



## J.H. Campbell Generating Facility

### *Dry Ash Landfill - Location Restriction Certification Report*

Pursuant to:  
40 CFR 257.64

Submitted to:  
**Consumers Energy Company**  
1945 Parnall Road  
Jackson, Michigan, USA 49201

Submitted by:  
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Project No. 1899528

October 2018



## CERTIFICATION

### Professional Engineer Certification Statement [40 CFR 257.64(c)]

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 257.64 (40 CFR Part 257.64), I attest that this Location Restriction Certification 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 257.64.

Golder Associates Inc.

Jeffrey R. Piaskowski  
Signature

October 17, 2018  
Date of Report Certification

Jeffrey R. Piaskowski  
Name

6201061033  
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”) to regulate the solid waste management of CCR generated at electric utilities. Section 257.64 of the CCR RCRA Rule requires the owner or operator of an existing CCR landfill to document that the CCR unit is not located in an unstable area or demonstrate that generally acceptable good engineering practices have been incorporated into the design to ensure the structural integrity of design components will not be disrupted. According to Sections 257.64(c) and 257.64(d)1, the documentation must be certified by a qualified professional engineer no later than October 17, 2018. The documentation must be placed in the facility’s operating record and posted to the publicly available website per Section 257.105(e) and Section 257.107(e), respectively.

Golder Associates Inc. (Golder) is submitting this report to certify that the Dry Ash Landfill at the Consumers Energy Company (CEC) J.H. Campbell Generating Facility (JH Campbell) is located in an area that meets criteria outlined in 40 CFR 257.64.

## 2.0 UNSTABLE AREAS [40 CFR 257.64]

Section 257.64 requires that an existing CCR landfill not be located in an unstable area. As outlined in Section 257.64(b), the following must be considered when determining whether an area is unstable:

- Onsite or local soil conditions that may result in significant differential settling
- Onsite or local geologic or geomorphologic features
- Onsite or local human-made features or events (both surface and subsurface)

Previous geotechnical investigations in and around the JH Campbell Dry Ash Landfill indicate the onsite soils are comprised of a native sand layer that overlies glacial till (EES 2012). The sand deposit extends to an approximate depth of 45 to 60 feet below ground surface (bgs) and is underlain by fine-grained silty clay and clay silt soils which extend to bedrock at approximately 140 feet bgs (STS 1992).

Settlement and slope stability analyses for the JH Campbell Dry Ash Landfill were performed by STS Consultants, Ltd. (STS) as part of the construction permit application in 1993 (CPC 1993). Results of the settlement analyses indicate that immediate settlement would occur during CCR landfilling operations, but significant differential settlement is not anticipated.

A desktop study was conducted using GeoWebFace (MDEQ 2018), an online GIS database managed by the Michigan Department of Environmental Quality (MDEQ), which confirmed that none of the following are located in a proximity that would affect the stability of the JH Campbell Dry Ash Landfill.

- Oil wells
- Gas wells
- Underground mines

Additionally, maps provided by the USGS (USGS 2014a) and the Michigan Natural Features Inventory (Albert, et al. 2008) indicate that the JH Campbell Dry Ash Landfill is not located in an area prone to karst development.

The slope stability analysis included in the construction permit application (CPC 1993) considered onsite geologic features and the maximum height of landfilled CCR. Both global stability of the landfill and stability of the perimeter berms were evaluated. Results of the slope stability analysis indicate that the JH Campbell Dry Ash Landfill side slopes, foundation, and perimeter berms are stable.

The historical geotechnical investigations along with the results of the settlement analysis, slope stability analysis, and desktop study indicate the JH Campbell Dry Ash Landfill is not located in an unstable area, satisfying the requirements of Section 257.64.

### 3.0 CONCLUSION AND SUMMARY

Golder has determined that the JH Campbell Dry Ash Landfill meets the location restrictions outlined in 40 CFR 257.64. Prior to October 17, 2018, this report must be placed in the facility's operating record in accordance with Section 257.105(e) and must be made available on the facility's publicly accessible internet site in accordance with Section 257.107(e).

Sincerely,

**Golder Associates Inc.**



Jeffrey R. Piaskowski, PE  
*Senior Project Geotechnical Engineer*



Matthew J. Wachholz, PE  
*Senior Consultant*

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## 4.0 REFERENCES

Albert, D.A., Cohen, J.G., Kost, M.A., Slaughter, B.S., and Enander, H.D. 2008. Distribution of Maps of Michigan's Natural Communities. Michigan Natural Features Inventory, Report No. 2008-01, Lansing, MI.

Consumers Power Company (CPC). August 1993. Construction Permit Application and Support Documents. J.H. Campbell Ash Storage Facility Solid Waste Disposal Area Expansion.

Engineering and Environmental Solutions (EES), LLC. December 2012. Resource Conservation and Recovery Act Vertical Expansion Feasibility Investigation – 2012. J.H. Campbell Solid Waste Disposal Area.

Michigan Department of Environmental Quality (MDEQ). 2018. GeoWebFace GIS Database.

STS Consultants, Ltd. (STS). November 18, 1992. Final Report – Subsurface Exploration and Geotechnical Summary Report for the Proposed J.H. Campbell Ash Storage Facility Cell Expansion Project, West Olive, Michigan.

U.S. Geological Survey (USGS). 2014a. Karst in the United States: A Digital Map Compilation and Database.



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