



**REPORT**

# FORMER J.B. SIMS GENERATING STATION

*2021 Annual Surface Impoundment Inspection per 40 CFR Part 257.83*

Submitted to:

**Grand Haven Board of Light and Power**

Former J.B. Sims Generating Station  
1231 North 3rd Street  
Grand Haven, Michigan 49417

Submitted by:

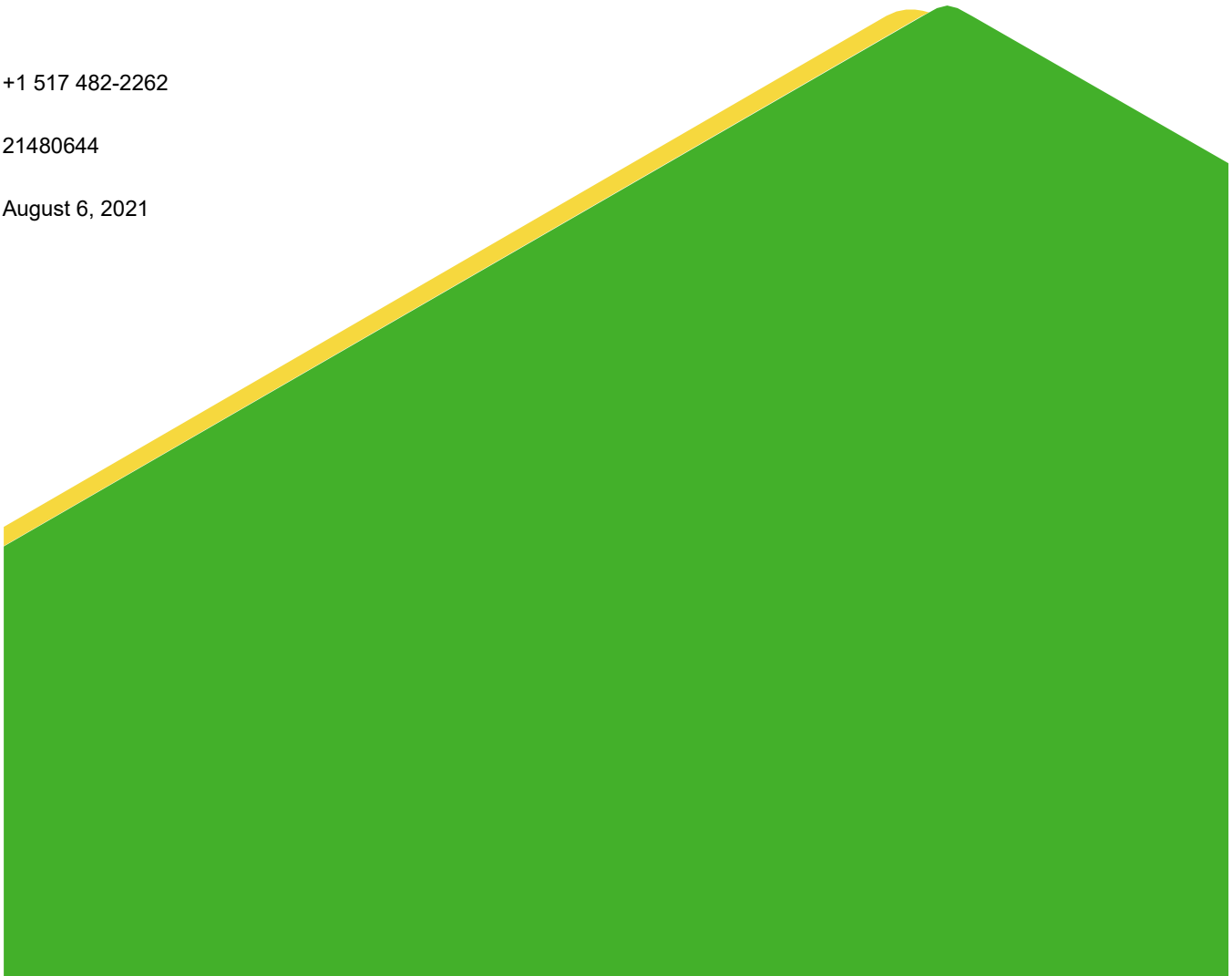
**Golder Associates Inc.**

15851 South US 27, Suite 50 Lansing, Michigan, USA 48906

+1 517 482-2262

21480644

August 6, 2021



# 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.

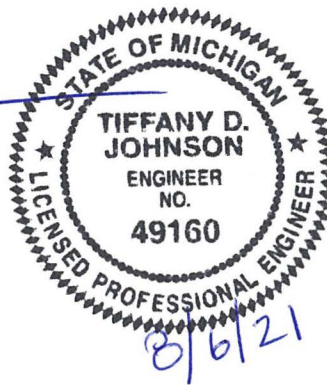
Golder Associates Inc.

  
\_\_\_\_\_  
Signature

August 6, 2021  
\_\_\_\_\_  
Date of Report Certification

Tiffany D. Johnson, P.E.  
\_\_\_\_\_  
Name

6201049160  
\_\_\_\_\_  
Michigan P.E. #



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## 1.0 INTRODUCTION

The United States Environmental Protection Agency (EPA) promulgated the Resource Conservation and Recovery Act (RCRA) Coal Combustion Residuals (CCR) Rule (Rule) on April 17, 2015, with an effective date of October 19, 2015. The Rule requires owners or operators of existing CCR surface impoundments to have those units inspected on an annual basis by a qualified professional engineer in accordance with 40 CFR 257.83(b)(1). 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 CCR surface impoundments.

Golder Associates Inc. (Golder) was retained by Grand Haven Board of Light and Power (GHBLP), Former J.B. Sims Generating Station (JBSGS) to perform the annual inspection of the removed but not closed Unit 3 East and West Bottom Ash Impoundments (Unit 3 Impoundments), the CCR surface impoundments located at the JBSGS (Site). The Unit 3 Impoundments have undergone closure by removal, but the closure has not yet been approved by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), therefore the annual inspection is still required. Portions of the original clay liner remain, but the area has had all CCR removed and can no longer hold anything but rain water.

It should be noted that the inactive CCR unit also present at the JBSGS, the inactive Units 1 and 2 Ash Impoundment, is not subject to 40 CFR 257.83 because the pond is incised.

The CCR Rule establishes national minimum criteria and new CCR management obligations for existing, new, and lateral expansions of CCR disposal units. One of the new obligations pertains to inspections, specifically; CCR unit owners/operators must initiate the following activities:

- weekly inspections and monthly instrument monitoring of CCR Units by October 19, 2015; and
- annual inspections of CCR units starting January 18, 2016.

This report presents the results of the 2021 annual inspection of the removed Unit 3 Impoundments CCR surface impoundment units at the JBSGS, located at 1231 North 3<sup>rd</sup> Street, on Harbor Island, Grand Haven, Michigan. The inspection was conducted to comply with 40 CFR 257.83 of the CCR Rule.

Per 40 CFR 257.83(b)(1), Golder reviewed available information regarding the status and condition of the CCR units and performed an onsite visual inspection on July 22, 2021. The inspection objectives included the following:

- Review of Operational Records (as applicable, see Section 3):
  - Design, construction, and closure information.
  - Results of previous structural stability assessments.
  - Results of previous annual inspections.
- A visual inspection to identify signs of distress or malfunction in the CCR units and appurtenant structures.
- A visual inspection of the hydraulic structures underlying the CCR units, or passing through the dike of the CCR units, for structural integrity and continued safe and reliable operation. All hydraulic structures have been removed from the Unit 3 Impoundments as of November 2020.

In accordance with §257.83(b)(2), this inspection report has been prepared by a qualified professional engineer documenting the operational records review, visual inspection, and identifying the following since the previous annual inspection:

- Any changes in geometry of the CCR surface impoundment since the previous annual inspection.
- The location and type of existing instrumentation and the maximum recorded readings for each instrument since the previous annual inspection.
- The approximate minimum, maximum, and present depth, and elevation of the impounded water and CCR since the previous annual inspection.
- The storage capacity of the impounding structure at the time of inspection.
- The approximate volume of the impounded water and CCR at the time of inspection.
- Any appearances of an actual or potential structural weakness of the CCR units, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR units and appurtenant structures.
- Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

## 2.0 FACILITY DESCRIPTION

When they were active, the Unit 3 Impoundments were located adjacent to each other and were constructed with compacted clay earthen embankments with a common embankment between them. The impoundment areas ranged from 175 to 190 feet long by 71 to 80 feet wide with an approximate surface area of 0.2 and 0.3 acres for the east and west impoundments, respectively. The impoundments were designed by Black & Veatch in 1981 and were constructed with compacted clay embankments with 3 horizontal to 1 vertical (3H:1V) exterior slopes and 2H:1V interior slopes with an approximately 10 feet wide crest. The embankments are not regulated as dams by the Michigan Dam Safety office.

Both impoundments were constructed with a minimum 3 feet of  $3 \times 10^{-7}$  centimeters per second (cm/sec) (Golder, January 2018) clay over the floor and were approximately 9 feet deep when they were active. Based on recent aerial topography (Droneview, November 2020), the current bottom elevation of the impoundments after CCR removal is approximately Elevation (El) 583 feet above mean sea level (ft-msl) (Golder, December 2020) and the current crest elevation ranges from 591 to 592 ft-msl.

The impoundments ceased receiving CCR from the plant in July 2020. As of November 2020, each impoundment has had CCR and CCR contaminated clay liner removed, the common embankment has been removed, and the southern berm has been notched. The impoundments now only collect rain fall within the portions of the remaining cleaned clay liner.

The concrete overflow structure and sluice gate conduit between the east and west impoundments and all other piping and hydraulic structures were removed and the former outfall regulated by EGLE Permit number MI 0000728 is no longer used.

### 3.0 BACKGROUND AND DOCUMENT REVIEW SUMMARY

Golder performed a review of the following historic documentation relative to the Unit 3 Impoundments:

- City of Grand Haven, Michigan Board of Light and Power J.B. Sims Station, Unit 3 Ash Pond Construction Report (Black & Veatch, 1983)
- DRAFT - Coal Combustion Residue Impoundment, Round 12 - Dam Assessment Report, JB Sims Power Plant (Site 04), East and West Bottom Ash Ponds, Grand Haven Board of Power and Light, Grand Haven, Michigan, Prepared for: United States Environmental Protection Agency Office of Resource Conservation and Recovery, Prepared by: Dewberry & Davis, LLC Fairfax, Virginia, Dated October 2012 (EPA, 2012)
- Final Report of Evaluation for Grand Haven Power Plant Ash Impoundment Grand Haven, Michigan (Soils & Structures, 2014)
- Annual Ash Impoundment Inspection Report (Soils & Structures, July 2016)
- Select GHBLP Personnel's J.B. Sims Ash Pond Daily Inspection Forms (Dated August 2018 to July 2019)
- 2017 Grand Haven Board of Light and Power J.B. Sims Generating Station, Unit 3 East and West Ash Pond Surface Impoundments Annual Visual Inspection Report (Golder, July 2017)
- Grand Haven Board of Light and Power J.B. Sims Generating Station, Units 1 and 3 Ash Ponds and Unit 3 East and West Bottom Ash Ponds – Documentation of Liner Construction, (Golder, January 2018)
- 2019 Grand Haven Board of Light and Power J.B. Sims Generating Station, Unit 3 East and West Ash Pond Surface Impoundments Annual Visual Inspection Report (Golder, August 2019)
- Updated Topography, prepared by Westshore Engineering and Surveying, dated October 21, 2019.
- 2020 Grand Haven Board of Light and Power J.B. Sims Generating Station, Unit 3 East and West Ash Pond Surface Impoundments Annual Visual Inspection Report (Golder, August 2020)
- Droneview Technologies, November 18, 2020, Aerial Topography for the Grand Haven Board of Light and Power (Droneview, November 2020)
- J.B. Sims Generating Station, Unit 3 Impoundments – CCR Removal Documentation Report, dated December 11, 2020 (Golder, December 2020)

### 4.0 2021 VISUAL INSPECTION

The 2021 onsite inspection of the removed Unit 3 Impoundments was performed by Tiffany Johnson, P.E. on July 22, 2021. Ms. Johnson is a Professional Engineer, licensed in the State of Michigan. Golder's inspector was directed by Mr. Paul Cederquist, Environmental Compliance Specialist for the GHBLP JBSGS.

The inspection provides the following information as stipulated in 40 CFR 257.83(b)(2):

- Any changes in geometry of the CCR surface impoundment since the previous annual inspection.
  - Yes. The CCR and CCR contaminated clay liner was removed, the common embankment was removed, all piping and hydraulic structures were removed, and the southern perimeter berm was notched (Golder, December 2020). Only the cleaned portions of the original clay liner remain.

- The location and type of existing instrumentation and the maximum recorded readings for each instrument since the previous annual inspection.
  - There is currently no instrumentation in place designed to monitor for the structural stability, the Units have been removed.
- The approximate minimum, maximum, and present depth, and elevation of the impounded water and CCR since the previous annual inspection.
  - Not applicable, the units were removed.
- The storage capacity of the impounding structure at the time of inspection.
  - 0 cubic yards, the CCR units were removed.
- The approximate volume of the impounded water and CCR at the time of inspection.
  - Water = rain fall only.
  - CCR = None, all CCR was removed.
- 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 appurtenant structures.
  - None were observed.
- Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.
  - None were observed.

Based on the July 22, 2021, visual inspection, the overall condition of the removed Unit 3 Impoundments is acceptable. There were no structural weaknesses or safety issues observed within the upstream, downstream, crest or hydraulic structures that would likely impact operations. The following minor observations were documented (Note: Features observed and documented during the inspection were not considered a deficiency or release as classified under 40 CFR 257.83(b)(5) and required no immediate action beyond periodic inspection or maintenance, and the impoundments were removed in 2020):

- Minor erosion within the remaining clay liner on all sides of the removed Unit 3 Impoundments. Silt fencing has been installed to prevent sediment runoff.

## 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). Based on review of information provided by GHBLP and Golder's on-site visual inspection, the overall condition of the removed Unit 3 Impoundments is acceptable. Golder's assessment is limited to the information provided by GHBLP and to the features that could be visually inspected in a safe manner. Golder cannot attest to the condition of subsurface or submerged structures.

## Signature Page

### Golder Associates Inc.



Eric Anderson  
*Staff Engineer*



Tiffany Johnson, P.E.  
*Senior Consultant*

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[https://golderassociates.sharepoint.com/sites/149929/project files/5 technical work/draft 2021 jbs ccr unit annual inspection report.docx](https://golderassociates.sharepoint.com/sites/149929/project%20files/5%20technical%20work/draft%202021%20jbs%20ccr%20unit%20annual%20inspection%20report.docx)



**APPENDIX A**

# Visual Inspection Checklist

## CCR SURFACE IMPOUNDMENT VISUAL INSPECTION CHECKLIST

**Facility Name:** J.B. Sims Generating Station (JBSGS) Unit 3  
East and West Bottom Ash Impoundments

**Owner:** Grand Haven Board of Light and Power (GHBLP)

**Purpose of Facility:** These impoundments were used to store bottom ash from the power plant, they are now closed and the ability to hold CCR is removed.

**Location:** Harbor Island, Grand Haven, Michigan

**Inspected By:** Tiffany Johnson, P.E. accompanied by Paul Cederquist (GHBLP)

**Inspection Date:** July 22, 2021

**Weather:** 70 degrees, Partly cloudy, no precipitation

ITEM	Acceptable	Monitor / Maintain	Investigate	Repair	REMARKS
1. General Conditions					The Unit 3 Impoundments were removed in November 2020 and only portions of the cleaned clay liner is remaining.
a. Year Minimum Water Elevation		-			N/A – CCR Unit was removed.
b. Year Average Water Elevation		-			N/A - CCR Unit was removed.
c. Year Maximum Water Elevation		-			N/A - CCR Unit was removed.
d. Current water level		-			Empty
e. Current storage capacity		-			Volume: 0 – impoundment ability was removed.
f. Current volume of impounded water		-			Volume: 0 – impoundment ability was removed.
g. Alterations	X				The CCR and CCR contaminated clay liner was removed, all piping and hydraulic structures were removed and the southern berm was notched.
h. Development of downstream plain	X				None observed.
i. Grass cover					N/A
j. Settlement/misalignment/cracks	X				None observed.
k. Sudden drops in water level?	X				The impoundment's ability to hold anything other than rain fall has been removed.
2. Inflow Structure					All hydraulic structures were removed.
a. Settlement					N/A
b. Cracking					N/A
c. Corrosion					N/A
d. Obstacles in inlet					N/A
e. Riprap/erosion control					N/A
3. Outflow Structure					All hydraulic structures were removed.
a. Settlement					N/A
b. Cracking					N/A
c. Corrosion					N/A
d. Obstacles in outlet					N/A
e. Riprap/erosion control					N/A

ITEM	Acceptable	Monitor / Maintain	Investigate	Repair	REMARKS
f. Seepage					N/A
4. Upstream slope					
a. Erosion		X			Minor erosion was observed on all sides.
b. Rodent burrows	X				
c. Vegetation	X				Clay recently regraded during removal of CCR and CCR contaminated clay liner.
d. Cracks/settlement	X				
e. Riprap/other erosion protection	X				
f. Slide, Slough, Scarp	X				
5. Crest					
a. Soil condition	X				Recently regraded during removal of CCR and CCR contaminated clay liner.
b. Comparable to width from previous inspection	X				
c. Vegetation	X				Soil road crest.
d. Rodent burrows	X				
e. Exposed to heavy traffic	X				
f. Damage from vehicles/machinery	X				
6. Downstream slope					
a. Erosion		X			Minor erosion observed on all sides.
b. Vegetation	X				
c. Rodent burrows	X				
d. Slide, Slough, Scarp	X				
e. Drain conditions	X				
f. Seepage					N/A
7. Toe					
a. Vegetation	X				Recently regraded during removal of CCR and CCR contaminated clay liner.
b. Rodent burrows	X				
c. Settlement	X				
d. Drainage conditions					N/A
e. Seepage					N/A
f. Other	X				

**Notes:**

- 1.) The impoundments have been removed and no longer receive CCR from the plant, the plant ceased operations in February 2020.
- 2.) 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.
- 3.) ft-msl = feet above mean sea level.



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