



# ARM Group LLC

Engineers and Scientists

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February 18, 2021

Ms. Barbara Brown  
Project Coordinator  
Maryland Department of the Environment  
1800 Washington Boulevard  
Baltimore, MD 21230

Re: Comment Response Letter:  
PORI Lagoon CMS Report  
Area B: Parcel B22  
Tradepoint Atlantic  
Sparrows Point, MD 21219

Dear Ms. Brown:

On behalf of Tradepoint Atlantic (TPA), ARM Group LLC (ARM) is providing this Comment Response Letter to address comments received from the United States Environmental Protection Agency (USEPA) and Maryland Department of the Environment (MDE) via email on December 16, 2020 regarding the recent submission of the Palm Oil Recovery, Inc. (PORI) Lagoon Corrective Measures Study (CMS) Report (Revision 0 dated November 20, 2020) and a supplemental Comment Response Letter dated December 16, 2020.

The PORI Lagoon was formerly located on an undeveloped portion of the TPA property within the area designated as Area B: Parcel B22 (the Site). The northern portion of Parcel B22 (encompassing the PORI Lagoon) is proposed for industrial redevelopment and has been designated as Sub-Parcel B22-2. The Response and Development Work Plan (RADWP) for Sub-Parcel B22-2 (Revision 0 dated November 9, 2020) was conditionally approved via email on December 16, 2020, along with the receipt of the comments discussed herein.

## **Executive Summary**

Due to the extremely tight deadline to complete the work, TPA has already completed impacted material excavation and removal. All removal activities were completed within the RADWP sub-parcel boundary. The final remedy for the PORI Lagoon is summarized below:

- Removal of material within the lagoon and transport to the on-site Greys Landfill for final disposal. Removal has been completed and was discussed in the PORI Lagoon Excavation

Completion Report (Revision 0 dated January 6, 2021). The Excavation Completion Report was approved by the MDE via email on January 25, 2021.

- Capping of the area using approved pavement caps as part of forthcoming development.
- Groundwater monitoring well network in the vicinity of the lagoon, with source wells, sentinel wells, and downgradient compliance wells.
- Groundwater monitoring plan and threshold establishment.
- Contingency groundwater remedies to be considered in the event of threshold exceedances, including sparge curtain extraction and/or carbon injection.

### **Response to CMS Comments**

An updated version of the PORI Lagoon CMS Report (Revision 1) is provided along with this Comment Response Letter. Responses to specific comments are provided below; the original comments are included in italics with the responses following.

1. *Please include a detailed description of the proposed contingency response actions for groundwater point of compliance exceedances - sparge curtain extraction and carbon injection.*

Section 5 of the revised CMS Report includes a summary of potential contingency response actions for groundwater point of compliance exceedances and outlines the proposed future groundwater monitoring program in the vicinity of the PORI Lagoon. If exceedances are identified warranting the implementation of a response action, additional design details would be prepared and submitted in a Work Plan prior to implementation.

2. *The proposal to use the highest DRO groundwater concentration along the TMC perimeter wells (termed “representative level in the Finishing Mills Area”) for groundwater point of compliance exceedance is not acceptable. The goal is to protect the TMC remedy. Provide an adequate rationale for a proposed point of compliance threshold.*

The recent source removal/excavation completed within the PORI Lagoon is anticipated to significantly reduce or eliminate the migration of contaminants from the PORI Lagoon to the Tin Mill Canal (TMC). Specific compliance thresholds for organic compounds are identified in Section 5. The proposed thresholds are significantly below the historical contaminant levels for VOCs, SVOCs, DRO, and Oil & Grease observed in the direct vicinity of the PORI Lagoon, and significantly below the Constituent Threshold Limits for treatment at the Humphreys Creek Wastewater Treatment Plant (HCWWTP).



### **Response to Soil Stabilization Work Plan Comments**

- 3. The pilot SPLP results for stabilized PORI sediment samples had significant DRO results. The Agencies request a pilot study that includes leaching of untreated PORI sediment samples, and leaching of aliquots of those same sediments following stabilization for comparison. Also, a later timepoint than 24 hours following stabilization would be preferable.*

This comment is no longer applicable, as source removal was selected over encapsulation with Portland cement. Source removal activities were detailed in the PORI Lagoon Excavation Completion Report (Revision 0 dated January 6, 2021).

However, in response to this comment (received prior to excavation), additional SPLP samples were collected to gain further understanding of the effect of the stabilization with Portland cement on the soil in the lagoon. A table detailing the results of the sampling events is included as **Attachment 1**. After comparing the unamended and amended DRO concentrations obtained from SPLP analysis of the same aliquot of soil, it was determined that mixing 5% and 10% Portland cement by volume with the soil led to a reduction in DRO of  $\geq 50\%$ .

- 4. Ensure that the PORI Lagoon lubricating oil contaminated sediment profile is fully delineated, so that encapsulation with Portland cement will be effective.*

As detailed in the revised CMS, excavation of the contaminated sediment was determined to be a feasible alternative for reducing the leaching of contaminants into the surrounding groundwater. The contaminated sediment profile was visually delineated during test pitting and subsequent excavation. The length of the lagoon was excavated until a hard bottom was reached, which was typically 5 feet below the observed water table elevation. Confirmation samples were collected from 9 locations surrounding the outside of the excavated area, from the banks of the lagoon. The results of the confirmation samples were submitted within the PORI Lagoon Excavation Completion Report (Revision 0 dated January 6, 2021) and confirmed the significantly contaminated material was removed.

### **Additional Revisions**

- 5. The MDE and USEPA provided supplemental comments via email on January 21, 2021 (specifically with respect to the PORI Lagoon Excavation Completion Report). TPA provided responses via email later the same day (January 21, 2021) which were accepted by the MDE and approved on January 25, 2021. Applicable comments related to the future groundwater monitoring program (specifically Comments #1 and #2 related to the schedule and reporting requirements) have been incorporated into the revised CMS report.*



6. Applicable comments from the prior Comment Response Letter dated December 16, 2020 (specifically Comment #1, and Comments #3 through #8) have also been addressed within the revised CMS Report.

If you have any questions, or if we can provide any additional information at this time, please do not hesitate to contact ARM Group LLC at 410-290-7775.

Respectfully Submitted,  
ARM Group LLC



Ryan Clancy  
Staff Engineer



T. Neil Peters, P.E.  
Senior Vice President  
QA Reviewer



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**ATTACHMENT 1**

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**Attachment 1 - PORI Lagoon  
SPLP Soil Characterization**

<u>Sample ID</u>	<u>Description</u>	<u>Parameter</u>	<u>Result (mg/L)</u>	<u>Laboratory Flag</u>
PORI E1 5% 12/15/20 (Lab Report 20121104)	5% PCC by volume, 24 hour cure	SPLP Diesel Range Organics	<b>1.7</b>	
		SPLP Gasoline Range Organics	0.1	U
		SPLP Oil & Grease	5	U
PORI W2 10% 12/15/20 (Lab Report 20121104)	10% PCC by volume, 24 hour cure	SPLP Diesel Range Organics	<b>1.4</b>	
		SPLP Gasoline Range Organics	0.1	U
		SPLP Oil & Grease	5	U
PORI 5% 7E 12/17/20 (Lab Report 20121701)	5% PCC by volume, 7 day cure	SPLP Diesel Range Organics	<b>1.4</b>	
		SPLP Gasoline Range Organics	0.1	U
		SPLP Oil & Grease	5	U
PORI 10% 7W 12/17/20 (Lab Report 20121701)	10% PCC by volume, 7 day cure	SPLP Diesel Range Organics	<b>1.4</b>	
		SPLP Gasoline Range Organics	0.1	U
		SPLP Oil & Grease	5	U
PORI 15% 7E 12/17/20 (Lab Report 20121701)	15% PCC by volume, 7 day cure	SPLP Diesel Range Organics	<b>1.4</b>	
		SPLP Gasoline Range Organics	0.1	U
		SPLP Oil & Grease	5	U
PORI UA 12/21/20 (Lab Report 20122111)	Unamended Soil	SPLP Diesel Range Organics	<b>1.8</b>	
		SPLP Gasoline Range Organics	0.1	U
		SPLP Oil & Grease	5	U
PORI 5% 72 Hr 12/21/20 (Lab Report 20122111)	5% PCC by volume, 72 hour cure	SPLP Diesel Range Organics	<b>0.7</b>	
		SPLP Gasoline Range Organics	0.1	U
		SPLP Oil & Grease	5	U
PORI 10% 72 Hr 12/21/20 (Lab Report 20122111)	10% PCC by volume, 72 hour cure	SPLP Diesel Range Organics	<b>0.9</b>	
		SPLP Gasoline Range Organics	0.1	U
		SPLP Oil & Grease	5	U

SPLP: Synthetic Precipitation Leaching Procedure

U: The analyte was not detected in the sample. This numeric value represents the sample LOQ.