

October 28, 2021

Project No. 21451440

Paul Cederquist

Environment and Safety Specialist
Grand Haven Board of Light and Power
1700 Eaton Drive
Grand Haven, MI 49417

**PROGRESS UPDATE AND PLAN & SCHEDULE FOR FORMER COAL YARD CLOSURE, J.B. SIMS
GENERATING STATION**

Dear Mr. Cederquist,

Golder Associates Inc. (Golder) is providing this letter to provide information regarding the ongoing closure activities of the former coal yard area at the former J.B. Sims Generating Station (JB Sims, Site). This update provides a summary of completed and ongoing activities and recommendations for future work.

The status of completed and ongoing activities related to the former coal yard closure at the Site is summarized as follows:

- *Updated Closure Verification Work Plan* for the Site was prepared by Golder and reviewed and approved by the Michigan Department of Environment, Great Lakes and Energy (EGLE) on July 9, 2021 (the Plan)
- Completion of initial site survey in accordance the Plan over the western portion of the site in August 2021
- Survey of the eastern portion of the site and storm water runoff area in accordance with the Plan cannot be completed until dewatering is completed
- Completion of borings in accordance with the Plan in September 2021 that revealed:
 - The former coal yard area generally has only surficial coal in soil remaining
 - Thicker layers of coal exist near the utility trenches where soils mixed with coal was used as backfill that would require dewatering to remove and could cause issues to infrastructure.
 - Borings confirmed coal in the storm water runoff area
 - Coal in the stormwater runoff area that would require dewatering to remove
- Soil samples collected from borings in the former coal yard storm water runoff area and analytical testing was completed to characterize the material for disposal:

- Analytical results indicated that no constituents were above regulatory levels for Type II landfilling
- However, levels of total PFAS were detected above cleanup criteria and high sulfur levels in the soils may impact disposal options at landfills
- Testing of water in the stormwater runoff area also documented the presence of PFAS compounds
- Survey of the perimeter of former coal yard area was completed in October to evaluate the potential for storm water that contacted material to leave the area
- A berm was placed on the southern perimeter of the remaining clay from the former Unit 3 impoundments to prevent stormwater (from the former plant site) entering or leaving this area in October

Given the bulleted issues above, coal yard closure and verification cannot proceed until measures to remove and properly discharge the runoff waters are developed. Additionally, completing partial closure could result in coal being re-introduced to the area by stormwater from the areas not closed. Items needing to be addressed specifically are outlined in the following Plan and Schedule:

- Development of a dewatering and liquids management plan that includes treatment for the detected constituents including PFAS – December 31, 2021
- Dewatering and pretreatment system design and contractor selection to complete the work – January 31, 2022
- Applying for and obtaining approval to discharge to the public owned sanitary sewer system (if approved) including pre-treatment for constituents including PFAS or submittal of request for discharge via a voluntary Administrative Consent Order to allow necessary dewatering so cleanup activities can continue – February 28, 2022
- Receiving landfill pre-approval for solids disposal and the landfill's conditions for disposal – February 28, 2022
- Receiving pre-approval for disposal of PFAS treatment system wastes (i.e., activated carbon, filters, etc.) – February 28, 2022
- Evaluate the due care requirements of the coal in the utility trenches – January 31, 2022
- Others to be determined

In the interim while these items are being addressed, Golder recommends the existing stormwater management berm system around the perimeter of the coal pile be improved to prevent stormwater that contacts material from leaving the site. A berm elevation of greater than 584 feet above mean sea level (ft-amsl) is recommended to be above the surrounding floodplain elevation. Clean material from on or offsite sources should be used in completing the perimeter berm. We recommend placing temporary erosion and sediment protection such as a straw erosion matt on the berm slopes that do not currently have vegetation to protect the berm through the winter months until vegetation can be established or closure has been completed.

Several items should be included within the former coal yard area. First, we recommend an interior berm be constructed to an elevation greater than 584 ft-amsl to prevent stormwater from the eastern portions of the site migrating to the west. Material for the interior berm can be obtained by scraping the surficial material in the former

coal yard area west of the berm to a depth of several inches. Next, we recommend a swale be excavated to drain low areas in the northwest corner of the yard to low areas to the south. Material excavated in constructing the swale can be used to construct the interior berm, if required. The location of all proposed berms and swales are shown on the Figure 1 (attached).

Periodic inspection of the site to evaluate erosion should be completed following significant rain or snowmelt events. Regrading and erosion control may be necessary if any erosion is identified during the inspections. Appropriate erosion control measures should be determined based on conditions observed. These may include regrading, silt fencing, erosion matting, or other measures deemed acceptable to mitigate erosion observed.

Please feel free to contact one of the undersigned with any questions or concerns you have relative to the information provided and our recommendations. We also recommend that you forward this update and plan and schedule to EGLE for their records. We look forward to hearing from you and continuing this important work with you.

Sincerely,

Golder Associates Inc.



Blaine Litteral, P.E.

Practice Leader
BL/TJ

CC: Dave Walters - GHBLP
Erik Booth – GHBLP



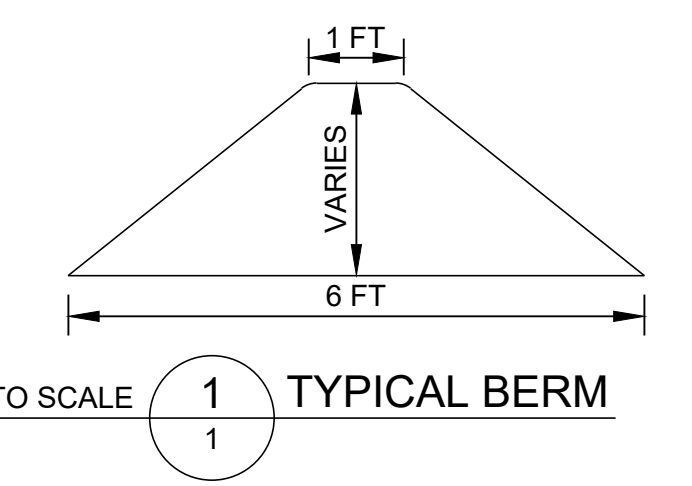
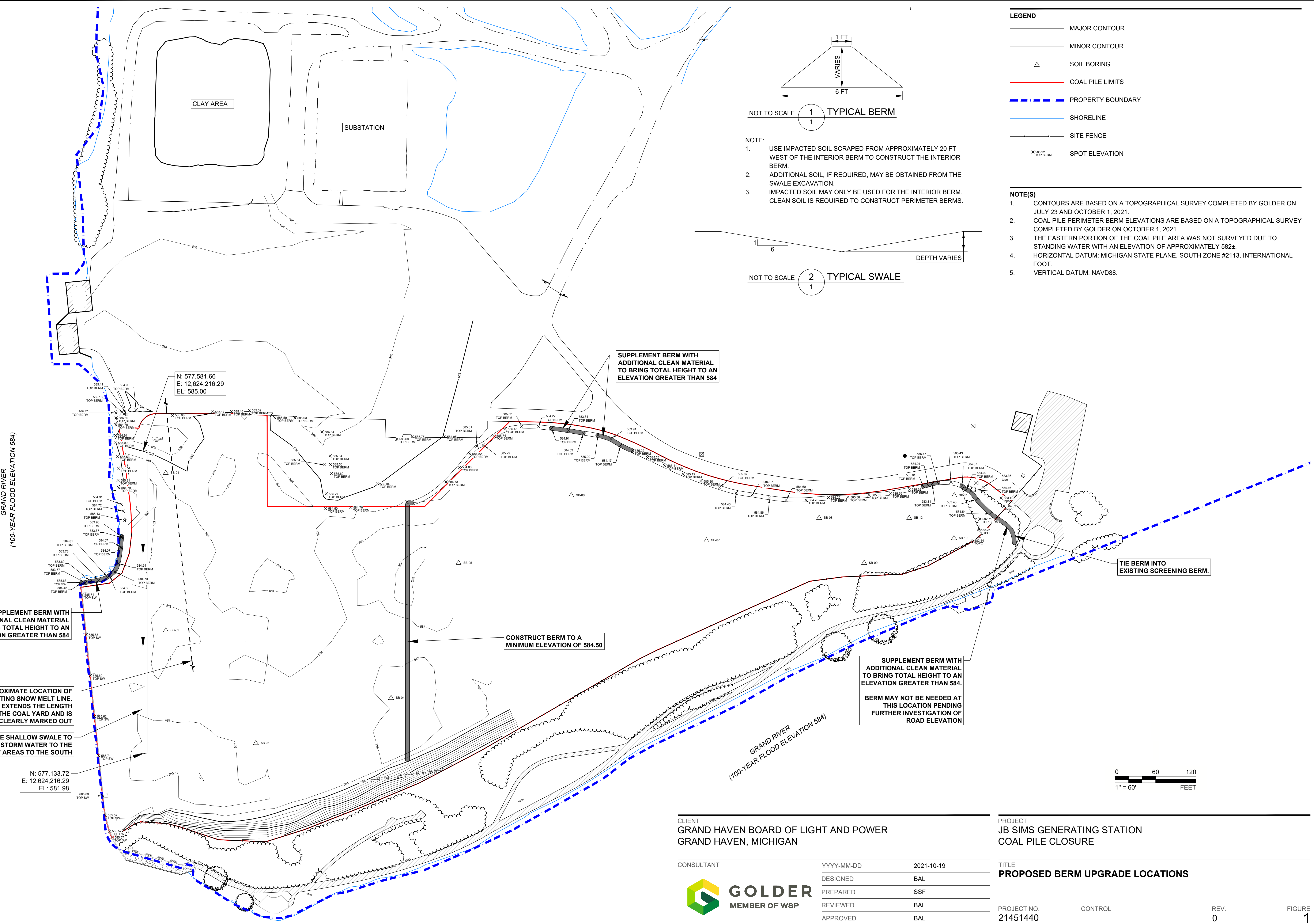
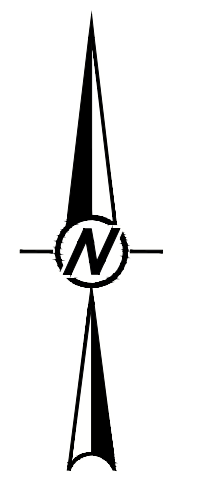
Tiffany D. Johnson, P.E.

Senior Consultant, Principal

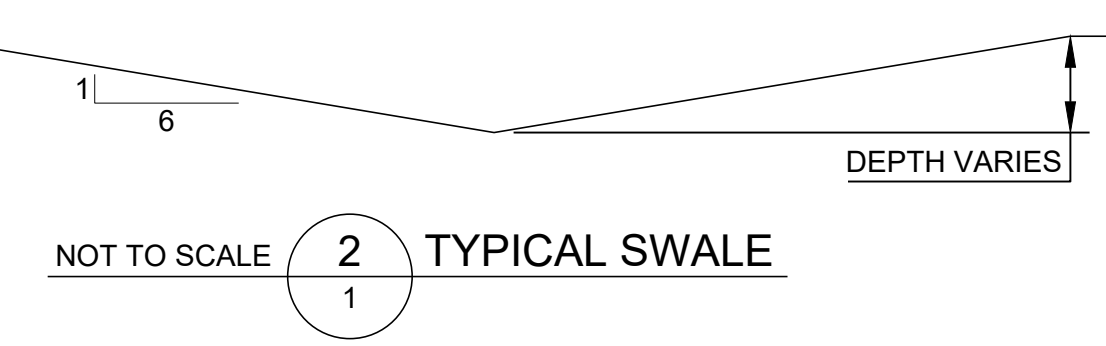
Attachment – Proposed Berm Upgrade Locations

[https://golderassociates.sharepoint.com/sites/140296/project files/5 technical work/coal pile removal update oct21/10-28-21final coal pile closure status letter r2.docx](https://golderassociates.sharepoint.com/sites/140296/project%20files/5%20technical%20work/coal%20pile%20removal%20update%20oct21/10-28-21final%20coal%20pile%20closure%20status%20letter%20r2.docx)

Path: \\golder\gis\Complete\21451440\21451440_01_Sims_Coal_Pile_Removal\PRODUCTION\Work\Plan_1 | File Name: 21451440\02.dwg | Last Edited By: stulmer Date: 2021-10-19 Time: 10:03:18 AM | Printed By: SFlumer Date: 2021-10-19 Time: 10:04:05 AM



- NOTE:
- USE IMPACTED SOIL SCRAPED FROM APPROXIMATELY 20 FT WEST OF THE INTERIOR BERM TO CONSTRUCT THE INTERIOR BERM.
 - ADDITIONAL SOIL, IF REQUIRED, MAY BE OBTAINED FROM THE SWALE EXCAVATION.
 - IMPACTED SOIL MAY ONLY BE USED FOR THE INTERIOR BERM. CLEAN SOIL IS REQUIRED TO CONSTRUCT PERIMETER BERMS.



- LEGEND**
- MAJOR CONTOUR
 - MINOR CONTOUR
 - SOIL BORING
 - COAL PILE LIMITS
 - PROPERTY BOUNDARY
 - SHORELINE
 - SITE FENCE
 - SPOT ELEVATION

- NOTE(S)**
- CONTOURS ARE BASED ON A TOPOGRAPHICAL SURVEY COMPLETED BY GOLDRER ON JULY 23 AND OCTOBER 1, 2021.
 - COAL PILE PERIMETER BERM ELEVATIONS ARE BASED ON A TOPOGRAPHICAL SURVEY COMPLETED BY GOLDRER ON OCTOBER 1, 2021.
 - THE EASTERN PORTION OF THE COAL PILE AREA WAS NOT SURVEYED DUE TO STANDING WATER WITH AN ELEVATION OF APPROXIMATELY 582±.
 - HORIZONTAL DATUM: MICHIGAN STATE PLANE, SOUTH ZONE #2113, INTERNATIONAL FOOT.
 - VERTICAL DATUM: NAVD88.

N: 577,581.66
E: 12,624,216.29
EL: 585.00

SUPPLEMENT BERM WITH ADDITIONAL CLEAN MATERIAL TO BRING TOTAL HEIGHT TO AN ELEVATION GREATER THAN 584

SUPPLEMENT BERM WITH ADDITIONAL CLEAN MATERIAL TO BRING TOTAL HEIGHT TO AN ELEVATION GREATER THAN 584

CONSTRUCT BERM TO A MINIMUM ELEVATION OF 584.50

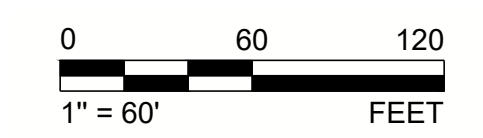
APPROXIMATE LOCATION OF EXISTING SNOW MELT LINE. LINE EXTENDS THE LENGTH OF THE COAL YARD AND IS CLEARLY MARKED OUT

EXCAVATE SHALLOW SWALE TO DIRECT STORM WATER TO THE LOW AREAS TO THE SOUTH

N: 577,133.72
E: 12,624,216.29
EL: 581.98

SUPPLEMENT BERM WITH ADDITIONAL CLEAN MATERIAL TO BRING TOTAL HEIGHT TO AN ELEVATION GREATER THAN 584.
BERM MAY NOT BE NEEDED AT THIS LOCATION PENDING FURTHER INVESTIGATION OF ROAD ELEVATION

TIE BERM INTO EXISTING SCREENING BERM.



CLIENT
GRAND HAVEN BOARD OF LIGHT AND POWER
GRAND HAVEN, MICHIGAN

PROJECT
JB SIMS GENERATING STATION
COAL PILE CLOSURE

CONSULTANT	DATE	DESCRIPTION
	2021-10-19	DESIGNED
		PREPARED
		REVIEWED
		APPROVED

TITLE	PROJECT NO.	CONTROL	REV.	FIGURE
PROPOSED BERM UPGRADE LOCATIONS	21451440		0	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ARCH D