGINEER
No. 43731
LICENSED PROFESSIONAL ENGINEER

Andrew J. Schwoerer, P.G.
Project Professional

John M. Trast, P.E. D.GE
Vice President

Attachments:
Figure 1 – Site Location Figure
PIPP Ash Landfill No. 3 CCR Compliance – Annual Inspection Form
Presque Isle Power Plant Ash Landfill No. 3 CCR Inspection – Photo Log

AJS:amp

WE ENERGIES
MARQUETTE, MICHIGAN

GEI Consultants of Michigan, P.C.

PRESQUE ISLE POWER PLANT
ASH LANDFILL #3
SITE LOCATION FIGURE

Project 2103691 | December 2023 | Fig. 1

B:\Working\WEC ENERGY GROUP_General\WE - Presque Isle\WE_PIPP_LF3\Dust Contol Mgmt\dwg\128980002_2023

PIPP ASH LANDFILL #3 CCR COMPLIANCE - ANNUAL INSPECTION FORM

INSPECTOR: John M. Trast, P.E.
INSPECTION DATE/TIME: 11/13/2023, 12:00 P.M.

WEATHER:

Temperature:	40's
Conditions:	Sunny
Wind:	Moderate
Wind Direction:	W
Precipitation:	None

LEACHATE COLLECTION SYSTEM:

Load-out Facility:

High level alarms:	No
Low level alarms:	No
Leak alarms	No
Tank Level :	---
Tank Volume:	10570 gallons
Pump:	Available
Pad Condition:	Good

Sump:

Pump #1-1:	Available	31.0 in	Primary LCS Sump
Pump #1-2:	Available	2.4 in	Primary LCS Sump
Pump #2-1:	Available	21.3 in	Cell 1 Secondary
Pump #4-1:	Available	-	Cell 2 Secondary
Control Panel:	Available	*No reading for Pump #4-1 at time of inspection. Issue will be resolved as soon as possible.	

Note: 62.4" in P1-1 or P1-2 equates to 12" of head on base liner

Comments: Leachate volume in the tank is being managed by the operators to generally keep the volume less than 30,000 gallons (total capacity is 100,000 gallons). Leachate levels in the sumps are being maintained in compliance with the operating license requirements (no alarms) of less than 1-foot of head on the liner.

STABILITY/EROSION OF FINAL COVERS & WASTE SLOPES:

Final Covers: ☑
Waste Slopes: ☑

Comments : The final cover slopes appear stable with no observed instability, no significant erosion, no woody vegetation, and no animal burrows. Some areas of bare vegetation were observed on the top of the cover, in addition to the west, east, and south slopes. We Energies will be notified of these areas and they will be reseeded during the next growing season. However, no instability or erosion observed due to these bare spots.

Note: Check mark indicates slope appears stable and no significant erosion.

LANDFILL OPERATIONS:

Fugitive Dust Control:

~~Tracking Pads :~~	☐
~~Cattle Guards :~~	☐
Access Road Clean:	☑
Landfill Surfaces Vegetated:	☑
Airbourne Dust Visible:	No
Sign of Recent Dust Deposition:	No

Stormwater Management

Exterior Ditches:	☑
~~Interior Ditches:~~	☐
Catch Basin:	☑
Culverts:	☑

Comments: The landfill was permanently closed upon receipt of the construction documentation report approval from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) on October 21, 2019, beginning the 30-year post closure care period.

Note: Check mark indicates that the features are acceptable.

Presque Isle Power Plant Ash Landfill No. 3
CCR Inspection – Photo Log

Date: 11/16/2023
Project No.: 2103683
Client: We Energies

Presque Isle Power Plant Ash Landfill No. 3
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Photo No. 1 – Leachate sump master board readings.

Photo No. 2 – Primary Leachate pump #1-2.

Presque Isle Power Plant Ash Landfill No. 3
CCR Inspection – Photo Log

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Photo No. 3 – Cell 2 riser vault building

Photo No. 4 – Cell 1 east slope and riser vault building.

Presque Isle Power Plant Ash Landfill No. 3
CCR Inspection – Photo Log

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Photo No. 5 – Landfill No. 3 leachate loadout facility.

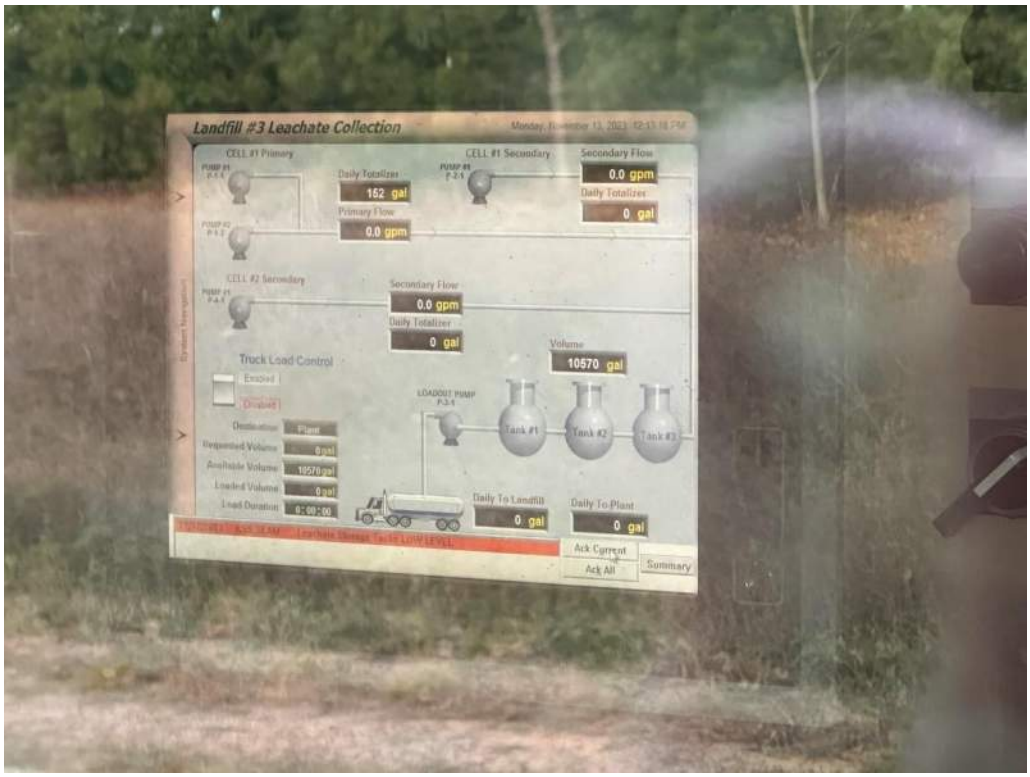

Photo No. 6 – Landfill No. 3 leachate loadout facility screen.

Presque Isle Power Plant Ash Landfill No. 3
CCR Inspection – Photo Log

Date: 11/16/2023
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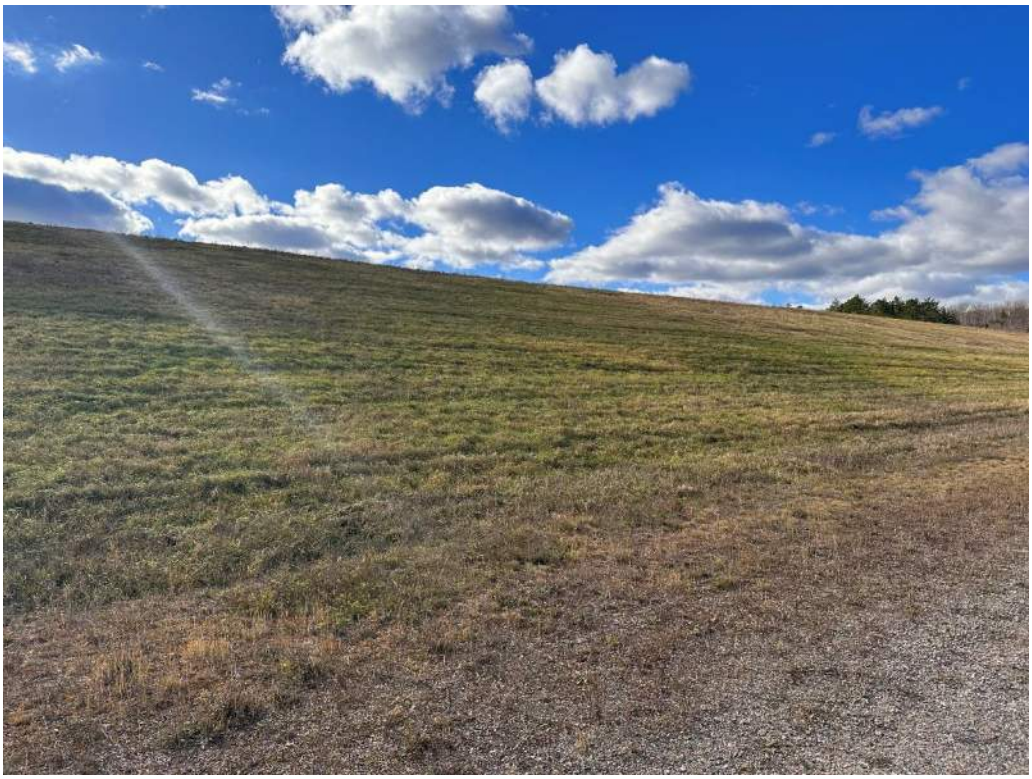

Photo No. 7 – North slope of Landfill No. 3, looking south.

Photo No. 8 – Northwest corner of Landfill No. 3.

Presque Isle Power Plant Ash Landfill No. 3
CCR Inspection – Photo Log

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Photo No. 9 – Top of Landfill No. 3, looking east.

Photo No. 10 – Cover erosion control berms.

Presque Isle Power Plant Ash Landfill No. 3
CCR Inspection – Photo Log

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Photo No. 11 – South slope of Landfill No. 3, looking east.

Photo No. 12 – Cover drain outlet located in the borrow area.

Presque Isle Power Plant Ash Landfill No. 3
CCR Inspection – Photo Log

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Photo No. 13 – Leachate cleanout on the west side of Landfill No. 3.

Photo No. 14 – South and east slopes of Landfill No. 3A, looking northwest.

Presque Isle Power Plant Ash Landfill No. 3
CCR Inspection – Photo Log

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Photo No. 15 – Landfill No. 3, looking east.

Photo No. 16 – Landfill No. 3, looking west.

Presque Isle Power Plant Ash Landfill No. 3
CCR Inspection – Photo Log

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Photo No. 17 – Landfill No. 3, looking northwest.