



Pond A Post-Closure Plan

J.H. CAMPBELL GENERATING FACILITY

POND A POST-CLOSURE PLAN

West Olive, Michigan

Submitted To: Consumers Energy Company
1945 W. Parnall Road
Jackson, Michigan 49201

Submitted By: Golder Associates Inc.
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March 2019

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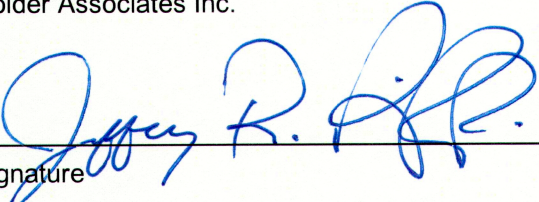


CERTIFICATION

Professional Engineer Certification Statement [40 CFR 257.104(d)(4)]

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 257.104 (40 CFR Part 257.104), I attest that this Post-Closure Plan 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 257.104.

Golder Associates Inc.



Signature

March 15, 2019

Date of Report Certification

Jeffrey R. Piaskowski, PE

Name

6201061033

Professional Engineer Certification Number





Table of Contents

1.0	INTRODUCTION.....	1
2.0	FACILITY CONTACT	2
3.0	MONITORING AND MAINTENANCE ACTIVITIES	3
3.1	Site Maintenance	3
3.2	Periodic Inspection Requirements	3
3.3	Site Use Restrictions.....	4
3.4	Groundwater Monitoring.....	4
4.0	REFERENCES.....	6

List of Figures

- Figure 1 Site Location Map
- Figure 2 Site Map

List of Appendices

- Appendix A General Site Inspection Sheet



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 beneficial use and disposal of CCR material generated at coal-fired electrical power generating complexes. In accordance with the CCR RCRA Rule, any CCR surface impoundment or CCR landfill that was actively receiving CCR on the effective date of the CCR RCRA Rule (October 19, 2015) was deemed to be an “Existing CCR Unit” on that date and subject to self-implementing compliance standards and schedules. Consumers Energy Company (CEC) identified Pond A as an existing CCR surface impoundment at the J.H. Campbell Generating Facility (JH Campbell). JH Campbell is located in West Olive, Michigan as presented on Figure 1 – Site Location Map. The location of Pond A is presented on Figure 2 – Site Map.

On December 28, 2018, the State of Michigan enacted Public Act No. 640 of 2018 (PA 640) to amend the Natural Resources and Environmental Protection Act (Michigan Part 115 Solid Waste Rules). The amendments were developed to allow CCR surface impoundments to be closed as landfills in the State of Michigan. On December 21, 2018, CEC and the Michigan Department of Environmental Quality (MDEQ) executed Consent Agreement No. 115-01-2018 which set forth requirements for the closure of Pond A at JH Campbell as a solid waste disposal area. The agreement requires CEC to submit a post-closure plan for Pond A to the MDEQ within 60 business days, and the post-closure plan must include the following at a minimum.

- Procedures to maintain the integrity and effectiveness of the final cover system, including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion, or other events and preventing run-on and run-off from eroding or otherwise damaging the final cover.
- Procedures to maintain the groundwater monitoring system and monitor the groundwater in accordance with the Hydrogeological Monitoring Plan (HMP).

As a result, this written post-closure plan is being generated pursuant to the following applicable post-closure performance standards for leaving CCR in place:

- RCRA
 - 40 CFR 257.104(d)
- State of Michigan
 - Part 115 R 299.4317
 - Part 115 R 299.4447
- Consent Agreement between CEC and MDEQ dated December 21, 2018



2.0 FACILITY CONTACT

The post-closure point of contact for Pond A at JH Campbell is:

Bethany L. Swanberg
1945 W Parnall Road
Jackson, Michigan 49201
(517) 788-0282
bethany.swanberg@cmsenergy.com



3.0 MONITORING AND MAINTENANCE ACTIVITIES

3.1 Site Maintenance

The following general site maintenance and monitoring will be conducted to ensure the integrity and effectiveness of the final cover system:

- Fertilizer will be applied in areas of stressed or poor quality cover vegetation as needed.
- Vegetative cover will be mowed as needed to restrict uncontrolled woody plant establishment on the cover for the remainder of the 30-year post-closure period (estimated through 2049). This includes mowing the side slopes around the perimeter of Pond A.
- Areas of erosion, including erosion from run-off or vehicle use, will be repaired by restoring the thickness of the protective cover and topsoil and seeding as necessary upon discovery.
- Erosion repairs will utilize clean soils. Typically, a repair is expected to involve minor regrading, spreading of small amounts of additional soil, and reseeded. Areas of repeated erosion will be evaluated to determine if additional protection, such as erosion blankets or riprap, should be added.
- Groundwater monitoring system will be maintained in accordance with applicable requirements from 40 CFR 257.90 to 40 CFR 257.98 and Part 115 R 299.4439 to R 299.4445.
- Differential settlement will be repaired as follows:
 - Minor differential settlement in which no ponding can occur or in which the subsurface drainage will not be compromised shall be repaired by stripping topsoil, adding sandy soil, and replacing topsoil to attain a smooth surface before seeding.
 - If differential settlement has occurred to the extent that drainage is compromised, surface soils shall be removed in the area to expose the geomembrane. The geomembrane shall be cut back and sand added to attain the line grade. Geomembrane, protective soil, and topsoil shall be replaced and seeded with repair certification maintained in the site files.

Areas requiring repair due to erosion or settlement will be identified during annual site inspections which are detailed below in Section 3.2.

3.2 Periodic Inspection Requirements

Periodic site inspections verifying the integrity and effectiveness of the final cover system will be conducted throughout the 30-year post-closure period (estimated through 2049) on no less than an annual basis. When and if items requiring construction and/or maintenance are identified during an inspection, CEC will schedule and conduct repairs promptly while noting the risk associated with the deficiency. During site inspections, the inspector will walk the entire closed Pond A area and document the problematic items on the "General Site Inspection Sheet" provided in Appendix A or similar field form.



If maintenance is required, only low ground-pressure tire or track equipment should be utilized to correct the deficiencies on closed portions of Pond A. Larger equipment can be used, but the equipment loading cannot exert more than five pounds per square inch (psi) on the liner material. The exterior dike is not being capped, as it will serve as an access road around the site during construction of the final cover system.

If repairs to the geosynthetics (e.g., geomembrane, geotextile, etc.) are necessary, a certified geosynthetic installer must conduct the repairs under the direction of a quality assurance representative. Repairs will be documented in a report, and a copy will be placed in the site's operating record.

3.3 Site Use Restrictions

Currently, the identified end use for Pond A at JH Campbell has been limited to securing the area and maintaining the site as described in Sections 3.1 and 3.2. If the area is to be developed in the future, the integrity of the geomembrane cover liner shall be confirmed with the proposed use; and institutional controls for maintaining the integrity of the geomembrane cover will be provided through an update to the post-closure plan. Once closed, the owner or operator must record a notation on the deed to the property. The notation on the deed must in perpetuity notify any potential purchaser of the property that:

- The land has been used as a CCR unit
- Its use is restricted under the post-closure care requirements as provided by Section 257.104(d)(1)(iii) and Part 115 R 299.4447

Use of the site will be restricted by either fencing and gating or procedures to prohibit access other than for performing inspections, maintenance, and monitoring; established easements; and to restrict the use of intrusive vehicles and activities at the site.

3.4 Groundwater Monitoring

A groundwater monitoring network was established for Pond A in 2015 in accordance with the CCR RCRA Rule. The groundwater monitoring network includes six background wells and six downgradient wells that were screened in the uppermost aquifer. The locations of the monitoring wells are presented on Figure 2 – Site Plan.

Post-closure groundwater monitoring will be performed in accordance with the Pond A HMP (TRC 2019). The HMP contains groundwater sampling and analysis and data evaluation procedures and includes an Assessment Monitoring Plan (AMP), which was required per 40 CFR 257.94(e) and Part 115 R 299.4441.

Post-closure groundwater monitoring will be performed for a period of 30 years (estimated through 2049) following certified closure of Pond A. Groundwater samples will be collected in the second and fourth quarters annually for the constituents provided in the HMP.



While in assessment monitoring, when the lower confidence limit (LCL), or the entire interval, exceeds the GWPS as presented in the site statistical plan, the result is recorded as a statistically significant level and an assessment of corrective measures is required per 40 CFR 257.96. Once remediation activities begin, semi-annual monitoring will continue, and confidence intervals will monitor the progress of remediation efforts. Confidence intervals will be compared to GWPS to determine when clean-up levels are achieved.

Additionally, an annual groundwater monitoring and corrective action report will be prepared and:

- Maintained in the JH Campbell operating record per 40 CFR 257.105(h)(1) and Part 115 R 299.4441, R 299.4444, and R 299.4445
- Submitted to MDEQ per the notification requirement in 40 CFR 257.106(h)(1) and Part 115 R 299.4441, R 299.4444, and R 299.4445
- Posted on a publicly accessible internet website per 40 CFR 257.107(h)(1)

If additional notification is warranted, CEC will notify appropriate parties per 40 CFR 257.106(h).



4.0 REFERENCES

- State of Michigan. 1994. State of Michigan Natural Resources and Environmental Protection Act, P.A. 451, Part 115 – Solid Waste Management.
- State of Michigan. 2018. State of Michigan Natural Resources and Environmental Protection Act, P.A. 640, Part 115 – Solid Waste Management.
- State of Michigan. December 21, 2018. Consent Agreement with Consumers Energy Company for Closure of Pond A as a Solid Waste Disposal Area.
- TRC Environmental Corporation, March 2019. Pond A Hydrogeological Monitoring Plan, JH Campbell Power Plant, West Olive, Michigan.
- USEPA. April 2015. 40 CFR Part 257 Subpart D. Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments; Final Rule.

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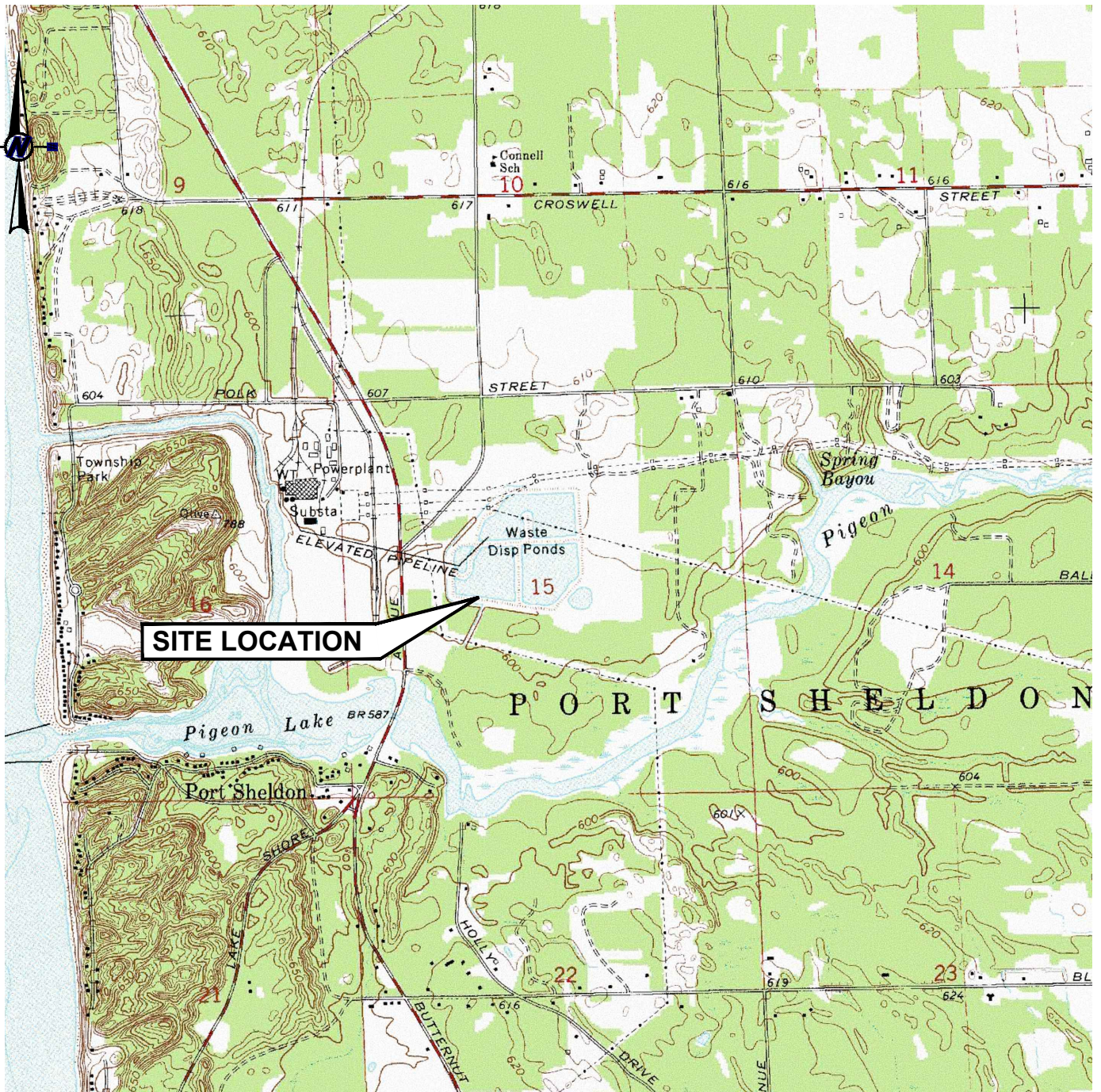
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FIGURES

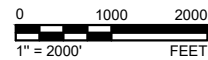


SITE LOCATION



REFERENCE(S)

1. BASE MAP TAKEN FROM 7.5 MINUTE U.S.G.S. QUADRANGLES OF PORT SHELDON MICHIGAN, DOWNLOADED FROM MICHIGAN DNR WEBSITE JUNE 2016.



CLIENT
CONSUMERS ENERGY COMPANY
17000 CROSWELL ST.
WEST OLIVE, MI 49460

PROJECT
J.H. CAMPBELL GENERATING FACILITY POND A
POST-CLOSURE PLAN

CONSULTANT	YYYY-MM-DD	2016-06-06
	DESIGNED	BAL
	PREPARED	ARM
	REVIEWED	DJS
	APPROVED	MAB



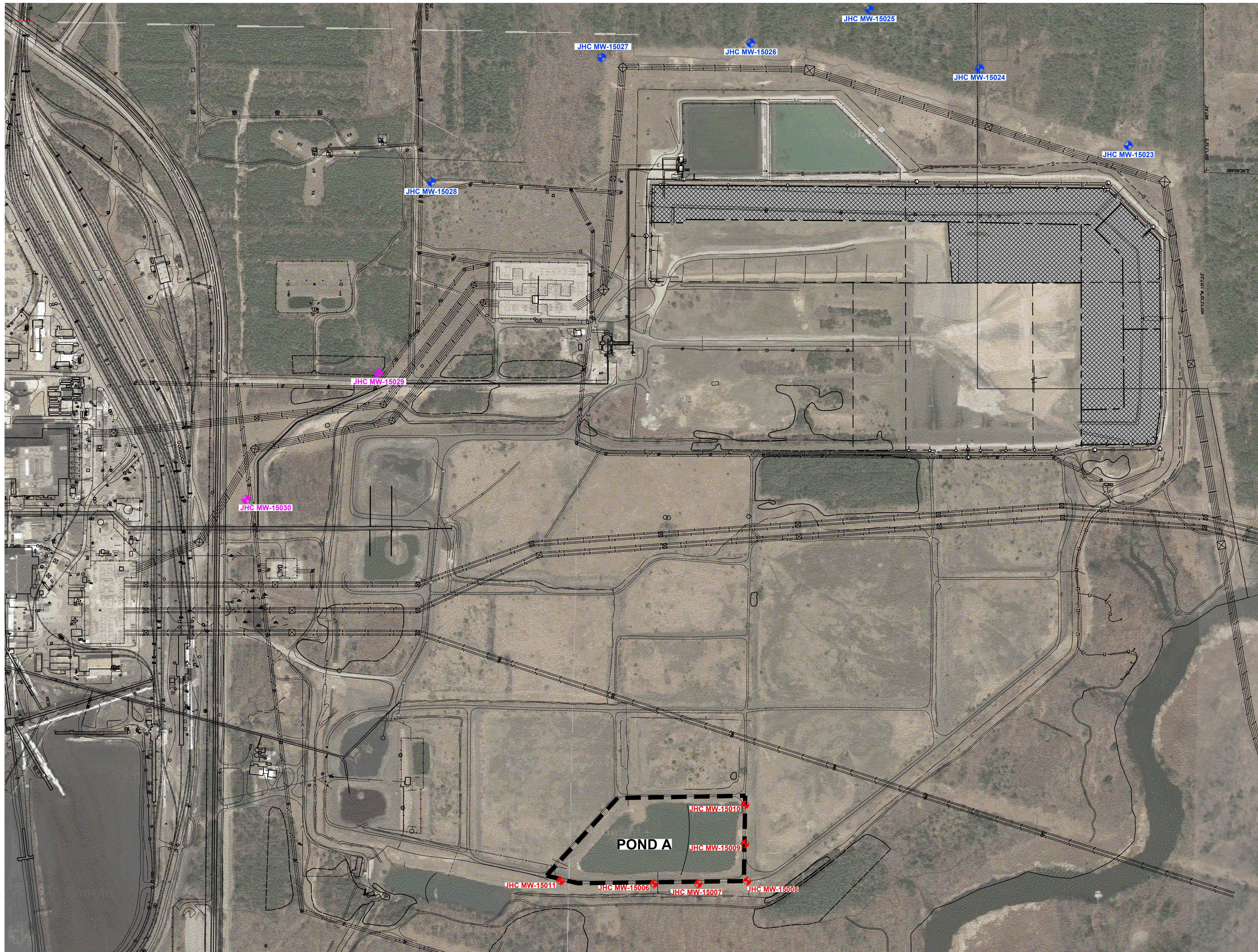
TITLE
SITE LOCATION MAP

PROJECT NO.
1654923

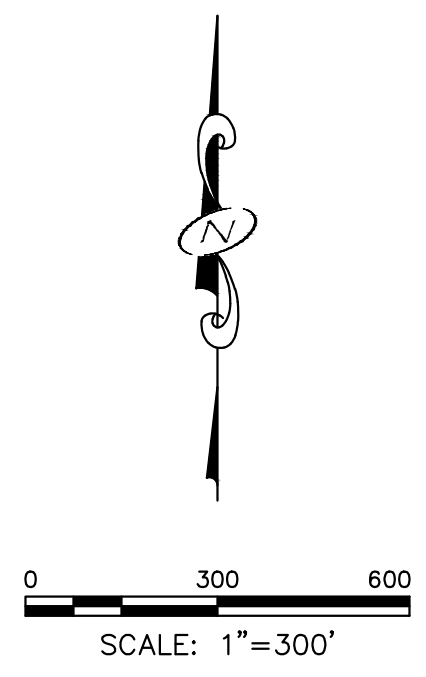
REV.
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FIGURE
1

S:\Projects\094 - Golder Associates\2016 Projects\094-16-004 - JH Campbell RCRA Ash Pond Closure\CAD\094-16-004-EXT-WELLS-2016 - Pond A update w background wells.dwg 3/17/2019 1:25 PM



LEGEND
 DOWN GRADIENT MONITORING WELL
 BACKGROUND MONITORING WELL
 STATIC WATER LEVEL MONITORING WELL



REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP	REV	DATE	DESCRIPTION	BY	CHK	APP
							03-11-19	2019 UPDATE		MS	DS	JP



J.H. CAMPBELL ASH STORAGE FACILITY

SITE MAP

SCALE	1" = 300'	DRAWING NO.	FIGURE	UNIT#
JOB	1654923		2	A

**APPENDIX A
GENERAL SITE INSPECTION SHEET**



**GENERAL SITE INSPECTION
J.H. CAMPBELL POND A CLOSURE AREA**

Inspector:	Inspection Date:
Post Closure Manager:	Review Date:

SITE CONDITIONS	
Weather:	Temperature:
Precipitation:	Wind:

INSPECTION TASKS
1) Note areas of erosion (gullies exceeding 6 inches deep).
2) Note areas of sedimentation.
3) Note areas of settlement that have compromised surface drainage controls.
4) Note areas of ponding.
5) Note areas of vegetative stress.
6) Note areas of woody plant growth.
7) Note location of animal burrows.
8) Condition of ditches, culverts, and channels.



**GENERAL SITE INSPECTION
J.H. CAMPBELL POND A CLOSURE AREA**

9) Condition of site access road(s), silt fences, and fences surrounding the site.
10) Condition of site restriction fencing and gates.
11) Proper site restriction signage.
12) Miscellaneous findings.

ADDITIONAL COMMENTS

CORRECTIVE ACTION PLAN (To Be Completed by Post Closure Manager)

