



REPORT

D.E. Karn Generating Facility
Bottom Ash Impoundment
2025 Inspection Report
Essexville, Michigan

Pursuant to 40 CFR 257.83

Submitted to:

Consumers Energy Company

1945 W. Parnall Road
Jackson, Michigan 49201

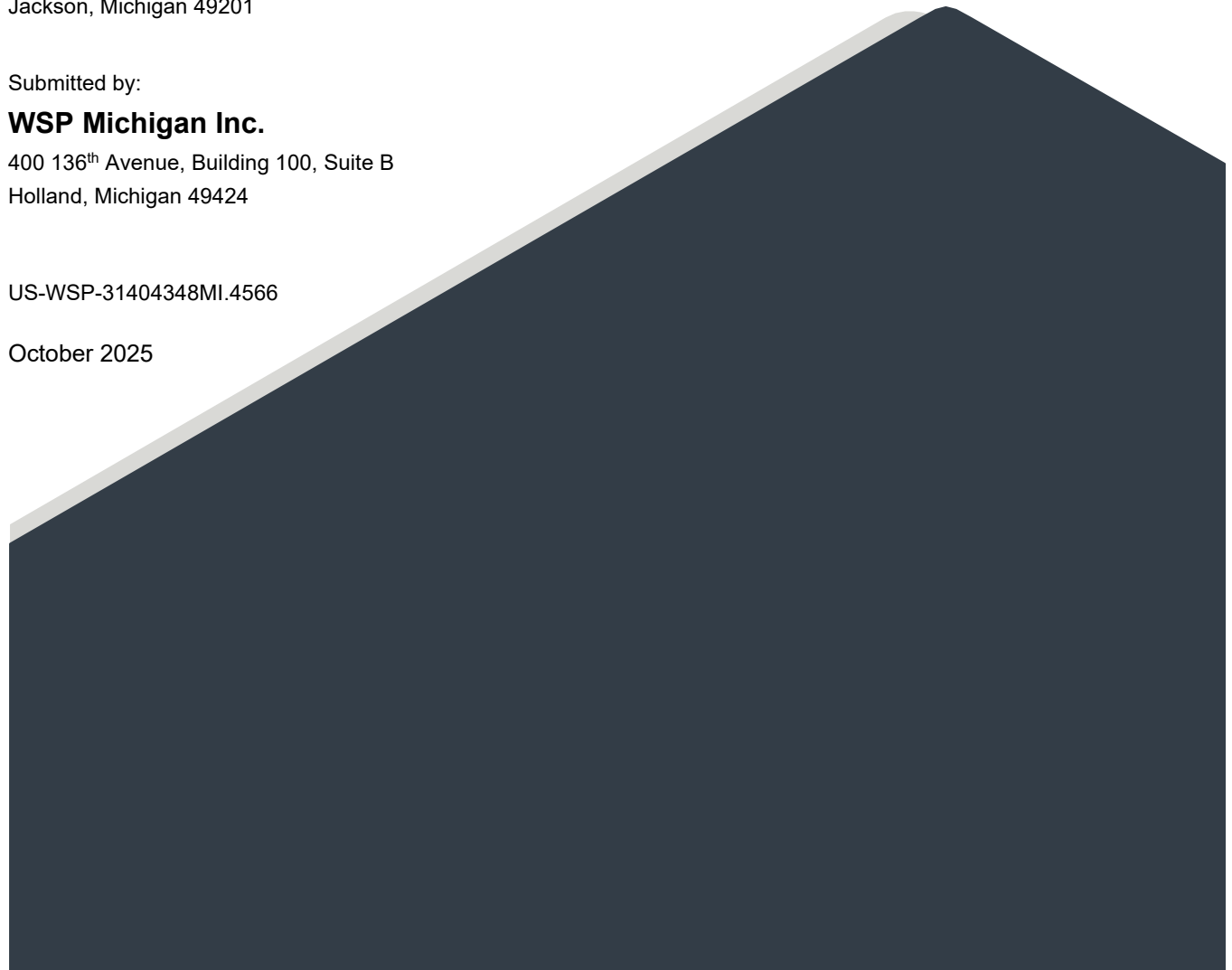
Submitted by:

WSP Michigan Inc.

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Holland, Michigan 49424

US-WSP-31404348MI.4566

October 2025



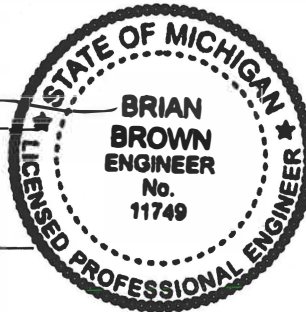
Certification

Professional Engineer Certification Statement [40 CFR 257.83]

I hereby certify that, having reviewed the attached documentation and being familiar with the provisions of Title 40 of the Code of Federal Regulations Section 257.83 (40 CFR Part 257.83), I attest that this Annual Inspection Report is accurate and has been prepared in accordance with good engineering practices, including the consideration of applicable industry standards, and with the requirements of 40 CFR Part 257.83.

WSP Michigan Inc.

Signature



October 6, 2025

Date of Report Certification

Brian A. Brown, PE

Name

6201311749

Professional Engineer Certification Number

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1.0 INTRODUCTION

On April 17, 2015, the United States Environmental Protection Agency (EPA) issued the Coal Combustion Residual (CCR) Resource Conservation and Recovery Act (RCRA) Rule (40 CFR 257 Subpart D) (“CCR RCRA Rule”). The CCR RCRA Rule requires owners or operators of existing CCR surface impoundments to have those units inspected on an annual basis by a qualified professional engineer (QPE) in accordance with 40 CFR 257.83(b). The annual qualified professional engineer inspections are required to be completed and the results documented in inspection reports (per 40 CFR 257.83(b)(2) for Existing CCR Surface Impoundments. These inspections are focused primarily on the structural stability of the unit and must ensure that the operation and maintenance of the unit is in accordance with recognized and generally accepted good engineering standards. Each inspection must be conducted and certified by a QPE.

WSP Michigan Inc. (WSP) was retained by Consumers Energy Company (CEC) to perform the annual inspection of the lined Bottom Ash Impoundment at the D.E. Karn Generating Facility (D.E. Karn, Site) to document, to the extent reasonable based on the information provided by CEC and the limits of the visual inspection, that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The Site has ceased generating electricity and is being decommissioned.

The inspection included the following:

- Review of applicable information regarding the status and condition of the CCR unit
- A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures
- A visual inspection of hydraulic structures passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation

2.0 BACKGROUND AND DOCUMENT REVIEW SUMMARY

An elevated trestle and pipe system hydraulically conveyed bottom ash to the impoundment system through two 10-inch diameter Nuvaloy pipes each connected to 15-feet of flexible rubber hose at the inlet. Stored bottom ash was removed via mechanical equipment from the pond as required to maintain storage capacity. Water was discharged from the settling basin section of the impoundment through an 18-inch diameter SDR 11 HDPE pipe located on the east side into the polishing basin section of the impoundment. The water was then discharged from the polishing basin section through a 24-inch DR 17 HDPE pipe located near the southeast corner into an internal ditch that conveys the flow to the Site’s permitted National Pollutant Discharge Elimination System (NPDES) outfall.

The Lined Bottom Ash Impoundment was removed in August through September 2024 and was closed in September 2024. The applicable available information reviewed for this assessment is summarized in Table 1 below.

Table 1: Summary of Background Document Review

Document	Date	Author
Weekly inspections performed by CEC	August 2024 – September 2024 (date of closure)	Bottom Ash Pond Qualified Personnel
D.E. Karn Generating Facility Karn Lined Impoundment Decommissioning Report	October 2024	WSP USA Inc.
D.E. Karn Generating Facility Bottom Ash Impoundment 2024 Annual Surface Impoundment Inspection Report	October 2024	WSP USA Inc.
D.E. Karn Generating Facility Bottom Ash Impoundment 2023 Annual Surface Impoundment Inspection Report	October 2023	WSP USA Inc.
D.E. Karn Generating Facility Karn Lined Impoundment Closure Work Plan	June 2023	WSP USA Inc.
D.E. Karn Generating Facility Bottom Ash Impoundment 2022 Annual Surface Impoundment Inspection Report	October 2022	Golder Associates USA Inc.
D.E. Karn Generating Facility Bottom Ash Impoundment 2021 Annual Surface Impoundment Inspection Report	October 2021	Golder Associates Inc.
D.E. Karn Generating Facility Bottom Ash Impoundment 2020 Annual Surface Impoundment Inspection Report	October 2020	Golder Associates Inc.
D.E. Karn Generating Facility Bottom Ash Impoundment 2019 Annual Surface Impoundment Inspection Report	October 2019	Golder Associates Inc.
D.E. Karn Generating Facility Bottom Ash Impoundment 2018 Annual Surface Impoundment Inspection Report	October 2018	Golder Associates Inc.
D.E. Karn Generating Facility Karn Lined Impoundment Closure Plan	June 2018	Golder Associates Inc.
D.E. Karn Generating Plant Bottom Ash Surface Impoundment Approved For Construction Drawings Revision D	February 2018	Golder Associates Inc.
D.E. Karn Generating Facility Bottom Ash Pond Closure Plan	January 2018	Golder Associates Inc.

3.0 2025 VISUAL INSPECTION

The 2025 onsite visual inspection of the Bottom Ash Impoundment was performed by WSP on May 19, 2025. The site inspection was performed by Brian Brown, PE, John Puls, PE, and Stephen Thumma, PE from WSP. WSP was accompanied by two CEC representatives, as follows:

- Mr. George McKenzie, PE - CEC System Engineering Department
- Mr. Joseph Firlit, PMP - CEC Manager Engineering Support

The inspection checklist form (see Appendix A) provides both observations and recommendations resulting from the visual inspection and the following information as stipulated in 40 CFR 257.83(b):

- Any changes in geometry of the impounding structure since the previous annual inspection.
 - Impoundment was closed by removal in September 2024.
- Approximate minimum, maximum, and present depth and elevation of the impounded water and Coal Combustion Residuals (CCR) since the previous annual inspection.
 - Not Present – The impoundment was closed by removal in September 2024.
- Any instrumentation in place designed to monitor the structural stability of the Bottom Ash Pond.
 - There is currently no instrumentation in place designed to monitor for the structural stability of the Closed Bottom Ash Impoundment at D.E. Karn.
- Storage capacity of the impounding structure at the time of inspection.
 - The Bottom Ash Impoundment was closed in September 2024 and had no storage capacity at the time of inspection.
- Approximate volume of the impounded water and CCR at the time of inspection.
 - The Bottom Ash Impoundment was closed in September 2024 and had no impounded water or CCR at the time of inspection.
- Appearances of 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 appurtenant structures.
 - Not applicable - The Bottom Ash Impoundment was closed by removal in September 2024.
- Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.
 - Not applicable - The Bottom Ash Impoundment was closed by removal in September 2024.

The checklist categorizes observed conditions of the impoundment or appurtenant structures as either acceptable, monitor/maintain, investigate, or repair, which are defined as follows:

- Acceptable: The condition was visually documented to be acceptable, requiring no action beyond periodic inspection in accordance with the SMP and typical maintenance.

- **Monitor/Maintain:** The condition was visually identified to exhibit the potential for or show existing degeneration that should either be monitored or maintained as detailed in the checklist.
 - Items identified in this category are not considered a deficiency or release as classified under 40 CFR 257.83(b)(5) requiring immediate action by CEC.
- **Investigate:** The limitations of the visual inspection did not allow for an opinion to be made on the condition of the item observed, and WSP recommends additional investigation to categorize the item.
- **Repair:** WSP recommends that items identified with a repair designation exhibited conditions that should initiate measures be taken to rectify the area of concern.
- No items identified for repair were considered a deficiency or release as classified under 40 CFR 257.83(b)(5) requiring immediate action by CEC.

Based on a review of previous inspection reports listed in Table 1 compared to conditions noted during the inspection, the following changes were observed:

- Closure activities of the Bottom Ash Impoundment were completed in September 2024.

4.0 LIMITATIONS OF ASSESSMENT

WSP has conducted the site inspection and prepared this report for the Bottom Ash Impoundment at D.E. Karn. The factual data, assessment, interpretations, and recommendations provided herein are based on the results of field observations from site inspections performed by WSP and review of previous site inspection reports provided to WSP by CEC and pertain to the specific project as described in this report and are not applicable to any other project or site location.

WSP has prepared this report in a manner consistent with the level of care and skill ordinarily exercised by members of the engineering and science professions currently practicing under similar conditions and has characterized the site conditions within the limitations of the scope of services as defined by CEC and subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied, is made. Any change of site conditions, purpose, development plans, or operation may alter the validity of this report. WSP cannot be responsible for use of this report, or portions thereof, unless WSP is requested to review and, if necessary, revise the report.

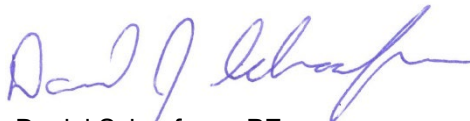
5.0 CLOSING

This report has been prepared in general accordance with normally accepted civil engineering practices to fulfill the Resource Conservation and Recovery Act (RCRA) reporting requirements in accordance with 40 CFR 257.83(b)(2). WSP has reviewed the available information on the Bottom Ash Impoundment at D.E. Karn and performed an onsite visual inspection. WSP's assessment is limited to the information provided by CEC and to the features that could be inspected visually in a safe manner. WSP cannot attest to the condition of subsurface or submerged structures.

WSP Michigan Inc.



Brian Brown, PE
Senior Consultant



Daniel Schaafsma, PE
Vice President

APPENDIX A

Visual Inspection Checklist

CCR SURFACE IMPOUNDMENT VISUAL INSPECTION CHECKLIST

Facility Name: D.E. Karn Bottom Ash Impoundment

Owner: Consumers Energy Company (CEC)

Purpose of Facility: Detention and settlement of sluiced bottom ash.

County, State: Bay County, Michigan

Inspected By: Brian Brown, John Puls, Stephen Thumma

Inspection Date: May 19, 2025

Weather: 54-degrees F, partly cloudy

ITEM					REMARKS
	Acceptable	Monitor/Maintain	Investigate	Repair	
1. General Conditions					Closed by removal September 2024
a. Year Minimum Water Elevation		NA			592 ft-amsl (during closure)
b. Year Average Water Elevation		NA			592 ft-amsl (during closure)
c. Year Maximum Water Elevation		NA			592 ft-amsl (during closure)
d. Current water level		NA			Not Applicable – Closed September 2024
e. Current storage capacity		NA			Not Applicable – Closed September 2024
f. Current volume of impounded water and CCR		NA			Not Applicable – Closed September 2024
g. Alterations		NA			Closed September 2024
h. Development of downstream plain	X				None observed.
i. Grass cover	X				Acceptable – New grass growth since closure in September 2024.
j. Settlement/misalignment/cracks	X				None observed.
k. Sudden drops in water level?	X				None observed.
2. Inflow Structure					
a. Settlement		NA			Inflow Structure removed during closure
b. Cracking		NA			Inflow Structure removed during closure

ITEM					REMARKS
	Acceptable	Monitor/Maintain	Investigate	Repair	
c. Corrosion			NA		Inflow Structure removed during closure
d. Obstacles in inlet			NA		Inflow Structure removed during closure
e. Riprap/erosion control			NA		Inflow Structure removed during closure
3. Outflow Structure					
a. Settlement			NA		Outflow Structure removed during closure
b. Cracking			NA		Outflow Structure removed during closure
c. Corrosion			NA		Outflow Structure removed during closure.
d. Obstacles in outlet			NA		Outflow Structure removed during closure
e. Riprap/erosion control			NA		Outflow Structure removed during closure
f. Seepage			NA		Outflow Structure removed during closure
4. Upstream slope					
a. Erosion		X			Minor erosion of stone from the crest road, see note 1.
b. Rodent burrows	X				None observed.
c. Vegetation	X				Acceptable.
d. Cracks/settlement	X				None observed.
e. Riprap/other erosion protection	X				None observed.
f. Slide, Slough, Scarp	X				None observed.
5. Crest					
a. Soil condition		X			Minor erosion of stone from the crest road, see note 1.
b. Comparable to width from previous inspection	X				
c. Vegetation	X				Acceptable.
d. Rodent burrows	X				None observed.
e. Exposed to heavy traffic	X				None observed.

ITEM					REMARKS
	Acceptable	Monitor/Maintain	Investigate	Repair	
f. Damage from vehicles/machinery	X				
6. Downstream slope					
a. Erosion	X				None observed.
b. Vegetation	X				
c. Rodent burrows	X				None observed.
d. Slide, Slough, Scarp	X				None observed.
e. Drain conditions	X				
f. Seepage	X				None observed.
7. Toe					
a. Vegetation	X				
b. Rodent burrows	X				None observed.
c. Settlement	X				None observed.
d. Drainage conditions	X				
e. Seepage	X				None observed.

General Remarks:

- 1) Features observed and documented in this checklist were not considered a deficiency or release as classified under 40 CFR 257.84(b)(5) and required no immediate action beyond periodic inspection in accordance with the SMP and typical maintenance.

