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Subject: Status Update - C. Reiss Coal Dock, Superior (BRRTS #02-16-589248)
Date: Tuesday, November 21, 2023 8:43:15 AM
Attachments: [image001.png](#)

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Good morning Joe,

Excavation of the stormwater pond on the C. Reiss site in Superior, Wisconsin is underway and we wanted to provide an update on the recent field conditions encountered during installation.

Northern half. Excavation and subsequent installation of the 2-foot clay liner was performed in the approximate northern half of the stormwater pond as planned the week of 11/13 (**green** in the exhibit below); note that the “total depth” of pond excavation is inclusive of over-excavating the bottom two feet of the pond in order to appropriately install the 2-foot, compacted clay liner. As indicated by a geotechnical boring performed in this area (B-05; refer to the exhibit below), native clay was encountered as expected at the maximum depth of excavation. No groundwater was observed at total depth in the northern half of the pond excavation.

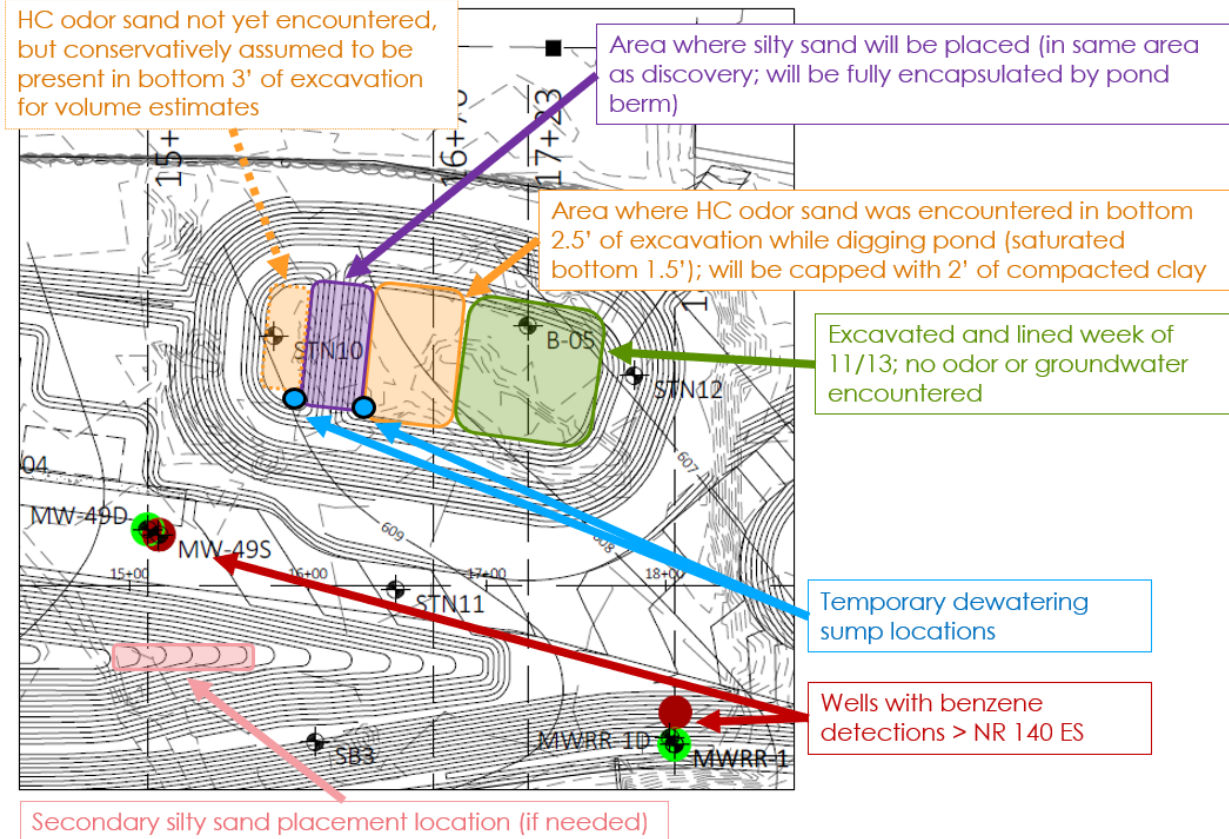
Southern half. Excavation is in progress on the southern half of the stormwater pond (**orange** in the exhibit below). Unlike the northern half, silty sand was observed in this area approximately 2.5 feet above the target depth and was found to be saturated and exhibiting a hydrocarbon (HC) odor approximately 1.5 feet above the target depth. Upon this discovery and per the requirements of the Remedial Action Plan/Materials Management Plan (RAP/MMP), the Site representative paused onsite work and notified Stantec for confirmation of next steps.

Current conditions: Deeper excavation in this area was temporarily suspended as soon as saturated conditions were observed in the silty sand. As depicted in **Photograph 1** attached, there is presently no water pooling or evidence of free product/LNAPL in the excavation. Stantec estimates that a total of approximately 100 cubic yards of saturated silty sand will be displaced by the pond excavation. The HC odor present within the silty sand appears to be associated with documented benzene-contamination to groundwater in this area originating from the east-adjointing property.

Proposed material management: Excavation is planned to continue (deepen by 1.5 feet) in this area the week of 11/27, Stantec intends to manage the excavated silty sand and future contaminated groundwater in the following manner:

- **Contaminated groundwater:** While groundwater is not pooling in the excavation currently, it is expected that contaminated groundwater will accumulate as the excavation reaches total depth, and benzene is known to be present in groundwater at a concentration greater than the NR 140 ES in this area (**red** in the exhibit below). Stantec is presently coordinating with Northland (the Contractor) to profile and dispose of any accumulated groundwater via vacuum pumping for the remainder of the stormwater pond excavation. Temporary “sump” locations will be utilized for dewatering as illustrated in **blue** on the exhibit below.
- **Silty sand:** The silty sand (which has HC odor from the impacted groundwater) will be placed in the bottom of the dividing bench between the stormwater pond “lobes”, to be ultimately capped by compacted clay liner (outlined in **purple** on the exhibit below). This location was determined as it was:
 - In the same area that it was originally encountered in/generated from, and
 - In an area of the site where groundwater is already documented to have HC impacts (and therefore will not exacerbate contamination onsite).
- Though not anticipated, in the event that an additional location is needed for stockpiling this silty sand material, a secondary location has also been identified in the core/bottom of the east-adjointing sediment berm (illustrated in **pink** in the exhibit below) as this area also contains similar benzene-impacted groundwater. Material stockpiled in this location would be covered with plastic sheeting until more substantial filling of the berm would be performed in Spring 2024.
- **Approach:** The associated remaining excavation, groundwater pumping/disposal, and pond liner installation is proposed to be performed in concert to limit the amount of time that contaminated materials are exposed, during the week of 11/27. Dewatering will be performed concurrently with final excavation and will continue during the immediate and subsequent installation of the compacted 2-foot clay liner. The silty sand placement in the dividing bench within the pond will additionally allow for dewatering of the material prior to capping with a minimum of two feet of clay.

Stormwater Pond Exhibit



The management approach outlined above to complete construction of the stormwater pond was developed in a manner that is consistent with the proposed approaches outlined in the RAP/MMP and the Monitoring and Contingency Plan for the site.

Please contact Stantec with any questions. Thank you.

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