

Consulting December 19, 2020 Engineers and Scientists GEI Project No. 1610530

> Mr. Bob Meidl WEC Energy Group – Business Services 333 West Everett Street, A231 Milwaukee, Wisconsin 53203

#### Re: Caledonia Ash Landfill Inspection Report We Energies Town of Caledonia, Racine County Wisconsin

Dear Mr. Meidl:

GEI Consultants, Inc. (GEI) is pleased to provide this landfill inspection report for the We Energies Caledonia Ash Landfill. The inspection was completed to comply with 40 CFR 257 Subpart D – Standards for the Disposal of Coal Combustion Residuals (CCR) 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 generally 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.

#### Background

The We Energies Caledonia Ash Landfill is located in the North 1/2 of Section 1, Township 4 North, Range 22 East, Village of Caledonia, Racine County, Wisconsin. The landfill is permitted by the Wisconsin Department of Natural Resources (WDNR) under License Number 03232. Figure 1 - Site Location Figure, shows the location of the landfill relative to the Oak Creek Power Plant and Elm Road Generating Station. The landfill was permitted by the WDNR on August 27, 1987, with the issuance of a Conditional Plan of Operation Approval. The facility is licensed and approved as a 45-acre, 4,050,000 cubic yard (cy) landfill. The landfill was divided into 18 sequential cells, 10 cells at base grade and 8 cells overlying the base grade cells. However, based upon the May 19, 2010 Plan of Operation Modification Approval, the landfill development plan has been revised to eliminate the overlying cells. Base grade cells 1, 2, 3, 4, 6, 8, and 10 have been constructed. Cells 12, 14, and 16 are permitted but have not been constructed. Cells 1 has been closed and the perimeter slopes of Cell 2 have been closed.

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 19, 2020. Copies of the site location figure and landfill inspection photo log are appended to this letter-report and constitute the entirety of the report.

#### **Site Inspection**

The landfill site inspection was performed by Mr. John Trast, P.E. on November 19, 2020. The annual site inspection included an inspection of the perimeter berms, waste surfaces and slopes, final covers, interior and exterior storm water controls, the leachate collection lift station, the leachate storage and load-out controls, the leachate load-out pad, the site access road and the cell entrance.

There were no signs or evidence of any distress or malfunction of the CCR unit, or any conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit. The perimeter berms and waste slopes did not show any evidence of structural weakness or instability. The leachate lift station and load-out facilities were operational. However, Great Lakes TV Seal was on-site and performing the annual leachate line jetting and cleaning at the time of the inspection. Leachate hauling from the storage tanks continued during the cleaning event. The interior and exterior storm water controls were free of obstruction and provided plenty of capacity for storm water storage and conveyance. The access road, load-out pad and cell entrance were clean and free of obstructions. At the time of the inspection, Edgerton was screening and stockpiling bottom ash for beneficial use. The fugitive dust control plan is effective as there was no evidence of fugitive dust around the perimeter of the landfill and no observed dust from the screening and stockpiling operation.

At the time of the inspection there is approximately 1,650,000 cubic yards of CCR disposed of in the Caledonia Ash Landfill.

#### Conclusion

On November 19, 2020, a GEI licensed professional engineer completed an annual inspection of the Caledonia Ash Landfill in compliance with § 257.84(b) Annual inspections by a qualified professional engineer. The landfill appeared to be in excellent condition. On the exterior slopes the vegetation is well established with no significant erosion, no woody vegetation, no animal burrows, and no areas of instability or structural weakness. On the interior of the landfill the ash is graded and compacted with no significant erosion rills observed. Contact stormwater is routed,

as designed the infiltration area and there was no water observed or ponded within the disposal area. The beneficial use stockpiles and processing area is neat an orderly, graded to drain, and no visible dust was observed during the inspection of the landfill or evidence of fugitive dust outside the limits of the landfill.

The inspection was completed by John, M. Trast, P.E. I am a licensed professional engineer in the State of Wisconsin in accordance with the requirements of Chapter A-E 4, Wisconsin Administrative Code; that this document has been prepared in accordance with the Rules of Professional Conduct in Chapter A-E 8, Wisconsin Administrative Code; 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 in Chapters NR 500 to 538, Wisconsin Administrative Code and 40 CFR 257.

If you have any questions regarding this report, please contact me at 920-455-8299.

Sincerely,

GEI CONSULTANTS, INC. John M. Trast, P.E.

Vice President

Attachments: Figure 1 - Site Location Figure Caledonia Inspection Form Landfill Inspection Photo Log



JXT:xxx

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#### **CALEDONIA LANDFILL - ANNUAL INSPECTION & CONDITION SUMMARY**

#### INSPECTOR: John M. Trast, P.E. INSPECTION DATE/TIME: 11/19/20 2:00 PM

LANDFILL OPERATIONS:								
Note:	e: Check mark indicates that the stormwater controls are adequate.							
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Comments :	Contact water observed in infiltration area along east perimeter ditch, Edgerton actively spraying water for dust control inside LF.							
Culverts (Inlets & Outlets) :	Appear stable & no significant erosion: Yes							
Diversion Berms, Ditches & Check Dams @ Clay Stockpile :	Stability/Erosion of Covers & Waste Slopes:							
Silt Fence @ Soil Stockpiles :	$\checkmark$							
Ditch Check Dams :								
Landfill Perimeter Ditches:								
STORMWATER / EROSION CO	NTROLS / SLOPE	STABILITY						
Note: Free of debris/floatables.								
Comments :	Pump discharging on auto.							
Culvert inlet clear :	Yes	Yes make sure pump is discharging into ditch or						
Vetland level below culvert inlet :	Yes		Note: If wetland level is above culvert inlet					
Pump station operational :	Yes		Pump Discharge:	Yes				
WETLAND CONTROL			eyetein, and pun					
Note:	Great Lakes TV	on site actively per leachate collection	torming leachate l	ine jetting, annual ns.				
Visual inspection of all leac	hate manhole inv	erts performed on	Thursday, Novem	ber 19, 2020				
Pad Condition:	G	Good forcemain from MH#4 to tank.						
Pump:	Green	Green	Great Lakes TV jetting the leachate					
Levels:	Full	Empty	Inlet Pipes:	Submerged				
Leak alarms	No	No	Control Panel:	Green				
l ow level alarms.	No	No	Pump #2: Red					
Load-out Facility:	South Tank	North Tank	LIII Station: Dump #1:	Red				
LEACHATE COLLECTION SYS	South Tonk	North Tonk	Lift Station					
Precipitation:	None							
Wind Direction:	W							
Wind:	Strong							
Conditions:	Sunny							
Temperature:	52° F							
WEATHER:								

EANDTIEL OF ERATIONO.							
Fugitive Dust Control:	In-Cell Stormwater Management						
Tracking Pads :	$\checkmark$	Upper Ditch :	$\checkmark$				
Cattle Guards :	$\checkmark$	Lower Ditch :	$\checkmark$				
Wheel Wash :	$\checkmark$	Down Flume :	$\checkmark$				
Access Road Clean:	$\checkmark$	Culverts :	$\checkmark$				
Landfill Surfaces Groomed:	$\checkmark$	Reservoirs :	$\checkmark$				
Airbourne Dust Visible:	No	Sediment :		Good			
Sign of Recent Dust Deposition:	No	Standing Water :		No	Only in infiltration area.		
Comments:	Actively scre stormwater	eening bottom ash in cell #1 collection area. Great Lake	10, re es TV	claiming a	ash material from east ditch n site		

Note: Check mark indicates that the features are acceptable.





Photo No. 1: North perimeter limit of Cell 10 looking east on 11/19/2020



Photo No. 2: North perimeter limit of Cell 10 looking west on 11/19/2020

Date: 11/19/2020 Project No.: 1610530 Client: We Energies





Photo No. 3: Contact water collection area along east end of Cell 10 looking south. 11/19/2020



Photo No. 4: East perimeter berm looking south 11/19/2020





Photo No. 5: Contact water collection area along east slope 11/19/2020



Photo No. 6: Photo No. 4: East perimeter berm looking south 11/19/2020





Photo No. 7: North interor slope of Cell 10 looking west on 11/19/2020



Photo No. 8: Screened ash stockpiling operation in Cell 10 for beneficial use 11/19/2020





Photo No. 9: Ash screening operation in Cell 10 11/19/2020



Photo No. 10: West interior slope looking south 11/19/2020





Photo No. 11: West perimeter slope and stormwater ditch looking south 11/19/2020



Photo No. 12: West perimeter slope looking north 11/19/2020





Photo No. 13: South slope of the Caledonia Landfill looking northeast 11/19/2020



Photo No. 14: East slope of the Caledonia Landfill looking north-northeast 11/19/2020