RESPONSE AND DEVELOPMENT WORK PLAN

AREA A: SUB-PARCEL A15-1 TRADEPOINT ATLANTIC SPARROWS POINT, MARYLAND

Prepared For:



TRADEPOINT ATLANTIC

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1.0 INTRODUCTION

ARM Group LLC, on behalf of Tradepoint Atlantic (TPA), has prepared this Response and Development Plan (RADWP) for a portion of the TPA property that has been designated as Area A: Sub-Parcel A15-1 (the Site). TPA submitted a letter (dated June 17, 2025; **Appendix A**) requesting an expedited plan review to achieve construction deadlines for the proposed development on this Site. As shown on **Figure 1**, Sub-Parcel A15-1 consists of approximately 46.9 acres located primarily within Parcel A15 but extending slightly into Parcel A8 of the approximately 3,100-acre former steel plant property.

Sub-Parcel A15-1 (refer to **Figure 2**) is slated to be developed as a Dredged Material Containment Facility (DMCF). The planned development activities will generally include demolition of existing pump houses, grading, and placement of the berm. Subsequent site use will involve placement of dredged materials within the DMCF.

The conduct of any environmental assessment and cleanup activities on the TPA property, as well as any associated development, is subject to the requirements outlined in the following agreements:

- Administrative Consent Order (ACO) between TPA (formerly Sparrows Point Terminal, LLC) and the Maryland Department of the Environment (MDE), effective September 12, 2014; and
- Settlement Agreement and Covenant Not to Sue (SA) between TPA (formerly Sparrows Point Terminal, LLC) and the United States Environmental Protection Agency (USEPA), effective November 25, 2014.

Sub-Parcel A15-1 is part of the acreage that was removed (Carveout Area) from inclusion in the Multimedia Consent Decree between Bethlehem Steel Corporation, the USEPA, and the MDE (effective October 8, 1997) as documented in correspondence received from the USEPA on September 12, 2014. Based on this agreement, the USEPA determined that no further investigation or corrective measures will be required under the terms of the Consent Decree for the Carveout Area. However, the SA reflects that the property within the Carveout Area will remain subject to the USEPA's Resource Conservation and Recovery Act (RCRA) Corrective Action authorities.

An application to enter the full TPA property (3,100 acres) into the MDE Voluntary Cleanup Program (VCP) was submitted to the MDE on June 27, 2014. The property's current and anticipated future use is Tier 3 (Industrial) and plans for the property include demolition and redevelopment over the next several years.

In consultation with the MDE, TPA affirms that it desires to accelerate the assessment, remediation, and redevelopment of certain sub-parcels within the larger site due to current market conditions. To that end, the MDE and TPA agree that the Controlled Hazardous Substance (CHS) Act (Section 7-222 of the Environment Article) and the CHS Response Plan (Code of Maryland



Regulations [COMAR] 26.14.02) shall serve as the governing statutory and regulatory authority for completing the development activities on Sub-Parcel A15-1 and complement the statutory requirements of the VCP (Section 7-501 of the Environment Article). Upon submission of a RADWP and completion of any remedial activities for the sub-parcel, the MDE shall issue a No Further Action Letter (NFA) upon a recordation of an Environmental Covenant describing any necessary land use controls for the specific sub-parcel. At such time that all the sub-parcels within the larger parcel have completed remedial activities, TPA shall submit to the MDE a request for issuing a Certificate of Completion (COC) as well as all pertinent information concerning completion of remedial activities conducted on the parcel. Once the VCP has completed its review of the submitted information it shall issue a COC for the entire parcel described in TPA's VCP application.

Alternatively, TPA or other entity may elect to submit an application for a specific sub-parcel and submit it to the VCP for review and acceptance. If the application is received after the cleanup and redevelopment activities described in this RADWP are implemented and an NFA is issued by MDE and USEPA (the Agencies) pursuant to the CHS Act, the VCP shall prepare a No Further Requirements Determination for the sub-parcel.

If TPA or other entity has not carried out cleanup and redevelopment activities described in the RADWP, the cleanup and redevelopment activities may be conducted under the oversight authority of either the VCP or the CHS Act, so long as those activities comport with this RADWP.

This RADWP provides a site description and history; summary of environmental conditions identified by the 2014 Phase I Environmental Site Assessment (ESA); summary of relevant findings and environmental conditions identified by the relevant Phase II Investigations; and any necessary engineering and/or institutional controls to facilitate the planned development and address the impacts and potential human health exposures. These controls include work practices and applicable protocols that are submitted for approval to support the development and use of the Site. Engineering/institutional controls approved and installed for this RADWP shall be described in closure certification documentation submitted to the Agencies demonstrating that exposure pathways on the Site are addressed in a manner that protects public health and the environment.



2.0 SITE DESCRIPTION AND HISTORY

2.1 SITE DESCRIPTION

The Sub-Parcel A15-1 development project consists of approximately 46.9 acres comprising the majority of Parcel A15 and a small portion of Parcel A8 (**Figure 1**). The development will include the construction of a DMCF (**Figure 2**). The Site is zoned Manufacturing Heavy-Industrial Major (MH-IM) and is not occupied, but is currently in use as a retention basin called the High Head Reservoir. There is no groundwater use on-site or within the surrounding TPA property.

Ground surface elevations at the Site range from 7 to 12 feet above mean sea level (amsl), with the majority of the subaerially exposed land at the Site being relatively flat. Surface water elevation of the High Head Reservoir is maintained at approximately 7 ft amsl, as measured at the outfall weir located at the southern edge of the reservoir.

2.2 SITE HISTORY

From the late 1800s until 2012, the production and manufacturing of steel was conducted at Sparrows Point. Iron and steel production operations and processes at Sparrows Point included raw material handling, coke production, sinter production, iron production, steel production, and semi-finished and finished product preparation. In 1970, Sparrows Point was the largest steel facility in the United States, producing hot and cold rolled sheets, coated materials, pipes, plates, and rod and wire. The steel making operations at the facility ceased in fall 2012. There is no evidence that iron and steel industrial processes were completed within the boundary of Parcel A15.

Historical operations on Site primarily consisted of the High Head Reservoir, which occupied approximately 66% of the 61.3 acres of Parcel A15. The Reservoir was constructed between 1916 and 1952 as an industrial facility to receive treated effluent from the Back River Wastewater Treatment Plant (BRWWTP). The reservoir was constructed by damming and expanding a bay formerly present on the northeastern side of Humphrey Creek. The Phase I ESA prepared by Weaver Boos Consultants dated May 19, 2014, identified one Recognized Environmental Condition (REC) on the adjacent Parcel A8 (and within Sub-Parcel A15-1). Finding 243, REC 11B identifies a discharge pipe leading from beneath the Air Production Facility (located in Parcel A8, on the western side of the High Head Reservoir) to the High Head Reservoir. According to the Phase I ESA (Weaver Boos), oily surface water was observed in the discharge area during a site visit in 2014. Booms were placed around the discharge pipe, although oil was observed on both sides of the booms in 2014. No sheen has been observed in years. The reservoir in this area is now dry.

There are two pumping stations currently located within Parcel A15 along the southeast and southwest shoreline of the reservoir. The pumping stations are slated for demolition. Each pumping



station has an associated sub-station. An oxygen plant/Air Production facility was present west of Parcel A15 in Parcel A8 and has previously been assessed (refer to the Parcel A8 Phase II Investigation Report, Revision 1, dated November 11, 2017 and CVOC Impacted Groundwater Supplemental Investigation Report dated January 22, 2020).

While the steel plant was operational, treated effluent was discharged from the BRWWTP (operated by Baltimore City) to the reservoir and used as an industrial water source in the steel plant. The BRWWTP effluent flowed into the northeastern portion of the reservoir through two pipes (96-inch pipe and 60-inch pipe). The reservoir no longer receives treated effluent from the BRWWTP and there is no industrial process water discharged to the reservoir on Parcel A15.

Stormwater runoff from multiple properties, including TPA parcels A2, A8, A13, and A14, the non-TPA property along the northeast boundary, collects in the High Head Reservoir. Stormwater from the High Head Reservoir is piped directly to the National Pollutant Discharge Elimination System (NPDES) permitted Outfall 014, located just to the west of the Humphrey Creek Wastewater Treatment Plant.



3.0 ENVIRONMENTAL SITE ASSESSMENT RESULTS

3.1 PHASE I ENVIRONMENTAL SITE ASSESSMENT RESULTS

A Phase I ESA was completed by Weaver Boos for the entire Sparrows Point property on May 19, 2014. Weaver Boos completed site visits of Sparrows Point from February 19 through 21, 2014, for the purpose of characterizing current conditions at the former steel plant. The Phase I ESA identified particular features across the TPA property which presented potential risks to the environment. These RECs included buildings and process areas where releases of hazardous substances and/or petroleum products potentially may have occurred. The Phase I ESA also relied upon findings identified during a previous visual site inspection (VSI) conducted in 1991 as part of the RCRA Facility Assessment prepared by A.T. Kearney, Inc. dated August 1993, for the purpose of identifying Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) on the property. This VSI is regularly cited in Description of Current Conditions (DCC) Report prepared by Rust Environment and Infrastructure (January 1998).

Weaver Boos' distinction of a REC or Non-REC was based upon the findings of the DCC Report (which was prepared when the features remained on-site in 1998) or on observations of the general area during their site visit. Weaver Boos made the determination to identify a feature as a REC based on historical information, observations during the site visit, and prior knowledge and experience with similar facilities. The following REC was identified within the Sub-Parcel A15-1 development area: Discharge Pipe (Finding 243, REC 11B). There were no additional SWMUs or AOCs identified as sampling targets, and no additional units were identified from the DCC report Table 3-1.

3.2 Phase II Investigation Results – Sub-Parcel A15-1

Phase II Investigations specific to soil, groundwater, surface water, and sediment conditions were performed for the property area including Sub-Parcel A15-1 in accordance with the requirements outlined in the ACO as further described in the following agency-approved Phase II Investigation Work Plans:

- Area A: Parcel A8 (Revision 3) dated October 23, 2015
- Area A: Parcel A15 (Revision 1) dated September 30, 2022

All soil samples and groundwater samples were collected and analyzed in accordance with agency-approved protocols during the Phase II Investigations, the specific details of which can be reviewed in each agency-approved Work Plan. Each Phase II Investigation was developed to target specific features which represented a potential release of hazardous substances and/or petroleum products to the environment, including RECs, SWMUs, and AOCs, as applicable, as well as numerous other targets identified from former operations that would have the potential for environmental contamination. Samples were also collected at site-wide locations to ensure full coverage of each



investigation area. The full analytical results and conclusions of each investigation have been presented to the agencies in the following Phase II Investigation Reports:

- Area A: Parcel A8 (Revision 1) dated November 6, 2017
- Area A: Parcel A15 (Revision 1) dated August 28, 2023

This RADWP summarizes the relevant soil, groundwater, surface water, and sediment findings from these Phase II Investigations with respect to the proposed development of Sub-Parcel A15-1.

3.2.1 Soil Investigation Findings

Based on the scope of development for Sub-Parcel A15-1, 41 soil samples collected from 19 soil boring locations were included in this evaluation of Sub-Parcel A15-1. The 19 soil borings are shown on **Figure 3**, and the samples obtained from these borings provided relevant analytical data for discussion of on-site conditions.

Soil samples collected during the Phase II Investigation were analyzed for the Target Compound List (TCL) volatile organic compounds (VOCs) via USEPA Method 8260, TCL semi-volatile organic compounds (SVOCs) via USEPA Methods 8270, polynuclear aromatic hydrocarbons (PAHs) via USEPA Methods 8270 SIM, total petroleum hydrocarbon (TPH) diesel range organics (DRO) and gasoline range organics (GRO) via USEPA Method 8015, Oil & Grease via USEPA Method 9071, Target Analyte List (TAL) metals via USEPA Method 3050, hexavalent chromium via USEPA Method 7196, and cyanide via USEPA Method 9012. Shallow soil samples (0 to 1 foot below ground surface) only were analyzed for polychlorinated biphenyls (PCBs) via USEPA Method 8082. The laboratory Certificates of Analysis (including Chains of Custody) and Data Validation Reports are included as electronic attachments. The Data Validation Reports contain qualifier keys for the flags assigned to individual results in the attached summary tables.

Soil sample results were screened against the Project Action Limits (PALs) established in the property-wide Quality Assurance Project Plan (QAPP) (Revision 4, dated May 31, 2022), or based on other direct agency guidance. Several PALs have been adjusted based on revised toxicity data published by the USEPA (May 2021). **Table 1** and **Table 2** provide summaries of the detected organic and inorganic compounds in the soil samples collected from the soil borings. **Figure 4** presents the soil sample results that exceeded the organic and inorganic PALs. PAL exceedances were limited to two SVOCs (benzo[a]pyrene and dibenz[a,h]anthracene), Oil & Grease, and one inorganic (arsenic).

Non-aqueous phase liquid (NAPL) was not observed in any of the Phase II soil boring locations.



3.2.2 Groundwater Investigation Findings

A total of seven shallow groundwater monitoring locations (three monitoring wells and four piezometers) provide relevant analytical data for the proposed Sub-Parcel A15-1 development project and are shown on **Figure 5**. There is no direct exposure risk for future Composite Workers at the Site because there is no use of groundwater on the TPA property; however, groundwater may be encountered in the sub-parcel during some construction tasks. If groundwater is encountered, the appropriate health and safety plans and management procedures shall be followed to limit exposure in accordance with the dewatering requirements outlined in Section 5.2.

Each groundwater monitoring point was inspected for evidence of NAPL using an oil-water interface probe prior to sampling. None of the seven monitoring points showed evidence of NAPL during these checks. Groundwater samples were analyzed for TCL-VOCs, TCL-SVOCs, TAL metals, hexavalent chromium, total cyanide, TPH-DRO, and TPH-GRO. All analysis methods are listed in Section 3.2.1. The laboratory Certificates of Analysis (including Chains of Custody) and Data Validation Reports are included as electronic attachments. The Data Validation Reports contain qualifier keys for the flags assigned to individual results in the attached summary tables.

The Phase II Investigation groundwater results were screened against the PALs established in the property-wide QAPP (Revision 4, dated May 31, 2022), or based on other direct agency guidance. Similar to the evaluation of soil data, several PALs have been adjusted based on revised toxicity data published by the USEPA (May 2021). **Table 3** and **Table 4** provide summaries of the detected organic and inorganic compounds in the groundwater samples, and **Figure 5** presents groundwater results that exceeded the PALs. Groundwater exceedances of the PALs in the Phase II Investigations in the vicinity of the proposed development project consisted of two VOCs (chloroform and trichloroethene), two SVOCs (benz[a]anthracene and naphthalene), TPH-DRO, and five dissolved metals (cobalt, iron, lead, manganese, and vanadium).

3.2.3 Surface Water Investigation Findings

A total of eight surface water samples were collected from the approximate locations in **Figure 6**. Samples were collected from the middle of the water column at each location. The water depth ranged from 5 to 6 feet deep. All surface water samples were analyzed for VOCs, SVOCs, PAHs, TAL-Dissolved Metals, Oil & Grease, TPH-DRO, TPH-GRO, dissolved hexavalent chromium, total cyanide, and available cyanide. All analysis methods are listed in Section 3.2.1.

The surface water samples were screened against the PALs established in the QAPP (for groundwater) to determine potential direct exposure risks. The surface water analytical results were additionally compared to the National Recommended Water Quality Criteria (NRWQC) Aquatic Life Chronic Criteria for Freshwater. The analytical results for the detected parameters are summarized and compared to the PALs and the Aquatic Life Chronic Criteria for Freshwater in **Table 5** (Organics) and **Table 6** (Inorganics). No detections were observed for any organics that



have established NRWQC screening levels. There were no inorganic exceedances of the NRWQC screening levels.

Figure 6 presents the surface water results that exceeded the organic and inorganic PALs. PAL exceedances were limited to three VOCs (bromodichloromethane, chloroform, and dibromochloromethane), two SVOCs (benz[a]anthracene and naphthalene), TPH-DRO, and Oil & Grease.

The laboratory Certificates of Analysis (including Chains of Custody) and DVRs have been included as electronic attachments. The DVRs contain a glossary of qualifiers for the final flags assigned to results in the attached summary tables.

3.2.4 Sediment Investigation Findings

A total of 12 sediment samples were collected within the High Head Reservoir from the approximate locations in **Figure 7**. Each of the sediment samples were collected as a grab sample from the top 12 inches of accumulated sediment in the bottom surface of the High Head Reservoir with a Ponar dredge.

Each sediment sample was analyzed for VOCs, SVOCs, TAL-Metals, Mercury, Oil & Grease, TPH-DRO, TPH-GRO, PCBs, hexavalent chromium, and cyanide. All analysis methods are listed in Section 3.2.1, with the exception of mercury, which was analyzed via USEPA Method 7471.

The analytical results for the detected sediment parameters from Sub-Parcel A15-1 are summarized and compared to the soil PALs and also the Biological Technical Assistance Group (BTAG) Freshwater Sediment Screening Benchmark values in **Table 7** (Organics) and **Table 8** (Inorganics). PAL exceedances were limited to four PCB mixtures (Aroclor 1248, Aroclor 1254, Aroclor 1260, and total PCBs), TPH-DRO, Oil & Grease, and two inorganics (arsenic and lead). There were multiple exceedances for VOCs, SVOCs, metals, and total PCBs of the BTAG Freshwater Sediment Screening Benchmark values.

The laboratory Certificates of Analysis (including Chains of Custody) and DVRs have been included as electronic attachments. The DVRs contain a glossary of qualifiers for the final flags assigned to results in the attached summary tables.

3.2.5 Locations of Potential Concern

For soil and sediment, lead, PCBs, and TPH/Oil & Grease are subject to special requirements as designated by the agencies: lead results above 10,000 mg/kg are subject to additional delineation (and possible excavation), PCB results above 50 mg/kg are subject to delineation and excavation, and TPH/Oil & Grease results above 6,200 mg/kg should be evaluated for the potential presence and mobility of NAPL in any future development planning:



- There were no locations where detections of lead exceeded 10,000 mg/kg.
- There were no locations where detections of PCBs exceeded 50 mg/kg.
 - o There were several locations with TPH or Oil & Grease concentrations above 6,200 mg/kg: Soil sample A8-005-SB-1 had an Oil & Grease exceedance, with a concentration of 7,740 mg/kg.
 - Sediment samples with TPH-DRO and Oil & Grease detections above 6,200 mg/kg were detected in 11 of 12 sediment samples, with concentrations ranging from 13,400 mg/kg (Oil & Grease, A15-003-SD) to 82,400 mg/kg (Oil & Grease, A15-011-SD).

As stated in the Parcel A15 Phase II Investigation Report, additional characterization may be required during future redevelopment to ensure proper management of sediments if they are to be excavated.

No visual observations of NAPL were noted at any locations for the Site. Additionally, no NAPL was detected in any monitoring wells within or proximate to the proposed development area.



4.0 PROPOSED SITE DEVELOPMENT PLAN

TPA is proposing the construction of a DMCF for Sub-Parcel A15-1. The proposed development will include permanent improvements on approximately 46.9 acres located primarily within Parcel A15, but extending slightly into Parcel A8. The proposed future use of Sub-Parcel A15-1 is Tier 3 – Industrial. The remainder of Parcel A15 will be addressed in separate RADWP in accordance with the requirements of the ACO, if necessary. Due to the proposed use of slag fill, the entirety of the Site will have an environmental cap as part of the VCP capping remedy. Capping will be completed following placement of the dredged material in the DMCF (and will be detailed in a future A15-1 RADWP Addendum).

Site-specific health and safety requirements will be implemented to be protective of workers. Upgraded personal protective equipment (PPE) beyond standard Level D protection will be used in conjunction with the property-wide Health and Safety Plan (HASP) for the entire scope of intrusive work covered by this RADWP as a protective measure to ensure that there are no unacceptable exposures for Construction Workers during project implementation. The modified Level D PPE requirements which will be applied throughout this project, including specific PPE details, planning, tracking/supervision, enforcement, and documentation, are outlined in the PPE Standard Operational Procedure (SOP) provided as **Appendix B**.

A restriction prohibiting the use of groundwater for any purpose at the Site will be included as an institutional control in the NFA and COC issued by the Agencies, and a deed restriction prohibiting the use of groundwater will be filed. The groundwater use restriction will protect future Composite Workers from potential direct exposures. Proper water management is required to prevent unacceptable discharges or risks to Construction Workers during development. Work practices and health and safety plans governing groundwater encountered during excavation activities will provide protection for Construction Workers involved with development at the Site.

The development plan for the Site is shown on **Figure 2**. Detailed development plan drawings are included as **Appendix C**. The High Head Industrial Basin DMCF will be constructed with a berm that runs the entire circumference of the existing basin. The berm will be constructed with a clay core and subgrade slurry wall. The outer slope of the berm will consist of a geotextile fabric, 1-ft of MDE approved clean fill, and a permanent erosion control blanket (refer to the cross section in **Appendix C**). The DMCF design is being reviewed and permitted by the MDE Dam Safety Program. The design criteria include the following:

• A 3' thick slurry wall with a saturated permeability of K=1x10⁻⁶ cm/sec or less embedded into the Recent Alluvial Layer below grade. To provide a continuous containment system the full circumference slurry wall will be embedded a minimum of 3-ft into the underlying lean clay strata or 3-ft into the upper fat clay within the Recent Alluvial Layer.



• A 5' thick clay core will be located at the center of the embankment (berm). The clay core will have a saturated permeability of $K=1\times10^{-6}$ cm/sec or less.

The slurry wall construction will include the following:

- 1. Construction of a working platform at least 100 ft wide and approximately 4 ft above the surrounding grades. This working platform will also serve as the base to the DMCF berm.
- 2. The slurry wall will be constructed through the working platform down to the design elevation while bentonite slurry will be continuously pumped into the trench. The slurry creates a filter cake on the sidewalls and maintains stability of the trench. This elevation of the slurry in the trench and slurry density will be monitored to ensure compliance with design requirements that are based on trench stability.
- 3. The excavated material will be placed beside the trench and mixed with slurry until the material has a soil-bentonite slump of 8 to 11 inches. The soil-bentonite slurry will be allowed to flow back into the trench. The bottom of the trench will be sounded to verify no sidewall sloughing.
- 4. Once the slurry wall is complete, a small sacrificial berm will be placed over the slurry wall to promote consolidation and protection from the elements.
- 5. At least 3 to 4 weeks after portions of the wall are complete, the berm will be heightened along with a clay core as per the drawings. The slurry wall will be embedded a minimum of 2 ft into the clay core to provide a continuous watertight system.
- 6. The slurry wall and DMCF berm construction will be observed and monitored by a field engineer whose responsibility is to ensure the integrity of the system.

A 20-ft wide gravel road will be constructed on the top of the berm. The 1-foot-thick road will consist of MDE approved stone, concrete, or gravel underlaid with geotextile fabric.

The High Head Industrial Basin DMCF will receive dredged material generated during the Sparrows Point Container Terminal project. The dredge sediment was tested for hydraulic conductivity. The testing was performed via Method ASTM D5084; the results of the testing ranged from 2.8 x 10⁻⁸ to 8.5 x 10⁻⁸. Once the DMCF is filled and the dredge material is dewatered and consolidated, the DMCF will be capped. An A15-1 RADWP Addendum will be submitted for the final capping plan.

The development of the Site will involve the tasks listed below. Documentation of the outlined tasks and procedures will be provided in a Sub-Parcel A15-1 Development Completion Report.



4.1 DEVELOPMENT PHASE

4.1.1 Erosion and Sediment Control Installation

Erosion and sediment controls will be installed prior to the commencement of grading work in accordance with the requirements of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control. Any soils which are disturbed during the installation of erosion and sediment controls will be placed on-site below the cap.

4.1.2 Grading and Site Preparation

Grading activities including both cut and fill will occur within the Site boundary. Any material that is not suitable for compaction will be excavated and replaced with subbase material. Borrow materials will be obtained from Agency-approved sources and will be documented prior to transport to the Site. Processed slag aggregate sourced from the TPA property and Agency-approved borrow material will be used to construct the berms for the DMCF (no dredged material will be used to construct the berms). Following berm construction, dredged material will be placed inside the berm. Subsequently, the DMCF will be fully capped. The DMCF will be an enclosed facility, entirely surrounded by the berm and slurry wall.

Other materials approved by the Agencies for industrial use may also be used as fill, but the placement of materials other than approved clean fill will necessitate that the Site be subject to surface engineering controls (i.e., capping). Fill sources shall be free of organic material, frozen material, or other deleterious material. In the case that there is excess material (not anticipated), the spoils will be stockpiled at a suitable location and dealt with in accordance with the soil management procedures included in the 'Environmental Professional Roles' document (Hillis-Carnes Engineering Associates, September 17, 2019); refer to **Appendix D**). This work will be coordinated with the Agencies accordingly. No excess material will leave the 3,100-acre property without prior approval from Agencies.



5.0 DEVELOPMENT IMPLEMENTATION PROTOCOLS

5.1 DEVELOPMENT PHASE

This plan presents protocols for the handling of soils and fill materials in association with the development of Sub-Parcel A15-1. In particular, this plan highlights the minimum standards for construction practices and managing potentially contaminated materials to reduce potential risks to workers and the environment.

The two existing pump houses will be demolished in accordance with all applicable state and local regulations. Any records generated as part of these demolitions will be included in the Development Completion Report.

Several minor PAL exceedances were identified in soil samples across the Site. The PALs are based on the USEPA's RSLs for industrial soils, or other direct guidance from the MDE. Because PAL exceedances can present potential risks to human health and the environment at certain concentrations, this plan presents material management and other protocols to be followed during the work to adequately mitigate potential risks from such materials remaining on-site during the development phase. There were no locations in the proposed Site boundary with soil exceedances of the special management criteria for PCBs (50 mg/kg) or lead (10,000 mg/kg). However, an Oil & Grease exceedance was observed at soil boring A8-005-SB (7,740 mg/kg), above the TPH criteria of 6,200 mg/kg. TPH and Oil and Grease exceedances were also identified in 11 of 12 sediment samples. Particular care will be taken when handling soils in the vicinity of this soil boring or with any sediments. NAPL was not detected on the water table in any monitoring wells within the proposed development area.

As noted above, the entirety of the Site will be capped following the placement of the dredged material. An A15-1 RADWP Addendum for the final capping of the DMCF will be submitted once the DMCF has been filled, and the dredge material has settled, dried out, and consolidated. The proposed cap will meet the required minimum thicknesses for surface engineering controls, which are provided in **Appendix E**.

5.1.1 Erosion/Sediment Control

Erosion and sediment controls will be installed prior to commencing grading work in accordance with the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control. In addition, the following measures are being taken to prevent contaminated soil from exiting the Site:

- Stabilized construction entrance placed at site entrance.
- A dry street sweeper used as necessary on adjacent roads, with the swept dust collected and properly managed.



• Remove accumulated sediment from along silt fencing and sediment traps as needed.

5.1.2 Soil Excavation and Utility Trenching

There are currently no utility trenches proposed as part of the RADWP Drawings (included as **Appendix C**), however, trenching will be conducted as part of the slurry wall construction. Prior to any excavation / trenching activities, a pre-excavation meeting shall be held to address proper operating procedures for working on-site and monitoring excavations and utility trenching in potentially contaminated material. This meeting shall include the construction manager and the Environmental Professional (EP) providing oversight on the project. During the meeting, the construction manager and the EP shall review the proposed excavation/trenching locations and any associated utility invert elevations. The construction manager will be responsible for conveying all relevant information regarding excavation/grading and/or utility work to the workers who will be involved with these activities. The HASP and PPE SOP for the project shall also be reviewed and discussed.

The EP will provide oversight of any soil excavation/trenching activities as described in Section 5.6. In general, and based on the existing sampling information, all excavated materials are expected to be suitable for replacement on the Site. However, the EP will monitor the soil excavation activities for signs of significantly contaminated material which may not be suitable for reuse (as described below). The EP will also be responsible for monitoring organic vapor concentrations in the worker breathing zone within utility trenches and excavations to determine whether any increased level of health and safety protection is required.

To the extent practical, all excavation activities will be conducted in a manner to minimize repeated handling of materials. Stockpiles shall be stored in a location that is not subjected to concentrated stormwater runoff. Stockpiles shall be managed as necessary to prevent the erosion and off-site migration of stockpiled materials, and in accordance with the applicable provisions of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control. Soil designated for replacement on-site which does not exhibit evidence of contamination (as determined by the EP) may be managed in large stockpiles (no size restriction) within the erosion and sediment control areas.

A general utility cross section is provided as **Appendix F**. Additional preventative measures will be required if evidence of petroleum contamination is encountered, to prevent the discharge to, or migration of, petroleum product along a utility conduit. Contingency measures have been developed to ensure that utilities will be constructed in a manner that will prevent the migration of any encountered NAPL, and that excavated material will be properly managed. The Utility Excavation NAPL Contingency Plan (**Appendix G**) provides protocols to be followed if NAPL is encountered during the construction activities. Preventative measures to inhibit the spread of petroleum product will be conducted in accordance with this Plan.



The EP will monitor all soil excavation and utility trenching activities for signs of potential contamination. Soils will be monitored with a hand-held photoionization detector (PID) for potential VOCs and will also be visually inspected for the presence of staining, petroleum waste materials, or other indications of significant contamination. If there are no visual indications of potential contamination and no elevated PID detections, material removed from excavations/trenching can be re-used as backfill on-site. If screening of excavated materials by the EP indicates the presence of conditions of potential concern (i.e., sustained PID readings greater than 10 ppm, visual staining, unsuitable waste materials, etc.), such materials shall be segregated for additional sampling and special management.

Excavated material exhibiting evidence of significant contamination shall be placed in stockpiles (not to exceed 500 cubic yards) on polyethylene sheeting to minimize potential exposures and erosion when not in use. Materials stockpiled due to evidence of contamination will be sampled in accordance with reuse and/or waste disposal requirements and transported to an appropriate permitted disposal facility. Analysis of segregated soils for any use other than disposal must be submitted to the Agencies for approval.

5.1.3 Soil Sampling and Disposal

Excavated materials that are determined by the EP to warrant sampling and analysis because of elevated PID readings or other indications of potential contamination shall be sampled and analyzed to determine how the materials should be managed. If excavated and stockpiled, such materials shall be placed on a polyethylene or equivalent tarp to minimize potential exposures and erosion. All stockpiled soil may be considered for use as fill under surface engineering controls at this Site or on other areas of the TPA property depending on the analytical results.

Any soil that is generated from excavations/trenching that is not proposed (or suitable) for reuse within the subject parcel will be sampled to determine the suitability of the material for disposal. Soil material that is determined to be non-hazardous may be taken to an appropriate non-hazardous landfill (which may include Greys Landfill if approved by TPA) for proper disposal. Soil material that is determined to be a hazardous waste shall be shipped off-site in accordance with applicable regulations to an appropriate and permitted RCRA disposal facility. A summary of sampling including a description of the material, estimated volume, and sampling parameters will be submitted to the Agencies. The quantities of all materials that require disposal, if any, will be recorded and identified in the Development Completion Report.

5.1.4 Fill

Processed slag aggregate sourced from the TPA property will be used as the fill material for construction of the berms at the Site (no dredged material will be used to construct the berms). 'Processed slag aggregate' refers to the removal of larger boulders and debris (but not crushing or size screening). "Processed slag" is screened with a PID by the on-site Environmental



Professional. Impacted material (elevated PID readings, odors, visual impacts) will not be used. The placement of processed slag aggregate or materials other than approved clean fill will necessitate that the Site will be subject to surface engineering controls (i.e., capping). Soil excavated on the Sub-Parcel has been determined to be suitable for re-use within the Site unless such materials are determined by the Agencies to be unsuitable for use as outlined in Section 5.1.2 and Section 5.1.3.

All over-excavated utility trenches will be backfilled with material approved by the Agencies for industrial use. Backfill may include material removed from utility trenches unless such materials are identified by the EP as unsuitable due to elevated PID readings or other indications of potential contamination. As with structural fill, processed slag aggregate and other materials approved for industrial use can be used as backfill in utility trenches on the Site if the area will be covered by a VCP cap. Utility backfill which will extend into the cap (i.e., top 2 feet of backfill in landscaped areas) must meet the VCP clean fill requirements, and a geotextile marker fabric will be placed between the VCP clean fill and any underlying material. A general utility detail drawing is provided as **Appendix F**. Material imported to the Site will be screened according to Agency guidance for suitability.

5.1.5 Dust Control

General construction operations, including grading, will be performed at the Site. These activities are anticipated to be performed in areas of soil impacted with Contaminant of Potential Concerns (COPCs). Best management practices should be undertaken at the TPA property as a whole to prevent the generation of dust which could impact other areas of the property outside of the immediate work zone. To limit worker exposure to contaminants borne in dust and windblown particulates, dust monitoring will be performed during dust-generating activities.

The EP will be responsible for the Site dust monitoring program. This will consist of both monitoring for visible dust as well as real-time dust monitoring. If sustained visible dust is observed, the General Contractor will implement dust suppression methods to address dust levels at the Site. Such methods may include an increase in the frequency of water trucks spraying vehicle routes, covering of material piles with plastic sheeting, or decreasing drop heights of material from excavation equipment.

Real-time dust monitoring will be implemented using Met One Instruments, Inc. E-Sampler dust monitors or equivalent real-time air monitoring devices will be utilized. Continuous dust monitoring will be performed in the work area as well as perimeter monitors at upwind and downwind locations based on the prevailing wind direction predicted for that day. The prevailing wind direction will be assessed during the day, and the positions of the perimeter monitors may be adjusted if there is a sustained shift in prevailing wind direction.



The action level for determining the need for implementing additional dust suppression methodologies is 3.0 milligrams per cubic meter (mg/m³). The lowest of the site-specific dust action levels was selected from the Occupational Safety and Health Administration Permissible Exposure Limit and American Conference of Governmental Industrial Hygienists Threshold Limit Value. If sustained dust concentrations exceed the action level (3.0 mg/m³) at monitoring locations as a result of conditions occurring at the Site, operations will be temporarily stopped until additional dust suppression can be implemented. Operations may resume once monitoring indicates that dust concentrations are below the action level.

Once all dust-generating activities are complete, the dust monitoring program may be discontinued.

5.2 WATER MANAGEMENT

This plan presents the protocols for handling any groundwater and surface water that needs to be removed to facilitate construction of the proposed Sub-Parcel A15-1 development.

5.2.1 Groundwater and Surface Water PAL Exceedances

Groundwater and surface water samples were collected during the preceding Phase II Investigations from monitoring wells within and surrounding the Site. Aqueous PAL exceedances in groundwater and surface water in the vicinity of the development LOD included both organic and inorganic compounds. The aqueous PAL exceedances are summarized on **Figure 5** for groundwater and **Figure 6** for surface water.

While the concentrations of PAL exceedances are not deemed to be a significant human health hazard for future workers since there is no on-site groundwater or surface water use which could lead to direct exposures, proper water management is required during construction to prevent unacceptable discharges or risks to Construction Workers.

5.2.2 Dewatering

Dewatering of the High Head Reservoir may be necessary to facilitate the placement and compaction of structural fill during berm construction. The floor of the basin is currently >90% dry through evaporation. If required, dewatering will be done in accordance with all local, state, and federal regulations. Water will be managed via one of the following options:

- Transported to be treated at the HCWWTP, following any pretreatment necessary and discharged in accordance with NPDES Permit No. 90-DP-0064; Special Conditions; A.1, A.4, or A.6 (whichever is currently in effect); Effluent Limitations and Monitoring Requirements;
- Discharged in accordance with the requirements of the General Permit for Stormwater Associated with Construction Activity (20-CP);



- Discharged to the Baltimore County sanitary sewer system;
- Discharged locally in accordance with the requirements of Special Condition AF, Section 2, Mobile Dewatering Collection and Treatment Unit of NPDES Permit No. 90-DP-0064; or
- Off-site disposal.

The Agencies will be notified which option is selected prior to the generation of groundwater. If water is sent to the HCWWTP via trucking or direct discharge to a drainage system that flows to the HCWWTP, applicable outfall dewatering fluids will be evaluated pursuant to the HCWWTP Constituent Threshold Limits for Dewatering Activities related to Remediation, Development, and Capping Protocol listed below.

The EP will inspect water that collects in the excavations/trenches. If the water exhibits indications of significant contamination (e.g., sheen, odor, discoloration, presence of product), the water may also be sampled to confirm conditions. If the results of the analyses are above the threshold levels listed below, groundwater at the Site will be further evaluated to confirm acceptable treatment by the HCWWTP, or will be evaluated to design an appropriate pre-treatment option. Alternatively, the water may be disposed of at an appropriate off-site facility.

	<u>Analysis</u>	Threshold Levels
•	Total metals by USEPA Method 6020A	1,000 ppm
•	PCBs by USEPA Method 8082	>Non-Detect
•	SVOCs by USEPA Method 8270C	1 ppm_
•	VOCs by USEPA Method 8260B	1 ppm_
•	Oil & Grease by USEPA Method 1664	200 ppm
•	TPH-DRO by USEPA Method 8015B	200 ppm
•	TPH-GRO by USEPA Method 8015B	200 ppm

Documentation of water testing and the selected disposal option will be reported to the Agencies in the Development Completion Report. Associated permits or permit modifications related to dewatering will also be provided in the Development Completion Report.

5.2.3 DMCF Water Management

Water within the berm footprint will be contained within the existing basin. NPDES permitted effluent piping will be installed over the dike wall to discharge supernatant and stormwater from the DMCF – additional treatment may be required and will be implemented pursuant to the NPDES Permit. The Sparrows Point NPDES permit will be modified to cover the discharge of dredge material supernatant from the DMCF, once the DMCF construction is complete and the DMCF is operating. Stormwater around the DMCF will be diverted away from the DMCF using swales and piping to a local permitted stormwater system.



5.3 HEALTH AND SAFETY

A property-wide HASP has been developed and is provided with this RADWP (as an electronic attachment) to present the minimum requirements for worker health and safety protection for all development projects. All contractors working on the Site may elect to adopt the property-wide HASP or may prepare their own HASP that provides a level of protection that is at least as much as that provided by the attached HASP.

Modified Level D PPE will be used for the entire scope of intrusive work covered by this RADWP as a protective measure to ensure that there are no unacceptable exposures for Construction Workers during project implementation. Health and safety controls outlined in the HASP and PPE SOP will mitigate potential risk to Construction Workers from contacting impacted soil, groundwater, surface water, or sediment during development. The modified Level D PPE requirements planned for this development project, including specific PPE details, planning, tracking/supervision, enforcement, and documentation, are outlined in the PPE SOP provided as **Appendix B**. The EP will be responsible for monitoring organic vapor concentrations in the worker breathing zone within the utility trenches and excavations to determine whether any increased level of health and safety protection (including engineering controls and/or PPE) is required.

Prior to commencing work, the contractor must conduct an on-site safety meeting for all personnel. All personnel must be made aware of the HASP and the PPE SOP. Detailed safety information shall be provided to personnel who may be exposed to COPCs. Workers will be responsible for following established safety procedures to prevent contact with potentially contaminated material.

5.4 INSTITUTIONAL CONTROLS (FUTURE LAND USE CONTROLS)

Long-term conditions related to future use of the Site will be placed on the RADWP approval, NFA, and COC. These conditions are anticipated to include the following:

- A restriction prohibiting the use of groundwater for any purpose at the Site and a requirement to characterize, containerize, and properly dispose of groundwater in the event of excavations encountering groundwater.
- Notice to the Agencies at least 30 days prior to any future soil disturbances that are expected to breach the approved capping remedy (i.e., through the berm).
- Notice to the USEPA at least 30 days prior to any future soil disturbances that are expected to breach the approved capping remedy, only if the contractor will not use the modified Level D PPE specified in the approved SOP.
- Requirement for a HASP in the event of any future excavations at the Site.



- Complete appropriate characterization and disposal of any material excavated/pumped at the Site in accordance with applicable local, state, and federal requirements.
- Implementation of inspection procedures and maintenance of the containment remedies.

The owner/operator will file the above deed restrictions as defined by the VCP in the NFA and COC.

5.5 POST REMEDIATION REQUIREMENTS

Post remediation requirements will include compliance with the conditions specified in the NFA, COC, and the deed restrictions recorded for the Site. Deed restrictions will be recorded within 30 days after receipt of the final NFA. In addition, the Agencies will be provided with a written notice of any future excavations (as applicable) in accordance with the requirements given in Section 5.5. Written notice of planned excavation activities will include the proposed date(s) for the excavation, location of the excavation, health and safety protocols (as required), clean fill source (as required), and proposed characterization and disposal requirements. Written notice may consist of email correspondence and/or hard copy correspondence.

Additional requirements will include inspection procedures and maintenance of the containment remedies to minimize degradation which could lead to future exposures, as well as continued perimeter groundwater monitoring pursuant to the Sitewide Groundwater Corrective Measures Study. An O&M Plan will be submitted for Agency approval and will include long-term inspection and maintenance requirements for the capped areas of the Site. The responsible party will perform cap inspections, perform maintenance of the cap, and retain inspection records, as required by the O&M Plan.

5.6 CONSTRUCTION OVERSIGHT

The EP will observe the Site during all ground intrusive work to ensure that the work is completed in accordance with this RADWP, specifically as it related to the noted environmental and safety protocols. Upon completion, the EP will certify that based on observations made during environmental monitoring, the Site was developed in accordance with this RADWP.

The EP will monitor all soil excavation and utility trenching activities (if conducted) for signs of contamination that may indicate materials that are not suitable for reuse. In particular, soils will be monitored with a hand-held PID for potential VOC impacts, and will also be visually inspected for staining, petroleum waste materials, or other indications of significant contamination. If screening of excavated materials by the EP indicates the presence of conditions of potential concern (i.e., sustained PID readings greater than 10 ppm, visual staining, unsuitable waste materials, etc.), such materials shall be segregated for additional sampling and special management (as described in Section 5.1.2; Soil Excavation and Utility Trenching). The EP will also perform routine periodic breathing zone monitoring and PPE spot checks during ground intrusive activities. The EP will



also inspect any water that collects in the excavations/trenches on an as-needed basis to coordinate appropriate sampling prior to disposal (as described in Section 5.2.2; Dewatering).

Daily inspections, as necessary, will be performed during general site grading and cap construction activities to verify:

- appropriate fill materials are being used (as described in Section 5.1.4; Fill);
- dust monitoring and control measures are being implemented (as described in Section 5.1.5; Dust Control)
- HASP requirements and the PPE SOP are being enforced by the designated Site Safety Officer (as described in Section 5.4; Health and Safety), and
- surface engineering controls are being installed with the appropriate thicknesses (shown on the RADWP attachments).

Oversight by an EP will not be required during construction activities which do not have a significant environmental component, such as above-grade construction.

Records will be developed by the EP to document:

- Compliance with soil screening requirements;
- Proper water management, including documentation of any testing and water disposal;
- Observations of construction activities during site grading and cap construction; and
- Proper cap thickness and construction.



6.0 PERMITS, NOTIFICATIONS AND CONTINGENCIES

The participant and their contractors will comply with all local, state, and federal laws and regulations by obtaining any necessary approvals and permits to conduct the activities contained herein. Any permits or permit modifications from State or local authorities will be provided as addenda to this RADWP.

A grading permit is required if the proposed grading disturbs over 5,000 square feet of surface area or over 100 cubic yards of earth. A grading permit is required for any grading activities in any watercourse, floodplain, wetland area, buffers (stream and within 100 feet of tidal water), habitat protection areas or forest buffer areas (includes forest conservation areas). Based on the scope of proposed earth disturbance, a grading permit will be acquired as part of this development project. Erosion and Sediment Control Plans will be submitted to, and approved by, the Agencies prior to initiation of land disturbance for development.

Contingency measures will include the following:

- 1. The Agencies will be notified immediately of any previously undiscovered contamination, previously undiscovered storage tanks and other oil-related issues, and citations from regulatory entities related to health and safety practices.
- 2. Any significant change to the implementation schedule will be noted in the progress reports to Agencies.
- 3. Modified Level D PPE will be used for the entire scope of ground intrusive work covered by this RADWP as a protective measure to ensure that there are no unacceptable exposures for Construction Workers during project implementation. The modified Level D PPE requirements which will be applied during this project are outlined in the PPE SOP provided as **Appendix B**. If it is not possible to implement the PPE SOP as provided, the agencies will be notified and a RADWP Addendum will be submitted to detail any appropriate mitigative measures.



7.0 IMPLEMENTATION SCHEDULE

Progress reports will be submitted to the Agencies on a quarterly basis. Each quarterly progress report will include, at a minimum, a discussion of the following information regarding tasks completed during the specified quarter:

- Development Progress
- Soil Management (imported materials, screening, stockpiling)
- Soil Sampling and Disposal
- Water Management
- Dust Monitoring
- Notable Occurrences (if applicable)
- Additional Associated Work (if applicable)

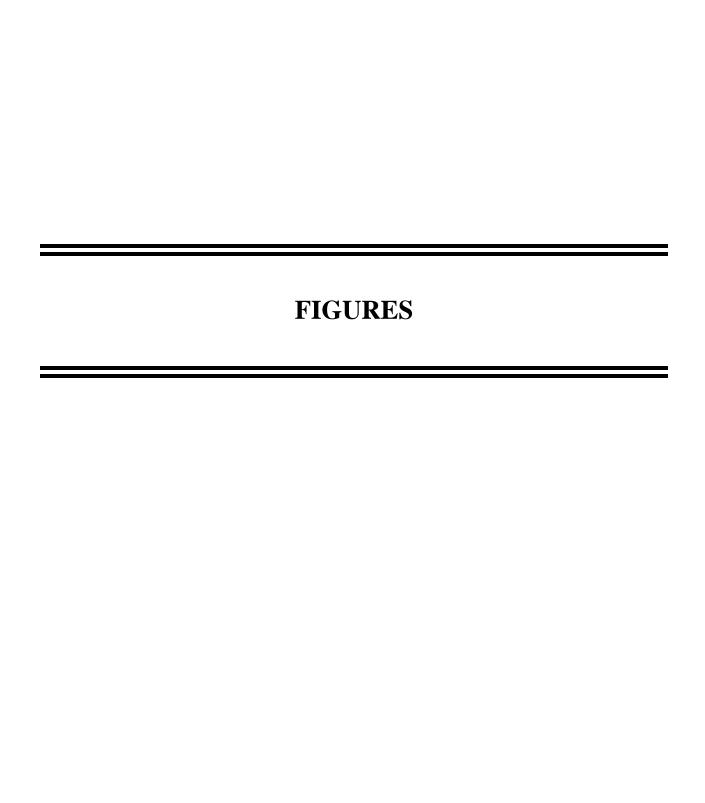
The proposed implementation schedule is shown below:

Task	Proposed Completion Date
Anticipated Development Approval	September 2025
Development:	
Installation of Erosion and Sediment Controls	October 2025
Site Preparation / Grading	October 2025
Substantial Completion	October 2026
Submittal of Development Completion Report/ Notice of Completion of Remedial Actions*	January 2027
Request for NFA from the Agencies	January 2027
Recordation of institutional controls in the land records office of Baltimore County	Within 30 days of receiving the approval of NFA from the Agencies
Submit proof of recordation with Baltimore County	Upon receipt from Baltimore County

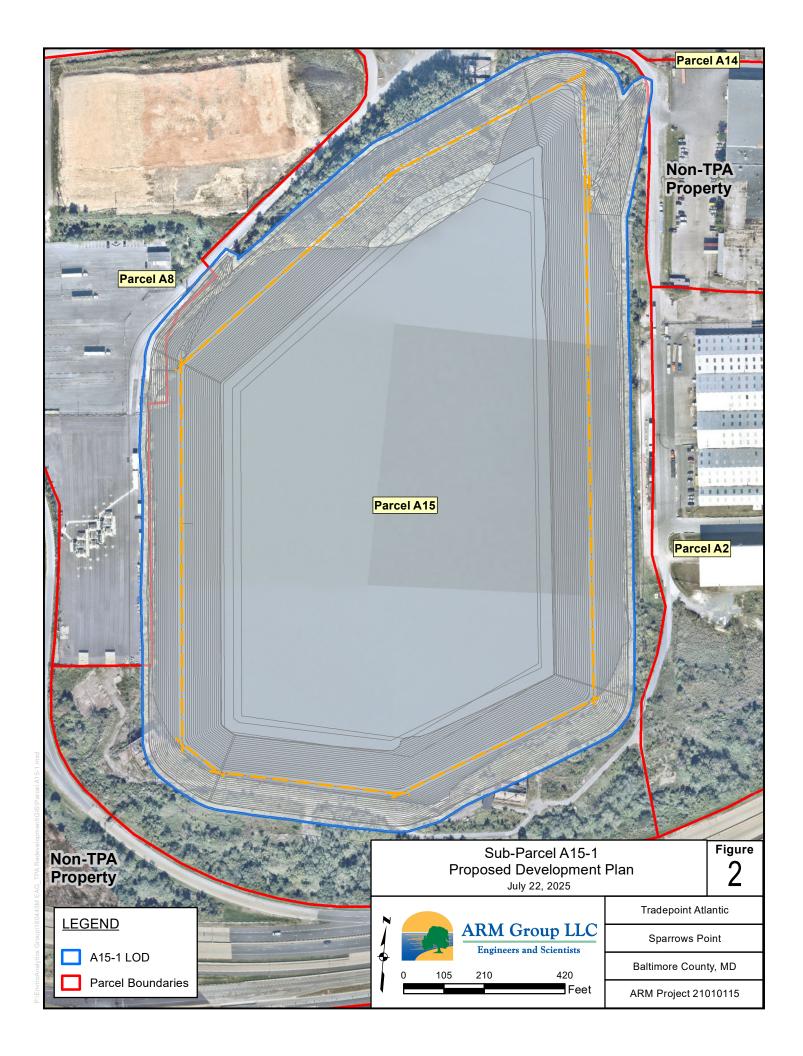


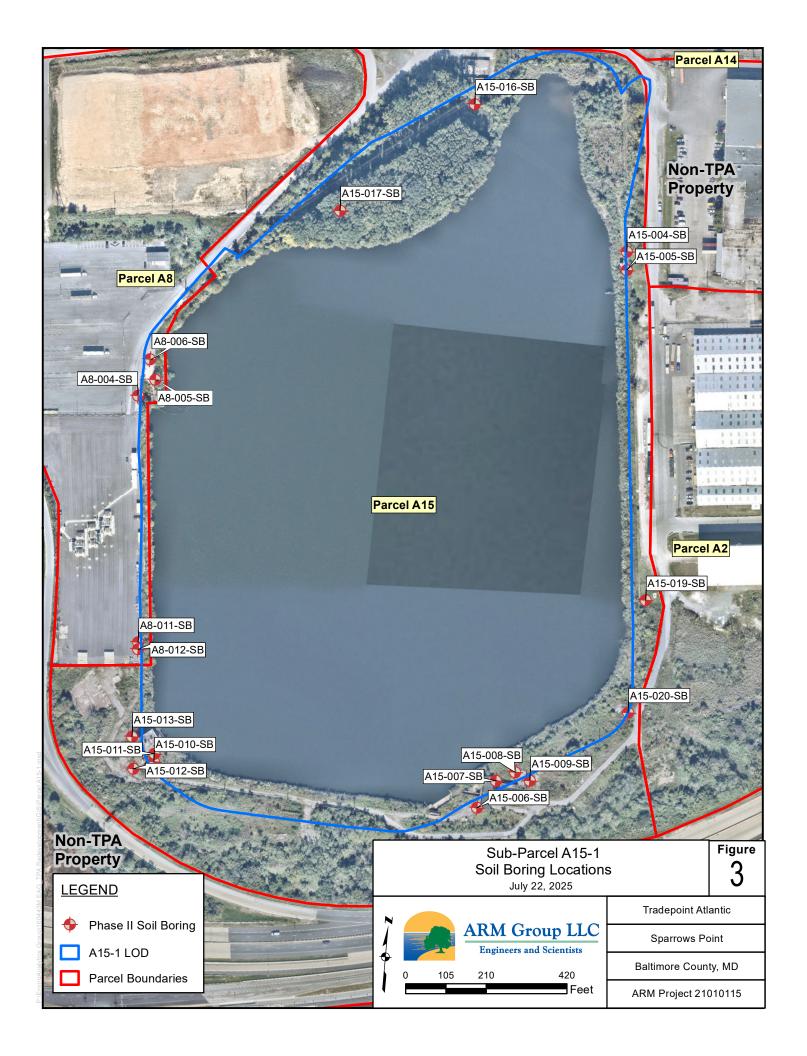
*Notice of Completion of Remedial Actions will be prepared by a Professional Engineer registered in Maryland and submitted with the Development Completion Report to certify that the work is consistent with the requirements of this RADWP and the Site is suitable for occupancy and use.

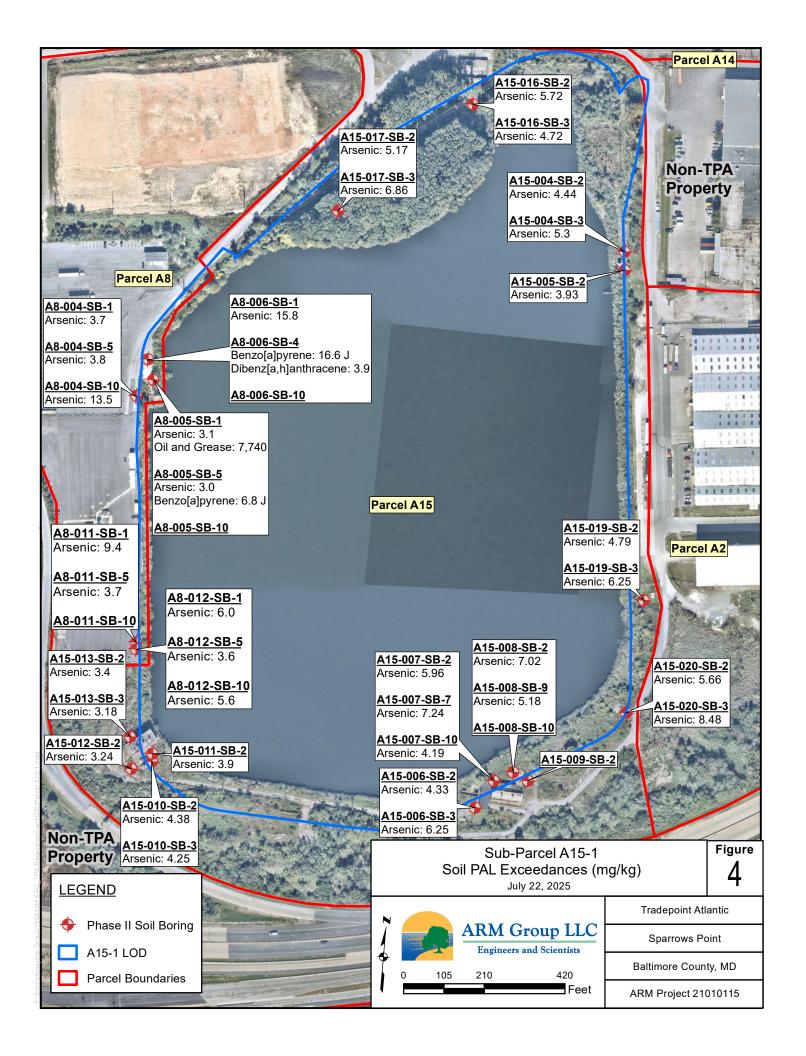


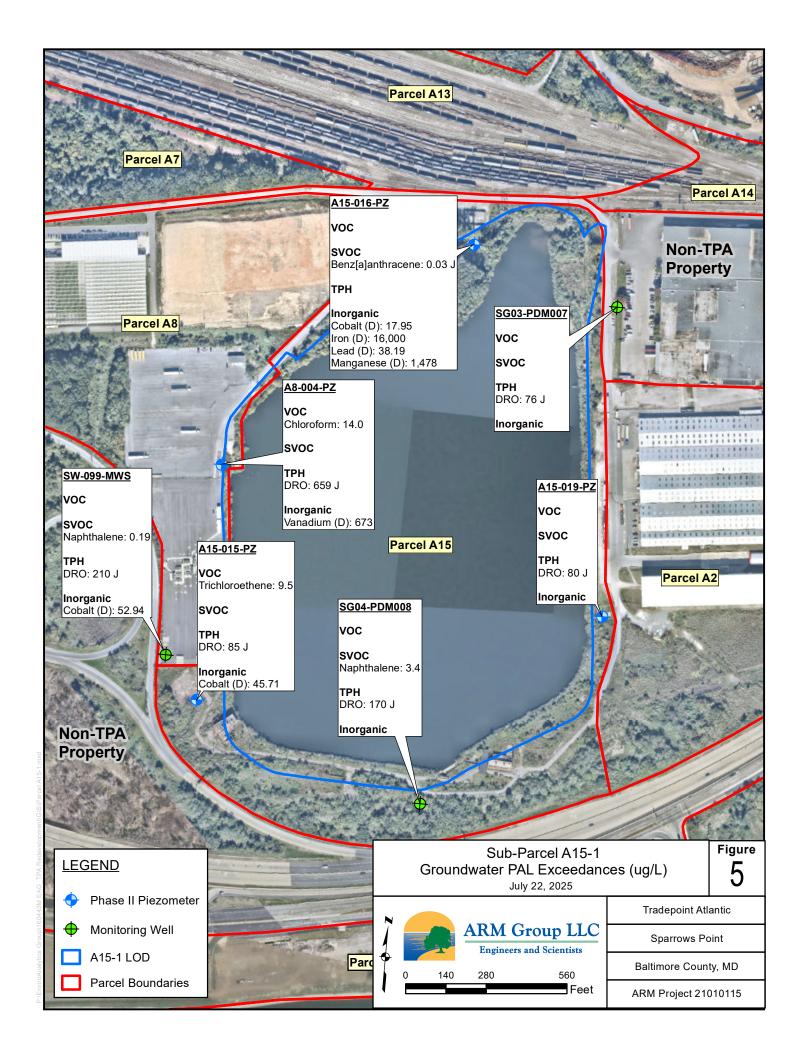


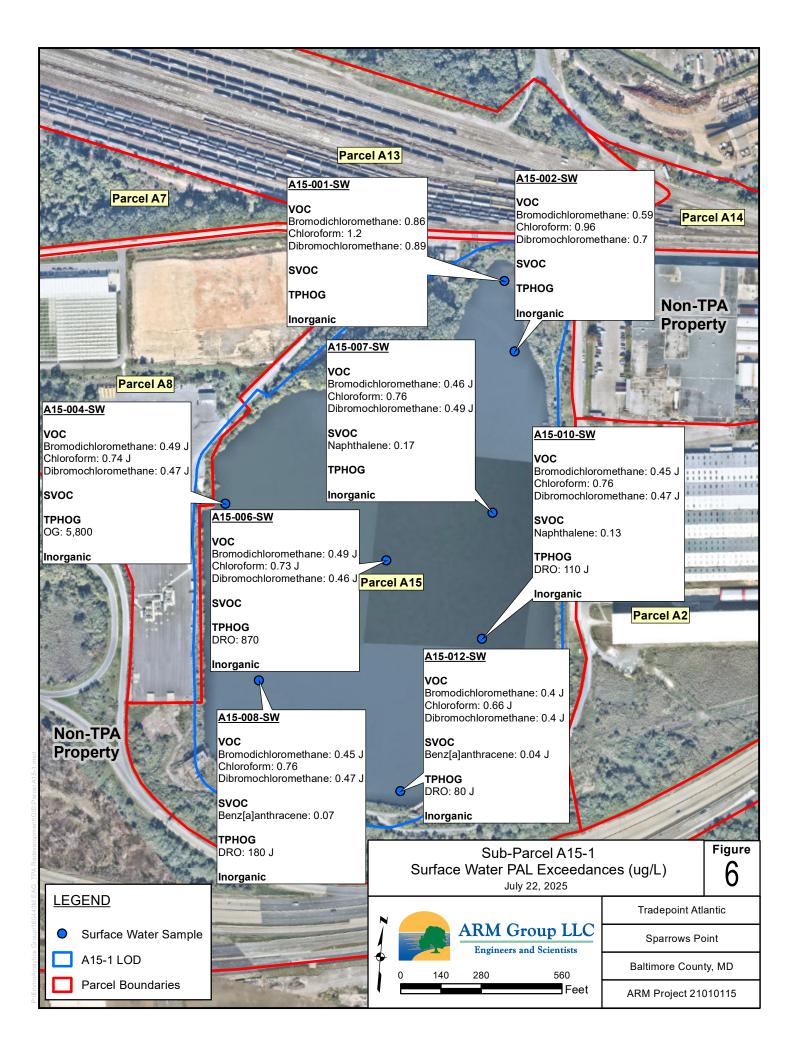


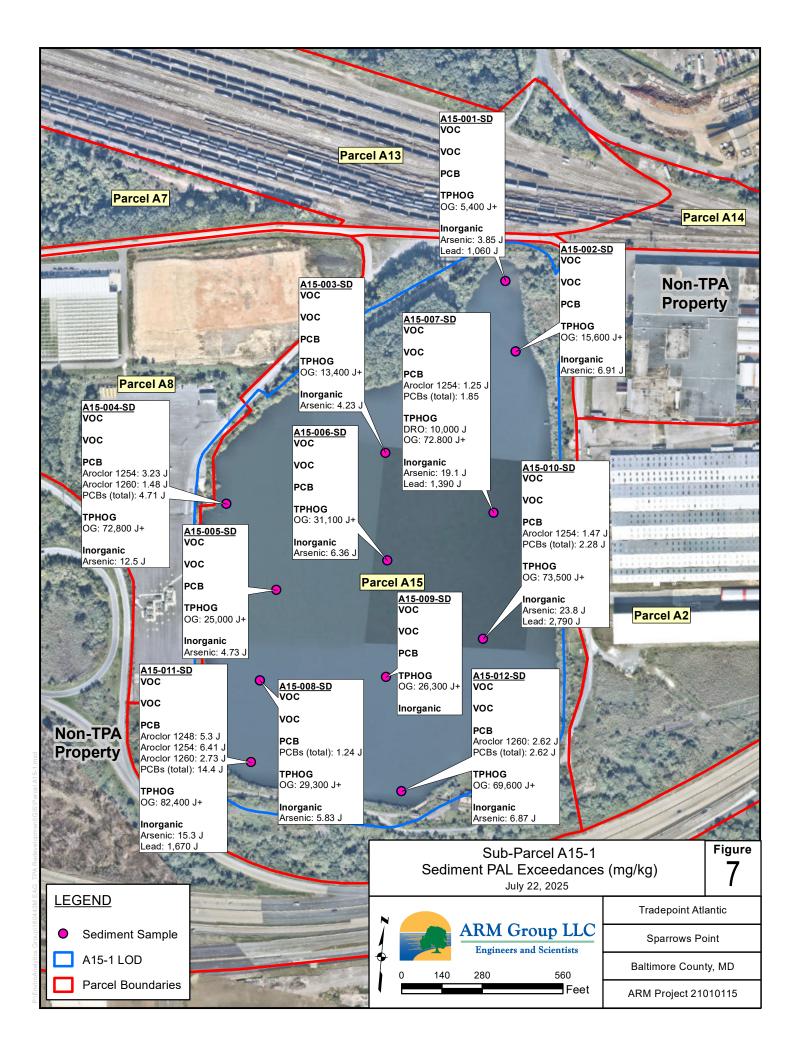












TABLES

	1	П	A15-004-SB-2*	A15 004 SR 3*	A15-005-SB-2*	A15-006-SB-2	A15-006-SB-3	A15-007-SB-2	A15-007-SB-7	A15-008-SB-2	A15-008-SB-9	A15-009-SB-2	A15-010-SB-2*	A 15 O10 SR 3*
Parameter	Units	PAL	11/8/2022	11/8/2022	11/8/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022	12/21/2022	12/21/2022
Volatile Organic Compounds			11/0/2022	11,0,2022	11/0/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022	12/21/2022	12/21/2022
1,1-Dichloroethane	mg/kg	16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethene	mg/kg	1,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Butanone (MEK)	mg/kg	190,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Hexanone	mg/kg	1,300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acetone	mg/kg	670,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	mg/kg	5.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chloroform	mg/kg	1.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cyclohexane	mg/kg	27,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Chloride	mg/kg	1,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloroethene	mg/kg	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	mg/kg	47,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethene	mg/kg	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichlorofluoromethane	mg/kg	3,100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Semi-Volatile Organic Compounds^	<u> </u>													
1,1-Biphenyl	mg/kg	200	0.45 U	0.43 U	0.42 U	0.45 U	0.43 U	0.45 U	0.47 U	0.45 U	0.45 U	0.42 U	2.2 U	0.45 U
2,4-Dimethylphenol	mg/kg	16,000	0.2 U	0.19 U	0.18 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.18 U	0.98 U	0.2 U
2-Methylnaphthalene	mg/kg	3,000	0.0028 J	0.0076 U	0.0046 J	0.01	0.0026 J	0.008 U	0.0082 U	0.0078 U	0.0023 J	0.0064 J	0.0037 J	0.008 U
2-Methylphenol	mg/kg	41,000	0.2 U	0.19 U	0.18 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.18 U	0.98 U	0.2 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.28 U	0.27 U	0.26 U	0.28 U	0.27 U	0.29 U	0.29 U	0.28 U	0.29 U	0.27 U	1.4 U	0.29 U
Acenaphthene	mg/kg	45,000	0.0078 U	0.0076 U	0.0016 J	0.0021 J	0.0076 U	0.008 U	0.0082 U	0.0078 U	0.0074 J	0.0074 U	0.0079 U	0.008 U
Acenaphthylene	mg/kg	45,000	0.026	0.0076 U	0.033	0.012	0.0076 U	0.008 U	0.0082 U	0.0078 U	0.008 U	0.0018 J	0.0035 J	0.001 J
Anthracene	mg/kg	230,000	0.014	0.0076 U	0.015	0.011	0.00068 J	0.008 U	0.0082 U	0.0078 U	0.008 U	0.0022 J	0.003 J	0.0017 J
Benz[a]anthracene	mg/kg	21	0.064	0.0076 U	0.076	0.085	0.0052 J	0.0048 J	0.0082 U	0.0024 J	0.008 U	0.0064 J	0.012	0.0037 B
Benzaldehyde	mg/kg	120,000	0.26 U	0.25 U	0.24 U	0.054 J	0.25 U	0.26 U	0.27 U	0.26 U	0.26 U	0.24 U	1.3 U	0.26 U
Benzo[a]pyrene	mg/kg	2.1	0.06	0.0076 U	0.076	0.072	0.0038 J	0.0034 J	0.0082 U	0.0019 J	0.008 U	0.0071 J	0.0093	0.008 U
Benzo[b]fluoranthene	mg/kg	21	0.076	0.0076 U	0.096	0.099	0.005 J	0.0039 J	0.0082 U	0.0025 J	0.008 U	0.013	0.017	0.0045 B
Benzo[g,h,i]perylene	mg/kg		0.028	0.0076 U	0.034	0.044	0.0034 J	0.0021 J	0.0082 U	0.0011 J	0.008 U	0.007 J	0.0079 U	0.0026 J
Benzo[k]fluoranthene	mg/kg	210	0.027	0.0076 U	0.027	0.032	0.0014 J	0.0014 J	0.0082 U	0.0078 U	0.008 U	0.0028 J	0.0079 U	0.0012 J
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.2 U	0.19 U	0.18 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.18 U	0.98 U	0.2 U
Carbazole	mg/kg		0.2 U	0.19 U	0.18 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.18 U	0.98 U	0.2 U
Chrysene	mg/kg	2,100	0.045	0.0076 U	0.056	0.059	0.0033 J	0.0039 J	0.0082 U	0.0016 J	0.008 U	0.0087	0.014	0.0096
Dibenz[a,h]anthracene	mg/kg	2.1	0.0088	0.0076 U	0.01	0.012	0.0076 U	0.008 U	0.0082 U	0.0078 U	0.008 U	0.0018 J	0.003 J	0.008 U
Di-n-butylphthalate	mg/kg	82,000	0.2 U	0.19 U	0.18 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.18 U	0.92 J	0.2 U
Fluoranthene	mg/kg	30,000	0.095	0.0076 U	0.1	0.13	0.0055 J	0.0053 J	0.00066 J	0.0032 J	0.0012 J	0.013	0.013	0.01
Fluorene	mg/kg	30,000	0.002 J	0.0076 U	0.0022 J	0.0035 J	0.0076 U	0.008 U	0.001 J	0.0078 U	0.0012 J	0.001 J	0.0079 U	0.002 J
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.041	0.0076 U	0.051	0.06 J	0.004 J	0.0027 J	0.0082 UJ	0.0016 J	0.008 U	0.0083	0.011	0.0016 J
Naphthalene	mg/kg	8.6	0.0095	0.0076 U	0.016	0.016	0.0027 J	0.0015 J	0.0082 U	0.0078 U	0.033	0.0063 J	0.0053 J	0.0033 J
N-Nitrosodiphenylamine	mg/kg	470	0.16 U	0.15 U	0.15 U	0.16 U	0.15 U	0.16 U	0.16 U	0.16 U	0.16 U	0.15 U	0.79 U	0.16 U
Phenanthrene	mg/kg		0.021	0.0076 U	0.024	0.052	0.0035 J	0.0021 J	0.00086 J	0.0016 J	0.0011 J	0.0087	0.0048 B	0.0097
Phenol	mg/kg	250,000	0.2 U	0.19 U	0.18 U	0.2 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	0.18 U	0.98 U	0.2 U
Pyrene	mg/kg	23,000	0.079	0.0076 U	0.085	0.11	0.0052 J	0.0046 J	0.0082 U	0.0029 J	0.001 J	0.012	0.013	0.0088
PCBs														
Aroclor 1248	mg/kg	0.94	0.0379 U	N/A	0.0378 U	0.0184 J	N/A	0.038 U	N/A	0.0395 U	N/A	0.036 U	0.0638	N/A
Aroclor 1254	mg/kg	0.97	0.0379 U	N/A	0.0378 U	0.0225 J	N/A	0.038 U	N/A	0.0395 U	N/A	0.036 U	0.0256 J	N/A
Aroclor 1260	mg/kg	0.99	0.0379 U	N/A	0.0378 U	0.0376 J	N/A	0.038 U	N/A	0.0395 U	N/A	0.0192 J	0.0388 U	N/A
Aroclor 1268	mg/kg		0.0379 U	N/A	0.0378 U	0.0161 J	N/A	0.038 U	N/A	0.0395 U	N/A	0.012 J	0.0388 U	N/A
PCBs (total)	mg/kg	0.97	0.0379 U	N/A	0.0378 U	0.0946 J	N/A	0.038 U	N/A	0.0395 U	N/A	0.0312 J	0.0894 J	N/A
TPH/Oil & Grease	II5 11-5	u 0.57		- 17.12	3.32700	3.32 10 0	11/11		- 1/		11/11	0.00120	0.00210	11/11
Diesel Range Organics	mg/kg	6,200	6.2 B	4.2 B	6.5 B	36 B	6.4 B	3.7 B	3.4 B	8.2 B	6.5 B	5.1 B	23 J	39
Gasoline Range Organics	mg/kg	6,200	2 B	0.5 B	1.1 B	0.62 B	0.73 B	0.62 B	0.63 B	0.69 B	0.97 B	0.62 B	0.83 B	0.72 B
Oil & Grease	mg/kg	6,200	410	231 U	422	251	388	295	224 U	239 U	244 U	210	1,950	312
On & Orease	IIIg/Kg	0,200	710	231 U	722	231	300	433	227 U	2370	477 U	210	1,730	312

Bold indicates detection

Values in red indicate a detection exceedance of the Project Action Limit (PAL)

- * Indicates non-validated data
- ^ PAH compounds were analyzed via SIM

- J: The positive result reported for this analyte is a quantitative estimate.
- R: The result for this analyte is unreliable. Additional data is needed of confirm or disprove the presence of this compound/analyte in the sample.
- B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
- U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
- UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

	П	П	A15-011-SB-2*	A15-012-SB-2*	A 15 012 CD 2*	A15-013-SB-3*	A 15 O16 CD 2*	A15-016-SB-3*	A 15 017 CD 2*	A15-017-SB-3*	A15-019-SB-2	A15-019-SB-3	A15-020-SB-2	A15-020-SB-4
Parameter	Units	PAL	12/21/2022	12/21/2022	12/21/2022	12/21/2022	11/8/2022	11/8/2022	11/8/2022	11/8/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022
Volatile Organic Compounds	<u> </u>	<u> </u>	12/21/2022	12/21/2022	12/21/2022	12/21/2022	11/0/2022	11/0/2022	11/6/2022	11/0/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022
1,1-Dichloroethane	mg/kg	16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethene	mg/kg	1,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Butanone (MEK)	mg/kg	190,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Hexanone	mg/kg	1,300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acetone	mg/kg	670,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	mg/kg	5.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chloroform	mg/kg	1.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cyclohexane	mg/kg	27,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Chloride	mg/kg	1,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloroethene	mg/kg	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	mg/kg	47,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethene	mg/kg	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichlorofluoromethane	mg/kg	3,100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Semi-Volatile Organic Compounds^	mg ng	3,100	11/21	11/11	14/21	14/21	1 1/11	11/11	11/21	11/21	11/21	11/11	11/11	11//11
1,1-Biphenyl	mg/kg	200	4.4 U	2.2 U	1.3 U	0.45 U	0.43 U	0.46 U	0.43 U	0.4 U	0.44 U	0.43 U	2.1 U	0.43 U
2,4-Dimethylphenol	mg/kg	16,000	1.9 U	0.98 U	0.59 U	0.43 C	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U	0.19 U	0.92 U	0.19 U
2-Methylnaphthalene	mg/kg	3,000	0.078 U	0.039 U	0.022 J	0.0079 U	0.01	0.008 U	0.0075 U	0.0071 U	0.0036 J	0.0076 U	0.037 U	0.0076 U
2-Methylphenol	mg/kg	41,000	1.9 U	0.98 U	0.59 U	0.2 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U	0.19 U	0.92 U	0.19 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	2.8 U	1.4 U	0.84 U	0.28 U	0.16 J	0.29 U	0.27 U	0.26 U	0.28 U	0.27 U	1.3 U	0.27 U
Acenaphthene	mg/kg	45,000	0.078 U	0.039 U	0.023 U	0.0079 U	0.0076 U	0.008 U	0.0075 U	0.0071 U	0.0077 U	0.0076 U	0.037 U	0.0076 U
Acenaphthylene	mg/kg	45,000	0.078 U	0.039 U	0.02 J	0.0079 U	0.0065 J	0.008 U	0.0012 J	0.0071 U	0.003 J	0.0076 U	0.037 U	0.0076 U
Anthracene	mg/kg	230,000	0.013 J	0.039 U	0.024	0.00087 J	0.0071 J	0.008 U	0.0012 J	0.0071 U	0.0013 J	0.002 J	0.037 U	0.0076 U
Benz[a]anthracene	mg/kg	21	0.13	0.039 U	0.1	0.002 B	0.026	0.0024 J	0.0091	0.0071 U	0.008	0.0037 J	0.0085 J	0.0076 U
Benzaldehyde	mg/kg	120,000	2.6 U	1.3 U	0.78 U	0.26 U	0.051 J	0.26 U	0.25 U	0.23 U	0.25 U	0.25 U	1.2 U	0.25 U
Benzo[a]pyrene	mg/kg	2.1	0.12	0.039 U	0.1	0.0016 J	0.025	0.002 J	0.0088	0.0071 U	0.0094	0.0028 J	0.012 J	0.0076 U
Benzo[b]fluoranthene	mg/kg	21	0.18	0.039 U	0.12	0.002 B	0.035	0.0026 J	0.011	0.0071 U	0.0098	0.0031 J	0.015 J	0.0076 U
Benzo[g,h,i]perylene	mg/kg		0.067 J	0.0094 J	0.074	0.0013 J	0.017	0.0013 J	0.0063 J	0.0071 U	0.0068 J	0.0026 J	0.015 J	0.0076 U
Benzo[k]fluoranthene	mg/kg	210	0.053 J	0.039 U	0.036	0.00075 J	0.011	0.0008 J	0.004 J	0.0071 U	0.0035 J	0.0023 J	0.0044 J	0.0076 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	1.9 U	0.98 U	0.59 U	0.2 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U	0.19 U	0.92 U	0.19 U
Carbazole	mg/kg		1.9 U	0.98 U	0.59 U	0.2 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U	0.19 U	0.92 U	0.19 U
Chrysene	mg/kg	2,100	0.14	0.039 U	0.093	0.0013 B	0.024	0.0019 J	0.008	0.0071 U	0.0063 J	0.0026 J	0.016 J	0.0076 U
Dibenz[a,h]anthracene	mg/kg	2.1	0.022 J	0.039 U	0.02 J	0.0079 U	0.0041 B	0.008 U	0.0019 B	0.0071 U	0.0015 J	0.0021 J	0.037 U	0.0076 U
Di-n-butylphthalate	mg/kg	82,000	1.9 U	0.98 U	0.59 U	0.2 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U	0.19 U	0.92 U	0.19 U
Fluoranthene	mg/kg	30,000	0.24	0.0076 B	0.2	0.0025 B	0.053	0.0037 J	0.016	0.0071 U	0.015	0.0038 J	0.011 J	0.00061 J
Fluorene	mg/kg	30,000	0.078 U	0.039 U	0.005 J	0.0079 U	0.0018 J	0.008 U	0.0075 U	0.0071 U	0.0077 U	0.0015 J	0.037 U	0.0076 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.085	0.039 U	0.087	0.0015 J	0.02	0.0017 J	0.0078	0.0071 U	0.0084	0.0034 J	0.011 J	0.0076 UJ
Naphthalene	mg/kg	8.6	0.078 U	0.039 U	0.053	0.0079 U	0.015	0.008 U	0.0021 J	0.0071 U	0.0082	0.0015 J	0.037 U	0.0076 U
N-Nitrosodiphenylamine	mg/kg	470	1.6 U	0.78 U	0.47 U	0.16 U	0.15 U	0.16 U	0.15 U	0.14 U	0.15 U	0.15 U	0.74 U	0.15 U
Phenanthrene	mg/kg		0.035 B	0.0039 B	0.097	0.0021 B	0.024	0.0014 J	0.0081	0.0071 U	0.0054 J	0.0031 J	0.0042 J	0.00072 J
Phenol	mg/kg	250,000	1.9 U	0.98 U	0.59 U	0.2 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U	0.19 U	0.92 U	0.19 U
Pyrene	mg/kg	23,000	0.22	0.007 B	0.2	0.0019 B	0.043	0.0035 J	0.014	0.0005 J	0.013	0.0036 J	0.013 J	0.0076 U
PCBs		,												
Aroclor 1248	mg/kg	0.94	0.0356 J	0.0196 J	0.109 U	N/A	0.0374 U	N/A	0.0359 U	N/A	0.0377 U	N/A	0.0368 U	N/A
Aroclor 1254	mg/kg	0.97	0.0313 J	0.0227 J	0.109 U	N/A	0.0374 U	N/A	0.0359 U	N/A	0.0377 U	N/A	0.0368 U	N/A
Aroclor 1260	mg/kg	0.99	0.0384 U	0.0382 U	0.109 U	N/A	0.0105 J	N/A	0.0359 U	N/A	0.0377 U	N/A	0.0368 U	N/A
Aroclor 1268	mg/kg		0.0384 U	0.0382 U	0.109 U	N/A	0.0374 U	N/A	0.0359 U	N/A	0.0377 U	N/A	0.0368 U	N/A
PCBs (total)	mg/kg	0.97	0.0669 J	0.0423 J	0.109 U	N/A	0.0105 J	N/A	0.0359 U	N/A	0.0377 U	N/A	0.0368 U	N/A
TPH/Oil & Grease	II 5' 5	n												
Diesel Range Organics	mg/kg	6,200	350	140	14 J	39 U	13 B	8.9 B	5 B	3.7 B	5.4 B	4.1 B	44	3.6 B
Gasoline Range Organics	mg/kg	6,200	0.88 B	1 B	0.77 B	0.8 B	0.68 B	0.85 B	0.87 B	0.87 B	0.61 B	0.59 B	0.67 B	0.62 B
Oil & Grease	mg/kg	6,200	1,060	666	380	290	313	255	305	218 U	214 U	231 U	200 U	212 U
			1,500	000	200		010	200	- 000	-100		-510	2000	2120

Bold indicates detection

Values in red indicate a detection exceedance of the Project Action Limit (PAL)

- * Indicates non-validated data
- ^ PAH compounds were analyzed via SIM

- J: The positive result reported for this analyte is a quantitative estimate.
- R: The result for this analyte is unreliable. Additional data is needed of confirm or disprove the presence of this compound/analyte in the sample.
- B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
- U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
- UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

	П	П	A8-004-SB-1	A8-004-SB-1	A8-004-SB-5	A8-004-SB-5	A8-004-SB-10	A8-004-SB-10	A8-005-SB-1	A8-005-SB-1	A8-005-SB-5	A8-005-SB-5	A8-005-SB-10	A8-006-SB-1
Parameter	Units	PAL	10/29/2015	3/17/2016	10/29/2015	3/17/2016	10/29/2015	4/13/2016	10/29/2015	3/17/2016	10/29/2015	3/17/2016	4/13/2016	10/29/2015
Volatile Organic Compounds	I	I	10/27/2013	3/1//2010	10/2//2013	3/17/2010	10/2//2013	4/13/2010	10/27/2013	3/1//2010	10/27/2013	3/17/2010	4/13/2010	10/29/2013
1,1-Dichloroethane	mg/kg	16	0.0048 U	N/A	0.0047 U	N/A	N/A	N/A	0.0048 U	N/A	0.0044 U	N/A	N/A	0.0044 U
1,1-Dichloroethene	mg/kg	1,000	0.0048 U	N/A	0.0047 U	N/A	N/A	N/A	0.0048 U	N/A	0.0008 J	N/A	N/A	0.0044 U
2-Butanone (MEK)	mg/kg	190,000	0.0048 0	N/A	0.0056 J	N/A	N/A	N/A	0.0048	N/A	0.0036 J	N/A	N/A	0.0053 J
2-Hexanone	mg/kg	1,300	0.027 0.0065 J	N/A	0.0030 J	N/A	N/A	N/A	0.018	N/A	0.0089 U	N/A	N/A	0.0033 J
Acetone	mg/kg	670,000	0.0083	N/A	0.0093	N/A	N/A	N/A	0.018	N/A	0.0039	N/A	N/A	0.003
Benzene	mg/kg	5.1	0.0048 U	N/A	0.039 0.0013 J	N/A	N/A	N/A	0.20 0.0013 J	N/A	0.027 0.003 J	N/A	N/A	0.003 0.0024 J
Chloroform	mg/kg	1.4	0.0048 0	N/A N/A	0.0013 3	N/A	N/A	N/A	0.0013 J	N/A	0.003 J 0.0031 J	N/A	N/A	0.0024 J 0.0044 U
Cyclohexane	mg/kg	27,000	0.0096 U	N/A	0.0093 U	N/A	N/A	N/A	0.0048 U	N/A	0.0031 J	N/A	N/A	0.0044 U
Methylene Chloride	mg/kg	1,000	0.0031 J	N/A	0.0023 J	N/A	N/A	N/A	0.0014 J	N/A	0.0073 3	N/A	N/A	0.0044 UJ
Tetrachloroethene	mg/kg	100	0.0031 3	N/A N/A	0.0023 3	N/A	N/A	N/A	0.017 J	N/A	0.0098	N/A	N/A	0.0044 0.5
Toluene	mg/kg	47,000	0.0052 J	N/A N/A	0.0077 J	N/A	N/A	N/A	0.0043 J	N/A	0.0038 0.0016 J	N/A	N/A	0.0049 0.0011 J
Trichloroethene	mg/kg	6	0.00032 J 0.0043 J	N/A	0.00077 J	N/A	N/A	N/A	0.00077 J	N/A	0.0010 J 0.0027 J	N/A	N/A	0.0011 J
Trichlorofluoromethane	mg/kg	3,100	0.0045 J	N/A	0.0047 U	N/A	N/A	N/A	0.00072 J	N/A	0.0027 J	N/A	N/A	0.0044 U
	IIIg/Kg	3,100	0.0025 J	IV/A	0.0047 U	IV/A	IV/A	IV/A	0.0046 U	IV/A	0.0044 U	IV/A	IV/A	0.0044 U
Semi-Volatile Organic Compounds^	ma/Isa	200	7.7/4	0.02.1	NT/4	0.071 U	N7/4	0.049.1	N7/4	0.075 U	NT/ A	0.02 I	0.08 U	N1/4
1,1-Biphenyl	mg/kg	4	N/A	0.02 J	N/A	0.00.00	N/A	0.048 J	N/A		N/A	0.03 J		N/A
2,4-Dimethylphenol	mg/kg	16,000	N/A	0.071 UJ	N/A	0.071 U	N/A	0.082 U	N/A	0.075 U	N/A	0.073 U	0.08 U	N/A
2-Methylnaphthalene	mg/kg	3,000	0.057 J	N/A	0.059	N/A	0.0018 J	N/A	0.064 J	N/A	0.19	N/A	0.08 U	0.017
2-Methylphenol	mg/kg	41,000 41,000	N/A N/A	0.071 UJ	N/A N/A	0.071 U 0.14 U	N/A N/A	0.082 U	N/A N/A	0.075 U 0.15 U	N/A	0.073 U 0.15 U	0.08 U	N/A N/A
3&4-Methylphenol(m&p Cresol)	mg/kg			0.14 UJ				0.16 U			N/A		0.16 U	
Acenaphthene	mg/kg	45,000	0.19	N/A	0.41	N/A	0.0036 J	N/A	0.15 U	N/A	1.2	N/A	0.08 U	0.065
Acenaphthylene	mg/kg	45,000	0.03 J	N/A	0.016	N/A	0.0084 U 0.007 J	N/A	0.15 U	N/A	0.038	N/A	0.08 U 0.08 U	0.0074
Anthracene	mg/kg	230,000	0.42	N/A	0.084	N/A		N/A	0.073 J	N/A	0.37	N/A		0.029
Benz[a]anthracene	mg/kg	21	0.78	N/A	0.73	N/A	0.0035 J	N/A	0.34	N/A	2.9	N/A	0.029 J	0.17
Benzaldehyde	mg/kg	120,000	N/A	0.071 R	N/A	0.071 R	N/A	0.02 J	N/A	0.075 R	N/A	0.017 J	0.08 U	N/A
Benzo[a]pyrene	mg/kg	2.1	1.2 J	N/A	1.3 J	N/A	0.0015 J	N/A	0.63 J	N/A	6.8 J	N/A	0.043 J	0.34 J
Benzo[b]fluoranthene	mg/kg	21	2	N/A	1.4	N/A	0.0024 J	N/A	0.93	N/A	7.6	N/A	0.057 J	0.47
Benzo[g,h,i]perylene	mg/kg	210	0.51	N/A	0.38	N/A	0.0084 U	N/A	0.76	N/A	6.6	N/A	0.026 J	0.17
Benzo[k]fluoranthene	mg/kg	210	0.79	N/A	1 37/4	N/A	0.0011 J	N/A	0.39	N/A	3	N/A	0.03 J	0.39
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	0.071 U	N/A	0.071 U	N/A	0.082 U	N/A	0.043 J	N/A	0.016 J	0.08 U	N/A
Carbazole	mg/kg	2 100	N/A	0.021 J	N/A	0.02 J	N/A	0.045 J	N/A	0.075 U	N/A	0.065 J	0.08 U	N/A
Chrysene	mg/kg	2,100	1.1	N/A	0.81	N/A	0.0024 J	N/A	0.42	N/A	3	N/A	0.038 J	0.22
Dibenz[a,h]anthracene	mg/kg	2.1	0.15 U	N/A	0.17	N/A	0.0084 U	N/A	0.15 U	N/A	0.93	N/A	0.08 U	0.063
Di-n-butylphthalate	mg/kg	82,000	N/A	0.071 U	N/A	0.071 U	N/A	0.082 U	N/A	0.075 U	N/A	0.073 U	0.08 U	N/A
Fluoranthene	mg/kg	30,000	1.2	N/A	0.65	N/A	0.0097	N/A	0.54	N/A	2.5	N/A	0.025 J	0.25
Fluorene	mg/kg	30,000	0.032 J	N/A	0.043	N/A	0.0042 J	N/A	0.15 U	N/A	0.17	N/A	0.08 U	0.0077
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.42	N/A	0.5	N/A	0.0084 U	N/A	0.58	N/A	5.7	N/A	0.027 J	0.2
Naphthalene	mg/kg	8.6	0.092 J	N/A	0.097	N/A	0.0055 J	N/A	0.079 J	N/A	0.23	N/A	0.08 U	0.028
N-Nitrosodiphenylamine	mg/kg	470	N/A	0.071 U	N/A	0.071 U	N/A	0.082 U	N/A	0.075 U	N/A	0.073 U	0.08 U	N/A
Phenanthrene	mg/kg	250,000	0.3	N/A	0.26	N/A	0.021	N/A	0.29	N/A	1.3	N/A	0.08 U	0.11
Phenol	mg/kg	250,000	N/A	0.071 UJ	N/A	0.071 U	N/A	0.082 U	N/A	0.075 U	N/A	0.073 U	0.08 U	N/A
Pyrene	mg/kg	23,000	1.1	N/A	0.68	N/A	0.0072 J	N/A	0.43	N/A	2.4	N/A	0.023 J	0.21
PCBs	11	T			T		T				1		/:	
Aroclor 1248	mg/kg	0.94	0.18 U	N/A	N/A	N/A	N/A	N/A	0.19 U	N/A	N/A	N/A	N/A	0.018 U
Aroclor 1254	mg/kg	0.97	0.18 U	N/A	N/A	N/A	N/A	N/A	0.16 J	N/A	N/A	N/A	N/A	0.018 U
Aroclor 1260	mg/kg	0.99	0.18 U	N/A	N/A	N/A	N/A	N/A	0.19 U	N/A	N/A	N/A	N/A	0.03
Aroclor 1268	mg/kg	_	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PCBs (total)	mg/kg	0.97	1.3 U	N/A	N/A	N/A	N/A	N/A	1.3 U	N/A	N/A	N/A	N/A	0.13 U
TPH/Oil & Grease														
Diesel Range Organics	mg/kg	6,200	187	N/A	69.1	N/A	N/A	N/A	329	N/A	113	N/A	N/A	29
	11 14	II (200	0.711	7/1/4	0.711	3.7/4	3.7/4	3.7/4	10011	7.7/4	8.6 U	7.7/4	3/7/4	8.6 U
Gasoline Range Organics	mg/kg mg/kg	6,200 6,200	8.7 U	N/A N/A	9.7 U	N/A N/A	N/A N/A	N/A N/A	10.8 U	N/A N/A	0.0 U	N/A N/A	N/A N/A	0.0 C

Bold indicates detection

Values in red indicate a detection exceedance of the Project Action Limit (PAL)

- J: The positive result reported for this analyte is a quantitative estimate.
- R: The result for this analyte is unreliable. Additional data is needed of confirm or disprove the presence of this compound/analyte in the sample.
- B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
- U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
- UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

^{*} Indicates non-validated data

[^] PAH compounds were analyzed via SIM

Particular Column			II	A8-006-SB-1	A8-006-SB-4	A8-006-SB-4	A8-006-SB-10	A8-006-SB-10	A8-011-SB-1	A8-011-SB-1	A8-011-SB-5	A8-011-SB-5	A8-012-SB-1	A8-012-SB-1	A8-012-SB-5	A8-012-SB-5
White Control Components	Parameter	Units	PAL													3/17/2016
In Continuement	Volatile Organic Compounds			3/1//2010	10/25/2015	3/1//2010	10/25/2013	17 13/2010	10/20/2013	3/1//2010	10/20/2013	3,17,2010	10/20/2013	3/1//2010	10/20/2013	3/1//2010
13-1-bit constraints	<u> </u>	mg/kg	16	N/A	0.0055 U	N/A	N/A	N/A	0.0048 U	N/A	0.0048 U	N/A	0.0053 U	N/A	0.001 J	N/A
Dimension (HTKC)										+						
December Marging 1,500 Not 0.047 Not Not Not Not 0.047 Not N	· /		,							<u> </u>						
Decrease											_			1		
Description			· · · · · · · · · · · · · · · · · · ·													
Characiens			· · · · · · · · · · · · · · · · · · ·				**	+								
Cyablecone																
Methylenet Chornic			-													
Ternschiender mgkg 100 Mol 6.229 Mol	,		l													
Tobase			· · · · · · · · · · · · · · · · · · ·													
Findshardscoredume											_					
Trick temperature											_		†			
Semi-Valuatio Organic Cumpounds*				1						1				1		
II-Biplewy mpkg 200 m.026.j M.4 0.08.j M.4 0.08.j M.4 0.08.j M.4 0.07.j		IIIg/Kg	3,100	14/21	0.0033 C	11/21	1 1/21	11/21	0.0040 C	11/21	0.0040 0	11/21	0.0033 0	14/21	0.0043 0	11/21
24-Dimorphiphend mg/kg [6,500 6,072 U MA 6,087 J MA 0.681 U MA 0.681 U MA 0.687 U MA 0.698 U MA 0.6	<u> </u>	mg/kg	200	0.026.1	N/A	0.06.1	N/A	0.084 11	N/A	0.07 I/	N/A	0.078 II	N/A	0.069.17	N/A	0.079 11
2Medy-phendulene	, 1 ,															
2M-Mathylphenol mg/kg 41,000 0.072 U																
Sa4-Methylphenol(msp) Croso)	, i		· · · · · · · · · · · · · · · · · · ·					+								
Accomplishmen	¥ 1															
Accepthylane										1						
Anthrocene	1							+								
Benefalahmbrene	1 ,															
Bernelacherde																
Benzele plyrene			-													
Berzolp Diroranthene	·															
											_					
Bezos[k]Horanthene			21													
Fist2-Estylheryt)phthalate			210													
Carbazole			<u> </u>												1	
Chrysene			160					+								
Dibenz[a,h]anthracene			2.100													
Din-butylphthalate	*							+		+	+					
Fluoranthene mg/kg 30,000 N/A 12.2 N/A 0.0075 J N/A 0.22 N/A 0.015 N/A 0.084 N/A 0.0088 N/A	L / J															
Fluorene																
Indeno[1,2,3-c,d]pyrene mg/kg 21								+			+					
Naphthalene								+		+						
N-Nitrosodiphenylamine mg/kg 470 0.072 U N/A 0.068 J N/A 0.084 U N/A 0.07 U N/A 0.078 U N/A 0.069 U N/A 0.079 U Phenanthrene mg/kg N/A 3.8 N/A 0.0051 J N/A 0.084 U N/A 0.012 N/A 0.048 N/A 0.0057 J N/A Phenol mg/kg 250,000 0.072 U N/A 0.051 J N/A 0.084 U N/A 0.035 J N/A 0.078 U N/A 0.069 U N/A 0.0057 J N/A 0.084 U N/A 0.035 J N/A 0.078 U N/A 0.078 U N/A 0.069 U N/A 0.079 U N/A 0.079 U N/A 0.079 U N/A 0.084 U N/A 0.012 N/A 0.075 N/A 0.069 U N/A 0.079 U N/A 0.079 U N/A 0.075 N/A 0.063 J N/A 0.075 N/A 0.075 N/A 0.063 J N/A 0.075 N/A 0.075 N/A 0.063 J N/A 0.075 N/A 0.075 N/A 0.075 N/A 0.063 J N/A 0.075 N	L									+						
Phenanthrene mg/kg mg/kg 250,000 0.072 U N/A 0.051 J N/A 0.084 U N/A 0.035 J N/A 0.078 U N/A 0.069 U N/A 0.079 U				1						1				1	1	
Phenol mg/kg 250,000 0.072 U N/A 0.051 J N/A 0.084 U N/A 0.035 J N/A 0.078 U N/A 0.069 U N/A 0.079 U	1 2		470													
Pyrene mg/kg 23,000 N/A 11.3 N/A 0.0076 J N/A 0.16 N/A 0.012 N/A 0.075 N/A 0.0063 J N/A PCBs Aroclor 1248 mg/kg 0.94 N/A			2.50000				1									
PCBs Aroclor 1248 mg/kg 0.94 N/A																
Arcolor 1248 mg/kg 0.94 N/A N/A N/A N/A 0.018 U N/A N/A N/A Arcolor 1254 mg/kg 0.97 N/A N/		mg/kg	23,000	N/A	11.3	N/A	0.0076 J	N/A	0.16	N/A	0.012	N/A	0.075	N/A	0.0063 J	N/A
Aroclor 1254																
Arcolor 1260 mg/kg 0.99 N/A N/A N/A N/A 0.018 U N/A																
Aroclor 1268 mg/kg N/A																
PCBs (total) mg/kg 0.97 N/A N/A N/A N/A N/A 0.12 U N/A N/A N/A 0.13 U N/A N/A N/A N/A N/A TPH/Oil & Grease Diesel Range Organics mg/kg 6,200 N/A 175 N/A			0.99													
TPH/Oil & Grease Diesel Range Organics mg/kg 6,200 N/A 175 N/A														1		
Diesel Range Organics mg/kg 6,200 N/A 175 N/A	PCBs (total)	mg/kg	0.97	N/A	N/A	N/A	N/A	N/A	0.12 U	N/A	N/A	N/A	0.13 U	N/A	N/A	N/A
	TPH/Oil & Grease															
	Diesel Range Organics	mg/kg	6,200	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gasoline Range Organics mg/kg 6,200 N/A 10.3 U N/A	Gasoline Range Organics	mg/kg	6,200	N/A	10.3 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Oil & Grease mg/kg 6,200 N/A 1,320 N/A N/A N/A 1,040 N/A 419 N/A 2,180 N/A 557 N/A	Oil & Grease		6,200	N/A	1,320	N/A	N/A	N/A	1,040	N/A	419	N/A	2,180	N/A	557	N/A

Bold indicates detection

Values in red indicate a detection exceedance of the Project Action Limit (PAL)

- * Indicates non-validated data
- ^ PAH compounds were analyzed via SIM

- J: The positive result reported for this analyte is a quantitative estimate.
- R: The result for this analyte is unreliable. Additional data is needed of confirm or disprove the presence of this compound/analyte in the sample.
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- U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
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Table 2 - Sub-Parcel A15-1 Summary of Inorganics Detected in Soil

		-0				T games Detected						
Parameter	Units	PAL	A15-004-SB-2*	A15-004-SB-3*	A15-005-SB-2*	A15-006-SB-2	A15-006-SB-3	A15-007-SB-2	A15-007-SB-7	A15-007-SB-10*	A15-008-SB-2	A15-008-SB-9
i ai ainetei	Onits	IAL	11/8/2022	11/8/2022	11/8/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022
Metals												
Aluminum	mg/kg	1,100,000	15,100	7,640	16,300	8,170	9,640	8,010	11,900	N/A	8,560	11,000
Antimony	mg/kg	470	4.66 U	4.44 U	4.41 U	4.64 U	4.35 U	4.71 U	4.96 U	N/A	4.56 U	4.76 U
Arsenic	mg/kg	3	4.44	5.3	3.93	4.33	6.25	5.96	7.24	4.19	7.02	5.18
Barium	mg/kg	220,000	176	34.2	165	74.9	23.7	29.7	32.1	N/A	38.3	29.2
Beryllium	mg/kg	2,300	1.8	0.472	1.85	0.542	0.541	0.399 J	0.626	N/A	0.604	0.579
Cadmium	mg/kg	100	0.36 J	0.887 U	0.442 J	0.459 J	0.157 J	0.212 J	0.172 J	N/A	0.326 J	0.145 J
Chromium	mg/kg	1,800,000	30.2	13.4	29.4	17	16.1	14.5	21.2	N/A	19.2	18.2
Chromium VI	mg/kg	6.3	0.253 J	1.06	0.912 U	0.849 J-	0.65 J-	0.64 J-	1.18 J-	N/A	0.513 J-	0.757 J-
Cobalt	mg/kg	350	5.34	3.7	2.84	4.98	6.48	3.94	5.06	N/A	7.32	5.05
Copper	mg/kg	47,000	14.2	6.12	11.9	15	10.4	11.4	10.2	N/A	71.6	10.1
Iron	mg/kg	820,000	28,200	14,600	18,400	9,750	16,300	14,400	19,000	N/A	15,200	13,700
Lead	mg/kg	800	18.5	9.21	23.2	32.7	19.4	22.7	11.5	N/A	28.3	15.2
Manganese	mg/kg	26,000	2,300	57.2	2,790	477	77.4	65.3	64.4	N/A	680	52
Mercury	mg/kg	350	0.06 J	0.075 U	0.093	0.06 J	0.221	0.088 U	0.081 U	N/A	0.081 U	0.087 U
Nickel	mg/kg	22,000	8.87	6.42	5.24	7.1	11.6	7	9.54	N/A	19.3	10.7
Selenium	mg/kg	5,800	0.583 J	1.77 U	0.914 J	1.86 U	1.74 U	1.88 U	1.99 U	N/A	1.82 U	1.9 U
Silver	mg/kg	5,800	0.466 U	0.444 U	0.441 U	0.464 U	0.435 U	0.471 U	0.496 U	N/A	0.456 U	0.476 U
Thallium	mg/kg	12	0.679 J	1.77 U	0.279 J	1.86 U	1.74 U	1.88 U	1.99 U	N/A	1.82 U	1.9 U
Vanadium	mg/kg	5,800	161	30.9	146	216	22.3	22.9	30.6	N/A	68.2	27.1
Zinc	mg/kg	350,000	79.6	21.4	158	68.6	41.8	34	28.6	N/A	39.6	31.6
Other												
Cyanide, Total	mg/kg	150	1.1 U	1.1 U	0.81 J	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	N/A	1.2 UJ	1.2 UJ

Values in red indicate a detection exceedance of the Project Action Limit (PAL)

N/A: This parameter was not analyzed for this sample.

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

- J: The positive result reported for this analyte is a quantitative estimate.
- J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.
- B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
- R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte.

^{*} Indicates non-validated data

Table 2 - Sub-Parcel A15-1 Summary of Inorganics Detected in Soil

						Tgames Detected						
Danamatan	II\$4a	DAI	A15-008-SB-10*	A15-009-SB-2	A15-010-SB-2*	A15-010-SB-3*	A15-011-SB-2*	A15-012-SB-2*	A15-013-SB-2*	A15-013-SB-3*	A15-016-SB-2*	A15-016-SB-3*
Parameter	Units	PAL	12/20/2022	12/20/2022	12/21/2022	12/21/2022	12/21/2022	12/21/2022	12/21/2022	12/21/2022	11/8/2022	11/8/2022
Metals												
Aluminum	mg/kg	1,100,000	N/A	6,670	11,800	12,200	22,000	18,600	6,300	12,300	8,720	10,500
Antimony	mg/kg	470	N/A	4.4 U	4.62 U	4.54 U	4.5 U	4.46 U	4.72 U	4.6 U	4.52 U	4.7 U
Arsenic	mg/kg	3	1.88	0.88~U	4.38	4.25	3.9	3.24	3.4	3.18	5.72	4.72
Barium	mg/kg	220,000	N/A	61.4	68.8	50.2	200	219	43.9	33.8	57.5	46.2
Beryllium	mg/kg	2,300	N/A	0.663	0.771	0.701	3.14	2.22	0.422 J	0.44 J	0.569	0.43 J
Cadmium	mg/kg	100	N/A	1.54	0.205 J	0.155 J	1.35	0.635 J	0.342 J	0.102 J	0.594 J	0.183 J
Chromium	mg/kg	1,800,000	N/A	669	19.2	18.4	28.8	660	36.9	13.4	46.2	20.6
Chromium VI	mg/kg	6.3	N/A	2.59 J-	0.972 U	0.964 U	0.952~U	0.946~U	1.12	0.192 J	0.927 U	0.971 U
Cobalt	mg/kg	350	N/A	1.55 J	5.46	5.23	2.04	2.26	4.88	3.22	9.01	4.23
Copper	mg/kg	47,000	N/A	21	9.53	10.1	38.2	14.5	10.2	6.9	29.8	17.6
Iron	mg/kg	820,000	N/A	145,000	14,700	12,800	19,900	38,100	11,600	12,600	25,500	11,600
Lead	mg/kg	800	N/A	17.9	13.4	13.3	113	31.1	30.8	9.61	34.4	21.3
Manganese	mg/kg	26,000	N/A	22,400	554	394	2,530	22,300	704	55.2	2,220	174
Mercury	mg/kg	350	N/A	0.071 U	0.081 U	0.068 J	0.231	0.09 U	0.202	0.091 U	0.128	0.26
Nickel	mg/kg	22,000	N/A	6.84	7.92	8.58	10.9	4.73	6.71	7.49	10.3	6.55
Selenium	mg/kg	5,800	N/A	0.76 J	0.432 J	0.248 J	1.38 J	1.15 J	1.89 U	1.84 U	1.81 U	1.88 U
Silver	mg/kg	5,800	N/A	0.44 U	0.462 U	0.454 U	0.503	0.652	0.472 U	0.46 U	0.284 J	0.47 U
Thallium	mg/kg	12	N/A	1.76 U	1.85 U	1.81 U	1.8 U	2.52	1.89 U	1.84 U	1.81 U	1.88 U
Vanadium	mg/kg	5,800	N/A	409	36.8	27.6	57.2	2,170	35.4	19.5	59	25.8
Zinc	mg/kg	350,000	N/A	83.7	46	49	3,280	274	78.4	21.2	173	76.9
Other												
Cyanide, Total	mg/kg	150	N/A	1 UJ	0.39 B	1.1 U	0.78 B	0.28 B	0.38 B	1.1 U	1.2	1.2 U

Values in red indicate a detection exceedance of the Project Action Limit (PAL)

- U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
- UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
- J: The positive result reported for this analyte is a quantitative estimate.
- J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.
- B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
- R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte.

^{*} Indicates non-validated data

Table 2 - Sub-Parcel A15-1 Summary of Inorganics Detected in Soil

					Summary of the	8						
Danamatan	IInita	PAL	A15-017-SB-2*	A15-017-SB-3*	A15-019-SB-2	A15-019-SB-3	A15-020-SB-2	A15-020-SB-4	A8-004-SB-1	A8-004-SB-5	A8-004-SB-10	A8-005-SB-1
Parameter	Units	PAL	11/8/2022	11/8/2022	12/20/2022	12/20/2022	12/20/2022	12/20/2022	10/29/2015	10/29/2015	10/29/2015	10/29/2015
Metals												
Aluminum	mg/kg	1,100,000	8,260	10,800	9,620	8,940	6,480	10,200	11,700	14,800	N/A	15,900
Antimony	mg/kg	470	4.45 U	4.25 U	4.73 U	4.56 U	4.34 U	4.54 U	2.7 UJ	2.4 UJ	N/A	1.8 UJ
Arsenic	mg/kg	3	5.17	6.86	4.79	6.25	5.66	8.48	3.7	3.8	13.5	3.1
Barium	mg/kg	220,000	49.5	88.1	47.3	27.6	59.3	18.7	140	141	N/A	178
Beryllium	mg/kg	2,300	0.506	1.08	0.539	0.485	0.501	0.471	0.75 B	0.73 B	N/A	2.1
Cadmium	mg/kg	100	0.11 J	0.259 J	0.155 J	0.158 J	0.431 J	0.159 J	0.61 J	0.61 J	N/A	1.1
Chromium	mg/kg	1,800,000	14.1	17.6	14	19.8	18.3	20.3	938	1,130	N/A	332
Chromium VI	mg/kg	6.3	0.362 J	0.523 J	1.1 J-	0.312 J-	0.888 UJ	0.918 J-	1.1 UJ	1.1 UJ	N/A	1.1 UJ
Cobalt	mg/kg	350	2.97	18	5.56	4.32	4.3	3.32	7.4	8.3	N/A	4.3
Copper	mg/kg	47,000	4.91	16.8	9.64	9.69	21	10.1	49.6	61.1	N/A	28.2
Iron	mg/kg	820,000	14,400	17,300	12,500	15,200	12,400	20,200	141,000 J	193,000 J	N/A	54,000 J
Lead	mg/kg	800	10.2	47.5	13	11.5	69.7	11	34	32.8	N/A	30.3
Manganese	mg/kg	26,000	80.4	1,000	112	340	310	42.4	21,600	24,600	N/A	13,400
Mercury	mg/kg	350	0.058 J	0.191	0.081 U	0.078 U	0.346	0.074 U	0.033 J	0.03 J	N/A	0.022 J
Nickel	mg/kg	22,000	5.08	10.4	8.38	8.59	7.29	7.1	26.5	27.8	N/A	9.8
Selenium	mg/kg	5,800	1.78 U	1.7 U	1.89 U	1.82 U	0.284 J	0.301 J	3.6 U	3.3 U	N/A	2.5 U
Silver	mg/kg	5,800	0.445 U	0.241 J	0.473 U	0.456 U	0.39 J	0.454 U	2.7 U	2.4 U	N/A	1.8 U
Thallium	mg/kg	12	1.78 U	1.7 U	1.89 U	1.82 U	1.73 U	1.82 U	3.2 J	4.8 B	N/A	6.2 U
Vanadium	mg/kg	5,800	23.4	29.1	21.8	43.6	23.6	28.8	1,820	2,260	N/A	838
Zinc	mg/kg	350,000	26.2	60.3	47.2	37.4	146	26.4	132	174	N/A	89.8
Other												
Cyanide, Total	mg/kg	150	1.1 U	1 U	1.2 UJ	1.1 UJ	1 UJ	1.1 UJ	0.14 J-	0.23 J-	N/A	0.54 J-

Values in red indicate a detection exceedance of the Project Action Limit (PAL)

- U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
- UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
- J: The positive result reported for this analyte is a quantitative estimate.
- J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.
- B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
- R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte.

^{*} Indicates non-validated data

Table 2 - Sub-Parcel A15-1 Summary of Inorganics Detected in Soil

				_					1	_
Units	PAL									A8-012-SB-10
Omts	1712	10/29/2015	10/29/2015	10/29/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015	10/26/2015
mg/kg	1,100,000	12,700	5,910	14,100	11,700	10,800	N/A	12,200	11,800	N/A
mg/kg	470	2.4 UJ	1.8 UJ	2 UJ	2.9 B	2.9 U	N/A	2.3 U	2.6 U	N/A
mg/kg	3	3	15.8	2.5	9.4	3.7	2.4 J	6	3.6	5.6
mg/kg	220,000	122	79.4	119	195	62.2	N/A	82.6	58.3	N/A
mg/kg	2,300	1.1	0.6 U	1.7	0.48 J	0.42 J	N/A	0.43 J	0.43 J	N/A
mg/kg	100	0.54 J	0.6 J	0.44 J	7	0.44 B	N/A	2.2	1.3 U	N/A
mg/kg	1,800,000	380	1,020	561	1,200	25.2	N/A	472	18.2	N/A
mg/kg	6.3	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	N/A	1.1 UJ	1.2 UJ	N/A
mg/kg	350	3.9 J	22.8	15.4	9.8	8.6	N/A	8.1	5.3	N/A
mg/kg	47,000	141	395	27.6	98.8	21.2	N/A	51.3	18.7	N/A
mg/kg	820,000	71,400 J	330,000 J	39,200 J	128,000	17,600	N/A	66,400	12,900	N/A
mg/kg	800	25.9	28	17.6	457	54	N/A	102	46.7	N/A
mg/kg	26,000	14,900	21,900	2,790	23,200	354	N/A	11,000	102	N/A
mg/kg	350	0.012 J	0.042 J	0.048 J	0.028 J	0.055 J	N/A	0.1 U	0.05 J	N/A
mg/kg	22,000	10.3	104	109	90.5	16	N/A	31.3	13.1	N/A
mg/kg	5,800	3.2 U	2.2 J	2.7 U	4.3 U	3.9 U	N/A	3.1 U	3.5 U	N/A
mg/kg	5,800	2.4 U	1.8 U	2 U	3.2 U	2.9 U	N/A	2.3 U	2.6 U	N/A
mg/kg	12	1.5 B	3.3 B	6.8 U	2.6 B	9.7 U	N/A	1.6 B	8.7 U	N/A
mg/kg	5,800	1,130	1,890	256	2,020	73.1	N/A	1,080	26.7	N/A
mg/kg	350,000	137	116	71.2	600	178	N/A	296	58.5	N/A
mg/kg	150	1.2 J-	0.3 J-	1 J-	0.95	0.59 U	N/A	0.52 J	0.6 U	N/A
	mg/kg	mg/kg 1,100,000 mg/kg 470 mg/kg 3 mg/kg 220,000 mg/kg 2,300 mg/kg 100 mg/kg 1,800,000 mg/kg 350 mg/kg 47,000 mg/kg 820,000 mg/kg 800 mg/kg 350 mg/kg 350 mg/kg 5,800 mg/kg 5,800	mg/kg 1,100,000 12,700 mg/kg 470 2.4 UJ mg/kg 3 3 mg/kg 220,000 122 mg/kg 100 0.54 J mg/kg 1,800,000 380 mg/kg 6.3 1.1 UJ mg/kg 350 3.9 J mg/kg 47,000 141 mg/kg 800 25.9 mg/kg 26,000 14,900 mg/kg 350 0.012 J mg/kg 5,800 3.2 U mg/kg 5,800 2.4 U mg/kg 5,800 1,130 mg/kg 5,800 1,130	mg/kg 1,100,000 12,700 5,910 mg/kg 470 2.4 UJ 1.8 UJ mg/kg 3 3 15.8 mg/kg 220,000 122 79.4 mg/kg 2,300 1.1 0.6 U mg/kg 100 0.54 J 0.6 J mg/kg 1,800,000 380 1,020 mg/kg 6.3 1.1 UJ 1.1 UJ mg/kg 350 3.9 J 22.8 mg/kg 47,000 141 395 mg/kg 820,000 71,400 J 330,000 J mg/kg 800 25.9 28 mg/kg 26,000 14,900 21,900 mg/kg 350 0.012 J 0.042 J mg/kg 5,800 3.2 U 2.2 J mg/kg 5,800 2.4 U 1.8 U mg/kg 5,800 1,130 1,890 mg/kg 350,000 137 116	mg/kg 1,100,000 12,700 5,910 14,100 mg/kg 470 2.4 UJ 1.8 UJ 2 UJ mg/kg 3 3 15.8 2.5 mg/kg 220,000 122 79.4 119 mg/kg 2,300 1.1 0.6 U 1.7 mg/kg 100 0.54 J 0.6 J 0.44 J mg/kg 1,800,000 380 1,020 561 mg/kg 6.3 1.1 UJ 1.1 UJ 1.1 UJ mg/kg 350 3.9 J 22.8 15.4 mg/kg 47,000 141 395 27.6 mg/kg 820,000 71,400 J 330,000 J 39,200 J mg/kg 800 25.9 28 17.6 mg/kg 26,000 14,900 21,900 2,790 mg/kg 350 0.012 J 0.042 J 0.048 J mg/kg 5,800 3.2 U 2.2 J 2.7 U mg/kg <t< td=""><td> Mark 1,100,000 12,700 5,910 14,100 11,700 11,800 12,900 12,400 12,800 12,900 12,700 12,800 11,900 12,900 10,3 104 109 90,5 12,800 12,800 12,800 12,800 12,800 10,3 104 109 90,5 12,800 12,</td><td>Img/kg 1,100,000 12,700 5,910 14,100 11,700 10,800 mg/kg 470 2,4 UJ 1,8 UJ 2 UJ 2,9 B 2,9 U mg/kg 3 3 15.8 2.5 9,4 3.7 mg/kg 220,000 122 79.4 119 195 62.2 mg/kg 2,300 1.1 0.6 U 1.7 0.48 J 0.42 J mg/kg 100 0.54 J 0.6 J 0.44 J 7 0.44 B mg/kg 1,800,000 380 1,020 561 1,200 25.2 mg/kg 6.3 1,1 UJ 1,1 UJ 1,1 UJ 1,1 UJ 1,2 UJ mg/kg 350 3.9 J 22.8 15.4 9.8 8.6 mg/kg 47,000 141 395 27.6 98.8 21.2 mg/kg 820,000 71,400 J 330,000 J 39,200 J 128,000 17,600 mg/kg 800 25.9</td><td>Img/kg 1,100,000 12,700 5,910 14,100 11,700 10,800 N/A mg/kg 470 2.4 UJ 1.8 UJ 2 UJ 2.9 B 2.9 U N/A mg/kg 3 3 15.8 2.5 9.4 3.7 2.4 J mg/kg 220,000 122 79.4 119 195 62.2 N/A mg/kg 2,300 1.1 0.6 U 1.7 0.48 J 0.42 J N/A mg/kg 100 0.54 J 0.6 J 0.44 J 7 0.44 B N/A mg/kg 1.800,000 380 1,020 561 1,200 25.2 N/A mg/kg 6.3 1.7 UJ 1.7 UJ 1.7 UJ 1.7 UJ 1.2 UJ N/A mg/kg 350 3.9 J 22.8 15.4 9.8 8.6 N/A mg/kg 350 3.9 J 22.8 15.4 9.8 8.6 N/A mg/kg 320,000</td><td> Mag/kg</td><td>Units PAL 10/29/2015 10/29/2015 10/29/2015 10/26/2015</td></t<>	Mark 1,100,000 12,700 5,910 14,100 11,700 11,800 12,900 12,400 12,800 12,900 12,700 12,800 11,900 12,900 10,3 104 109 90,5 12,800 12,800 12,800 12,800 12,800 10,3 104 109 90,5 12,800 12,	Img/kg 1,100,000 12,700 5,910 14,100 11,700 10,800 mg/kg 470 2,4 UJ 1,8 UJ 2 UJ 2,9 B 2,9 U mg/kg 3 3 15.8 2.5 9,4 3.7 mg/kg 220,000 122 79.4 119 195 62.2 mg/kg 2,300 1.1 0.6 U 1.7 0.48 J 0.42 J mg/kg 100 0.54 J 0.6 J 0.44 J 7 0.44 B mg/kg 1,800,000 380 1,020 561 1,200 25.2 mg/kg 6.3 1,1 UJ 1,1 UJ 1,1 UJ 1,1 UJ 1,2 UJ mg/kg 350 3.9 J 22.8 15.4 9.8 8.6 mg/kg 47,000 141 395 27.6 98.8 21.2 mg/kg 820,000 71,400 J 330,000 J 39,200 J 128,000 17,600 mg/kg 800 25.9	Img/kg 1,100,000 12,700 5,910 14,100 11,700 10,800 N/A mg/kg 470 2.4 UJ 1.8 UJ 2 UJ 2.9 B 2.9 U N/A mg/kg 3 3 15.8 2.5 9.4 3.7 2.4 J mg/kg 220,000 122 79.4 119 195 62.2 N/A mg/kg 2,300 1.1 0.6 U 1.7 0.48 J 0.42 J N/A mg/kg 100 0.54 J 0.6 J 0.44 J 7 0.44 B N/A mg/kg 1.800,000 380 1,020 561 1,200 25.2 N/A mg/kg 6.3 1.7 UJ 1.7 UJ 1.7 UJ 1.7 UJ 1.2 UJ N/A mg/kg 350 3.9 J 22.8 15.4 9.8 8.6 N/A mg/kg 350 3.9 J 22.8 15.4 9.8 8.6 N/A mg/kg 320,000	Mag/kg	Units PAL 10/29/2015 10/29/2015 10/29/2015 10/26/2015

Values in red indicate a detection exceedance of the Project Action Limit (PAL)

- U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
- UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
- J: The positive result reported for this analyte is a quantitative estimate.
- J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.
- B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
- R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte.

^{*} Indicates non-validated data

Table 3 - Sub-Parcel A15-1 Summary of Organics Detected in Groundwater

5	TT	DAI	A15-015-PZ*	A15-016-PZ*	A15-019-PZ*	A8-004-PZ	SG03-PDM007*	SG04-PDM008	SW-099-MWS
Parameter	Units	PAL	1/4/2023	1/4/2023	1/4/2023	11/4/2015	12/30/2022	12/29/2022	1/19/2023
Volatile Organic Compounds									
1,1-Dichloroethane	μg/L	2.7	1.2	0.75 U	0.75 U	2	0.75 U	0.75 U	1
1,1-Dichloroethene	μg/L	7	1.6	0.5 U	0.5 U	1 U	0.5 U	0.5 U	1.2
1,2-Dichloroethene (Total)	μg/L	70	0.52	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U
Benzene	μg/L	5	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.19 J	0.3 J
Carbon disulfide	μg/L	810	5 U	0.31 J	5 U	1 U	5 U	5 U	5 U
Chloroform		0.22	0.75 U	0.75 U	0.75 U	14	0.75 U	0.75 U	0.75 U
cis-1,2-Dichloroethene	μg/L	70	0.52	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	μg/L	450	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.55
Toluene	μg/L	1,000	0.75 U	0.75 U	0.75 U	1 U	0.75 U	0.28 J	0.75 U
Trichloroethene	μg/L	5	9.5	0.5 U	0.5 U	1.3	0.5 U	0.5 U	0.19 J
Semi-Volatile Organic Compound	ls^								
2,4-Dimethylphenol	μg/L	360	5 U	5 U	5 U	1 U	5 U	20	5 UJ
2-Methylnaphthalene	μg/L	36	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.16	0.02 J
2-Methylphenol	μg/L	930	5 U	5 U	5 U	1 U	5 U	1.3 J	5 U
3&4-Methylphenol(m&p Cresol)	μg/L	930	5 U	5 U	5 U	2 U	5 U	12	5 U
Acenaphthene	μg/L	530	0.1 U	0.1 U	0.04 J	0.1 U	0.1 U	0.07 J	0.19
Acenaphthylene	μg/L	530	0.1 U	0.02 J	0.1 U	0.1 U	0.1 U	0.03 J	0.1 U
Anthracene	μg/L	1,800	0.1 U	0.05 J	0.03 J	0.1 U	0.1 U	0.02 J	0.03 B
Benz[a]anthracene	μg/L	0.03	0.05 U	0.03 J	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U
Benzo[a]pyrene	μg/L	0.2	0.1 U	0.02 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo[b]fluoranthene	μg/L	0.25	0.02 J	0.04 J	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U
Benzo[g,h,i]perylene	μg/L		0.1 U	0.02 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo[k]fluoranthene	μg/L	2.5	0.1 U	0.02 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chrysene	μg/L	25	0.1 U	0.02 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluoranthene	μg/L	800	0.1 U	0.03 B	0.12	0.079 J	0.1 U	0.04 J	0.1 U
Fluorene	μg/L	290	0.1 U	0.1 U	0.04 J	0.017 J	0.1 U	0.07 J	0.61
Indeno[1,2,3-c,d]pyrene	μg/L	0.25	0.1 U	0.03 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Naphthalene	μg/L	0.12	0.1 U	0.1 U	0.1 U	0.11	0.1 U	3.4	0.19
Phenanthrene	μg/L		0.05 U	0.05 U	0.03 B	0.1 U	0.05 U	0.11	0.11
Pyrene	μg/L	120	0.1 U	0.02 J	0.38	0.077 J	0.1 U	0.03 J	0.03 J
ТРН									
Diesel Range Organics	μg/L	47	85 J	500 U	80 J	659 J	76 J	170 J	210 J
Gasoline Range Organics	μg/L	47	26 B	20 B	26 B	4,800 U	35 B	31 B	42 B

Detections in bold

Values in red indicate an exceedance of the Project Action Limit (PAL)

^{*} indicates non-validated data

[^] PAH compounds were analyzed via SIM

U: This analyte was not detected in the sample. The numeric value repesents the sample quantitation/detection limit.

J: The positive result reported for this analyte is a quantitative estimate.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

Table 4 - Sub-Parcel A15-1 Summary of Inorganics Detected in Groundwater

_			A15-015-PZ*	A15-016-PZ*	A15-019-PZ*	A8-004-PZ	SG03-PDM007*	SG04-PDM008	SW-099-MWS
Parameter	Units	PAL	1/4/2023	1/4/2023	1/4/2023	11/4/2015	12/30/2022	12/29/2022	1/19/2023
Metals	<u>"</u>								
Aluminum, Dissolved	μg/L	20,000	363	10,900	102	362	7.67 J	1,210	214
Antimony, Dissolved	μg/L	6	4 U	4 U	4 U	6 U	0.4762 J	4 U	0.5913 J
Arsenic, Dissolved	μg/L	10	4.588	4.528	3.481	5 U	2.954	0.7354	8.853
Barium, Dissolved	μg/L	2,000	21.87	257.8	17.33	20.6	31.44	73.21	29.71
Beryllium, Dissolved	μg/L	4	0.2054 J	2.606	0.5 U	1 U	0.5 U	0.5 U	1.486
Cadmium, Dissolved	μg/L	5	0.28	0.239	0.2 U	3 U	0.2 U	0.2 U	0.146 J
Chromium, Dissolved	μg/L	100	0.8502 J	31.55	0.2886 J	1.4 B	0.5949 J	1 U	1.112
Cobalt, Dissolved	μg/L	6	45.71	17.95	2.399	5 U	0.3946 J	0.5 U	52.94
Copper, Dissolved	μg/L	1,300	0.9212 J	31.1	0.4616 J	1.6 J	2.095	1 U	0.8403 J
Iron, Dissolved	μg/L	14,000	10,800	16,000	5,820	44.8 B	127	22.6 J	9,570
Lead, Dissolved	μg/L	15	0.516 J	38.19	1 U	5 U	1 U	1 U	0.9063 J
Manganese, Dissolved	μg/L	430	306.6	1,478	170.1	5.5 J	5.243	1.553	328.9
Mercury, Dissolved	μg/L	2	0.2 U	0.266	0.2 U	0.05 B	0.2 U	0.2 U	0.2 U
Nickel, Dissolved	μg/L	390	58.1	37.62	2.269	1.3 B	1.302 J	0.6844 J	80.68
Selenium, Dissolved	μg/L	50	5 U	10.1	5 U	6.3 B	4.79 J	5 R	1.84 J
Thallium, Dissolved	μg/L	2	1 U	0.1645 J	1 U	5.1 B	0.1963 J	1 U	1 U
Vanadium, Dissolved	μg/L	86	5 U	68.39	5 U	673	18.61	29.52	1.66 J
Zinc, Dissolved	μg/L	6,000	57.3	86.41	10 U	0.86 B	10 U	10 U	109.7

Detections in bold

Values in red indicate an exceedance of the Project Action Limit (PAL)

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

J: The positive result reported for this analyte is a quantitative estimate.

R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

^{*}indicates non-validated data

Table 5 - Sub-Parcel A15-1 Summary of Organics Detected in Surface Water

D 4	T.L. 14.	DAI	A15-001-SW	A15-002-SW	A15-004-SW	A15-006-SW	A15-007-SW	A15-008-SW*	A15-010-SW*	A15-012-SW*
Parameter	Units	PAL	1/17/2023	1/17/2023	1/17/2023	1/17/2023	1/17/2023	1/18/2023	1/18/2023	1/18/2023
Volatile Organic Compounds										
Acetone	μg/L	14,000	3.9 J	3.8 J	3 J	3 J	3.4 J	3 J	3.2 J	2.5 J
Bromodichloromethane	μg/L	0.13	0.86	0.59	0.49 J	0.49 J	0.46 J	0.44 J	0.45 J	0.4 J
Bromoform	μg/L	3.3	1.6 J	1.4 J	1.3 J	1.3 J	1.3 J	1.2 J	2 U	2 U
Bromomethane	μg/L	7.5	1 UJ	1 UJ	1 UJ	0.27 J	0.27 J	1 U	1 U	0.3 J
Carbon disulfide	μg/L	810	0.33 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	μg/L	0.22	1.2	0.96	0.74 J	0.73 J	0.76	0.74 J	0.76	0.66 J
Dibromochloromethane	μg/L	0.17	0.89	0.7	0.47 J	0.46 J	0.49 J	0.48 J	0.47 J	0.4 J
Semi-Volatile Organic Comp	ounds^									
2-Methylnaphthalene	μg/L	36	0.1 U	0.1 U	0.1 U	0.1 U	0.05 J	0.1 U	0.06 J	0.05 J
Acenaphthene	μg/L	530	0.1 U	0.1 U	0.03 J					
Acenaphthylene	μg/L	530	0.1 U	0.1 U	0.1 U	0.1 U	0.02 J	0.03 J	0.1 U	0.04 J
Anthracene	μg/L	1,800	0.1 U	0.1 U	0.1 U	0.1 U	0.03 J	0.1 U	0.1 U	0.05 J
Benz[a]anthracene	μg/L	0.03	0.05 U	0.05 U	0.05 U	0.05 U	0.02 J	0.07	0.02 J	0.04 J
Benzo[a]pyrene	μg/L	0.2	0.1 U	0.04 J	0.1 U	0.02 J				
Benzo[b]fluoranthene	μg/L	0.25	0.05 U	0.04 J	0.05 U	0.02 J				
Benzo[g,h,i]perylene	μg/L		0.1 U	0.02 J	0.1 U	0.1 U				
Benzo[k]fluoranthene	μg/L	2.5	0.1 U	0.02 J	0.1 U	0.01 J				
Chrysene	μg/L	25	0.1 U	0.1 U	0.1 U	0.1 U	0.01 J	0.05 J	0.1 U	0.02 J
Fluoranthene	μg/L	800	0.1 U	0.05 J	0.02 J	0.1 U	0.03 J	0.06 J	0.02 J	0.05 J
Fluorene	μg/L	290	0.1 U	0.02 J	0.02 J	0.1 U	0.04 J	0.1 U	0.1 U	0.05 J
Indeno[1,2,3-c,d]pyrene	μg/L	0.25	0.1 U	0.02 J	0.1 U	0.1 U				
Naphthalene	μg/L	0.12	0.07 J	0.09 J	0.07 J	0.06 J	0.17	0.1 U	0.13	0.06 J
Phenanthrene	μg/L		0.03 J	0.05	0.03 J	0.05 U	0.05 J	0.04 J	0.05 U	0.12
Pyrene	μg/L	120	0.1 U	0.04 J	0.02 J	0.1 U	0.03 J	0.07 J	0.02 J	0.05 J
TPH/Oil & Grease										
Diesel Range Organics	μg/L	47	140 B	93 B	130 B	870	90 B	180 J	110 J	80 J
Gasoline Range Organics	μg/L	47	20 B	19 B	23 B	21 B	23 B	20 B	20 B	18 B
Oil & Grease	μg/L	47	3,600 U	3,600 U	5,800	3,600 U	3,600 U	3,600 U	3,600 U	3,600 U

Detections in bold

Values in red indicate an exceedance of the Project Action Limit (PAL)

^{*} indicates non-validated data

[^] PAH compounds were analyzed via SIM

U: This analyte was not detected in the sample. The numeric value repesents the sample quantitation/detection limit.

J: The positive result reported for this analyte is a quantitative estimate.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

Table 6 - Sub-Parcel A15-1 Summary of Inorganics Detected in Surface Water

D	TT '.	DAI	NRWQC	A15-001-SW	A15-002-SW	A15-004-SW	A15-006-SW	A15-007-SW	A15-008-SW*	A15-010-SW*	A15-012-SW*
Parameter	Units	PAL	Freshwater	1/17/2023	1/17/2023	1/17/2023	1/17/2023	1/17/2023	1/18/2023	1/18/2023	1/18/2023
Metals											
Aluminum, Dissolved	μg/L	20,000		10.3	10	9.06 J	8.99 J	9.12 J	9.93 J	9.08 J	10.9
Antimony, Dissolved	μg/L	6		4 U	4 U	4 U	4 U	4 U	0.8088 B	0.7259 B	0.7678 B
Arsenic, Dissolved	μg/L	10	150	0.5 U	0.3402 J	0.2296 J	0.2047 J				
Barium, Dissolved	μg/L	2,000		14.69	14.22	13.67	13.5	13.41	15.3	14.11	13.56
Chromium, Dissolved	μg/L	100	74	0.414 J	0.3504 J	0.2238 J	0.2806 J	0.3597 J	0.1806 J	0.2064 J	0.297 J
Cobalt, Dissolved	μg/L	6		0.569	0.6343	0.6803	0.5962	0.6087	0.6582	0.7062	0.692
Copper, Dissolved	μg/L	1,300		0.945 B	0.9443 B	0.9359 B	0.8763 B	1.186	0.9216 J	0.995 J	1.02
Iron, Dissolved	μg/L	14,000	1,000	31.2 B	28.1 B	30.2 B	22.4 B	28.2 B	33.7 J	30.8 J	34.8 J
Manganese, Dissolved	μg/L	430		1.541	1.675	0.9707 J	1.164	0.593 J	1.058	1.35	1 U
Nickel, Dissolved	μg/L	390	52	3.47	3.784	3.534	3.425	3.306	3.574	3.202	3.562
Thallium, Dissolved	μg/L	2		1 U	1 U	1 U	1 U	IU	0.2193 B	1 U	0.2116 B
Vanadium, Dissolved	μg/L	86		1.734 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc, Dissolved	μg/L	6,000	120	8.115 J	11.03	6.933 J	6.816 J	6.887 J	7.399 J	5.664 J	5.813 J

Detections in bold

Values in red indicate an exceedance of the Project Action Limit (PAL)

Values indicate an exceedance of National Recommended Water Quality Criteria (NRWQC) Aquatic Life Chronic Criteria for Freshwater Screening Value

^{*} indicates non-validated data

U: This analyte was not detected in the sample. The numeric value repesents the sample quantitation/detection limit.

J: The positive result reported for this analyte is a quantitative estimate.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

			BTAG	A15-001-SD	A15-002-SD	A15-003-SD	A15-004-SD	A15-005-SD	A15-006-SD	A15-007-SD	A15-008-SD	A15-009-SD	A15-010-SD	A15-011-SD	A15-012-SD
Parameter	Units	PAL	Freshwater	1/17/2023	1/17/2023	1/17/2023	1/17/2023	1/17/2023	1/17/2023	1/17/2023	1/18/2023	1/18/2023	1/18/2023	1/18/2023	1/18/2023
Volatile Organic Compounds		<u>"</u>							_		_			_	
1,2,4-Trichlorobenzene	mg/kg	110	2.1	0.00052 J	0.012 UJ	0.014 UJ	0.035 UJ	0.016 UJ	0.016 UJ	0.017 UJ	0.016 UJ	0.02 UJ	0.021 UJ	0.031 UJ	0.026 UJ
1,2-Dichlorobenzene	mg/kg	9,300	0.0165	0.0005 J	0.0011 J	0.014 UJ	0.035 UJ	0.0059 J	0.0016 J	0.017 UJ	0.016 UJ	0.02 UJ	0.021 UJ	0.031 UJ	0.026 UJ
1,3-Dichlorobenzene	mg/kg	,	4.43	0.0036 UJ	0.001 J	0.014 UJ	0.035 UJ	0.016 J	0.0044 J	0.018 J	0.016 UJ	0.02 UJ	0.0038 J	0.0031 J	0.0042 J-
1,4-Dichlorobenzene	mg/kg	11	0.599	0.0015 J	0.0071 J	0.0046 J	0.016 J	0.057 J	0.02 J	0.12 J	0.0034 J	0.0056 J	0.059 J	0.044 J	0.02 J-
2-Butanone (MEK)	mg/kg	190,000		0.031 J	0.28 J	0.4 J	1.5 J	0.87 J	1.1 J	1.7 J	0.3 J	0.65 J	2.2 J	2 J	1.5 J-
Acetone	mg/kg	670,000		0.11 J	0.95 J	1.4 J	5.6 J	11 J	3.6 J	10 J	0.98 J	2.5 J	14 J	14 J	6.4 J
Benzene	mg/kg	5.1		0.0009 UJ	0.0025 J	0.0036 UJ	0.0031 J	0.0034 J	0.0015 J	0.0077 J	0.004 UJ	0.005 UJ	0.0083 J	0.0078 J	0.004 J-
Carbon disulfide	mg/kg	3,500	0.000851	0.018 UJ	0.062 UJ	0.071 UJ	0.18 UJ	0.099 J	0.084 J	0.2 J	0.08 UJ	0.1 UJ	0.28 J	0.3 J	0.15 J-
Chlorobenzene	mg/kg	1,300	0.00842	0.00024 J	0.0047 J	0.0019 J	0.05 J	0.12 J	0.072 J	0.18 J	0.0028 J	0.0046 J	0.042 J	0.019 J	0.064 J-
Ethylbenzene	mg/kg	25	1.1	0.00036 J	0.001 J	0.0021 J	0.0026 J	0.0048 J	0.0021 J	0.014 J	0.008 UJ	0.0025 B	0.0068 J	0.0084 J	0.013 UJ
Isopropylbenzene	mg/kg	9,900	0.086	0.001 J	0.0027 J	0.00093 J	0.0095 J	0.024 UJ	0.0077 J	0.084 UJ	0.008 UJ	0.01 UJ	0.032 J	0.015 J	0.024 J-
Methyl Acetate	mg/kg	1,200,000		0.0072 UJ	0.025 UJ	0.028 UJ	0.071 UJ	0.032 UJ	0.032 UJ	0.034 UJ	0.032 UJ	0.04 UJ	0.041 UJ	0.17 J	0.052 UJ
Styrene	mg/kg	35,000	0.559	0.0018 UJ	0.0062 UJ	0.0071 UJ	0.018 UJ	0.0018 B	0.0018 B	0.0035 B	0.008 UJ	0.01 UJ	0.01 UJ	0.016 UJ	0.013 UJ
Toluene	mg/kg	47,000		0.0018 UJ	0.0062 UJ	0.0071 UJ	0.018 UJ	0.0075 J	0.008 UJ	0.011 J	0.008 UJ	0.01 UJ	0.01 UJ	0.016 UJ	0.013 UJ
Xylenes	mg/kg	2,800	0.0252	0.0018 UJ	0.019 J	0.0071 UJ	0.037 J	0.15 J	0.063 J	0.4 J	0.008 U.J	0.0064 J	0.18 J	0.082 J	0.21 J
Semi-Volatile Organic Compounds^	<u> </u>				0.000								0.000		
1,1-Biphenyl	mg/kg	200	1.22	0.64 UJ	1.7 UJ	5.2 UJ	2.9 UJ	2 UJ	7.2 UJ	7.6 UJ	2.1 UJ	2.1 UJ	0.16 J	2.6 UJ	2.5 UJ
2-Methylnaphthalene	mg/kg	3,000	0.0202	0.25 J	0.11 J	0.13 J	0.14 J	0.11 J	0.16 J	0.95 J	0.35 J	0.14 J	0.57 J	1.7 J	0.57 J
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.0202	0.41 UJ	1 UJ	3.3 UJ	0.32 J	1.3 UJ	4.6 UJ	4.8 UJ	0.18 J	0.15 J	0.25 J	0.3 J	0.48 J
4-Chloroaniline	mg/kg	11		0.28 UJ	0.73 UJ	2.3 UJ	1.3 UJ	0.89 UJ	0.66 J	5 J	0.31 J	0.93 UJ	2,2 J	7.6 J	2.5 J-
Acenaphthene	mg/kg	45,000	0.0067	0.37 J	0.038 J	0.033 J	0.079 J	0.027 J	0.051 J	0.76 J	0.071 J	0.035 J	0.69 J	1.4 J	0.26 J
Acenaphthylene	mg/kg	45,000	0.0059	0.11 J	0.03 J	0.027 J	0.051 J	0.024 J	0.062 J	0.18 J	0.081 J	0.043 J	0.15 J	0.35 J	0.11 J
Anthracene	mg/kg	230,000	0.0572	0.27 J	0.079 J	0.064 J	0.069 J	0.048 J	0.058 J	0.8 J	0.2 J	0.083 J	0.92 J	1.9 J	0.35 J
Benz[a]anthracene	mg/kg	21	0.108	0.6 J	0.15 J	0.16 J	0.12 J	0.098 J	0.066 J	0.74 J	0.3 J	0.16 J	0.89 J	4.1 J	0.44 J
Benzo[a]pyrene	mg/kg	2.1	0.15	0.49 J	0.15 J	0.12 J	0.078 J	0.081 J	0.048 J	0.3 J	0.23 J	0.16 J	0.35 J	2 J	0.24 J
Benzo[b]fluoranthene	mg/kg	21	0.0272	0.3 J	0.2 J	0.17 J	0.12 J	0.11 J	0.066 J	0.45 J	0.37 J	0.21 J	0.64 J	3 J	0.4 J
Benzo[g,h,i]perylene	mg/kg		0.17	0.34 J	0.12 J	0.068 J	0.1 UJ	0.071 UJ	0.13 UJ	0.093 UJ	0.15 J	0.11 J	0.047 UJ	0.22 UJ	0.045 UJ
Benzo[k]fluoranthene	mg/kg	210	0.24	0.08 J	0.06 J	0.066 J	0.032 J	0.039 J	0.022 J	0.15 J	0.11 J	0.064 J	0.21 J	1.1 J	0.13 J
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.18	1.9 J	3 J	1.2 J	14 J	3.7 J	6.1 J	25 J	9.2 J	3.9 J	18 J	44 J	30 J-
Chrysene	mg/kg	2,100	0.166	0.4 J	0.14 J	0.19 J	0.12 J	0.083 J	0.062 J	0.55 J	0.28 J	0.14 J	0.69 J	3.2 J	0.39 J-
Dibenz[a,h]anthracene	mg/kg	2.1	0.033	0.041 J	0.029 UJ	0.023 J	0.1 UJ	0.071 UJ	0.13 UJ	0.093 UJ	0.037 UJ	0.037 J	0.047 UJ	0.22 J	0.045 UJ
Fluoranthene	mg/kg	30,000	0.423	1.3 J	0.3 J	0.19 J	0.39 J	0.2 J	0.23 J	2.9 J	0.037 UJ	0.31 J	0.047 UJ	12 J	0.045 UJ
Fluorene	mg/kg	30,000	0.0774	0.46 J	0.062 J	0.058 J	0.1 J	0.049 J	0.08 J	0.96 J	0.15 J	0.06 J	0.97 J	2.3 J	0.35 J
Indeno[1,2,3-c,d]pyrene	mg/kg	21	0.017	0.17 J	0.13 J	0.084 J	0.1 UJ	0.065 J	0.13 UJ	0.093 UJ	0.037 UJ	0.037 UJ	0.047 UJ	0.22 UJ	0.14 J
Naphthalene	mg/kg	8.6	0.176	0.05 J	0.075 J	0.087 J	0.096 J	0.082 J	0.1 J	0.54 J	0.24 J	0.094 J	0.36 J	0.39 J	0.36 J
Phenanthrene	mg/kg	3.0	0.204	0.3 J	0.19 J	0.13 J	0.35 J	0.14 J	0.18 J	3.2 J	0.41 J	0.17 J	3.2 J	8 J	1.1 J-
Pyrene	mg/kg	23,000	0.195	1.8 J	0.33 J	0.19 J	0.42 J	0.21 J	0.26 J	3 J	0.76 J	0.31 J	3.6 J	12 J	1.8 J-
PCBs	II8 4-8		3.1,0	2.0 0	0.000	0.27 0	V 2 V	0.210	0.200		0.700		2.00	-20	2.5 0
Aroclor 1248	mg/kg	0.94	I	0.362 J	0.399 UJ	0.402 UJ	0.745 UJ	0.461 UJ	0.562 UJ	0.658 UJ	0.182 UJ	0.177 UJ	0.243 UJ	5.3 J	0.604 UJ
Aroclor 1254	mg/kg	0.97	l	0.337 J	0.559 J	0.318 J	3.23 J	0.435 J	0.434 J	1.25 J	0.753 J	0.434 J	1.47 J	6.41 J	0.604 UJ
Aroclor 1260	mg/kg	0.99	l	0.0982 J	0.354 J	0.205 J	1.48 J	0.292 J	0.26 J	0.604 J	0.486 J	0.312 J	0.809 J	2.73 J	2.62 J
PCBs (total)	mg/kg	0.97	0.0598	0.797 J	0.913 J	0.523 J	4.71 J	0.727 J	0.694 J	1.85 J	1.24 J	0.746 J	2.28 J	14.4 J	2.62 J
TPH/Oil & Grease	<u> </u>		0.0070	0.777	0.2100	0.020		V., 2, 0	0.0710	1.00 0	1.270	0.7100	2.200	11.70	2.02 0
Diesel Range Organics	mg/kg	6,200	T T	710 J	820 J	590 J	5,000 J	1,300 J	1,100 J	10,000 J	160 J	72 J	2,800 J	3,300 J	3,500 J
Gasoline Range Organics	mg/kg	6,200		2.1 B	5.3 B	8.4 B	50 J	1,500 J	1,100 J	110 J	14 B	27 B	240 J	140 J	48 J
Oil & Grease		6,200		5,400 J+	15,600 J+	13,400 J+	72,800 J+	25,000 J+	31,100 J+	72,800 J+	29,300 J+	26,300 J+	73,500 J+	82,400 J+	69,600 J+
On & Orease	mg/kg	0,200		3,400 37	13,000 37	13,400 37	72,000 JT	23,000 3™	31,100 57	74,000 JT	47,300 JT	20,300 3∓	75,500 57	02,400 JT	02,000 37

Detections in bold

Values in red indicate an exceedance of the Project Action Limit (PAL)

Values indicate an exceedance of the Freshwater Biological Technical Assistance Group (BTAG) Screening Value

All Samples Validated

^ PAH compounds were analyzed via SIM

U: This analyte was not detected in the sample. The numeric value repesents the sample quantitation/detection limit.

J: The positive result reported for this analyte is a quantitative estimate.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

J+: The positive result reported for this analyte is a quantitative estimate, but may be biased high.

J-: The positive result reported for this analyte is a quantitative estimate, but may be biased low.

Table 8 - Sub-Parcel A15-1 Summary of Inorganics Detected in Sediment

	11 1		T T											115 011 05	
Parameter	Units	PAL	BTAG	A15-001-SD	A15-002-SD	A15-003-SD	A15-004-SD	A15-005-SD	A15-006-SD	A15-007-SD	A15-008-SD	A15-009-SD	A15-010-SD	A15-011-SD	A15-012-SD
T draineter	Omes	1112	Freshwater	1/17/2023	1/17/2023	1/17/2023	1/17/2023	1/17/2023	1/17/2023	1/17/2023	1/18/2023	1/18/2023	1/18/2023	1/18/2023	1/18/2023
Metals															
Aluminum	mg/kg	1,100,000		11,000 J	11,500 J	7,500 J	13,600 J	7,900 J	9,040 J	17,000 J	11,800 J	10,400 J	20,300 J	12,500 J	13,300 J
Antimony	mg/kg	470	2	33.2 UJ	17.5 UJ	18.4 UJ	63.7 J	7.87 J	47.1 J	23.6 J	13.8 J	6.42 J	15.4 J	27.5 J	70.5 J
Arsenic	mg/kg	3	9.8	3.85 J	6.91 J	4.23 J	12.5 J	4.73 J	6.36 J	19.1 J	5.83 J	2.4 J	23.8 J	15.3 J	6.87 J
Barium	mg/kg	220,000		131 J	337 J	294 J	1,170 J	488 J	658 J	1,690 J	706 J	601 J	1,160 J	950 J	1,620 J
Beryllium	mg/kg	2,300		1 J	1.08 B	0.799 B	0.941 B	0.928 B	0.737 B	1.4 B	1.6 J	1.47 J	2.42 J	1.68 J	1.65 J
Cadmium	mg/kg	100	0.99	1.87 J	6.53 J	7.17 J	47.5 J	12.3 J	23.2 J	38.8 J	19 J	16.3 J	43.3 J	35.7 J	27.6 J
Chromium	mg/kg	1,800,000	43.4	86.8 J	521 J	383 J	1,160 J	596 J	432 J	3,320 J	1,050 J	803 J	3,430 J	1,440 J	2,230 J
Cobalt	mg/kg	350	50	4.39 J	13.2 J	11.9 J	15.3 J	14.8 J	15.7 J	23.1 J	19.7 J	18.2 J	24.3 J	21.1 J	19.5 J
Copper	mg/kg	47,000	31.6	53.5 J	506 J	423 J	1,850 J	1,300 J	640 J	3,530 J	1,240 J	934 J	3,790 J	2,100 J	2,370 J
Iron	mg/kg	820,000	20,000	13,300 J	116,000 J	41,800 J	124,000 J	52,400 J	79,900 J	76,000 J	79,100 J	65,300 J	65,100 J	54,500 J	72,000 J
Lead	mg/kg	800	35.8	1,060 J	474 J	288 J	727 J	410 J	381 J	1,390 J	720 J	557 J	2,790 J	1,670 J	711 J
Manganese	mg/kg	26,000	460	712 J	578 J	450 J	643 J	549 J	493 J	604 J	783 J-	694 J-	834 J-	577 J-	550 J-
Mercury	mg/kg	350	0.18	0.501 J	1.86 J	2.15 J	4.66 J	3.44 J	3.27 J	9.52 J	5.02 J-	4.01 J-	14.9 J-	19.6 J-	7.8 J-
Nickel	mg/kg	22,000	22.7	8.23 J	27.5 J	23.3 J	119 J	68.1 J	52 J	402 J	55.4 J	40.1 J	525 J	109 J	251 J
Selenium	mg/kg	5,800	2	1.09 J	4.85 J	2.83 J	11.6 J	3.14 J	7.34 J	8.18 J	5.97 J	3.52 J	5.02 J	4.46 J	8.29 J
Silver	mg/kg	5,800	1	1.64 J	13.9 J	15.4 J	93.4 J	27 J	46.7 J	105 J	48.3 J	36.1 J	112 J	122 J	70.6 J
Thallium	mg/kg	12		2.66 UJ	1.83 J	1.87 J	2.25 J	1.39 J	2.11 J	11 UJ	2.63 J	8.6 UJ	2 J	10.4 UJ	10.6 UJ
Vanadium	mg/kg	5,800		32.3 J	66.9 J	31.1 J	41.3 J	38.5 J	28.9 J	51.3 J	60.8 J	42.2 J	85.2 J	54.3 J	46 J
Zinc	mg/kg	350,000	121	756 J	1,120 J	1,080 J	3,090 J	1,490 J	1,660 J	6,080 J	2,300 J	1,970 J	7,010 J	5,080 J	3,350 J
Other	Other														
Cyanide	mg/kg	150		1.2 J	1.2 J	1.1 J	6.6 J	3.3 J	6.2 U	79	3.6 J	3.5 J	47	4.4 J	9.1

Detections in bold

Values in red indicate an exceedance of the Project Action Limit (PAL)

Values indicate an exceedance of the Freshwater Biological Technical Assistance Group (BTAG) Screening Value

All Samples Validated

U: This analyte was not detected in the sample. The numeric value repesents the sample quantitation/detection limit.

J: The positive result reported for this analyte is a quantitative estimate.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

J-: The positive result reported for this analyte is a quantitative estimate, but may be biased low.

APPENDIX A



June 17, 2025

Maryland Department of Environment 1800 Washington Boulevard Baltimore MD, 21230

Attention: Ms. Jennifer Sohns

Subject: Request to Enter Temporary CHS Review

Tradepoint Atlantic Sub-Parcel A15-1

Dear Ms. Sohns:

The conduct of any environmental assessment and cleanup activities on the Tradepoint Atlantic property, as well as any associated development, is subject to the requirements outlined in the following agreements:

- Administrative Consent Order (ACO) between Tradepoint Atlantic (formerly Sparrows Point Terminal, LLC) and the Maryland Department of the Environment (effective September 12, 2014); and
- Settlement Agreement and Covenant Not to Sue (SA) between Tradepoint Atlantic (formerly Sparrows Point Terminal, LLC) and the United States Environmental Protection Agency (effective November 25, 2014).

On September 11, 2014, Tradepoint Atlantic submitted an application to the Maryland Department of the Environment's (Department) Voluntary Cleanup Program (VCP).

In consultation with the Department, Tradepoint Atlantic affirms that it desires to accelerate the assessment, remediation, and redevelopment of certain sub-parcels within the larger site due to current market conditions. To that end, the Department and Tradepoint Atlantic agree that the Controlled Hazardous Substance (CHS) Act (Section 7-222 of the Environment Article) and the CHS Response Plan (COMAR 26.14.02) shall serve as the governing statutory and regulatory authority for completing the development activities on Sub-Parcel A15-1 and complement the statutory requirements of the Voluntary Cleanup Program (Section 7-501 of the Environment Article). Upon submission of a Site Response and Development Work Plan and completion of the remedial activities for the sub-parcel, the Department shall issue a "No Further Action" letter upon a recordation of an environmental covenant describing any necessary land use controls for the specific sub-parcel. At such time that all the sub-parcels within the larger parcel have completed remedial activities, Tradepoint Atlantic shall submit to the Department a request for issuing a Certificate of Completion (COC) as well as all pertinent information concerning completion of remedial activities conducted on the parcel. Once the VCP has completed its review of the



submitted information it shall issue a COC for the entire parcel described in Tradepoint Atlantic's VCP application.

Alternatively, Tradepoint Atlantic, or other entity may elect to submit an application for a specific subparcel and submit it to the VCP for review and acceptance. If the application is received after the cleanup and redevelopment activities described in this work plan are implemented and a No Further Action letter is issued by the Department pursuant to the CHS Act, the VCP shall prepare a No Further Requirements Determination for the sub-parcel.

If Tradepoint Atlantic or other entity has not carried out cleanup and redevelopment activities described in the work plan, the cleanup and redevelopment activities may be conducted under the oversight authority of either the VCP or the CHS Act, so long as those activities comport with this work plan.

Engineering and institutional controls approved as part of this Site Response and Development Work Plan shall be described in documentation submitted to the Department demonstrating that the exposure pathways on the sub-parcel are addressed in a manner that protects public health and the environment. This information shall support Tradepoint Atlantic's request for the issuance of a COC for the larger parcel.

Please do not hesitate to contact Tradepoint Atlantic for further information.

Thank you,

Matthew Newman

Environmental Director TRADEPOINT ATLANTIC 6995 Bethlehem Boulevard, Suite 100 Baltimore, Maryland 21219 T 443.649.5063 C 443.791.9046 mnewman@tradepointatlantic.com

APPENDIX B

<u>Sparrows Point Development - PPE Standard</u> <u>Operational Procedure, Revision 3</u>

Planning, Tracking/Supervision, Enforcement, and Documentation

Planning

- Response and Development Work Plan (RDWP) for each individual redevelopment subparcel identifies and documents site conditions.
- RDWP is reviewed and approved by regulators.
- Contractor HASP to address site-specific conditions and PPE requirements:
 - Contractor H&S professional to sign-off on PPE requirements for site workers;
 - Job Safety Analysis (JSA) to be performed for ground intrusive work.
- Project Environmental Professional (EP) assigned to each construction project –
 monitors project during environmentally sensitive project phases and is available to
 construction contractor on an as needed basis. EP responsibilities include the following:
 - Dust monitoring
 - Routine ground intrusive breathing space air monitoring
 - Soil tracking
 - Water handling oversight
 - Ground intrusive work observation
 - Notification for unexpected conditions
- Pre-construction meeting identifies EP roles and responsibilities and reviews site conditions.
- Contractor to perform job-site HazCom. HazCom to be addressed in Contractor HASP and include:
 - o PPE requirements,
 - Exposure time limits,
 - Identification of chemicals of concern and potential effects of over-exposure (adverse reactions),
 - Methods and routes of potential exposure.
- All personnel that will be performing ground intrusive work within impacted soils shall sign-off on HazCom.
- If, based on a thorough review of Site conditions, it is expected that construction workers
 will have the potential to encounter materials considered hazardous waste under RCRA
 or DOT regulations, HAZWOPER-trained personnel will be utilized.

Tracking/Supervision

- Contractor to record any day that there is ground intrusive work and confirm that proper PPE is being worn.
- EP will note ground intrusive work on daily work sheets and perform at least one spot check per day.
- EP will log on daily work sheets PPE compliance for all intrusive work areas at least once per day.

• EP to take example photos of Exclusion Zones/Contamination Reduction Zones periodically.

Work Zones Delineation

- Exclusion Zone The Exclusion Zones will include the areas proposed for excavation or with active trenches, excavations, or ground intrusive work, at a minimum. Personnel working within the exclusion zone will be required to wear Modified Level D PPE as described in this SOP. EP to take example photos of Exclusion Zones/Contamination Reduction Zones periodically. The Exclusion Zones will be identified each work day.
- Contamination Reduction Zone This work zone is located outside of the exclusion zone, but inside of the limits of development (LOD). The Contamination Reduction Zone will be located adjacent to the Exclusion Zone, and all personal decontamination including removal of all disposable PPE/removal of soil from boots will be completed in the Contamination Reduction Zone.

Documentation

- Contractor HASP and HazCom.
- Contractor ground intrusive tracking record.
- HASP and HazCom sign-in sheets.
- EP pre-con memos.
- EP daily work sheets.
- Records documenting intrusive work and proper PPE use to be provided in completion report.

Enforcement

• Non-compliance of PPE requirements will result in disciplinary action up to and including prohibition from working on Sparrows Point.

Unknown and/or Unexpected Conditions

If unknown and/or unexpected conditions are encountered during the project that the EP determines to have a reasonable potential to significantly impact construction worker health and safety, the following will be initiated:

- 1. Job stoppage,
- 2. TPA and MDE notification.
- 3. Re-assessment of conditions.

Work will not continue until EP has cleared the area. If hazardous waste is identified, a HAZWOPER contractor will be brought in to address. The approved contingency plan will be implemented, where appropriate.

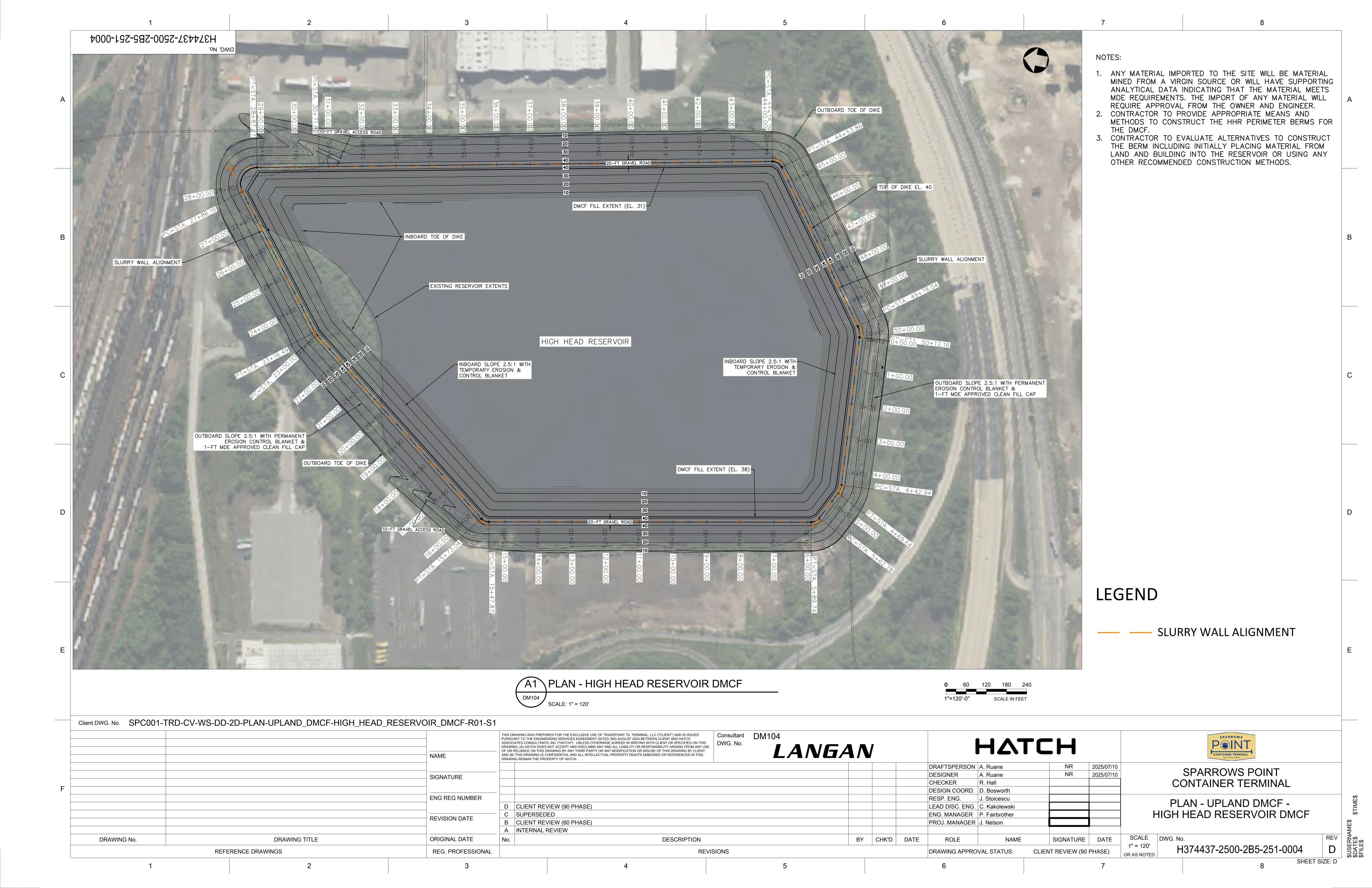
Modified Level D PPE

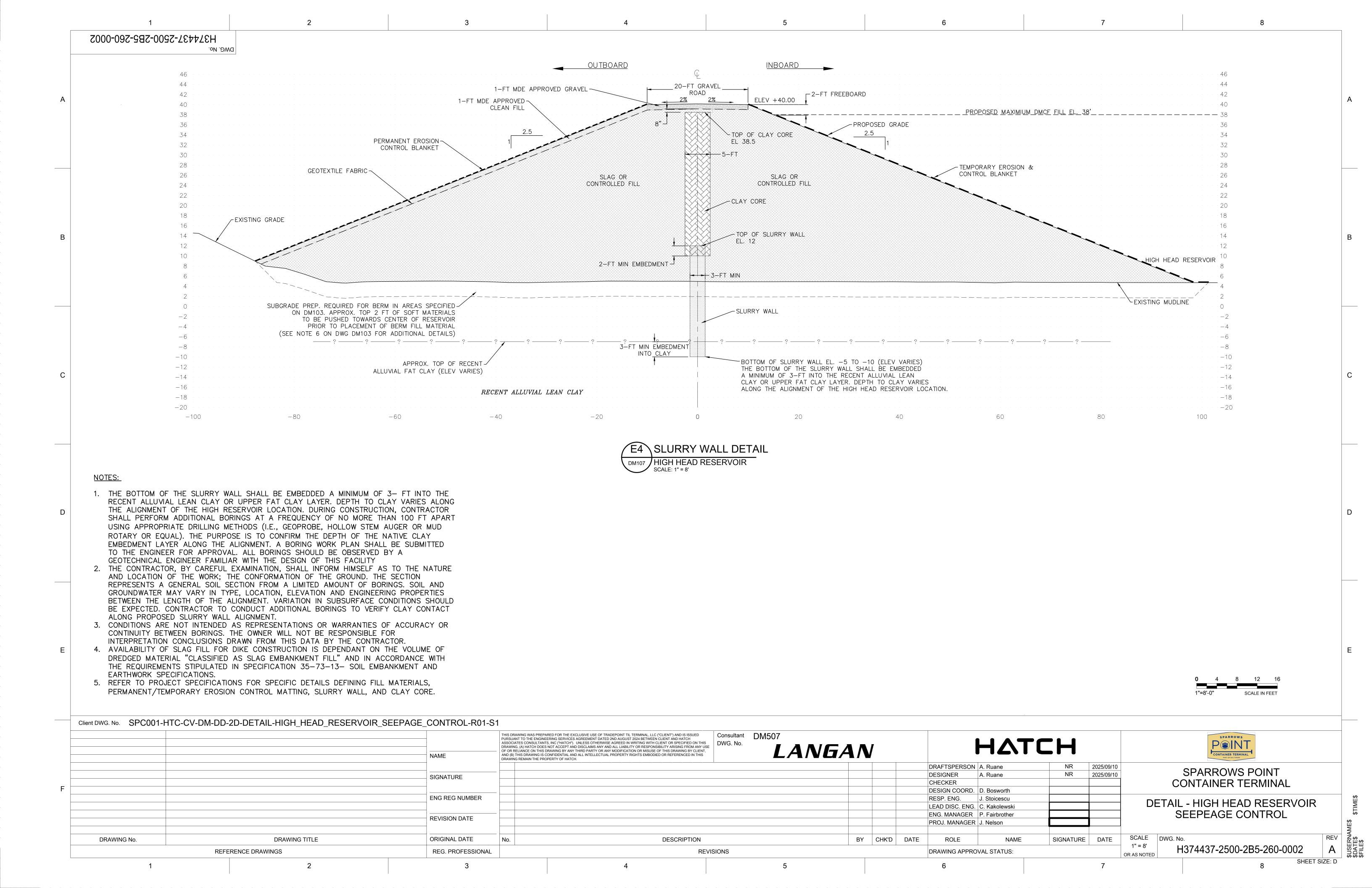
Modified Level D PPE will include, at a minimum, overalls such as polyethylene-coated Tyvek or clean washable cloth overalls, latex (or similar) disposable gloves (when working in wet/chemical surroundings) or work gloves, steel-toe/steel-shank high ankle work boots with taped chemical-protective over-boots (as necessary), dust mask, hard hat, safety glasses with

side shields, and hearing protection (as necessary). If chemical-protective over-boots create increased slip/trip/fall hazardous, then standard leather or rubber work boots could be used, but visible soils from the sides and bottoms of the boots must be removed upon exiting the Exclusion Zone.

SP Development PPE Procedure 4-3-19

APPENDIX C





APPENDIX D

Tradepoint Atlantic Facility

Hillis-Carnes Engineering Associates, Inc. Environmental Professional Roles

Hillis-Carnes Engineering Associates, Inc. (HCEA) is acting as the Environmental Professional (EP) for development of the Tradepoint Atlantic (TPA) facility. The EP's roles are as follows.

A. Monitoring of Excavated Soils

HCEA will monitor the environmental condition of soil as it is being excavated, including, but not limited to, the following example activities, as applicable: a) site grading and site preparation; b) excavation of underground utility trenches for new utilities; and c) excavation for installation of inlet/manholes. The monitoring includes the following:

- 1) Soils will be monitored with a calibrated photoionization detector (PID) for evidence of volatile organic compounds (VOCs). Evidence of VOCs is sustained PID readings greater than 10 metered units on the PID;
- 2) Soils will be inspected for visual indication of environmental impact (i.e., staining apparently due to impact);
- 3) Soils will be inspected for olfactory indication of environment impact (i.e., odors apparently due to impact);
- 4) Soils will be inspected for the presence of waste materials; and/or
- 5) Soils will be inspected for evidence of non-aqueous phase liquids (NAPL, which could potentially be drained or otherwise extracted from the soil).

If soils meeting any of the criteria above are encountered, HCEA will coordinate with the General Contractor and their Subcontractor(s) to segregate those materials by placing the materials on plastic sheeting (6-mil minimum) and covering the material with plastic sheeting at the end of each work day. Each stockpile of contaminated soil will not exceed 500 cubic yards. HCEA will coordinate with the Maryland Department of the Environment's (MDE's) Voluntary Cleanup Program (VCP) Project Manager for further evaluation of this material (e.g., for potential re-use on-parcel, for off-parcel disposal, etc.)

If NAPL is encountered in the utility trench, procedures described in the NAPL Contingency Plan attached to this document will be followed. Refer to the NAPL Contingency Plan for additional details. The NAPL Contingency Plan is included in the Response and Development Work Plan (RADWP) or the Limited Scope Project Plan, as applicable.

If the contractor encounters soils with unusual or strong odors, the contractor should inform the EP in order to evaluate the conditions of the soil.

B. Protocol for Impacted Soils

If soils meeting any of the criteria presented in the Section A are encountered, HCEA will coordinate with the appropriate parties to segregate those materials.

HCEA will then coordinate with TPA and the MDE's VCP Project Manager for further evaluation of this material for:
a) potential placement on the parcel on which the project is occurring; b) potential placement on another parcel within the TPA facility; c) potential disposal at Grey's Landfill; or d) potential disposal at an off-terminal location.

Evaluation of the material could include the laboratory analysis of the material for the following parameters: Total Petroleum Hydrocarbons-Diesel Range Organics (TPH-DRO); TPH-Gasoline Range Organics (TPH-GRO); Oil & Grease; Polychlorinated Biphenyls (PCBs); and Priority Pollutant Metals. The specifics of such an evaluation will be provided by HCEA to TPA and the MDE's VCP via a written sampling and analysis plan prior to any work conducted for the evaluation.

C. Protocol for Non-Impacted Soils

Excavated materials that do not meet the criteria presented in Section A will be stockpiled. No excavated materials may be replaced in a trench or excavation as backfill unless monitored/inspected and approved by the MDE. Similarly, separate sampling and approval by the MDE will be required to allow excavated materials to be placed within other areas of the TPA facility outside of the project boundary. In such instances, a sampling Work Plan that includes a description of the material, an estimated volume, and proposed sampling parameters will need to be submitted to the MDE for approval. The resulting analytical data will also be submitted to the MDE to determine the suitability of the material for its specified use. HCEA will coordinate with appropriate parties to facilitate removal of excess materials from the project site and will document approximate quantities and placement locations within the TPA facility.

D. Air Monitoring

HCEA will be on-site conducting daily air monitoring for total dust. At a minimum, this will consist of monitoring for visible dust. When sustained visual dust is observed, HCEA will request that the General Contractor implement methods for supplementing standard dust suppression methods to address dust levels. Such methods could include, but will not necessarily be limited to, an increase in the frequency of water trucks spraying the area, covering of soil piles with plastic sheeting, decrease drop heights of soil from excavation equipment, etc. If visible dust is sustained after additional methods are implemented to reduce dust, real-time dust monitoring equipment may be used.

If real-time dust monitoring is implemented, HCEA's on-site personnel will utilize a monitor to provide mass dust readings throughout the work day within the work area, or immediately downwind of the work area, depending on site conditions and activity. In addition to the work area monitoring, monitors will be stationed daily at two of the four perimeters of the parcel. The perimeters will correspond to those that are upwind and downwind of the work area, based on the predicted prevailing wind direction for that day. The prevailing wind direction will be assessed during the day and the positioning of the upwind and downwind monitors will be adjusted if there is a substantial shift in the prevailing wind direction.

When dust readings are sustained above the total dust action limit of 3.0 milligrams per cubic meter of air (mg/m³), HCEA will coordinate with the General Contractor to implement additional methods for supplementing the standard dust suppression methods to address the dust levels

E. Monitoring of Dewatering Activity

If dewatering becomes necessary during the Development Phase of the project, the water must be conveyed to the Humphrey Creek Waste Water Treatment Plant (HCWWTP). HCEA will document dewatering activity. During dewatering activities, if gross contamination is observed, the EP will contact the HCWWTP Operator to confirm if laboratory analysis is required, as well as potential analytes. If laboratory analysis of water produced by the dewatering becomes necessary, HCEA will collect water samples for transport to an analytical laboratory. All dewatering activities being conveyed to the HCWWTP via drain lines or direct purge into the Tin Mill Canal will require the use of a filter bag prior to discharge.

F. Monitoring of Worker Breathing Zone

In the event of unexpected/non-standard conditions that appear to warrant monitoring for organic vapor concentrations in the breathing zone of workers in the excavation trench, HCEA will notify TPA and monitoring will be conducted as described in this section. Such conditions include, but are not necessarily limited to, the following: encountering NAPL; unexpected/non-standard odors detected by the EP; and unexpected/non-standard odors or other conditions reported to the EP by the General Contractor or their Subcontractor(s). The monitoring will include attaching tubing to the sample port of the PID and the lowering of the tubing into the excavation trench when an individual(s) will be/is(are) physically enter(ing) the trench and where the unexpected/non-standard condition(s) has(have) been reported.

In the absence of NAPL, if the PID readings are greater than 5 metered units above background in the breathing zone for a 3-minute period, personnel will stop work, retreat from the work area, and allow time (at least 15 minutes) for vapors to dissipate. If monitoring indicates that concentrations still exceed 5 metered units after 15 minutes. HCEA will advise that work not continue without further evaluation.

G. Monitoring of PPE Standard Operation Procedures

An Interim Personal Protective Equipment (PPE) Standard Operational Procedure (SOP) has been prepared for the Sparrows Point Development. HCEA will monitor the implementation of the PPE SOP in accordance with the attachment. This monitoring will include, but is not limited to, at least one daily spot check for implementation of PPE SOP where there is ground intrusive work, with documentation of observations.

H. Documentation of Placement of Clean Fill

HCEA will monitor the placement of 24 inches of clean fill where clean fill is required. Generally, 18 inches of clean fill followed by 6 inches of topsoil will constitute the 24 inches of required clean fill. At approximate 10,000 square-foot intervals, HCEA will document the placement of clean fill, including photo-documentation of a measuring device against the clean fill profile. Photo-documentation will also be utilized to document that the placement of clean fill began immediately at the curbside. After placement, a hand auger will be utilized to evaluate the thickness of clean fill. Hand augering will occur once per every 10,000 square feet of clean fill placement.

I. Confined Spaces and Other Health and Safety Considerations

Any protocols or procedures related to Permitted Confined Spaces or Non-Permitted Confined Spaces, or any other aspects related to worker health and safety, will be the responsibility of the General Contractor.

J. MDE Notification

In the event of unexpected/non-standard conditions, HCEA will notify TPA so that TPA can notify the MDE's VCP Project Manager of such condition(s). Such conditions include, but are not necessarily limited to, the following: conditions warranting monitoring for organic vapor concentrations in the breathing zone of workers in the excavation trench; previously undiscovered contamination; and previously undiscovered storage tanks or other oil-related issues.

K. Close-Out Documentation

HCEA will provide close-out documentation for the project, in accordance with the spreadsheet that is attached. Note that HCEA will be requesting certain documents from the Contractor(s) for this task including, but not necessarily limited to, the following: a) disposal manifests for disposal of impacted soil outside of terminal property and/or Grey's Landfill; b) clean fill affidavits for any material that is imported onto the parcel; and c) truck tickets for any material that is imported onto the parcel.

L. Points of Contact:

TPA: Mr. Pete Haid: 732-841-7935; phaid@tradepointatlantic.com

Mr. Matthew Newman, P.E.: 443-791-9046; mnewman@tradepointatlantic.com

HCEA: Mr. Keith Progin: 443-250-9467; kprogin@hcea.com

MDE VCP: Ms. Barbara Brown: 410-537-3212; barbara.brown1@maryland.gov

Attachments: Sparrows Point Development Interim PPE Standard Operational Procedure (January 20, 2019)

Documentation Requirements for VCP Completion Reports (November 19, 2018)

Utility Excavation NAPL Contingency Plan – Revision 4 (June 19, 2017)

Documentation Requirements for VCP Completion Reports

Documentation	Responsible Party
General:	
Pre-construction meeting - memo with list of attendees and attached EP Roles Summary	EP
Daily Construction Observation Reports	EP
Soil Excavations:	
Soil Screening: PID Readings, Visual and Olfactory Observations (general statement if under 10 ppm; maximum readings if above 10 ppm)	EP
Impacted Soils: Stockpile Locations & Stabilization Measures	EP
Impacted Soils: Waste Characterization Sample Results or MDE inspection results	EP
Impacted Soils: Disposal Manifests (for off-parcel, off-Terminal or at Greys Landfill)	EP
Impacted Soils: Narrative for on-site placement and approximate quantity (in daily report)	EP
Non-Impacted Soils: Off-parcel disposal - Narrative of approximate quantity and location	EP
Non-Impacted Soils: On-parcel placement - Narrative of location for large quantities only (basins	EP
Dust monitoring, as applicable:	
Monitoring equipment (manufacturer and model)	EP
Monitoring locations and results (appended to daily report)	EP
Summary/Log of dust suppression actions (included in daily report)	EP
Construction:	
As-Built Drawings, including: - Minimum thickness of all layers: clean fill, subbase, asphalt layers, floor slabs - Grading and compaction specifications - Detention pond construction - Landscaping details	Contractor
Construction Photos (of milestones; note-worthy occurrences; minimum of monthly)	EP
Over excavation of utility trenches (if needed per NAPL Contingency Plan)	EP
VCP-Approved Clean Fill:	
Source Documentation (e.g., facility affidavit for clean material)	EP
Analytical Results (in absence of facility affidavit)	EP
Truck Tickets for Imported VCP-Approved Clean Fill	EP
Water Management:	
Grading Permit	Contractor
Groundwater Discharge Approvals and locations (as applicable)	EP
Collection/Reporting of samples of water removed from excavations	EP
Documentation of what is sent to WWTP or Outfalls	EP
Health and Safety protocols:	
HASP Acknowledgement (HASP cover page and management approval page)	Contractor

TPA = Tradepoint Atlantic

EP = Environmental Professional

APPENDIX E

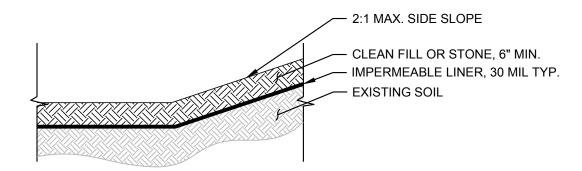
proje

2:1 MAX. SIDE SLOPE

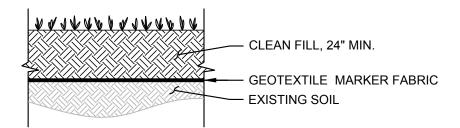
— CLEAN FILL OR STONE, 12" MIN.

— CLAY LAYER, 12" MIN.

— EXISTING SOIL



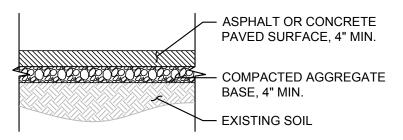
TYPICAL POND SECTIONS



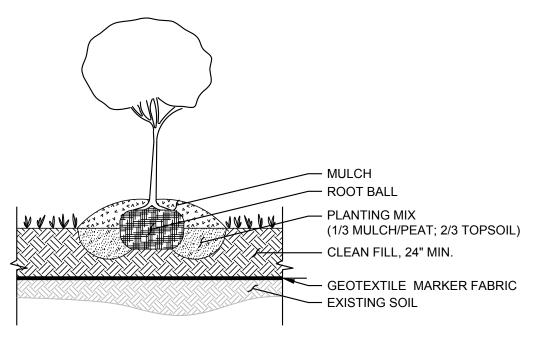
TYPICAL LANDSCAPE SECTION

GEOTEXTILE MARKER FABRIC SPECIFICATIONS

THE GEOTEXTILE MARKER FABRIC SHALL BE A NONWOVEN PERVIOUS SHEET OF POLYPROPYLENE MATERIAL. ADD STABILIZERS AND/OR INHIBITORS TO THE BASE MATERIAL, AS NEEDED, TO MAKE THE FILAMENTS RESISTANT TO DETERIORATION BY ULTRAVIOLET LIGHT, OXIDATION AND HEAT EXPOSURE. REGRIND MATERIAL, WHICH CONSISTS OF EDGE TRIMMINGS AND OTHER SCRAPS THAT HAVE NEVER REACHED THE CONSUMER, MAY BE USED TO PRODUCE THE GEOTEXTILE. POST-CONSUMER RECYCLED MATERIAL MAY BE USED. GEOTEXTILE SHALL BE FORMED INTO A NETWORK SUCH THAT THE FILAMENTS OR YARNS RETAIN DIMENSIONAL STABILITY RELATIVE TO EACH OTHER, INCLUDING THE EDGES. GEOTEXTILES SHALL MEET THE REQUIREMENTS SPECIFIED IN TABLE 1. WHERE APPLICABLE, TABLE 1 PROPERTY VALUES REPRESENT THE MINIMUM AVERAGE ROLL VALUES IN THE WEAKEST PRINCIPAL DIRECTION. VALUES FOR APPARENT OPENING SIZE (AOS) REPRESENT MAXIMUM AVERAGE ROLL VALUES



TYPICAL PAVING SECTION



TYPICAL PLANTING SECTION

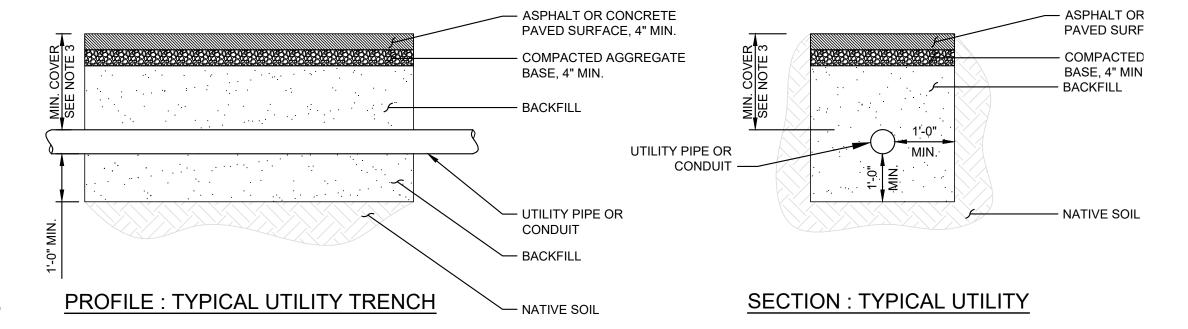
TCDNG'3"

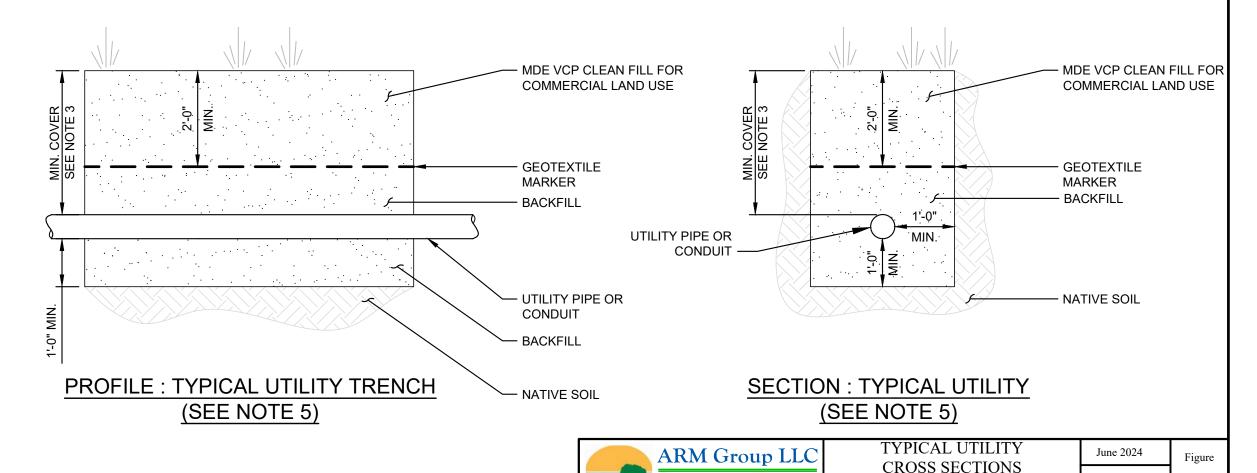
Mechanical Properties	Test Method	Unit	Minimum Average Roll Value			
	A		MD	CD		
Grab Tensile Strength	ASTM D4632	lbs (N)	120 (534)	120 (534)		
Grab Tensile Elongation	ASTM D4632	%	50	50		
Trapezoid Tear Strength	ASTM D4533	lbs (N)	50 (223)	50 (223)		
CBR Puncture Strength	310 (1380)					
	Maximum Opening Size					
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	70 (0.212)			
	No		Minimum	Roll Value		
Permittivity	ASTM D4491	sec ⁻¹	1.7			
Flow Rate	ASTM D4491	gal/min/ft2 (l/min/m2)	135 (5500)			
	Minimum Test Value					
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	70			

APPENDIX F

GENERAL NOTES:

- 1. ALL PIPES OR CONDUIT SHALL BE LEAK-PROOF AND WATERTIGHT. ALL JOINTS SHALL BE SEALED OR GASKETED.
- 2. ALL PIPES SHALL BE PROPERLY PLACED AND BEDDED TO PREVENT MISALIGNMENT OR LEAKAGE. PIPE BEDDING SHALL BE INSTALLED IN SUCH A MANNER AS TO MINIMIZE THE POTENTIAL FOR ACCUMULATION OF WATER AND CONCENTRATED INFILTRATION.
- 3. MINIMUM COVER ABOVE UTILITY SHALL BE BASED ON SPECIFIC UTILITY REQUIREMENTS.
- TRENCHES SHALL BE BACKFILLED WITH BEDDING AND MATERIALS APPROVED BY MDE.
- 5. FOR ANY UTILITY SEGMENT WHICH GOES THROUGH AN AREA WHICH IS DESIGNATED TO RECEIVE A LANDSCAPED CAP, THE UPPER 2 FEET OF BACKFILL MUST MEET THE REQUIREMENTS OF MDE VCP CLEAN FILL FOR COMMERCIAL LAND USE. IN THIS CASE THE MDE VCP CLEAN FILL WILL BE UNDERLAIN BY A GEOTEXTILE MARKER FABRIC. UTILITY SEGMENTS WHICH GO THROUGH AREAS WHICH DO NOT REQUIRE CAPPING OR ARE DESIGNATED TO RECEIVED A PAVED CAP WILL BE BACKFILLED WITH MATERIALS APPROVED BY MDE FOR THIS USE.





Engineers and Scientists

www.armgroup.net

1/2" = 1'-0"

21010213

Sparrows Point, MD

Tradepoint Atlantic

P: EnviroAnalytics Group 16043M EAG TPA Redevelopment/Drwg/NAPL Contingency/Reference/Utility Cross Section REV2.dwg Plott

APPENDIX G

Utility Excavation NAPL Contingency Plan

Revision 5 – September 20, 2022

Objectives:

The purpose of this plan is to describe procedures to be followed in the event that non-aqueous phase liquid (NAPL) is encountered in utility trenches or other excavations during development of the Tradepoint Atlantic property. The specific objectives of this plan and the procedures outlined herein are:

- 1. To ensure identification and proper management of NAPL contaminated soils.
- 2. To ensure proper worker protection for working in areas of NAPL contamination.
- 3. To ensure that the installation of new utilities does not create new preferential flow paths for the migration of NAPL or soil vapors.

Identification of Oil & Grease and Petroleum Contaminated Soil:

An Environmental Professional (EP) will be on-site to determine if soils show evidence of the presence of NAPL during installation of utility trenches or other excavation activities completed during development. NAPL-contaminated soils can be identified by the presence of free oil. Free oil (NAPL) is liquid oil which could potentially be drained or otherwise extracted from the soil, and is the focus of this contingency plan, although severe staining accompanied by odors may be addressed via similar contingency measures provided herein (based on the judgement of the EP).

If NAPL is encountered during construction, potentially impacted material from the excavation will be removed and separated on plastic / covered with the same. Additional discussion of removal of material is in the **Soil Excavation**, **Staging**, **Sampling and Disposal** section below. If NAPL is encountered in an area where there is no known historical NAPL impact, the MDE will be notified (see **Initial Reporting** section) and the open excavation may be allowed to sit overnight. If after removal of the initial material identified additional NAPL impacted material enters the open excavation, the extent of impacts may be delineated and additional material removed / segregated.

Soil Excavation, Staging, Sampling and Disposal:

The EP will monitor all utility trenching and excavation activities for signs of potential contamination. In particular, soils will be monitored with a hand-held photoionization detector (PID) for potential volatile organic compounds (VOCs) and will also be visually inspected for the presence of staining, petroleum waste materials, or other indications of NAPL contamination that may be different than what was already characterized.

Soil exhibiting physical evidence of NAPL contamination, which is located within a proposed new utility or subsurface structure (i.e., foundation, sump, electrical vault, underground tank, etc.), will

be excavated and segregated for disposal at the on-site nonhazardous landfill (Greys Landfill) or an off-site facility pending the completion of required analytical testing. If NAPL material continues to enter the open excavation, additional excavation may be continued in the field based on visual screening supplemented by the PID.

Any recovered NAPL impacted material will be segregated and collected for disposal. As required for disposal, samples impacted by NAPL will be collected for profiling/waste characterization and submitted to a fixed laboratory. Upon receipt of any additional characterization analytical results, the stockpiles will be tracked from generation to disposal.

Initial Reporting:

If evidence of NAPL in soil or groundwater is encountered during excavation in an area with no known historic NAPL impact, it will be reported to the MDE. Information regarding the location and characteristics of NAPL contaminated material will be documented as follows:

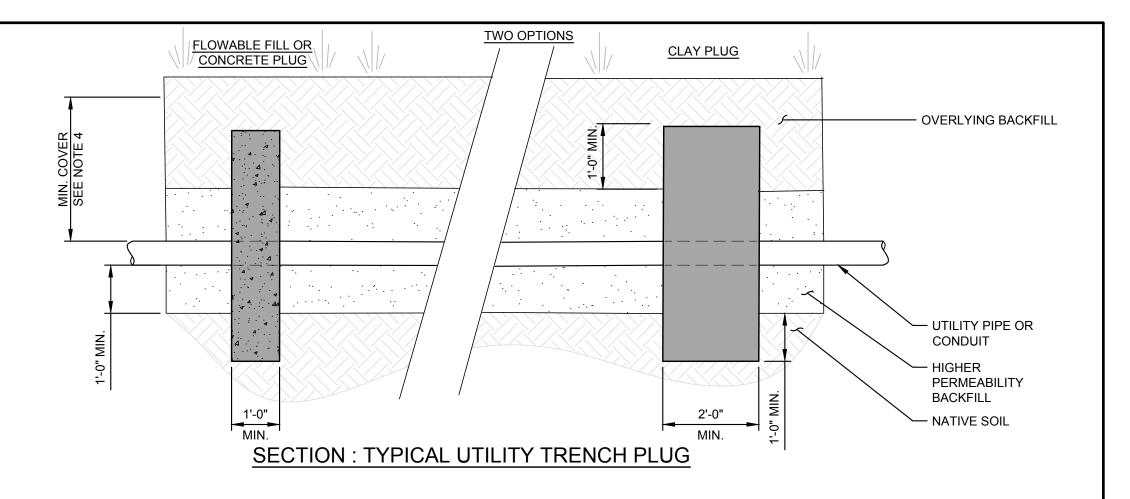
- Location (Site / Parcel ID with map);
- Approximate extent of contamination (horizontally and vertically prepare a sketch including dimensions);
- Relative degree of contamination (i.e. free oil with strong odor vs. staining); and
- Visual documentation (take photographs and complete a photograph log)

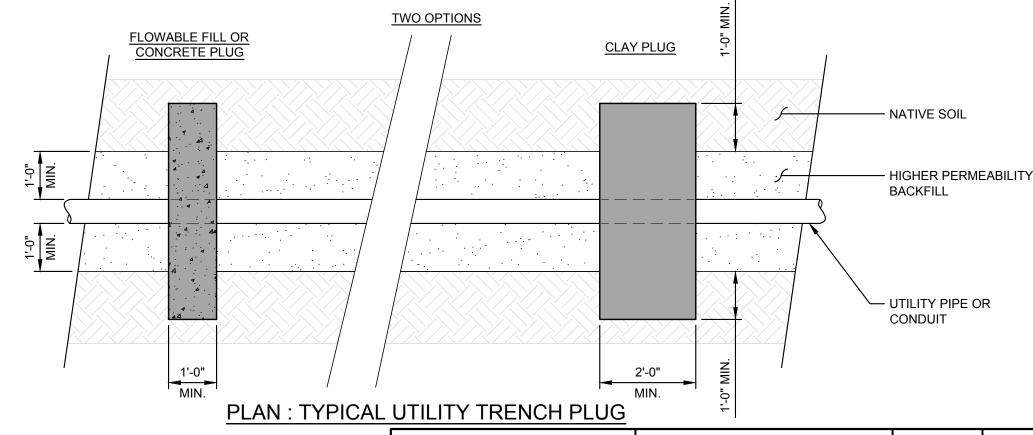
Utility Installations in Impacted Areas:

Underground piping or conduits installed through areas of known NAPL contamination shall be leak proof and water tight. All joints will be adequately sealed or gasketed, and pipes or conduits will be properly bedded and placed to prevent leakage. Trench backfill will meet the MDE definition of clean fill, or be otherwise approved by the MDE. Bedding must be properly placed and compacted below the haunches of the pipe. Clay, flowable fill, or concrete plugs may be placed every 100 feet across any permeable bedding to minimize the preferential flow and concentration of water along the bedding of such utilities.

If required, each trench plug will be constructed with a 2-foot-thick clay plug or 1-foot-thick flowable fill or concrete plug, perpendicular to the pipe, which extends at least 1 foot in all directions beyond the permeable pipe bedding. The plug acts as an anti-seep collar, and will extend above the top of the pipe. A specification drawing for installation of the trench plug has been provided as **Figure 1**.

- 2. ALL PIPES SHALL BE PROPERLY PLACED AND BEDDED TO PREVENT MISALIGNMENT OR LEAKAGE. PIPE BEDDING SHALL BE INSTALLED IN SUCH A MANNER AS TO MINIMIZE THE POTENTIAL FOR ACCUMULATION OF WATER AND CONCENTRATED INFILTRATION.
- 3. ANTI-SEEP COLLARS FROM THE PIPE MANUFACTURER. THAT ARE PRODUCED SPECIFICALLY FOR THE PURPOSE OF PREVENTING SEEPAGE AROUND THE PIPE, ARE ACCEPTABLE IF INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AND ONLY WITH PRIOR APPROVAL BY TPA.
- 4. MINIMUM COVER ABOVE UTILITY SHALL BE BASED ON SPECIFIC UTILITY REQUIREMENTS.
- TRENCHES SHALL BE BACKFILLED WITH BEDDING AND MATERIALS APPROVED BY MDE.
- 6. FOR ADDITIONAL REQUIREMENTS, INCLUDING THE USE OF MDE VCP CLEAN FILL FOR INDUSTRIAL LAND USE AND INSTALLATION OF GEOTEXTILE MARKER FABRIC, REFER TO NOTE 5 ON THE TYPICAL UTILITY CROSS SECTIONS.
- 7. ALL UTILITIES INSTALLED THROUGH AREAS CONTAINING NAPL OR ELEVATED CHEMICAL IMPACTS WITH THE POTENTIAL TO TRANSMIT VAPORS ALONG PREFERENTIAL FLOW PATHWAYS SHALL BE EITHER 1) BACKFILLED WITH LOW PERMEABILITY BACKFILL MATERIAL (LESS THAN OR EQUAL TO THE PERMEABILITY OF THE EXISTING SUBGRADE), OR 2) INSTALLED WITH TRENCH PLUGS ALONG THE ALIGNMENT IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN AND THE FOLLOWING NOTES:
 - A.) UTILITY TRENCH PLUGS SHALL BE INSTALLED AT 100-FOOT (MAX.) INTERVALS THROUGH ALL AREAS OF NAPL CONTAMINATION.
 - UTILITY TRENCH PLUGS SHALL EXTEND A MINIMUM OF 1-FOOT IN ALL DIRECTIONS BEYOND ANY HIGHER PERMEABILITY BACKFILL MATERIALS (I.E., MATERIALS EXCEEDING THE PERMEABILITY OF THE EXISTING SUBGRADE).





manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express,

UTILITY TRENCH PLUG ARM Group LLC Sparrows Point Site Engineers and Scientists

Tradepoint Atlantic

September 2020 Not to Scale

Figure 160443M

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