



**REPORT**

**J.C. Weadock Generating Facility  
Bottom Ash Pond  
2020 Annual Surface Impoundment Inspection Report**  
*Essexville, Michigan Pursuant to 40 CFR 257.83*

Submitted to:

**Consumers Energy Company**

1945 W. Parnall Road  
Jackson, Michigan, USA 49201

Submitted by:

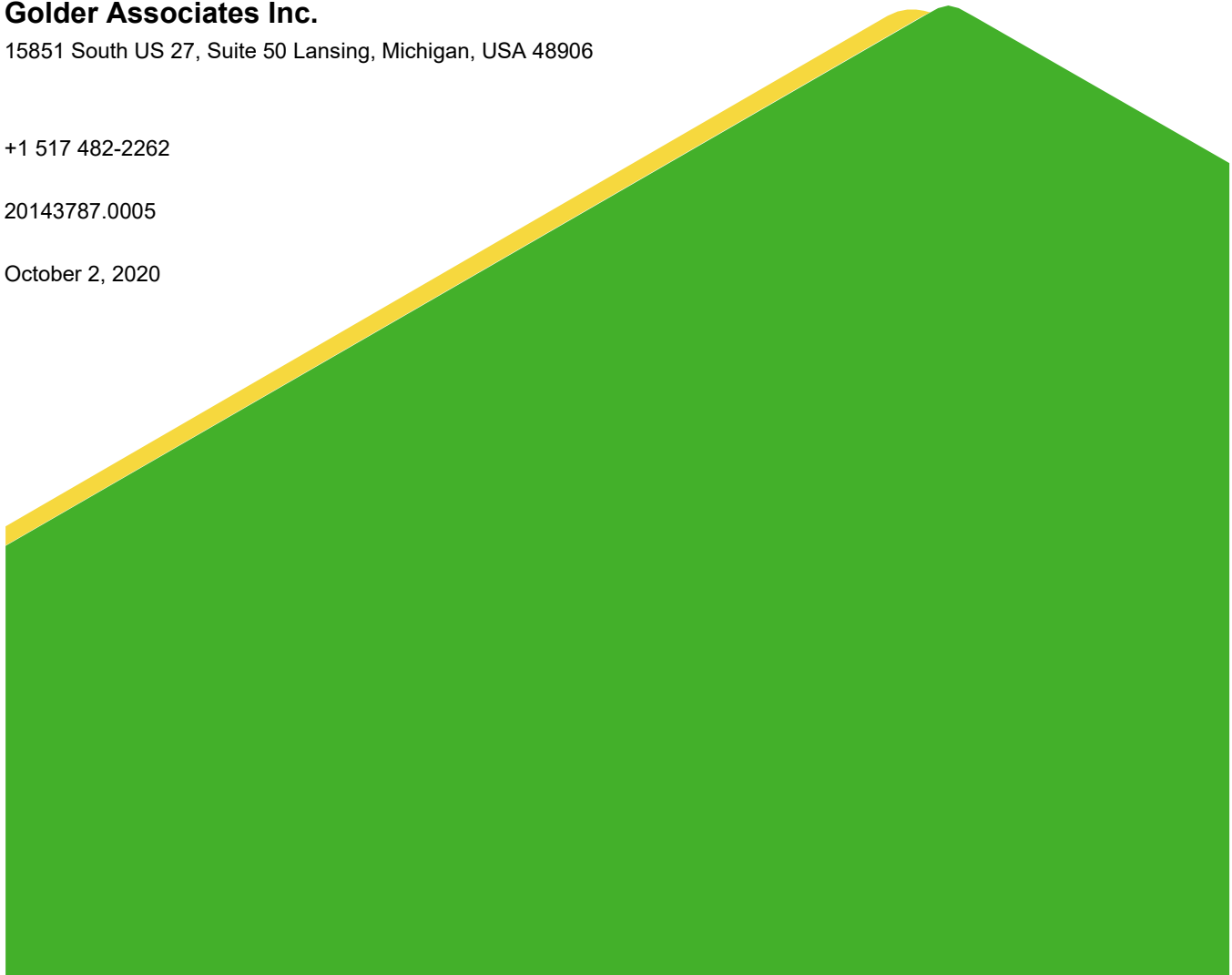
**Golder Associates Inc.**

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October 2, 2020



# Certifications

## 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.

Golder Associates Inc.

October 2, 2020

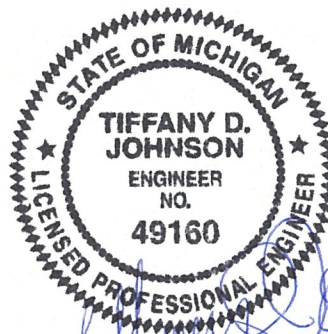
Date of Report Certification

Tiffany Johnson, P.E.

Name

6201049160

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.

Golder Associates Inc. (Golder) was retained by Consumers Energy Company (CEC) to perform the annual inspection of the Bottom Ash Pond at the J.C. Weadock Generating Facility (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 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 underlying the base of the CCR unit or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation

## 2.0 BACKGROUND AND DOCUMENT REVIEW SUMMARY

J.C. Weadock is located in Essexville, Michigan and is bounded by the Saginaw River to the west and Saginaw Bay to the north. During operation, bottom ash was sluiced from the J.C. Weadock electrical generating Units 7&8 from an elevated trestle and pipe system to the Bottom Ash Pond. Stored bottom ash has historically been removed via mechanical equipment from the ponds as required to maintain storage capacity on a quarterly basis. Water is discharged from the ponds into an internal ditch that conveys the flow to the Site’s permitted National Pollutant Discharge Elimination System (NPDES) outfall. J.C. Weadock Generating Facility is currently being decommissioned and the Bottom Ash Pond was under closure by removal of CCR construction during the 2020 inspection.

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 Consumers Energy Company (CEC)	January 2019 – May 2020	Bottom Ash Pond Qualified Personnel
J.C. Weadock Bottom Ash Pond 2019 RCRA CCR Surface Impoundment Inspection Report	October 2019	Golder Associates Inc.
J.C. Weadock Bottom Ash Pond 2018 RCRA CCR Surface Impoundment Inspection Report	October 2018	Golder Associates Inc.
J.C. Weadock Bottom Ash Pond 2017 RCRA CCR Surface Impoundment Inspection Report	October 2017	Golder Associates Inc.
J.C. Weadock Generating Facility Bottom Ash Pond Structural Stability and Safety Factor Assessment Report (includes inspection information)	October 2016	Golder Associates Inc.
J.C. Weadock Bottom Ash Pond 2015 Initial Annual RCRA CCR Inspection Report	January 2016	Golder Associates Inc.
Coal Combustion Waste Impoundment Round 7 - Dam Assessment Report, JC Weadock Fly Ash Dike	April 2011	Dewberry & Davis, LLC, Fairfax, Virginia
J.C. Weadock Revised Closure Plan	December 2011	AECOM Technical Services, Inc.
Surveillance Monitoring Programs (SMPs)	December 2010, Revised 2015	CEC
Inspection Report J.C. Weadock Generating Facility Ash Dike Risk Assessment	November 2009	AECOM Technical Services, Inc.

### 3.0 2020 VISUAL INSPECTION

The 2020 onsite visual inspection of the Bottom Ash Pond was performed by Golder Associates Inc. (Golder) on May 19, 2020. Golder's inspectors, Tiffany Johnson, P.E. and Halle Doering, EIT, were accompanied by Consumers Energy Company (CEC) representative, Mr. George McKenzie, P.E., CEC Systems Engineering Department.

The inspection checklist form (see Appendix A) provides both observations and recommendations as a result of 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.
  - No changes were observed since the previous inspection.

- Approximate minimum, maximum, and present depth and elevation of the impounded water and Coal Combustion Residuals (CCR) since the previous annual inspection.
  - Approximate minimum: Water has been drained; pond is in active closure by removal construction.
  - Approximate average: Water has been drained; pond is in active closure by removal construction.
  - Approximate maximum: Water has been drained; pond is in active closure by removal construction.
  - Current water level: The bottom ash pond was dry at the time of the inspection and CCR was being removed for closure.
- 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 Bottom Ash Pond at J.C. Weadock. At the time of the inspection and report, there are no plans for installation of stability monitoring instrumentation due to the closure by CCR removal of the Bottom Ash Pond.
- Storage capacity of the impounding structure at the time of inspection.
  - The storage capacity in Areas 1 and 2 is 61,800 cubic yards (Golder, 2016).
- Approximate volume of the impounded water and CCR at the time of inspection.
  - Water has been drained; pond is dry and is in active closure by removal construction.
- 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.
  - None were observed, closure by CCR removal construction was occurring during the time of the inspection.
- Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.
  - None were observed, closure by CCR removal construction was occurring during the time of the inspection.

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 Golder recommends additional investigation to categorize the item.
- Repair: Golder 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 review of previous inspection reports listed in Table 1, as compared to conditions noted during the inspection, the following changes were observed:

- Elimination of low volume miscellaneous wastewater discharge into the bottom ash pond;
- Areas of minor erosion and rodent burrows were observed; and
- The Bottom Ash Pond is undergoing active closure by removal construction.

## 4.0 LIMITATIONS OF ASSESSMENT

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

Golder has prepared this report in a manner consistent with that 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. Golder cannot be responsible for use of this report, or portions thereof, unless Golder 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 RCRA reporting requirements in accordance with 40 CFR 257.83(b)(2). Golder has reviewed the available information on the Bottom Ash Pond at J.C. Weadock and performed an onsite visual inspection. Golder's assessment is limited to the information provided by CEC and to the features that could be inspected visually in a safe manner. Golder cannot attest to the condition of subsurface or submerged structures.

## Signature Page

### Golder Associates Inc.

A handwritten signature in black ink that reads "Halle Doering". The signature is fluid and cursive, with the first name being more prominent.

Halle Doering  
*Project Engineer*

A handwritten signature in blue ink that reads "Tiffany Johnson". The signature is cursive and clearly legible.

Tiffany Johnson, P.E.  
*Principal*

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**APPENDIX A - INSPECTION CHECKLIST FORM**

# CCR SURFACE IMPOUNDMENT VISUAL INSPECTION CHECKLIST

**Facility Name:** J.C. Weadock Bottom Ash Pond

**Owner:** Consumers Energy Company (CEC)

**Purpose of Facility:** Detention and settlement of sluiced bottom ash. Pond is in active closure by removal.

**County, State:** Bay County, Michigan

**Inspected By:** Halle Doering and Tiffany Johnson

**Inspection Date:** May 19, 2020

**Weather:** 60-degrees F and overcast

ITEM	Acceptable	Monitor/Maintain	Investigate	Repair	REMARKS
1. General Conditions					
a. Year Minimum Water Elevation		NA			Water has been drained; pond is in active closure by removal construction.
b. Year Average Water Elevation		NA			Water has been drained; pond is in active closure by removal construction.
c. Year Maximum Water Elevation		NA			Water has been drained; pond is in active closure by removal construction.
d. Current water level		NA			Water has been drained; pond is in active closure by removal construction.
e. Current storage capacity		NA			Water has been drained; pond is in active closure by removal construction.
f. Current volume of impounded water and CCR		NA			Water has been drained; pond is in active closure by removal construction.
g. Alterations		NA			Water has been drained; pond is in active closure by removal construction.
h. Development of downstream plain		NA			Water has been drained; pond is in active closure by removal construction.
i. Grass cover		NA			Water has been drained; pond is in active closure by removal construction.

ITEM					REMARKS
	Acceptable	Monitor/Maintain	Investigate	Repair	
j. Settlement/misalignment/cracks	NA				Water has been drained; pond is in active closure by removal construction.
k. Sudden drops in water level?	NA				Water has been drained; pond is in active closure by removal construction.
2. Inflow Structure					
a. Settlement	NA				Inlet structure has been removed.
b. Cracking					
c. Corrosion					
d. Obstacles in inlet					
e. Riprap/erosion control					
3. Outflow Structure					
a. Settlement	NA				Outlet structure has been removed.
b. Cracking					
c. Corrosion					
d. Obstacles in outlet					
e. Riprap/erosion control					
f. Seepage					
4. Upstream slope					
a. Erosion	NA				Undergoing closure by removal.
b. Rodent burrows					
c. Vegetation					
d. Cracks/settlement					
e. Riprap/other erosion protection					
f. Slide, Slough, Scarp					
5. Crest					
a. Soil condition	X				Road gravel, actively used by construction equipment.
b. Comparable to width from previous inspection	X				
c. Vegetation	X				NA
d. Rodent burrows	X				None observed.
e. Exposed to heavy traffic	X				Yes, no damage observed.
f. Damage from vehicles/machinery	X				None observed.
6. Downstream slope					
a. Erosion		X			Erosion observed and north and south slopes, see note 1.
b. Vegetation		X			Tall vegetation observed, see note 1.
c. Rodent burrows		X			Burrows observed on the north slopes, see note 1.
d. Slide, Slough, Scarp	X				None observed.

ITEM	Acceptable	Monitor/Maintain	Investigate	Repair	REMARKS
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.

**Notes:**

- 1) Features observed and documented in this checklist were not considered a deficiency or release as classified under 40 CFR 257.83(b)(5) and required no immediate action beyond periodic inspection in accordance with the SMP and typical maintenance.



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