RESPONSE AND DEVELOPMENT WORK PLAN

AREA A: SUB-PARCEL A11-2
TRADEPOINT ATLANTIC
SPARROWS POINT, MARYLAND

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1.0 INTRODUCTION

ARM Group LLC (ARM), on behalf of Tradepoint Atlantic, has prepared this Response and Development Work Plan (RADWP) for a portion of the Tradepoint Atlantic property that has been designated as Area A: Sub-Parcel A11-2 (the Site). Tradepoint Atlantic submitted a letter (**Appendix A**) requesting an expedited plan review to achieve construction deadlines for the proposed development on this Site. Parcel A11 is comprised of approximately 102 acres of the approximately 3,100-acre former plant property. As shown on **Figure 1**, Sub-Parcel A11-2 consists of approximately 29.5 acres located within Parcel A11.

As shown on **Figure 2**, Sub-Parcel A11-2 is slated for development and occupancy as two logistics centers. A northern logistics center building will have an area of approximately 368,800 square feet and a southern logistics center building will have an area of approximately 107,400 square feet. Associated water lines, sanitary sewer lines, storm drains, conventional and trailer parking, access roads, and interior roads are also proposed. The planned development activities will generally include grading; construction of buildings; installation of utilities; and paving of parking areas and roadways. Subsequent site-use will involve workers in the on-site buildings, and truck drivers entering and leaving the Site with goods. Outside of the main development area designated as Sub-Parcel A11-2, temporary construction zones (not intended for permanent occupancy) with a total area of less than 4 acres within the Limit of Disturbance (LOD) will be utilized along the edges of the project area.

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 (MDE), 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 (USEPA), effective November 25, 2014.

Sub-Parcel A11-2 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 USEPA on September 12, 2014. Based on this agreement, 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 Tradepoint Atlantic property (3,100 acres) into the MDE Voluntary Cleanup Program (MDE-VCP) was submitted to the MDE and delivered 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 several years.

In consultation with the MDE, 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 MDE and Tradepoint Atlantic 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 the Sub-Parcel A11-2 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, Tradepoint Atlantic 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 Tradepoint Atlantic's VCP application.

Alternatively, Tradepoint Atlantic 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 a NFA is issued by the MDE 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 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 Phase I Environmental Site Assessment (ESA); summary of environmental conditions identified by the Parcel A11 Phase II Investigation and supplemental sampling activities; brief discussion of a human health Screening Level Risk Assessment (SLRA) conducted for the identified conditions; and any necessary engineering and/or institutional controls to facilitate the planned Sub-Parcel A11-2 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 MDE demonstrating that exposure pathways on the Site are addressed in a manner that protects public health and the environment.

Parcel A11 also contains the Sub-Parcel A11-1 development area covered by the previously approved RADWP (Revision 4 dated May 28, 2019). The Sub-Parcel A11-1 consisted of approximately 12.7 acres within the eastern portion of Parcel A11. Sub-Parcel A11-1 and Sub-Parcel A11-2 cover most of the acreage in the eastern half of Parcel A11. **Figure 3** shows the remaining areas that exist outside of the sub-parcel development boundaries, but inside the investigative Parcel A11. The remaining acreage of Parcel A11 will be addressed in future work associated with completion of the obligations of the ACO and associated VCP requirements. This work will include assessments of risk and, if necessary, RADWPs to address unacceptable risks associated with future land use. As noted above, temporary construction zones with a total area of less than 4 acres will be utilized along the edges of the project area outside of the sub-parcel. The temporary work outside of the boundary of the Site is not intended to be the basis for the issuance of a NFA or a COC, although the scope of construction is covered by this RADWP.

2.0 SITE DESCRIPTION AND HISTORY

2.1 SITE DESCRIPTION

Parcel A11 includes an area of 102 acres as shown on **Figure 1**. The Sub-Parcel A11-2 development project consists of 29.5 acres intended for occupancy comprising approximately a third of Parcel A11. The development will include two logistics centers. The northern logistics center will have an area of approximately 368,800 square feet. The southern logistics center will have an area of approximately 107,400 square feet. The configuration of these two logistics centers is presented on **Figure 2**. Outside of the main development area designated as Sub-Parcel A11-2, temporary construction zones (not intended for permanent occupancy) with a total area of less than 4 acres within the construction LOD will be utilized along the edges of the project area. The Site is currently zoned Manufacturing Heavy-Industrial Major (MH-IM), and is not occupied. The adjacent Sub-Parcel A11-1 recently underwent development and a logistics center was constructed. Development in Sub-Parcel A11-1 was detailed in the Sub-Parcel A11-1 RADWP (Revision 4 dated May 28, 2019). There is no groundwater use on-site or within the surrounding Tradepoint Atlantic property.

Sub-Parcel A11-2 is at an average elevation of approximately 13 feet above mean sea level (amsl). Elevations generally range between 11 and 14 feet over Sub-Parcel A11-2, with the exception of a few higher elevations caused by small soil/slag stockpiles. Elevations are fairly uniform at the Site with no clear discharge direction for surface water drainage. According to Figure B-2 of the Stormwater Pollution Prevention Plan (SWPPP) Revision 8 dated April 30, 2020, stormwater from the main development area of Sub-Parcel A11-2 is discharged through the drainage ditch along Peninsula Expressway and into Bear Creek.

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.

The eastern portion of Parcel A11 was formerly used for contractor equipment storage (the Contractor Area) and the western portion of Parcel A11 was formerly used as a spare parts storage yard (the Storage Yard). The majority of Sub-Parcel A11-2 is positioned within the former Storage Yard. According to the Description of Current Conditions (DCC) Report, prepared by Rust Environment and Infrastructure dated January 1998, several features of potential concern were historically located within the Contractor Area (all of which have been removed), including an

earthen oil pit, underground storage tanks (USTs), gas pumps and a pump island, unlabeled drums and containers with evidence of leaking and staining, and a small coal tar area. Numerous features at risk for leaks and releases (drums, tanks, fuel pumps, etc.) have been identified in specific contractor areas within various historical reports. Currently, the former Storage Yard is largely vacant with piles of stockpiled materials (soil and/or slag). Additional information regarding historical activities conducted within Parcel A11 can be found in the approved Phase II Investigation Work Plan dated May 18, 2016.

3.0 ENVIRONMENTAL SITE ASSESSMENT RESULTS

3.1 PHASE I ENVIRONMENTAL SITE ASSESSMENT RESULTS

A Phase I ESA was completed by Weaver Boos Consultants 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 Tradepoint Atlantic property which presented potential risks to the environment. These Recognized Environmental Conditions (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 as part of the RCRA Facility Assessment (RFA) 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 1991 VSI is regularly cited in the Description of Current Conditions (DCC) Report prepared by Rust Environment and Infrastructure, dated January 1998 (included with Weaver Boos' Phase I ESA).

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 in Sub-Parcel A11-2:

Contractor Equipment Storage (REC 16, Finding 256):
According to the Phase I ESA, a Contractor Area was located directly to the east of Greys Landfill within the boundary of Parcel A11. The Phase I ESA indicated that, based on the DCC Report and interviews with site personnel, this area was previously used as a storage area for contractor equipment, and may have been historically used to dispose of wastes of unknown types and quantities. Further action was recommended in this area due to the potential for surface and subsurface impacts as a result of the storage/dumping activities. Additional historical information regarding the Contractor Area is provided in Section 2.2.

Relevant SWMUs and AOCs were also identified from Figure 3-1 and Table 3-1 in the DCC Report. The DCC figure generally shows the SWMUs, AOCs, and main facility areas within the property boundaries. There were no AOCs identified at the Site, but there was one SWMU identified as the trash transfer station (SWMU 95) that was the only unit identified within the Site boundary. This unit was designated in the DCC Report as non-releasing.

3.2 PHASE II INVESTIGATIONS

3.2.1 Parcel A11 Phase II Investigation

A Phase II Investigation specific to soil conditions was performed for the Site in accordance with the requirements outlined in the ACO as further described in the Phase II Investigation Work Plan for Area A: Parcel A11 (Revision 1 dated May 18, 2016). Findings from the original Parcel A11 Phase II Investigation were presented within the Phase II Investigation Report (Revision 1 dated May 22, 2020), and the pertinent findings are summarized in this document.

The Phase II Investigation for soil conditions 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 (discussed above) as well as numerous other targets defined from former operations that would have the potential for environmental contamination. Soil samples were also collected at site-wide locations to ensure full coverage of the parcel. The Phase II Investigation for overall groundwater conditions included collection points distributed regularly throughout and along the perimeter of the Parcel A11 boundary.

A total of 143 soil samples (from 62 boring locations) and 11 shallow groundwater samples were collected for analysis between July 27, 2016 and March 8, 2017 as part of the Parcel A11 Phase II Investigation. Nine other groundwater wells (GL-02 (-5), GL-03 (-3), GL-08 (-3), GL-09 (-2), GL-11 (-1), GL-17 (-1), GL-18 (-3), GL-19, and TS-01 (-7)) are sampled semi-annually as part of the separate Greys Landfill groundwater monitoring, and relevant data collected from these sample locations were included within the Parcel A11 Phase II Investigation Report to supplement the overall groundwater characterization. The relevant soil and groundwater sample locations which provided pertinent data for discussion of the upcoming development of Sub-Parcel A11-2 are shown on **Figure 4** and **Figure 5**, respectively.

Soil and groundwater samples obtained from Parcel A11 were submitted to Pace Analytical Services, Inc. (PACE) and analyzed for the USEPA Target Compound List (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs) including polynuclear aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH) diesel range organics (DRO) and gasoline range organics (GRO), Oil & Grease, USEPA Target Analyte List (TAL) Metals, hexavalent chromium, and cyanide based on the parcel-specific sampling plan. Shallow soil samples collected from 0 to 1 foot below ground surface (bgs) were also analyzed for polychlorinated biphenyls (PCBs). The relevant laboratory Certificates of Analysis (including Chains of Custody) and Data Validation Reports (DVRs) from the Phase II Investigation are included as electronic attachments.

3.2.2 Supplemental Delineation Investigation

During the Phase II Investigation, several soil samples were identified with elevated concentrations of SVOCs, particularly naphthalene. To supplement the original Phase II Investigation, a Work Plan for the delineation of naphthalene (and associated chemical constituents including benzene and benzo[a]pyrene) was submitted to the MDE and USEPA to facilitate additional soil and groundwater delineation sampling activities in Parcel A11. The scope of the supplemental investigation proposed within the Work Plan was later expanded from the original scope, and the findings were periodically reported to the MDE and USEPA. Pertinent findings from the supplemental sampling activities are summarized in this document.

A total of 293 soil samples (from 119 boring locations) and 21 shallow groundwater samples were collected for analysis between June 12, 2018 and August 23, 2018 as part of the supplemental delineation sampling activities. The relevant soil and groundwater sample locations which provided pertinent data for discussion of the upcoming development of Sub-Parcel A11-2 are shown on **Figure 6** and **Figure 7**, respectively. The samples from the original Phase II Investigation are also shown for reference.

Soil and groundwater samples obtained from the supplemental delineation activities were submitted to PACE and analyzed for the TCL-VOCs, PAHs, TPH-DRO/GRO, and Oil & Grease. The relevant laboratory Certificates of Analysis (including Chains of Custody) from the supplemental investigation are included as electronic attachments. These additional samples did not undergo the formal validation process, so DVRs are not provided.

3.2.3 Summary of Results

Soil and groundwater results relevant for the Sub-Parcel A11-2 development project were screened against the Project Action Limits (PALs) established in the property-wide Quality Assurance Project Plan (QAPP) dated April 5, 2016, or based on other direct agency guidance (e.g., TPH/Oil & Grease). The PALs for relevant PAHs have been adjusted based on revised toxicity data published by the USEPA. **Table 1** and **Table 2** provide a summary of the detected compounds (organics and inorganics) in the soil samples collected during both the original Phase II Investigation as well as during the supplemental delineation sampling. **Table 3** and **Table 4** provide a summary of the detected compounds (organics and inorganics) in the groundwater samples obtained during both investigations, including the most recent analytical data (December 2020) obtained from the relevant Greys Landfill groundwater monitoring wells.

The PAL exceedances in soil and groundwater are highlighted on the respective detection summary tables. PAL exceedances in soil included five inorganics (arsenic, manganese, thallium, vanadium, and lead), one VOC (benzene), eight SVOCs (benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, indeno[1,2,3-c,d]pyrene, and naphthalene), TPH-DRO/GRO, and Oil & Grease. PAL exceedances in

groundwater included six total/dissolved metals (arsenic, cadmium, cobalt, iron, manganese, and thallium), 10 VOCs (1,1,2,2-tetrachloroethane, 1,1-dichloroethane, 1,2-dibromo-3-chloropropane, benzene, bromodichloromethane, carbon tetrachloride, chloroform, methylene chloride, toluene, and vinyl chloride), 12 SVOCs (1,4-dioxane, 2-methylnaphthalene, benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenz[a,h]anthracene, indeno[1,2,3-c,d]pyrene, naphthalene, n-nitroso-di-n-propylamine, pyrene, and 3&4-methylphenol), TPH-DRO/GRO, and Oil & Grease.

There were multiple locations within, or adjacent to, the proposed development LOD with soil exceedances of the TPH/Oil & Grease PAL (6,200 mg/kg) and/or potential indications of NAPL in the soil cores. **Figure 8a** (0 to 5 feet bgs) and **Figure 8b** (below 5 feet bgs) provide an overview of the distribution of NAPL observed in soil cores within the proposed LOD. Due to the known presence of NAPL, utility alignments and invert elevations must be considered with respect to these impacts prior to trenching.

Although NAPL was observed within the soil cores at numerous locations, free-phase product has not been observed to accumulate in any of the NAPL screening piezometers (gauged at standard 0-hr, 48-hr, and 30-day intervals) or groundwater monitoring points (gauged prior to sampling) that are relevant for the proposed development project. A summary of the NAPL gauging status for wells and piezometers within or near the development LOD is provided as **Figure 9**, indicating that all NAPL screening piezometers had clean 30-day measurements (i.e., no detected presence of NAPL). At this time, all NAPL screening piezometers at the Site have been abandoned. Each piezometer was gauged a final time on the abandonment date in accordance with agency guidance, and NAPL was not detected at any location.

A human health Screening Level Risk Assessment (SLRA) has typically been performed for soils within development sub-parcels to determine potential future risks to Composite Workers and Construction Workers. Based on existing data obtained during the Parcel A11 Phase II Investigation and supplemental delineation sampling, there is a known potentially unacceptable risk for future Composite Worker occupants of the Site due to NAPL contamination and associated VOC and SVOC constituents, in particular elevated levels of benzene, benzo[a]pyrene, and naphthalene, which have been identified as the main constituents of potential concern (COPCs) at the Site. These constituents, along with other representative VOCs and SVOCs in Parcel A11, are provided in the table below along with concentrations corresponding to baseline carcinogenic risk screening levels of 1E-6 to 1E-4:

Parameter	1E-6 (RSLs) (mg/kg)	1E-5 (mg/kg)	1E-4 (mg/kg)
Biphenyl	410	4,100	41,000
Benzene	5.10	51.0	510
Benz(a)anthracene	21.0	210	2,100
Benzo(a)pyrene	2.10	21.0	210
Benzo(b)fluoranthene	21.0	210	2,100
Dibenz(a,h)anthracene	2.10	21.0	210
Indeno(1,2,3-c,d)pyrene	21.0	210	2,100
Naphthalene	17.0	170	1,700

The concentrations associated with 1E-4 were considered to be the delineation thresholds for each individual compound during the preceding delineation activities. However, since the carcinogenic risk is cumulative for PAHs, the delineation thresholds for the three primary risk drivers were set at approximately 1/3 of the concentration corresponding to the risk level of 1E-4, as follows:

Delineation Thresholds	
Benzene	150
Benzo(a)pyrene	75.0
Naphthalene	500

The soil data obtained during the original Phase II Investigation and the supplemental delineation sampling were compared to the listed delineation thresholds. If a soil sample contained a concentration of benzene, benzo[a]pyrene, or naphthalene above one of the specified delineation thresholds, the associated soil boring was flagged with elevated chemical data. Soil borings exhibiting these analytical exceedances were often co-located with observations of NAPL in the soil cores. Based on this screening approach, summaries of elevated soil conditions at the Site are presented in **Figure 8a** (0 to 5 feet bgs) and **Figure 8b** (below 5 feet bgs). As shown on the figures, there are two main areas which are potentially impacted by NAPL and/or associated elevated chemical data. One of these areas is positioned in the northwestern portion of the Site and is partially located below the future northern warehouse building footprint. The second area is located to the west of the southern warehouse, extending slightly below the building's footprint.

Groundwater conditions at the Site were also evaluated. There is no potential for direct exposure to groundwater for a Composite Worker since groundwater is not used on the Tradepoint Atlantic property (and is not proposed to be utilized); however, elevated levels of VOCs/SVOCs in groundwater in the vicinity of the Site could potentially cause an unacceptable vapor intrusion (VI) condition for the proposed warehouse building. A groundwater contour map is presented as **Figure 10**, including groundwater elevation contours (developed from depth to water measurements obtained on January 16, 2018) and the most recent analytical data for the main compounds of interest: benzene, benzo[a]pyrene, and naphthalene.

Downgradient monitoring wells were installed east of the Sub-Parcel A11-1 development area to monitor the potential migration of known contaminant plumes. The installation and sampling of the downgradient wells were discussed in the Parcel A11 Eastern Groundwater Delineation Monitoring Network Letter Report (dated March 5, 2020). Additional evaluations or response actions for the impacts downgradient from Sub-Parcel A11-1 (and Sub-Parcel A11-2) may be coordinated with the agencies beyond the scope of this RADWP.

Based on the documented conditions in soil and groundwater, surface engineering controls are proposed at the Site as a containment remedy, supplemented by a sub-slab vapor barrier with a passive/active venting system to be installed below the building footprints. These measures are proposed to mitigate potential risks to future Composite Workers based on current conditions. During development, all of the required ground intrusive construction work or activities which require contact with potentially impacted materials will be performed by Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) trained workers. The use of OSHA HAZWOPER trained workers will mitigate potential risks to Construction Workers by ensuring that the on-site work is performed by personnel who are trained and equipped for the conditions at the Site.

The OSHA HAZWOPER trained workers will adhere to the Personal Protective Equipment (PPE) Standard Operating Procedure (SOP) provided as **Appendix B**. The modified Level D PPE requirements which will be applied during this project, including specific PPE details, planning, tracking/supervision, enforcement, and documentation, are outlined in the PPE SOP. The contractor will develop a site-specific Health and Safety Plan (HASP) which will be applied to all on-site OSHA HAZWOPER trained workers who may be engaged in ground intrusive construction work or activities which require contact with potentially impacted materials. OSHA HAZWOPER trained workers will not be required during construction activities which do not have a significant exposure risk, such as above-grade building construction.

3.3 RCRA CRITERIA

3.3.1 General

Based on the results and conclusions of the site investigation activities and human health risk screening, this section presents a summary of the identification and evaluation of remedial alternatives for Sub-Parcel A11-2 in general accordance with USEPA guidance under RCRA. In particular, this section presents the establishment of media cleanup objectives, the identification and initial screening of remedial alternatives for meeting the cleanup objectives, a detailed evaluation of the final remedial alternatives based on the RCRA evaluation criteria, and a recommendation of the most appropriate remedial alternative based on the evaluation criteria.

3.3.2 Establishment of Media Cleanup Objectives

This section summarizes the cleanup objectives for Sub-Parcel A11-2 based on the results of the site investigation activities, plans for redevelopment of the Site, applicable environmental cleanup regulations, and an evaluation of potential risks to human health and the environment. In general, the cleanup objectives for Sub-Parcel A11-2 are to mitigate potential risks to future Composite Workers and Construction Workers associated with the identified NAPL contamination and associated VOC and SVOC constituents in soil and groundwater. These objectives are further discussed as follows:

- Potential future direct contact risks to NAPLs and contaminated soils should be mitigated through appropriate containment, treatment, and/or removal actions.

- Potential future inhalation risks from VOCs/SVOCs in soil, groundwater and NAPLs should be mitigated through appropriate containment, treatment, and/or removal actions.

- While there are no current or anticipated future exposure pathways to impacted groundwater (since groundwater is not used on the Tradepoint Atlantic property and is not proposed to be used), potential future exposures to contaminated groundwater should be mitigated through use restrictions or treatment. No additional remedial actions are proposed to mitigate the potential migration of NAPL or associated constituents in groundwater below the Site as part of this RADWP. If additional response actions are required to address the presence of NAPL in the subsurface either inside or outside Sub-Parcel A11-2, such measures will be proposed under separate Work Plan.

3.3.3 Identification of Remedial Alternatives

This section presents the identification of potential remedial alternatives to be evaluated against the threshold screening criteria (i.e., protection of human health and the environment; attainment of media cleanup objectives; and controlling the sources). The potential remedial alternatives were developed based on the media clean-up objectives, communications with the MDE, and professional experience with the identification and screening of remedial alternatives, and consist of the following.

- Alternative 1 – No Action: This alternative does not include the implementation of any remedial activities, and essentially represents leaving the Site in its existing condition. This alternative does not address the media cleanup objectives, but is presented as a baseline condition for comparison purposes.

- Alternative 2 – In-Place Containment with Cap and Vapor Barrier: This alternative has been developed to meet the media cleanup objectives, and generally involves the following major activities: placement of a cap (concrete floor slab of building, asphalt pavement,

and/or soil cap) above the areas of contamination to prevent direct contact exposures; installation of a sub-slab vapor barrier and passive venting system that can be upgraded to an active venting and sub-slab depressurization system to restrict the migration of vapors into the proposed new buildings; utilization of low-permeability utility backfill and/or trench plugs to prevent preferential contaminant migration along utilities that pass through the areas of contamination; and long-term property use restrictions, inspection and maintenance of the cap and vapor barrier systems, and downgradient groundwater monitoring to ensure that the controls remain effective.

- Alternative 3 – In-Situ Treatment by Chemical Stabilization: This alternative represents one of a number of potential in-situ treatment alternatives for the identified contamination. In particular, this alternative would involve the in-situ treatment of the contamination through the injection of specialized chemical reagents using direct push technology or injection wells. The treatment works as a two-step process, generally consisting of permeability reduction followed by chemical weathering and NAPL encapsulation. The goal of the treatment would be to reduce contaminant concentrations to the point that no additional engineering controls or long-term monitoring would be required. Treatability studies would be required to confirm the effectiveness of the treatment and to refine the application rates and methods.

- Alternative 4 – Removal and Disposal: This alternative has been developed for comparative purposes, and would involve the excavation and off-site disposal of all contaminated soils and NAPLs, above and below the water table. Excavated materials would have to be dewatered, loaded, and transported to an approved disposal facility. Non-hazardous materials could potentially be disposed of at Greys Landfill, and any materials that are determined to be RCRA-hazardous would require treatment and disposal at an approved off-site hazardous waste facility. The excavated area would be backfilled with acceptable fill to facilitate the planned redevelopment.

3.3.4 Initial Screening of Remedial Alternatives

This section presents an initial screening of the identified remedial alternatives against the threshold criteria (i.e., protection of human health and the environment; attainment of media cleanup objectives; and controlling the sources). The screening is summarized as follows:

- Protection of Human Health and the Environment: Alternative 1 (No Action) does not provide adequate protection of human health and the environment because it does not mitigate the identified risks or address the remedial objective. Alternatives 2 through 4 (In-Place Containment, In-Situ Treatment, and Removal and Disposal) have the potential to provide adequate protection of human health and the environment, although Alternative 3 (In-Situ Treatment) and particularly Alternative 4 (Removal and Disposal) have the potential to increase short-term exposure risks associated with waste treatment/handling.

- Attainment of Media Cleanup Objectives: Alternative 1 (No Action) would not meet any of the established media cleanup objectives, while Alternatives 2 through 4 (In-Place Containment, In-Situ Treatment, and Removal and Disposal) would address all of the established media cleanup objectives.

- Controlling the Sources: Historic sources of contamination to the area have previously been eliminated through the decommissioning and removal of the previous steel production operations at the Site. Alternative 1 (No Action) would not provide any additional control of the existing contaminants, although Alternatives 2 through 4 (In-Place Containment, In-Situ Treatment, and Removal and Disposal) would provide varying levels of control with respect to the risks posed by the current site conditions.

Based on this initial screening, Alternative 1 (No Action) does not meet the threshold screening criteria, but Alternatives 2 through 4 (In-Place Containment, In-Situ Treatment, and Removal and Disposal) would meet the threshold criteria and will be retained for detailed evaluation in the following section of this report. Even though the No Action Alternative does not meet the threshold criteria, it has also been retained for detailed evaluation in the following section of this report to provide a baseline condition for comparison purposes.

3.3.5 Detailed Evaluation of Alternatives

This section presents a detailed evaluation of the remedial alternatives that were identified and screened in the previous section. This detailed evaluation has been conducted with respect to the following evaluation/balancing criteria: long-term effectiveness; toxicity, mobility and volume reduction; short-term effectiveness; implementability; community acceptance; state acceptance; and cost. A summary of the detailed evaluation of alternatives is presented on **Table 5**.

3.3.5.1 Long-Term Effectiveness

This criterion refers to the expected effectiveness, reliability and risk of failure of the alternatives, including the effectiveness under analogous site conditions, the potential impact resulting from a failure of the alternative, and the projected useful life of the alternative.

- Alternative 1 – No Action: This alternative is not effective in the long-term because it does not address the identified contamination or exposure pathways of concern.

- Alternative 2 – In-Place Containment with Cap and Vapor Barrier: The proposed capping and vapor control measures have been proven to be effective in the long-term at similar sites with similar conditions. Property use restrictions, and continued inspections, maintenance, and monitoring will ensure the long-term effectiveness of this alternative.

- Alternative 3 – In-Situ Treatment by Chemical Stabilization: The long-term effectiveness of this alternative is currently unknown and would have to be estimated from treatability studies and possibly additional sampling. The treatment measures have the potential to increase contaminant mobility in the long-term because of the required disturbance and chemical changes.

- Alternative 4 – Removal and Disposal: This alternative provides long-term effectiveness through the removal and secure disposal of contaminated materials.

3.3.5.2 Reduction in Toxicity, Mobility, or Volume of Wastes

This criterion generally refers to how much the remedial alternatives will reduce the waste toxicity, mobility and/or volume, primarily through treatment.

- Alternative 1 – No Action: This alternative does not provide any reduction in the toxicity, mobility, or volume of the contaminated materials.

- Alternative 2 – In-Place Containment with Cap and Vapor Barrier: This alternative does not provide any reduction in toxicity or volume. The planned cap and vapor migration controls (such as the use of low permeability backfill and/or trench plugs) will help reduce potential contaminant mobility by reducing infiltration through the unsaturated zone, preventing migration along utility corridors, and preventing the generation of dust.

- Alternative 3 – In-Situ Treatment by Chemical Stabilization: This alternative has the potential to provide reduction in contaminant toxicity, mobility, and volume through treatment, but this would need to be confirmed through treatability studies, and in-situ treatment has the potential to increase contaminant mobility.

- Alternative 4 – Removal and Disposal: This alternative does not provide any reduction in toxicity, mobility, or volume through treatment (except in the case of treatment at the disposal facility). The significant site disturbance associated with this alternative could increase contaminant mobility in the short term.

3.3.5.3 Short-Term Effectiveness

This criterion generally refers to potential short-term risks to on-site workers and the community in association with implementation of the remedial alternatives, such as might be associated with the excavation, handling, treatment, containment, and transportation of contaminated materials.

- Alternative 1 – No Action: This alternative does not increase or decrease short-term exposure risks.

- Alternative 2 – In-Place Containment with Cap and Vapor Barrier: This alternative can be quickly implemented with minimal short-term exposure risks. Any such short-term exposure risks would be mitigated through the implementation of site-specific health and safety controls to be executed by OSHA HAZWOPER trained workers.

- Alternative 3 – In-Situ Treatment by Chemical Stabilization: This alternative would be expected to increase short-term exposure risks through the intrusive disturbance of contaminated materials and the handling of reactive chemicals.

- Alternative 4 – Removal and Disposal: This alternative is expected to significantly increase short-term risks to on-site workers and the community because of the exposure, handling and transportation of a relatively large volume of waste.

3.3.5.4 Implementability

This criterion refers to the relative ease of alternative implementation (construction), including duration, administrative and technical feasibility, and availability of the required services and materials.

- Alternative 1 – No Action: This alternative provides the greatest ease of implementation as no action is required; however, it is not expected to be implementable because it does not address the applicable environmental requirements.

- Alternative 2 – In-Place Containment with Cap and Vapor Barrier: This alternative can be quickly implemented with readily available, typically acceptable, and proven technologies.

- Alternative 3 – In-Situ Treatment by Chemical Stabilization: This alternative presents implementation concerns because it requires specialized equipment and materials, and treatability studies would be required to confirm the technical feasibility.

- Alternative 4 – Removal and Disposal: This alternative presents significant implementation concerns because of potential short-term exposure risks, required air-emission and odor controls, the removal of materials from below the groundwater table, and the handling and transportation of a relatively large volume of waste materials.

3.3.5.5 Community Acceptance

This criterion refers to the known or anticipated community acceptance associated with the remedial alternatives.

- Alternative 1 – No Action: This alternative is not expected to be favorable because it does not address the identified contamination or the remedial objectives.

- Alternative 2 – In-Place Containment with Cap and Vapor Barrier: This alternative is expected to be acceptable because it addresses the remedial objectives without increasing risks to the community.

- Alternative 3 – In-Situ Treatment by Chemical Stabilization: This alternative is potentially acceptable depending on the results of treatability studies and other supplemental studies.

- Alternative 4 – Removal and Disposal: This alternative is potentially acceptable, but the transportation of large volumes of waste through any community is generally not favorable, and fugitive emissions and odors are expected to be a potential concern.

3.3.5.6 State Acceptance

This criterion refers to how the remedial alternatives will comply with applicable environmental regulations (e.g., permit requirements).

- Alternative 1 – No Action: This alternative is not expected to be acceptable because it does not meet the remedial action objectives.

- Alternative 2 – In-Place Containment with Cap and Vapor Barrier: This alternative is expected to be acceptable because it meets the remedial action objectives and can be implemented in a manner consistent with all anticipated regulatory and permitting requirements. Further, the regulatory agencies have approved this same alternative at the contiguously located Sub-Parcel A11-1.

- Alternative 3 – In-Situ Treatment by Chemical Stabilization: This alternative is potentially acceptable depending in the results of treatability and other supplemental studies.

- Alternative 4 – Removal and Disposal: This alternative is potentially acceptable, but the relocation of large volumes of wastes is generally not favorable.

3.3.5.7 Cost

This criterion addresses the anticipated short- and long-term costs associated with implementation of the remedial alternatives.

- Alternative 1 – No Action: This alternative does not have any cost.

- Alternative 2 – In-Place Containment with Cap and Vapor Barrier: The estimated costs for implementation of this alternative (~$1.2 million) are relatively low in both the short term and long term.

- Alternative 3 – In-Situ Treatment by Chemical Stabilization: The costs for this alternative would depend on the results of treatability studies and subsequent designs, but preliminary estimates from vendor-supplied data and previous experience indicate an anticipated cost of at least $7 million.

- Alternative 4 – Removal and Disposal: The costs for this alternative would depend on the final volume of materials to be removed, the need for air-emission and other controls during excavation and handling, the amount of excavated material that could be characterized as RCRA-hazardous waste, and costs for off-site transportation, treatment, and disposal. Preliminary estimates based on previous experience with similar materials and typical waste transportation and disposal costs indicate anticipated costs of at least $12 million.

3.3.6 Justification of Recommendation and Remedial Alternative

Based on the detailed evaluation of remedial alternatives as presented in the preceding section(s), **Alternative 2 – In-Place Containment with Cap and Vapor Barrier, is recommended for Sub-Parcel A11-2**. This alternative clearly satisfies the evaluation criteria better than the other potential alternatives and is an appropriate and favorable remedial alternative for the identified contamination. Supporting rational for selection of Alternative 2 – In-Place Containment with Cap and Vapor Barrier is summarized below:

- it satisfies the threshold screening criteria;
- it best satisfies the detailed alternative evaluation criteria;
- it meets the media cleanup goals;
- it can be readily and quickly implemented with proven and reliable technologies;
- it is consistent and compatible with the proposed site development plans;
- it provides for long-term protection of human health and the environment; and
- it can be conducted in accordance with applicable regulations.

4.0 PROPOSED SITE DEVELOPMENT PLAN

Tradepoint Atlantic is proposing to construct two logistics centers totaling approximately 476,200 square feet on Sub-Parcel A11-2. The proposed development will include permanent improvements on approximately 29.5 acres of land intended for occupancy within Parcel A11. The proposed future use of Sub-Parcel A11-2 is Tier 3 – Industrial. The remainder of Parcel A11 will be addressed in separate development plans in accordance with the requirements of the ACO that will include RADWPs, if necessary. Outside of the main development area, temporary construction zones with a total area of less than 4 acres will be utilized along the edges of the project area. The temporary work outside of the boundary of the Site is not intended to be the basis for the issuance of a NFA or a COC, although the scope of construction work is covered by this RADWP. The Site (29.5 acres encompassing Sub-Parcel A11-2; excluding the temporary construction zones) will be fully capped by surface engineering controls.

Certain compounds are present in the soils located near the surface and in the subsurface at concentrations in excess of the PALs. Therefore, soil is considered a potential media of concern. Potential risks/hazards exist for future adult Composite Workers based on existing impacts to soil including NAPL and chemical constituents exceeding the PALs. Surface engineering controls are required throughout the Site to be protective of future adult Composite Workers by preventing contact with potentially contaminated surface soil (or relocated subsurface soil) at the Site. Based on the existing conditions, the entire Site will be subject to surface engineering controls (i.e., capping). In addition, a sub-slab vapor barrier with a passive/active venting system will be installed below the future building footprints.

Construction Workers may contact impacted surface and/or subsurface soil during earth movement activities associated with construction, including within the temporary construction zones outside of the primary development area. All of the required ground intrusive construction work or activities which require contact with potentially impacted materials will be performed by OSHA HAZWOPER trained workers. The use of OSHA HAZWOPER trained workers will mitigate potential risks to Construction Workers by ensuring that the on-site work is performed by personnel who are trained and equipped for the conditions at the Site. The OSHA HAZWOPER trained workers will adhere to the PPE SOP provided as **Appendix B**. The modified Level D PPE requirements which will be applied during this project, including specific PPE details, planning, tracking/supervision, enforcement, and documentation, are outlined in the PPE SOP. The contractor will develop a site-specific HASP which will be applied to all on-site OSHA HAZWOPER trained workers who may be engaged in ground intrusive construction work or activities which require contact with potentially impacted materials. OSHA HAZWOPER trained workers will not be required during construction activities which do not have a significant exposure risk, such as above-grade building construction.

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 MDE, and a deed restriction prohibiting the use of groundwater will be filed. These groundwater use restrictions will protect future Composite Workers from potential 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 (OSHA HAZWOPER trained) Construction Workers involved with development at the Site.

The development plan for the Site is indicated in **Figure 2**, and the development drawing provided by Morris & Ritchie Associates, Inc. (MRA) is included as **Appendix C**. The various types of surface engineering controls proposed to be installed on the Site (concrete, asphalt, and landscaping) are summarized on **Figure 11**. The process of constructing the proposed warehouse buildings and support facilities will involve the tasks identified below. As-built and regulatory documentation for the outlined tasks and procedures will be provided in a Sub-Parcel A11-2 Development Completion Report.

4.1 RESPONSE PHASE

4.1.1 Groundwater Network Abandonments & Retention

All temporary groundwater sample collection points (piezometers) and NAPL screening piezometers within Parcel A11 have previously been abandoned. A total of 14 permanent monitoring wells are located within, or very close to, the Sub-Parcel A11-2 LOD. These monitoring wells include: GL-08 (-3), GL-08 (-36), GL-09 (-2), GL-09 (-20), LF-02, GL-03 (-3), GL-03 (-16), GL04-PZP001, GL04-PZM026, GL04-PZM046, GL-18 (-3), GL-18 (-33), LF-01, and LF-01D. These monitoring well locations are presented on **Figure 12**. Based on their location below buildings or in high traffic areas, GL-03 (-3), GL-03 (-16), and LF-02 will be abandoned in accordance with COMAR 26.04.04.34 through 36.

The abandonment of any permitted groundwater wells must be reported to the Water Management Administration as per COMAR 26.04.04, and records of all groundwater well and piezometer abandonments (including abandonment forms, if available) will be included in the Development Completion Report. It is understood that the agencies may require the installation of additional permanent monitoring wells in the future following site development.

The remainder of the existing monitoring wells in the Sub-Parcel A11-2 LOD will be retained during development. To ensure that the locations are not damaged/destroyed, these wells should be protected using sonotubes, flagging, and/or barriers as needed. Once the new capping surface (asphalt or landscape) has been placed surrounding each sonotube, the monitoring well will be completed with a well pad and manhole cover flush with the new surface.

4.1.2 Groundwater Remedies & Monitoring

There is no potential for direct exposure to groundwater for a Composite Worker since groundwater is not used on the Tradepoint Atlantic property (and is not proposed to be utilized); however, elevated levels of VOCs/SVOCs in groundwater in the vicinity of the Site could potentially cause an unacceptable VI condition for the proposed warehouse building without additional action. Elevated aqueous concentrations east of the development boundary may be indicative of past contaminant migration. However, the site investigation activities completed to date have indicated the absence of measurable NAPL; therefore, the NAPL does not appear to be highly mobile. Groundwater at the Site is being addressed via the following actions:

- Capping Remedy with Groundwater Use Restrictions: The capping remedy (i.e., surface engineering controls) and groundwater use restrictions will be installed at the Site to eliminate direct exposures to contaminants in groundwater. The capping remedy also reduces the potential for additional migration of contaminants into groundwater by reducing the influx of surface water through infiltration.

- Vapor Barrier and Vapor Extraction System – A vapor barrier remedy will be installed to prevent exposures to organic vapors that have volatilized from groundwater (or NAPL) by preventing the migration of vapors through the floor slab and into the building. A passive/active venting system will be installed below the vapor barrier to extract soil vapors from beneath the proposed buildings.

- Groundwater Monitoring – Groundwater impacts below the Site will be addressed by a combination of the remedies listed above (capping and vapor barrier). To further evaluate groundwater and prevent potential exposures in other areas of the Tradepoint Atlantic property, downgradient monitoring wells were installed east of the Sub-Parcel A11-1 development area to monitor the potential migration of known contaminant plumes. The installation and sampling of the downgradient wells were discussed in the Parcel A11 Eastern Groundwater Delineation Monitoring Network Letter Report (dated March 5, 2020). Ultimately the monitoring wells will be incorporated into the property-wide groundwater monitoring program. It is understood that the agencies may require the installation of additional permanent monitoring wells in the future following site development on Sub-Parcel A11-2. Additional evaluations or response actions for the impacts downgradient from Sub-Parcel A11-1 (and Sub-Parcel A11-2) may be coordinated with the agencies beyond the scope of this RADWP.

4.2 DEVELOPMENT PHASE

4.2.1 Erosion and Sediment Control Installation

Installation of erosion and sediment controls will be completed in accordance with the requirements of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control prior to any construction at the Site. Any soils which are disturbed during the installation of erosion and sediment controls will be replaced on-site below the cap.

4.2.2 Grading and Site Preparation

Grading activities including both cut and fill will occur within the Sub-Parcel A11-2 boundary. Any material that is not suitable for compaction will be excavated and replaced with subbase material, although it is not anticipated that poor soils will be encountered. Borrow materials will be obtained from MDE-approved sources and will be documented prior to transport to the Site. Processed slag aggregate sourced from the Tradepoint Atlantic property or other materials approved by the MDE for industrial use will be used as fill. 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 in accordance with the Materials Management Plan (MMP) for the Sparrows Point Facility (Papadopulos & Associates, et al., June 17, 2015). This work will be coordinated with MDE accordingly. No excess material will leave the 3,100-acre property without prior approval from MDE.

4.2.3 Installation of Structures and Underground Utilities

The logistics center buildings, parking lots, and other infrastructure associated with the development of Sub-Parcel A11-2 will be installed as shown on the development plans in **Appendix C**. Excavated soils may be replaced on-site below the cap. All utility trenches will be backfilled with bedding and backfill approved by the MDE for industrial use (which may include utility trench spoils). Additional protocols for the installation of utilities at the Site are provided in Section 5.1.2. Any water removed will be managed as detailed in Section 5.2.

4.2.4 Floor Slabs and Paving

Much of the Site will be covered with floor slabs or paving as indicated in the development plans provided in **Appendix C** and summarized on **Figure 11**. The paved areas will receive a layer of subbase material which will consist of compacted aggregate base, which may include processed slag aggregate sourced from the Tradepoint Atlantic property.

The required minimum thicknesses of all site-wide pavement sections which will serve as surface engineering controls are shown in the minimum capping section details provided in **Appendix D**. According to the development plans, all paved areas at the Site will be installed with a minimum of 4 inches of compacted aggregate base and a minimum of 4 inches of overlying pavement surface (asphalt or concrete), which meet these required minimum thicknesses.

4.2.5 Sub-Slab Vapor Barrier with Passive/Active Venting System

As noted earlier, a sub-slab vapor barrier with a passive/active venting system (sub-slab depressurization system) will be installed below the concrete floor slab of both logistics centers to prevent the intrusion of VOC/SVOC vapors to indoor air. The installation of the vapor barrier and venting system will address the potential for unacceptable VI risks/hazards resulting from the known presence of VOCs/SVOCs and NAPL at the Site.

The venting system will initially be a passive system, with some negative pressure created below the floor slab (and vapor barrier) through a wind-blown turbine connected to the vent pipes. If indoor air concentrations are later determined to exceed health-based levels based on post-construction indoor air sampling, an electric fan or blower will be connected to the end of the venting system to increase the effectiveness. The venting systems will be constructed with solid-walled riser pipes extending to the roof line. The preliminary design of the sub-slab passive/active venting system is depicted on **Figure 13a/b**. The sub-slab components will consist of the Geo-Seal® Vapor-Vent™ soil gas collection system, which shall be installed in accordance with the manufacturer's specifications which are included in **Appendix E**.

The vapor barrier (overlying the venting system) will consist of a Stego® Wrap vapor barrier membrane that has been proven to be effective for similar applications. The barrier will be chemically resistant to the anticipated VOC vapors, and will be sealed at all penetrations, seams, and edges. The manufacturer's information and seaming details for the selected Stego® Wrap vapor barrier are presented in **Appendix F**. Installation methods for the vapor barrier, including methods for ensuring the seams and penetrations are sealed properly are included in **Appendix F** (see "Installation Instructions"). Detailed installation specifications have also been developed and are included in **Appendix F**. The manufacturer's recommended methods for sealing any seams or surface penetrations generally include overlapping pieces of the Stego® Wrap and then sealing with Stego® Tape or Stego® Mastic.

The MDE must be notified at least four business days prior to the installation of the Stego® Wrap vapor barrier on-site. The installation of the Stego® Wrap vapor barrier will be performed by a trained construction crew. Daily oversight during installation will be provided by the Environmental Professional (EP) providing oversight on the project. Following installation of the vapor barrier, and prior to concrete placement, a smoke test will be performed to confirm that the barrier is properly sealed at all penetrations, seams, and edges. The MDE must be notified at least four business days prior to conducting the smoke test on-site. The EP will also provide oversight during the smoke test to document the results.

Alternate vapor barrier and sub-slab venting system materials may be used in place of the specified materials if approved in advance by the MDE. The proposed alternative material must be equally protective in its ability to prevent cross-migration of VOC vapors.

A sampling program has been developed to ensure sub-slab soil gas and indoor air are monitored following the installation of the vapor barrier and venting system. Details on the configuration of the sub-slab soil gas and indoor air monitoring points, installation specifications for the sub-slab monitoring points, sampling protocols and analyte list, and the proposed sampling schedule are included in the Sub-Slab Soil Gas & Indoor Air Monitoring Plan provided as **Appendix G**.

4.2.6 Landscaping

Much of the Site will be covered with landscaping caps as indicated in the development plans provided in **Appendix C** and summarized on **Figure 11**. The required minimum thicknesses of all site-wide landscaping sections which will serve as surface engineering controls are shown in the minimum capping section details provided in **Appendix D**. Landscaped areas at the Site will be installed with a minimum of 24 inches of VCP clean fill, with a geotextile marker fabric between the VCP clean fill and the existing underlying material. The proposed landscape sections for the Site meet the minimum capping requirements.

4.2.7 Stormwater Management

The proposed stormwater utility layout for the Site is provided on the development plan drawings in **Appendix C**. New stormwater infrastructure will be installed throughout the Site and will connect to existing subgrade stormwater utilities.

Tradepoint Atlantic is working with the MDE Industrial & General Permits Division to renew the property-wide National Pollutant Discharge Elimination System (NPDES) permit. The proposed stormwater management systems for each parcel are reviewed and approved by Baltimore County for each individual development project.

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 A11-2. 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.

Exceedances of the PALs were identified in soil samples across the Site. The PALs are set based on 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 such potential risks for material remaining on-site during the development phase. There were multiple locations within, or adjacent to, the proposed development LOD with soil exceedances of the TPH/Oil & Grease PAL (6,200 mg/kg) and/or potential indications of NAPL in the soil cores. **Figure 8a** and **Figure 8b** provide an overview of the distribution of the NAPL and associated elevated chemical impacts in soil. Due to the known presence of NAPL, utility alignments and invert elevations must be considered with respect to these impacts prior to trenching. Soil screening will be especially important during any excavation of existing soil in these areas.

Construction Workers may contact impacted surface and/or subsurface soil during earth movement activities associated with construction, including within the temporary construction zones outside of the primary development area. All of the required ground intrusive construction work or activities which require contact with potentially impacted materials will be performed by OSHA HAZWOPER trained workers. The use of OSHA HAZWOPER trained workers will mitigate potential risks to Construction Workers by ensuring that the on-site work is performed by personnel who are trained and equipped for the conditions at the Site. The OSHA HAZWOPER trained workers will adhere to the PPE SOP provided as **Appendix B**. The modified Level D PPE requirements which will be applied during this project, including specific PPE details, planning, tracking/supervision, enforcement, and documentation, are outlined in the PPE SOP. The contractor will develop a site-specific HASP which will be applied to all on-site OSHA HAZWOPER trained workers who may be engaged in ground intrusive construction work or activities which require contact with potentially impacted materials. OSHA HAZWOPER trained workers will not be required during construction activities which do not have a significant exposure risk, such as above-grade building construction.

Based on the characterization of surface and subsurface soils, surface engineering controls are an acceptable remedy to be protective of future adult Composite Workers who otherwise could potentially contact surface soil (or relocated subsurface soil) at the Site. The proposed capping

sections will meet the required minimum thicknesses for surface engineering controls, which are provided in **Appendix D**. The potential for unacceptable VI risks/hazards resulting from the known presence of VOCs/SVOCs and NAPL will require the installation of a vapor barrier (with an underlying passive/active venting system) to mitigate the potential for intrusion of contaminant vapors into the logistics center.

5.1.1 Erosion/Sediment Control

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

- Stabilized construction entrance will be placed at site entrance.
- A dry street sweeper will be used as necessary on adjacent roads, and the swept dust will be collected and properly managed.
- Accumulated sediment removed from silt fence, and sediment traps if applicable, shall be periodically removed and returned to the Site.

5.1.2 Soil Excavation and Utility Trenching

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 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 inverts. 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. Evidence of NAPL has been observed in multiple areas within the development LOD based on prior investigations (see attached summary **Figure 8a** and **Figure 8b**). The Utility Excavation NAPL Contingency Plan (discussed below) must also be reviewed during the pre-excavation meeting. The HASP and PPE SOP for the project shall also be reviewed and discussed.

The EP will provide oversight of soil excavation/trenching activities as described in Section 5.6. Soil excavation/trenching will occur during various phases of construction. In general, and based on the existing sampling information, all excavated materials are expected to be suitable for replacement on the Site below surface engineering controls. 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 (as further described in Section 5.3).

To the extent practical, all excavation activities should be conducted in a manner to minimize double or extra handling of materials. Any stockpiles shall be kept within the Site footprint, and 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 otherwise exhibit evidence of contamination (as determined by the EP) may be managed in large stockpiles (no size restriction) as long as they remain within the erosion and sediment controls.

All utility trenches will be backfilled with bedding and backfill materials approved by the MDE for industrial use. A general utility cross section is provided as **Appendix H**. 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 I**) 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.

All utility corridors which pass through areas containing elevated chemical impacts and that have the potential to preferentially transmit contaminated vapors or groundwater along the utility line shall be plugged using 1) low permeability backfill material; or 2) trench plugs in accordance with the details shown on the utility trench plug detail within the Utility Excavation NAPL Contingency Plan. **Figure 14** highlights areas which have already been identified with NAPL or elevated VOC/SVOC impacts in soil or groundwater based on prior investigations. Mitigative measures (i.e., low permeability backfill and/or trench plugs) will be required in these areas; an approximately 25-foot buffer was added surrounding the known impacts to conservatively define the area where mitigative measures shall be implemented to prevent potential migration.

The EP will monitor all soil excavation and utility trenching activities for signs of potential contamination. In particular, soils will be monitored with a hand-held 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 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 and covered with 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 waste disposal requirements and transported

to an appropriate permitted disposal facility. Plans for analysis of segregated soils for any use other than disposal must be submitted to the MDE for approval.

Excavated material that is visibly impacted by NAPL will be segregated and managed in accordance with the requirements specified in the Utility Excavation NAPL Contingency Plan. Excavated material with indications of possible NAPL contamination will also be containerized or placed in a stockpile (not to exceed 500 cubic yards) on polyethylene sheeting and covered with polyethylene sheeting until the material can be analyzed for TPH/Oil & Grease and PCBs (total) to characterize the material for appropriate disposal. The MDE will be notified if such materials are encountered during excavation or utility trenching activities.

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 should be covered with a polyethylene tarp to minimize potential exposures and erosion. All stockpiled soil may be considered for use as fill at this Site or on other areas of the property depending on the analytical results. A sampling Work Plan including a description of the material, estimated volume, and sampling parameters will be submitted to the MDE for approval. The resulting analytical data will be submitted to the MDE to determine the suitability of the material for reuse. If the MDE determines that the materials are unsuitable for reuse, the materials will be sampled to determine if they are classified as hazardous waste.

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. Soil material may be taken to an appropriate non-hazardous landfill (including Greys Landfill) for proper disposal if the concentrations of excavated sampled materials indicate that the materials are not hazardous, but still are not suitable for reuse. 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 Tradepoint Atlantic property will be used as the primary fill material for this project. The processed slag aggregate will be placed below the surface engineering controls (i.e., caps) installed across the Site. Soil excavated on the sub-parcel has been determined to be suitable for re-use at the Site below the surface engineering controls, unless such materials are determined by the EP/MDE to be unsuitable for use as outlined in Section 5.1.2 and Section 5.1.3.

All utility trenches will be backfilled with bedding and backfill approved by the MDE for industrial use (which may include utility trench spoils). As with structural fill, processed slag aggregate and

other materials approved for industrial use can be used as backfill in utility trenches if the area will be covered by a VCP cap. Any 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. Materials placed in areas outside of the Site boundary (i.e., within the temporary construction zones outside of Sub-Parcel A11-2) must meet the VCP clean fill requirements, or be otherwise approved by the MDE prior to placement. A general utility detail drawing is provided as **Appendix H**. Material imported to the Site will be screened according to MDE guidance for suitability.

All utility corridors which pass through areas containing NAPL or elevated chemical impacts and that have the potential to preferentially transmit contaminated vapors or groundwater along the utility line (as defined on **Figure 14**) shall be plugged using 1) low permeability backfill material (less than or equal to the permeability of the existing subgrade); or 2) trench plugs in accordance with the details shown in the Utility Excavation NAPL Contingency Plan (**Appendix I**).

5.1.5 **Dust Control**

General construction operations, including soil excavation and transport, and trenching for utilities will be performed at the Site. These activities are anticipated to be performed in areas of soil impacted with COPCs. Best management practices should be undertaken at the Sparrows Point 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 on dust and windblown particulates, dust monitoring will be performed in the immediate work zone and at the upwind and downwind perimeter of the Site, and dust control measures will be implemented if warranted based on the monitoring results. The action level proposed for the purpose of determining the need for dust suppression techniques (e.g. watering and/or misting) during the development activities at the Site will be 3.0 mg/m^3. The lowest of the site-specific dust action levels, OSHA PELs, and ACGIH TLV was selected as the proposed action level.

The EP will be responsible for the dust monitoring program. Air monitoring will be performed using Met One Instruments, Inc. E-Sampler dust monitors or equivalent real-time air monitoring devices. The EP will set-up dust monitoring equipment at the outset of ground intrusive work or other dust-generating activities, and continuous dust monitoring will be performed during this work. In addition to work area monitoring, a dust monitor will be placed at selected perimeter locations that will correspond to the upwind and downwind boundaries 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 will be adjusted if there is a substantial shift in the prevailing wind direction.

Once all dust-generating activities are complete (which may occur at a later stage of the project once ground intrusive work has been completed or after the Site has been capped), the dust

monitoring program may be discontinued. If additional dust-generating activities commence, additional dust monitoring activities will be performed.

If sustained dust concentrations exceed the action level (3.0 mg/m^3) at any of the monitoring locations as a result of conditions occurring at the Site, operations will be stopped temporarily until dust suppression can be implemented. Operations may be resumed once monitoring indicates that dust concentrations are below the action level. The background dust concentration will be utilized to evaluate whether Site activities are the source of the action level exceedance. The background dust concentration will be based on measurements over a minimum of a 1-hour period at the upwind Site boundary. The upwind data will be used to calculate a time weighted average background dust concentration. As noted above, the locations of the perimeter dust monitors may be adjusted periodically if there is a substantial shift in the prevailing wind direction.

As applicable, air monitoring will be conducted during development implementation activities to assess levels of exposure to Site workers, establish that the work zone designations are valid, and verify that respiratory protection being worn by personnel, if needed, is adequate. Concurrent with the work zone air monitoring, perimeter air monitoring will also be performed at the upwind and downwind Site boundaries to ensure contaminants are not migrating off-site. The concentration measured at the downwind perimeter shall not exceed the action level of 3.0 mg/m^3, unless caused by background dust from upwind of the Site. If exceedances of the action level are identified downwind for more than five minutes, the background dust concentration shall be evaluated to determine whether the action level exceedances are attributable to Site conditions. If on-site activities are the source of the exceedances, dust control measures and additional monitoring will be implemented. The dust suppression measures may include wetting or misting using a hose connected to a water supply or a water truck stationed at the Site.

Dust control measures will be implemented as described above to address dust generated as a result of construction activities conducted at the Site. However, based on the nature of the area and/or ongoing activities surrounding the Site, it is possible that windblown particulates may come from surrounding areas. As discussed above, the dust concentration in the upwind portion of the Site will be considered when monitoring dust levels in the work area. A pre-construction meeting will be held to discuss the potential of windblown particulates from other activities impacting the air monitoring required for this RADWP. Site contact information will be provided to address the possibility of upwind dust impacts. If sustained dust is observed above the action level (3.0 mg/m^3) and it is believed to originate from off-site (i.e., upwind) sources, this will immediately be reported to the MDE-VCP project team, as well as the MDE Air and Radiation Administration (ARA).

5.2 WATER MANAGEMENT

This plan presents the protocols for handling any groundwater or surface water that needs to be removed to facilitate construction of the proposed Sub-Parcel A11-2 development.

5.2.1 Groundwater PAL Exceedances

The shallow groundwater wells and temporary groundwater sample collection points which were sampled within and surrounding the development LOD during the Parcel A11 Phase II Investigation and supplemental sampling activities are shown on **Figure 5** and **Figure 7**. Aqueous PAL exceedances in shallow groundwater in the vicinity of the development LOD included both inorganic and organic compounds, including several elevated detections of VOCs and SVOCs. The aqueous PAL exceedances from the shallow hydrogeologic zone are provided in the detection summary tables (**Table 3** and **Table 4**). While the concentrations of PAL exceedances are not deemed to be a significant human health hazard for future Composite Workers since there is no on-site groundwater use which could lead to direct exposures (and indirect exposures will be mitigated via the installation of the sub-slab vapor barrier and passive/active venting system), proper water management is required during construction to prevent unacceptable discharges or risks to Construction Workers.

5.2.2 Dewatering

Dewatering may be necessary during the installation of underground utilities and within excavations/trenches due to intrusion of groundwater, stormwater, and/or dust control waters. **Figure 15** displays the shallow groundwater elevations underlying the Site based on prior investigation data. If dewatering is required, it shall be done in accordance with all local, state, and federal regulations.

Tradepoint Atlantic is coordinating with Baltimore County to determine if dewatering fluids may be discharged into the county sanitary sewer system through their Industrial Wastewater Discharge program. If pursued, Tradepoint Atlantic will apply for a temporary Industrial Wastewater Discharge Permit for the development activities from Baltimore County and will abide by all requirements of the permit. Discharge into the county sanitary sewer system may be utilized with or without pre-treatment based on the requirements of the county's temporary Industrial Wastewater Discharge Permit. Based on its location on the property, discharge into the county sanitary sewer system is the preferred disposal method for dewatering fluids.

If Tradepoint Atlantic determines it is infeasible to discharge dewatering fluids into the county sanitary sewer system, dewatering fluids may be transported to the Humphrey Creek Wastewater Treatment Plant (HCWWTP), in which case the water will be treated and discharged in accordance with NPDES Permit No. 90-DP-0064A; I. Special Conditions; A.4; Effluent Limitations and Monitoring Requirements. Water in the Tin Mill Canal (TMC) flows into the HCWWTP for final treatment before being discharged into Bear Creek. If the HCWWTP is selected as the disposal location, dewatering fluids will be tested pursuant to the protocol submitted within the HCWWTP Constituent Threshold Limits for Dewatering Activities related to Remediation, Development, and Capping Letter dated March 3, 2021. If the groundwater does not meet the constituent threshold limits specified in the protocol, the groundwater will be pre-treated. Due to the conditions

identified in the area, additional test pitting will be performed (above the density specified in the protocol), in order to demonstrate compliance with the HCWWTP constituent thresholds. A sampling plan will be provided to the MDE prior to this sampling. If required the groundwater will be pre-treated, periodically tested, transported, and discharged per the following procedure:

A conceptual flow diagram showing the treatment system is provided as **Appendix J**. Accumulated dewatering fluids will be pumped into an inlet collection tank. The collection tank will be a frac tank which will provide settling time for solids. The water will then be pumped through bag filters and granular activated carbon (GAC) vessels. Following this pre-treatment, the water will be either: 1) discharged to the TMC through a newly constructed conveyance pipe, or 2) trucked directly to the HCWWTP for final treatment.

Samples will be collected at the inlet after the filter bags (influent), between the first and second GAC vessels (midfluent), and after the last GAC vessel (effluent). The pre-treated water will be tested upon startup and then weekly thereafter for VOCs and SVOCs until the completion of the water treatment portion of the Sub-Parcel A11-2 project. Breakthrough of organic contaminants through the GAC vessels is not anticipated. Early detection of potential breakthrough will be achieved via the weekly midfluent VOC and SVOC samples. Note that additional analyses could be required if warranted based on field observations by the EP. In such case, the analyses run will be dependent on the suspected source of contamination and local site conditions.

The results of the analyses will be reviewed by the HCWWTP operator to determine if any wastewater treatment system adjustments are necessary. If the results of the analyses are above the listed threshold levels, the water will be further evaluated to confirm acceptable treatment at the HCWWTP, or will be evaluated to design an additional pre-treatment option. Alternatively, the water may be disposed of at an appropriate off-site facility.

Analysis	**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

The final selected disposal option will be provided to the MDE prior to initiation of dewatering activities for this Sub-Parcel A11-2 development project. If future adjustments to the dewatering plan are proposed, these will be submitted to the MDE for review prior to implementation. Documentation of the above outlined water testing, as well as the selected disposal option, will be

reported to the agencies in the Development Completion Report. Any permits or permit modifications related to dewatering will be provided to the agencies as addenda to this RADWP.

5.3 HEALTH AND SAFETY

Since the project is expected to encounter soil that is impacted with elevated levels of COPCs, in particular elevated VOCs/SVOCs and NAPL, all of the required ground intrusive construction work or activities which require contact with potentially impacted materials will be performed by OSHA HAZWOPER trained workers. The use of OSHA HAZWOPER trained workers will mitigate potential risks to Construction Workers by ensuring that the on-site work is performed by personnel who are trained and equipped for the conditions at the Site. The contractor providing the OSHA HAZWOPER trained workers will develop a site-specific HASP which will be applied to all on-site workers who may be engaged in the above-referenced activities. The HASP will specify workspace monitoring, Action Levels, and the appropriate PPE for worker health and safety protection for the project. At a minimum, the OSHA HAZWOPER trained workers will adhere to the modified Level D PPE requirements provided as **Appendix B**.

A Site Safety Officer must be designated within the contractor's HASP. A copy of the HASP will be maintained on-site and will be made available to the EP. The EP will be responsible for monitoring organic vapor concentrations in the worker breathing zone within the trenches and will coordinate with the designated Site Safety Officer (provided by the contractor) to determine whether any increased level of health and safety protection (including engineering controls and/or PPE) is required. The designated Site Safety Officer will be responsible for ensuring compliance with the requirements of the HASP, and for enforcing these requirements.

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. The EP may elect to adopt the contractor's HASP, or can prepare their own site-specific HASP.

OSHA HAZWOPER trained workers will not be required during construction activities which do not have a significant exposure risk, such as above-grade building construction.

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 deep excavations encountering groundwater. The entire Tradepoint Atlantic property will be subject to the groundwater use restriction.

- Notice to the MDE at least 30 days prior to any future soil disturbances that are expected to breach the approved capping remedy (i.e., through the pavement cap or marker fabric in landscaped areas).
- 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 at the Site in accordance with applicable local, state and federal requirements.
- Requirement to further evaluate vapor control measures if another enclosed structure is proposed in the future on the Site.
- Implementation of inspection procedures and maintenance of the containment remedies.

The responsible party will file the above deed restrictions as defined by the MDE-VCP in the NFA and COC. The Tenant will be required to sign onto the Environmental Covenant with restriction in the NFA. Tradepoint Atlantic will notify the Tenant of this requirement and will provide MDE with contact information for the Tenant prior to issuance of the NFA.

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 MDE and USEPA will be provided with a written notice of any future excavations (as applicable) in accordance with the requirements given in Section 5.4. 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.

Additional requirements will include inspection procedures and maintenance of the containment remedies to minimize degradation which could lead to future exposures. An Operations and Maintenance Plan (O&M Plan) will be submitted in the future for MDE approval. This O&M Plan will include long-term inspection and maintenance requirements for the capped areas of the Site as well as the vapor barrier. The responsible party will perform cap/barrier inspections, perform maintenance of the cap/barrier, and retain inspection records, as required by the O&M Plan. The O&M Plan must include specific requirements for the repair of any future penetrations of the vapor barrier below the floor slab.

The responsible party will also perform indoor air and/or sub-slab soil gas sampling. A sampling program has been developed to ensure sub-slab soil gas and indoor air are monitored following

the installation of the vapor barrier and venting system. Details on the configuration of the sub-slab soil gas and indoor air monitoring points, installation specifications for the sub-slab monitoring points, sampling protocols and analyte list, and the proposed sampling schedule are included in the Sub-Slab Soil Gas & Indoor Air Monitoring Plan provided as **Appendix G**.

The two buildings proposed on Sub-Parcel A11-2 may have separate tenants; therefore, occupancy requirements for each building may be implemented on separate schedules. If construction on one of the two buildings and associated capped areas is largely complete, this area will be segregated from remaining active construction areas through the use of temporary fencing. The pre-occupancy indoor air and/or sub-slab soil gas sampling noted above for the two buildings will be completed based on the proposed occupancy schedule for each building.

5.6 CONSTRUCTION OVERSIGHT

Construction Oversight by an EP will ensure and document that the project is built as designed and appropriate environmental and safety protocols are followed. Upon completion, the EP will certify that the project is constructed in accordance with this RADWP.

The EP will monitor all soil excavation and utility trenching activities 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 VOCs, 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. The EP will verify that the vapor barrier is installed in accordance with the manufacturer's specifications and any seams or penetrations are sealed properly (as described in Section 4.2.5; Sub-Slab Vapor Barrier with Passive/Active Venting System), appropriate fill materials are being used (as described in Section 5.1.4; Fill), dust monitoring and control measures are being implemented as appropriate (as described in Section 5.1.5; Dust Control), the requirements of the HASP and the PPE SOP are being enforced by the designated Site Safety Officer (as described in Section 5.3; 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 building construction.

Records shall be provided by the EP to document:

- Compliance with soil screening requirements
- Proper water management, including documentation of testing and water disposal
- Observations of construction activities during site grading and cap construction
- Proper construction of sub-slab vapor barrier
- 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). Erosion and Sediment Control Plans will be submitted to, and approved by, the MDE prior to initiation of land disturbance for development.

Contingency measures will include the following:

1. The MDE 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 MDE.

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

The proposed implementation schedule is shown below:

Task	**Proposed Completion Date**
Anticipated RADWP Approval	March 26, 2021
Groundwater Network Abandonments	April 2, 2021
Installation of Erosion and Sediment Controls	April 2021
Slag (or Alternative Fill) Delivery and Placement	April 2021
Site Preparation/Grading – Building Pad & Parking	April 2021
Utility Installations	June 2021
Construction of Building	July 2021 (start)
Installation of Pavements	November 2021 (start)
Pre-Occupancy Sub-Slab Soil Gas Monitoring	*Dependent on occupancy schedule*
Submittal of Development Completion Report/ Notice of Completion of Remedial Actions*	March 2022
Post-Occupancy Indoor Air & Sub-Slab Soil Gas Monitoring	*Dependent on occupancy schedule*

Request for NFA from the MDE	April 2022
Recordation of institutional controls in the land records office of Baltimore County	Within 30 days of receiving the approval of NFA from the MDE
Submit proof of recordation with Baltimore County	Upon receipt from Baltimore County

*Notice of Completion of Remedial Actions will be prepared by 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.

FIGURES


Sub-Parcel A11-2 Boundary
Site Boundary
Parcel Boundaries
Private Property
Parcel A9
Parcel A13
Parcel A5
Parcel A7
Parcel A14
Parcel A11
A11-2
Parcel A8
Parcel A12
Parcel A2
Parcel A15
Parcel A17
Parcel A18
Parcel A16
Parcel A6
Parcel A4
Parcel A10
Parcel A3
Parcel A1
Parcel B6
Parcel B8
Parcel B14
Parcel B21
Parcel B22
Parcel B16
Parcel B24
Parcel B15
Parcel B23
Parcel B7
Parcel B25
Parcel B1
Parcel B2
Parcel B3
Parcel B17
Parcel B19
Parcel B4
Parcel B5
Parcel B9
Parcel B18
Parcel B10
Parcel B13
Parcel B20
Parcel B11
Parcel B12
Source: Esri, IGN, and the
Tradepoint Atlantic
Area A and Area B Parcels
March 4, 2021
Figure
1
ARM Group LLC
Engineers and Scientists
0 500 1,000 2,000
Feet
Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
Area A: Project 200101
Area B: Project 200102
A11-2: Project 20010111

Parcel A5

Parcel A7

Parcel A8

Parcel A11

Parcel A12

PENINSULA EXPRESSWAY (MD 157)

RESERVOIR ROAD

FR. RESERVOIR ROAD (PUBLIC ROAD)

PROPOSED 368,804 SF DISTRIBUTION CENTER

PROPOSED 107,342 SF DISTRIBUTION CENTER

EX. LANDFILL

ALUMA/SAPWAY

EX. WAREHOUSE/DISTRIBUTION

TRAILER PARKING

DEPRESSED LOADING BAYS

EMPLOYEE PARKING

PROPOSED OFFICE

EX. GRAVEL ROAD (TYP.)

EX. OBSERVATION WELL (TYP.)

NONTIDAL WETLANDS

N 514,500

N 513,500

E 1,450,000

E 1,451,000

A11-2 Site Boundary

Additional Construction Worker Areas

A11-1 Development Area

Parcel Boundary

Sub-Parcel A11-2 Development Plan Layout

March 4, 2021

Figure 2

ARM Group LLC
Engineers and Scientists

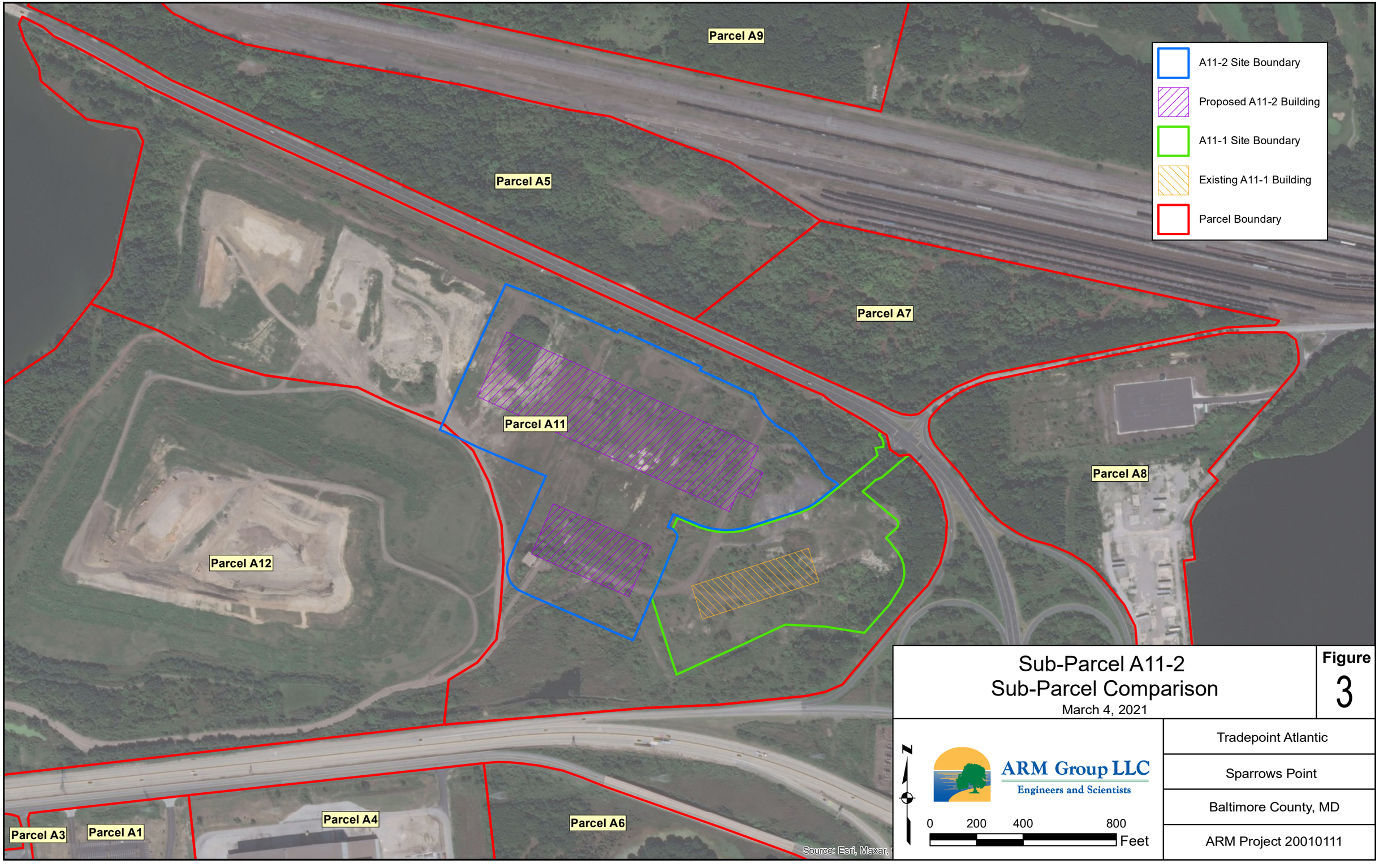
0 100 200 400 Feet

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111



Sub-Parcel A11-2
Sub-Parcel Comparison

March 4, 2021

Figure 3

N

ARM Group LLC
Engineers and Scientists

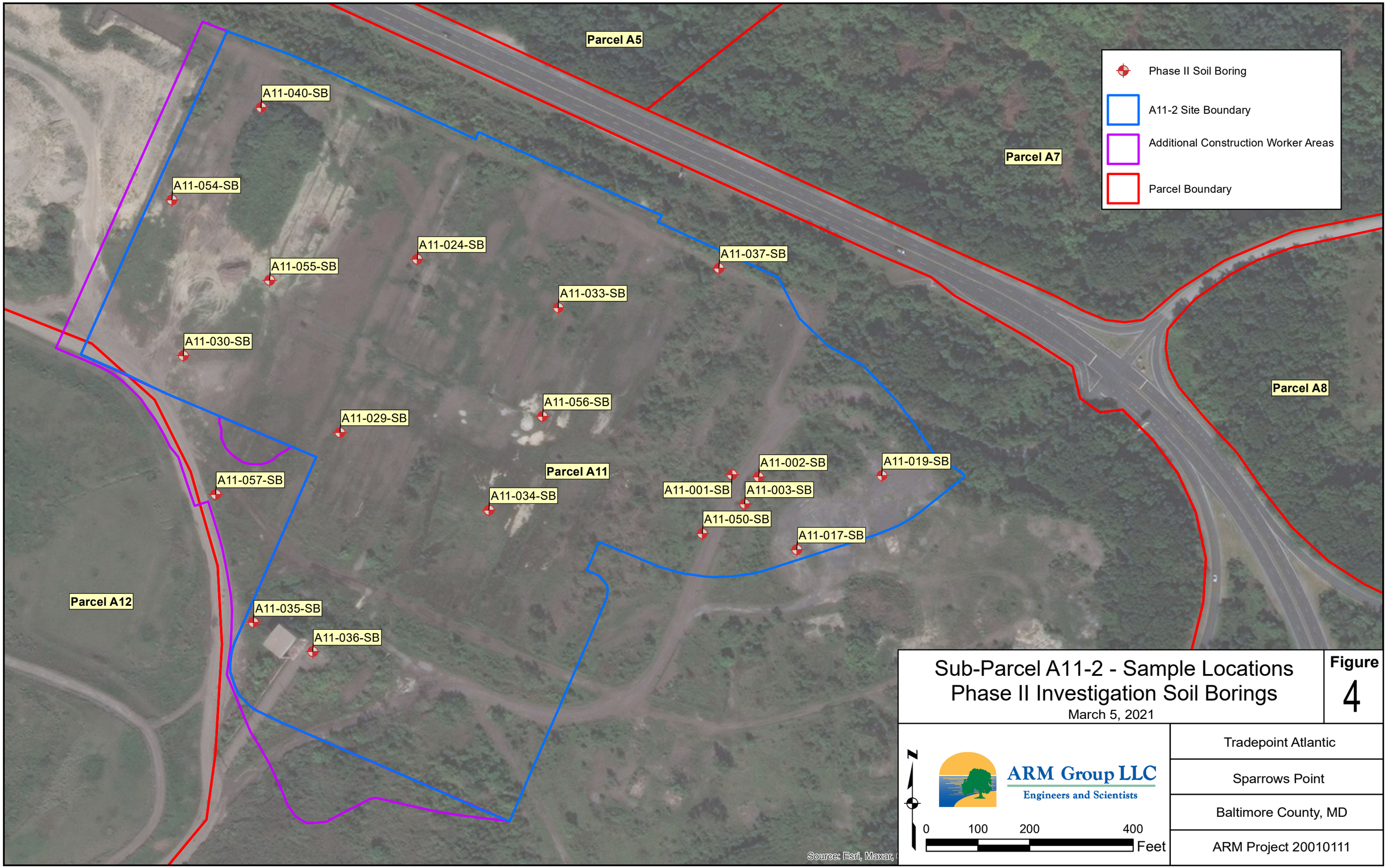
0 200 400 800 Feet

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111



Sub-Parcel A11-2 - Sample Locations
Phase II Investigation Soil Borings

March 5, 2021

Figure 4

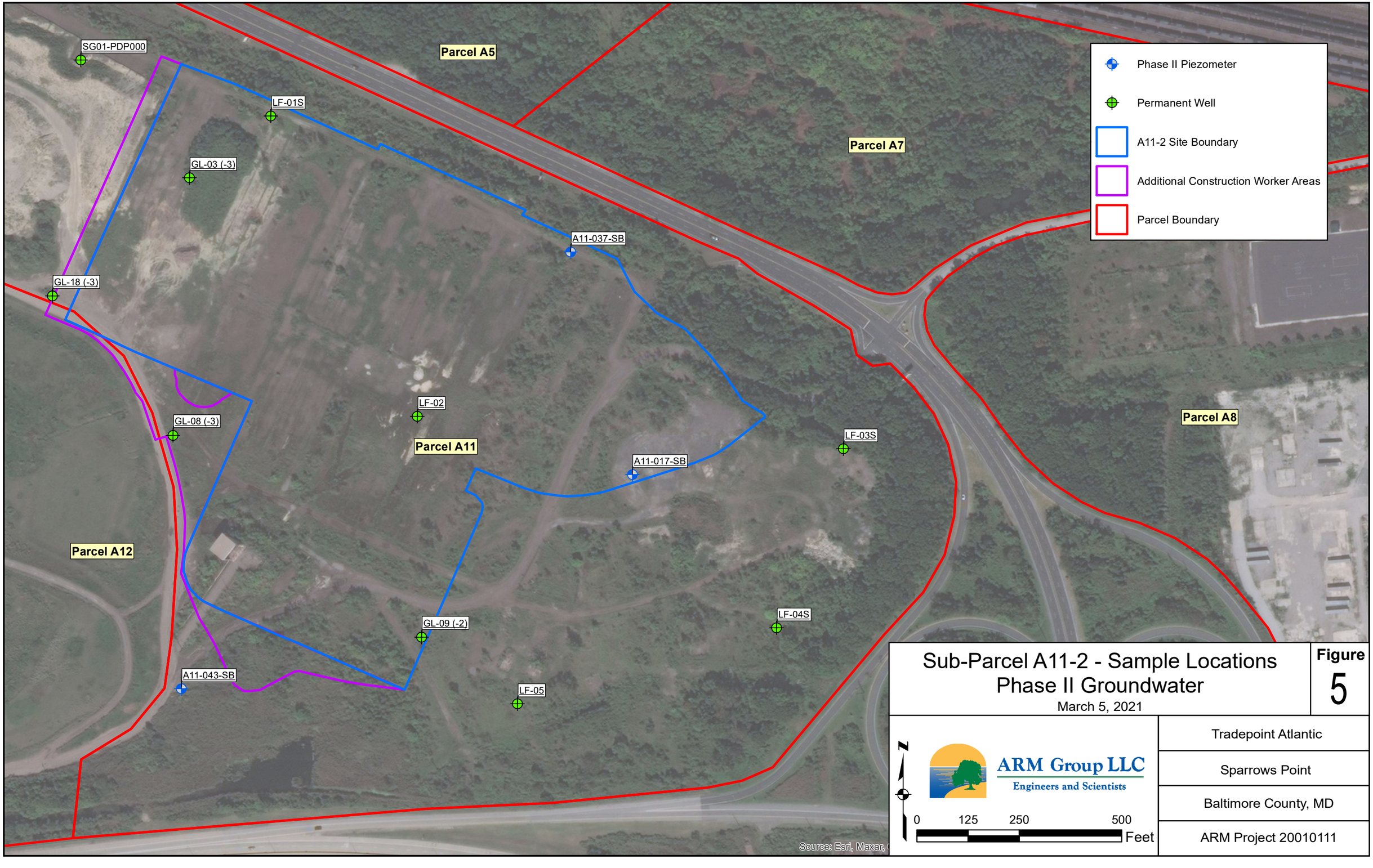
ARM Group LLC
Engineers and Scientists

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111



Sub-Parcel A11-2 - Sample Locations Phase II Groundwater

March 5, 2021

Figure 5

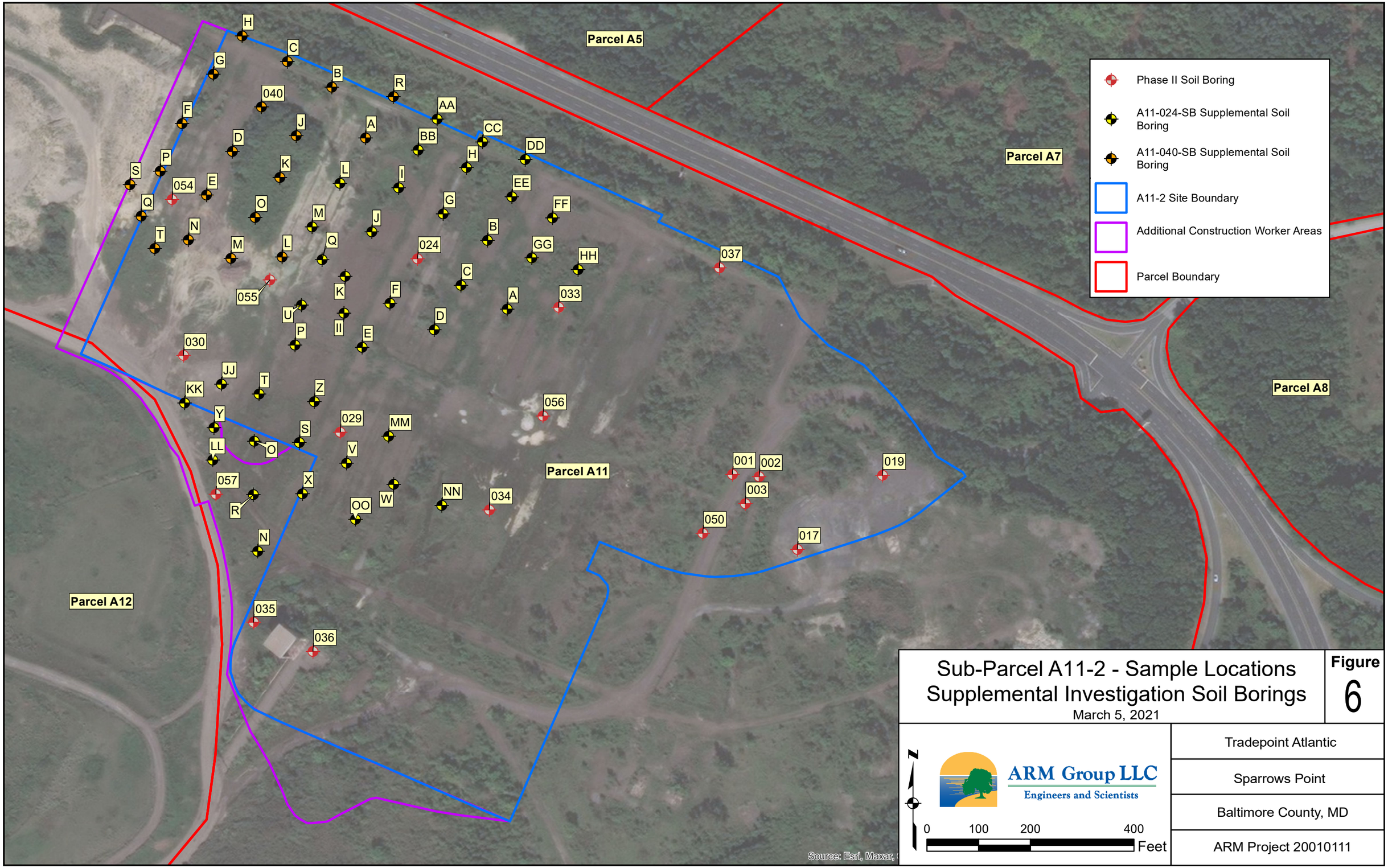
ARM Group LLC
Engineers and Scientists

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111



Sub-Parcel A11-2 - Sample Locations Supplemental Investigation Soil Borings

March 5, 2021

Figure 6

ARM Group LLC
Engineers and Scientists

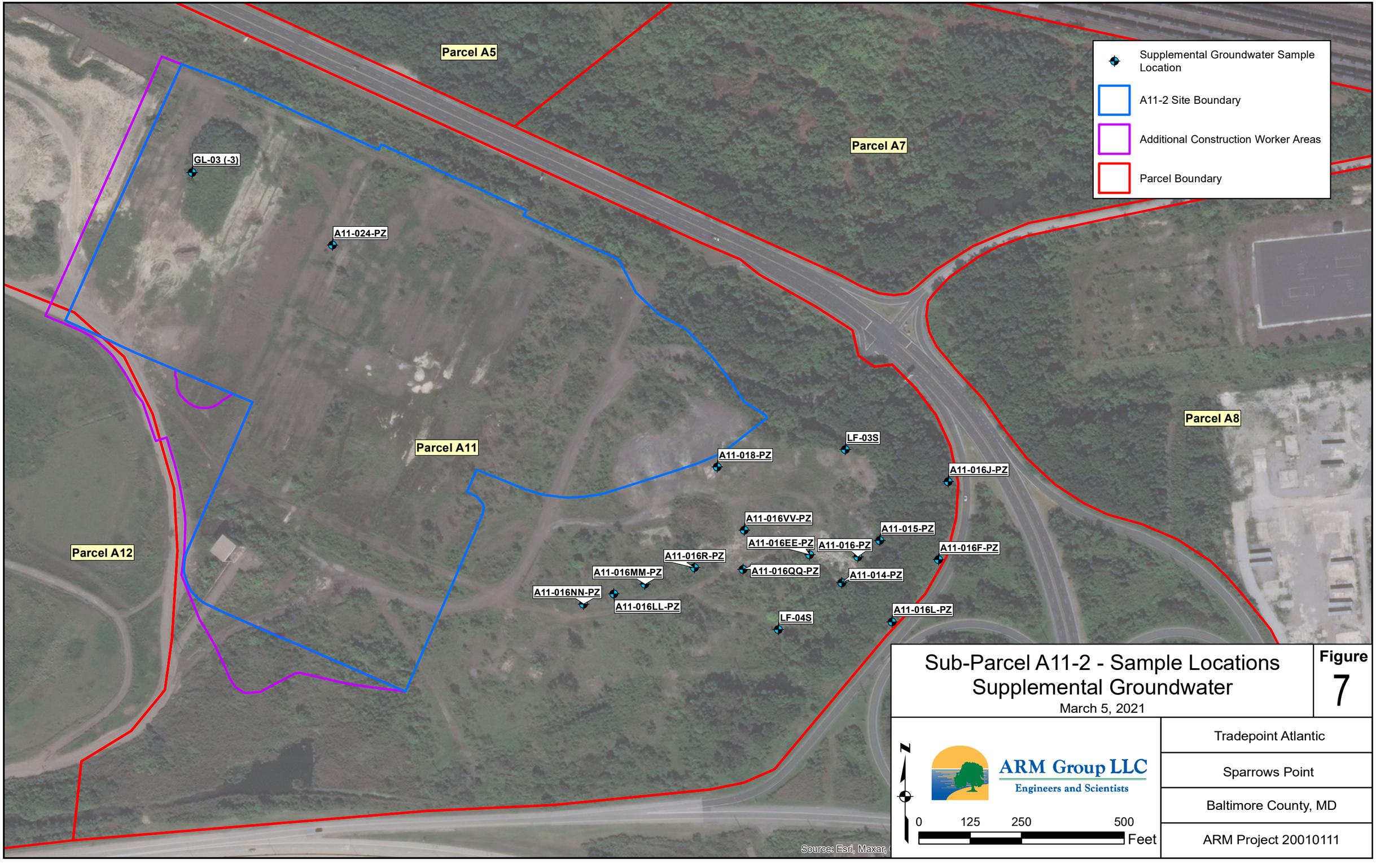
0 100 200 400 Feet

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111



Sub-Parcel A11-2 - Sample Locations Supplemental Groundwater

March 5, 2021

Figure 7

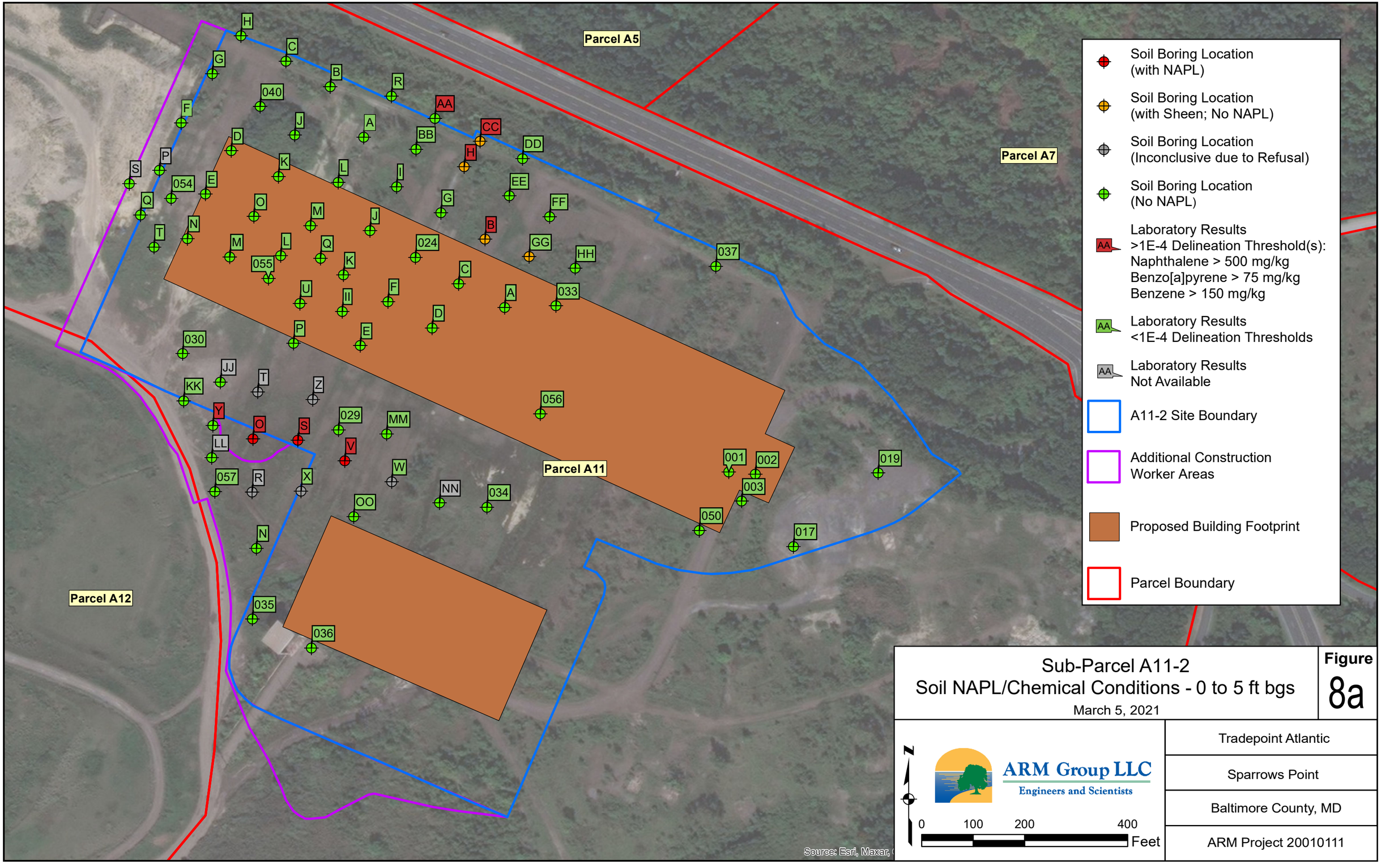
ARM Group LLC
Engineers and Scientists

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111



Sub-Parcel A11-2
Soil NAPL/Chemical Conditions - 0 to 5 ft bgs

March 5, 2021

Figure 8a

ARM Group LLC
Engineers and Scientists

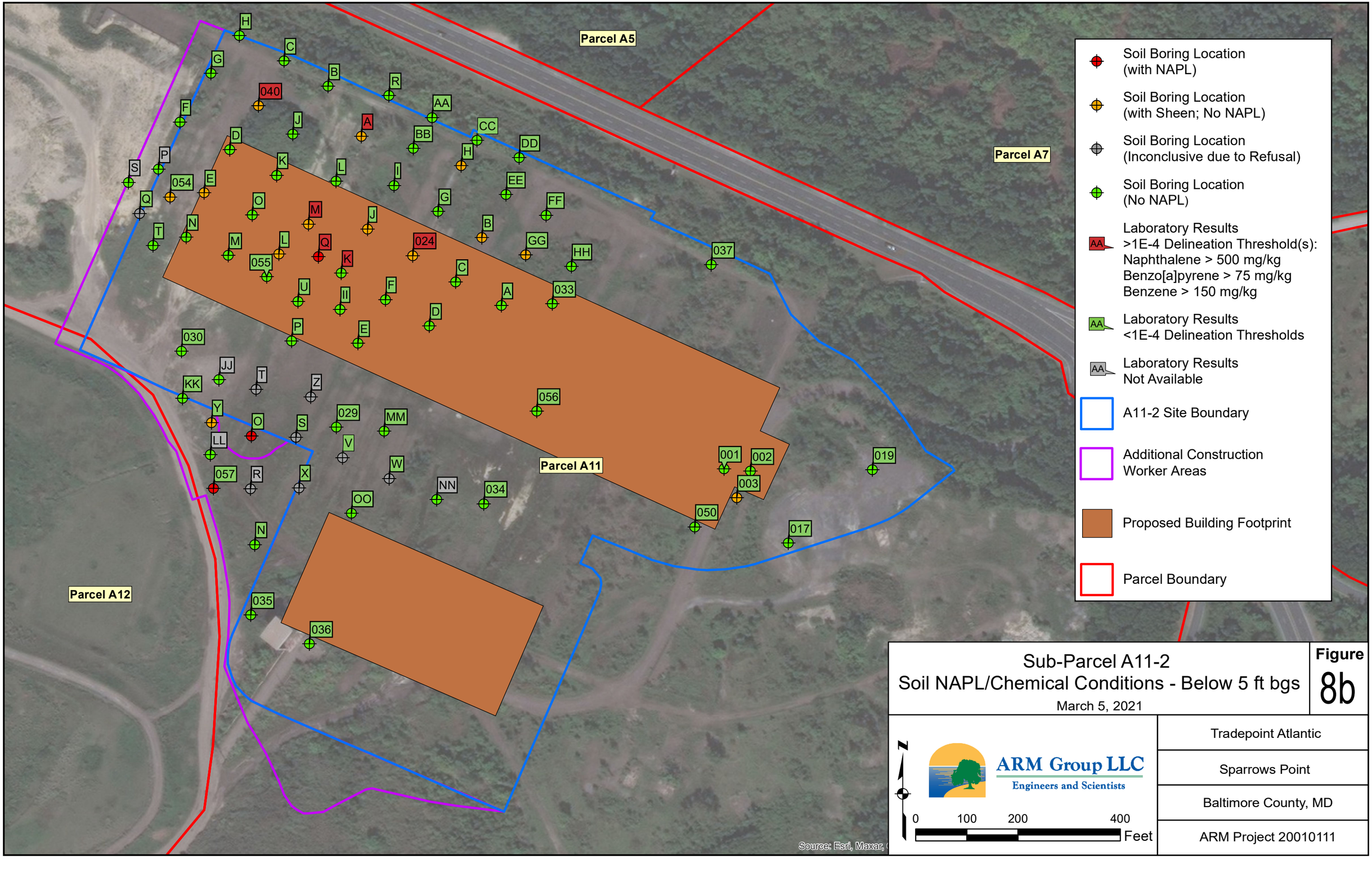
0 100 200 400 Feet

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111



Sub-Parcel A11-2
Soil NAPL/Chemical Conditions - Below 5 ft bgs

March 5, 2021

Figure 8b

ARM Group LLC
Engineers and Scientists

N

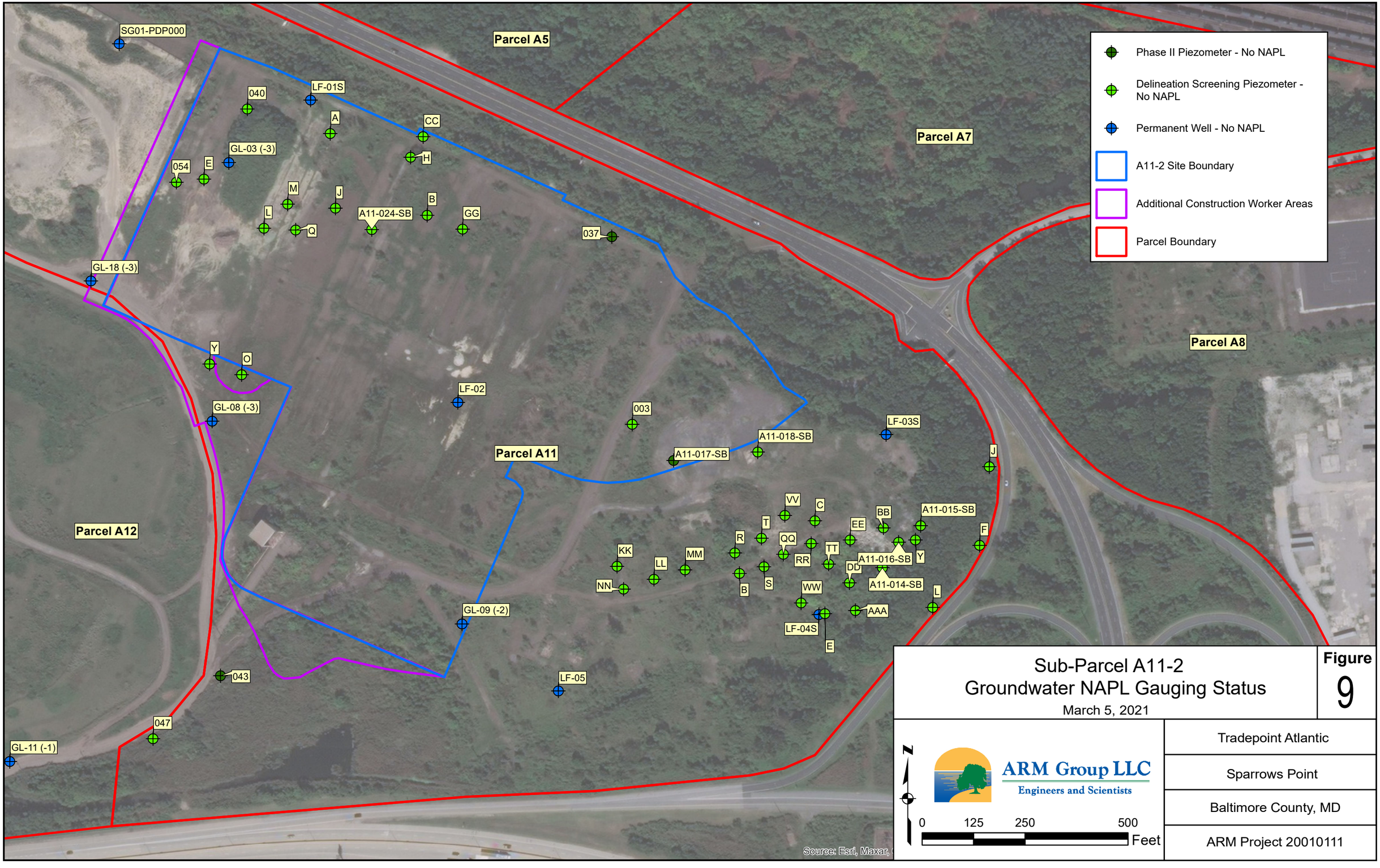
0 100 200 400 Feet

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111



Sub-Parcel A11-2
Groundwater NAPL Gauging Status

March 5, 2021

Figure 9

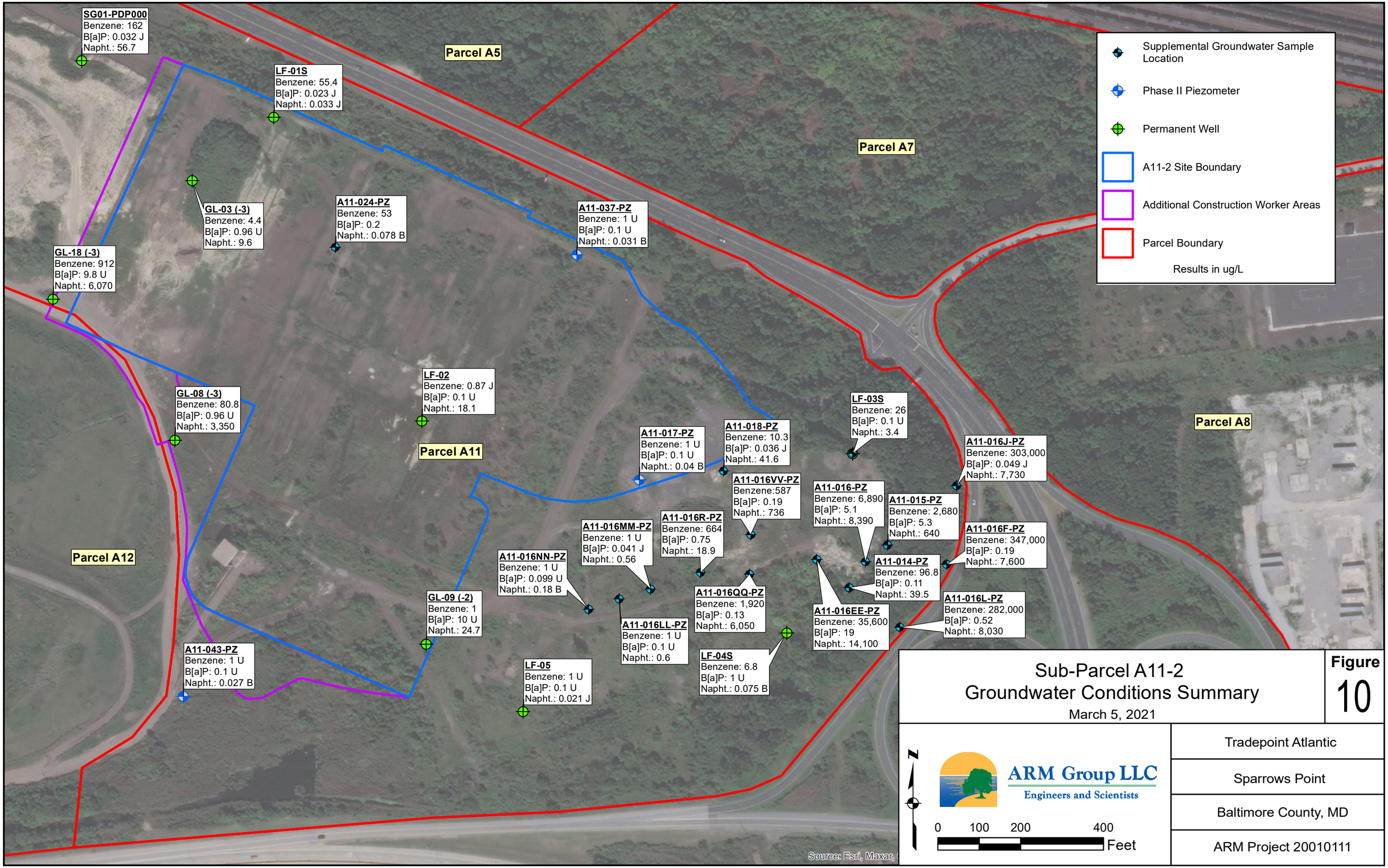
ARM Group LLC
Engineers and Scientists

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111



Sub-Parcel A11-2
Groundwater Conditions Summary

March 5, 2021

Figure 10

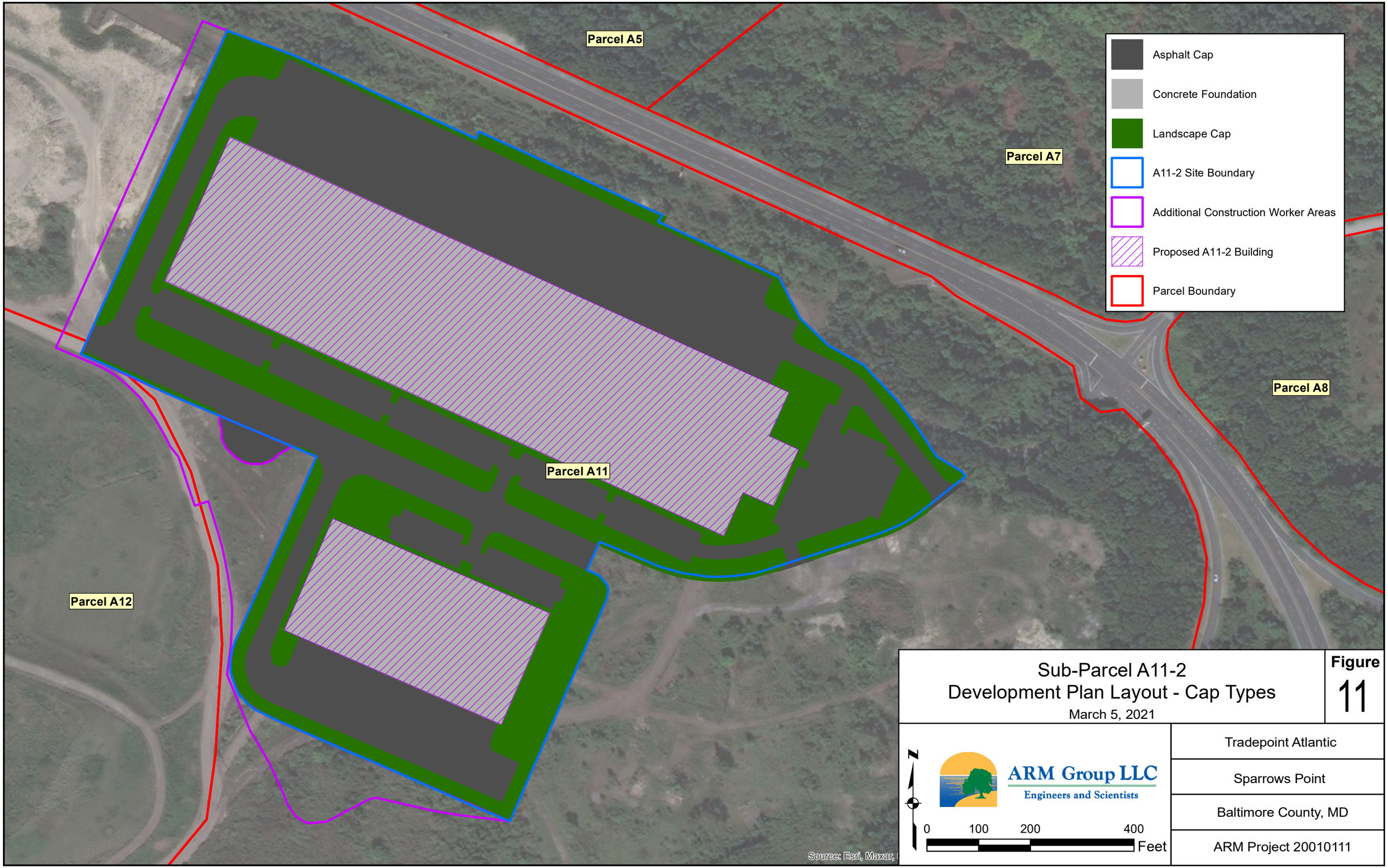
ARM Group LLC
Engineers and Scientists

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111



Sub-Parcel A11-2
Development Plan Layout - Cap Types
March 5, 2021

Figure 11

ARM Group LLC
Engineers and Scientists

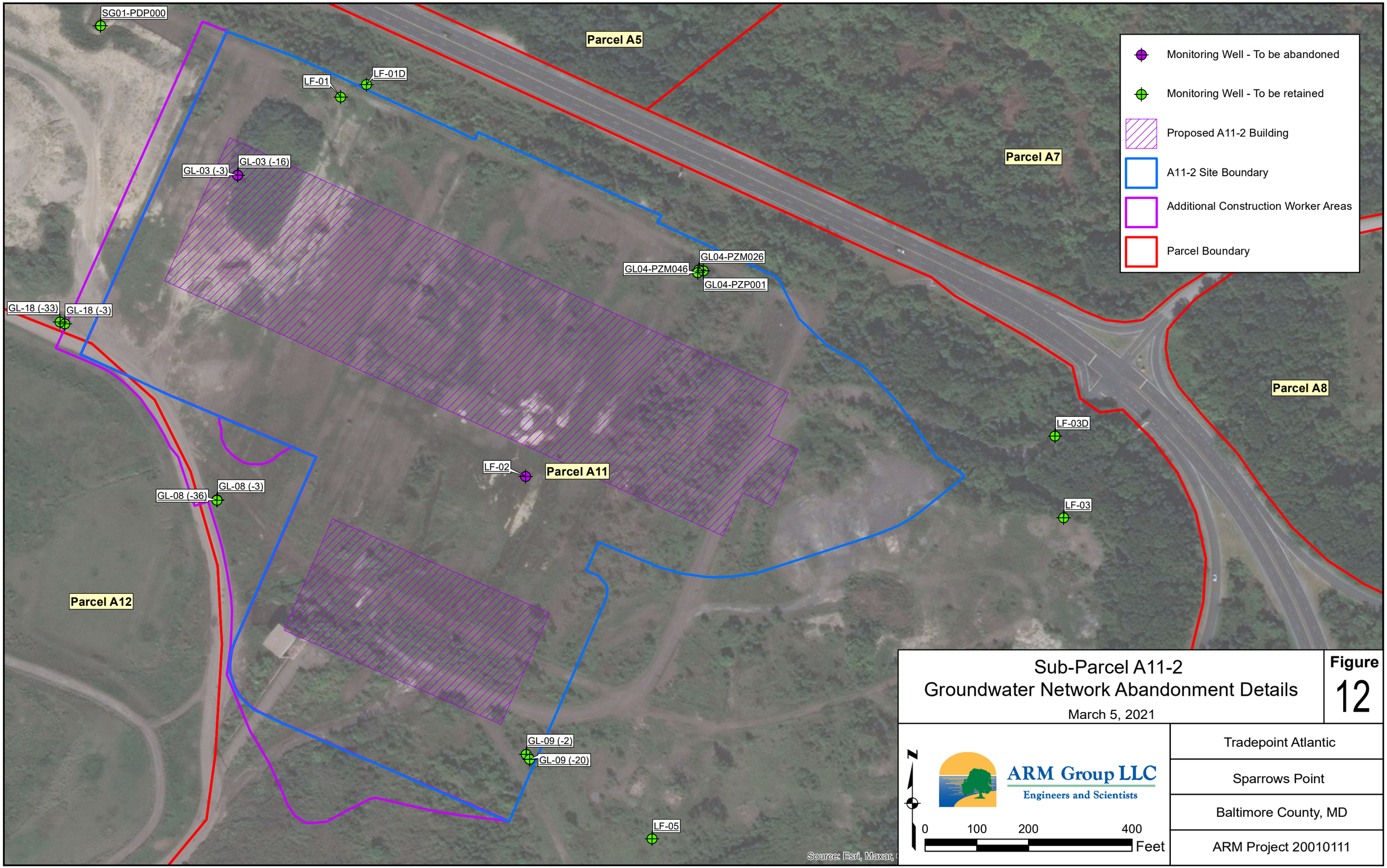
0 100 200 400 Feet

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111



Sub-Parcel A11-2
Groundwater Network Abandonment Details

March 5, 2021

Figure 12

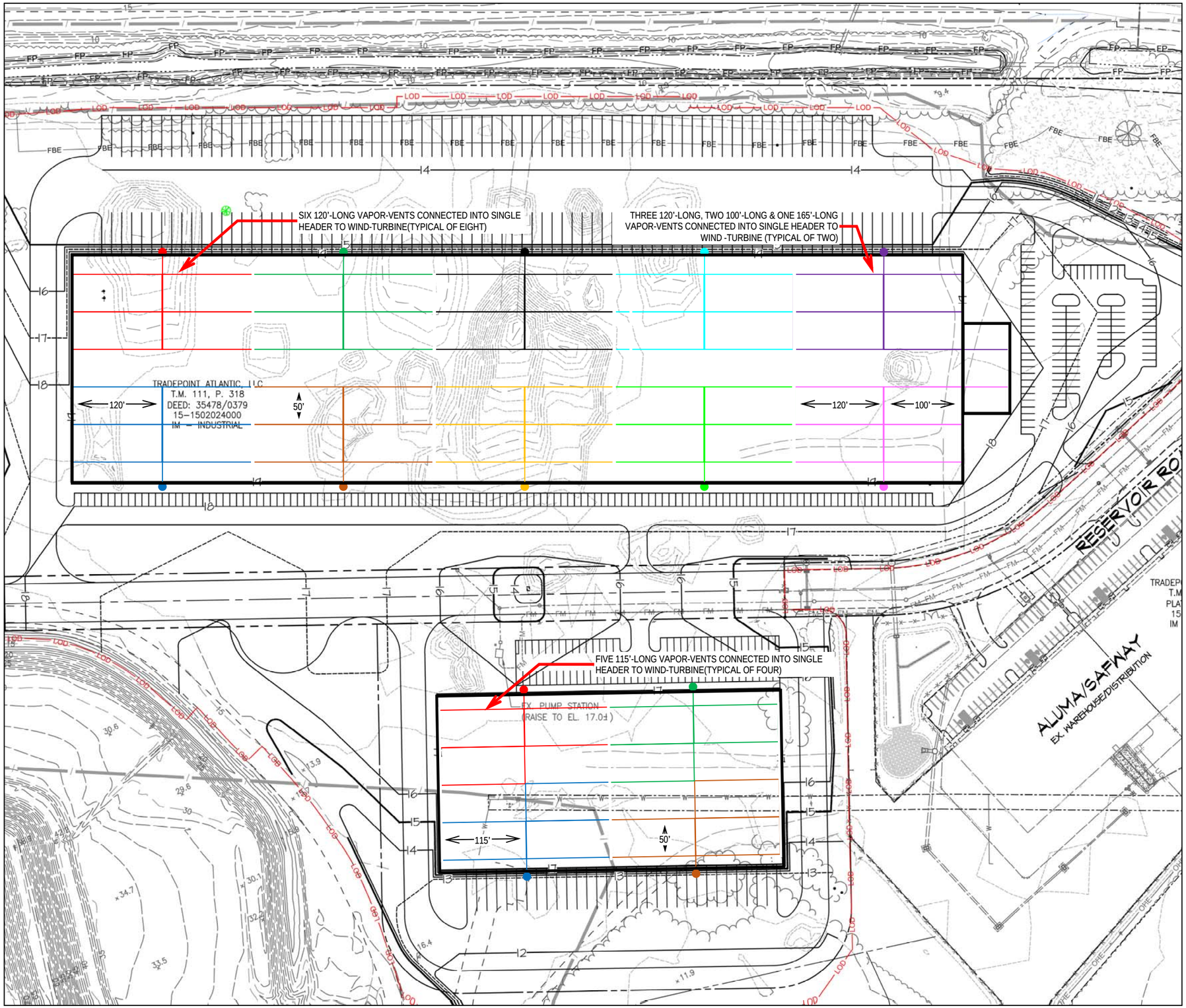
ARM Group LLC
Engineers and Scientists

Tradepoint Atlantic

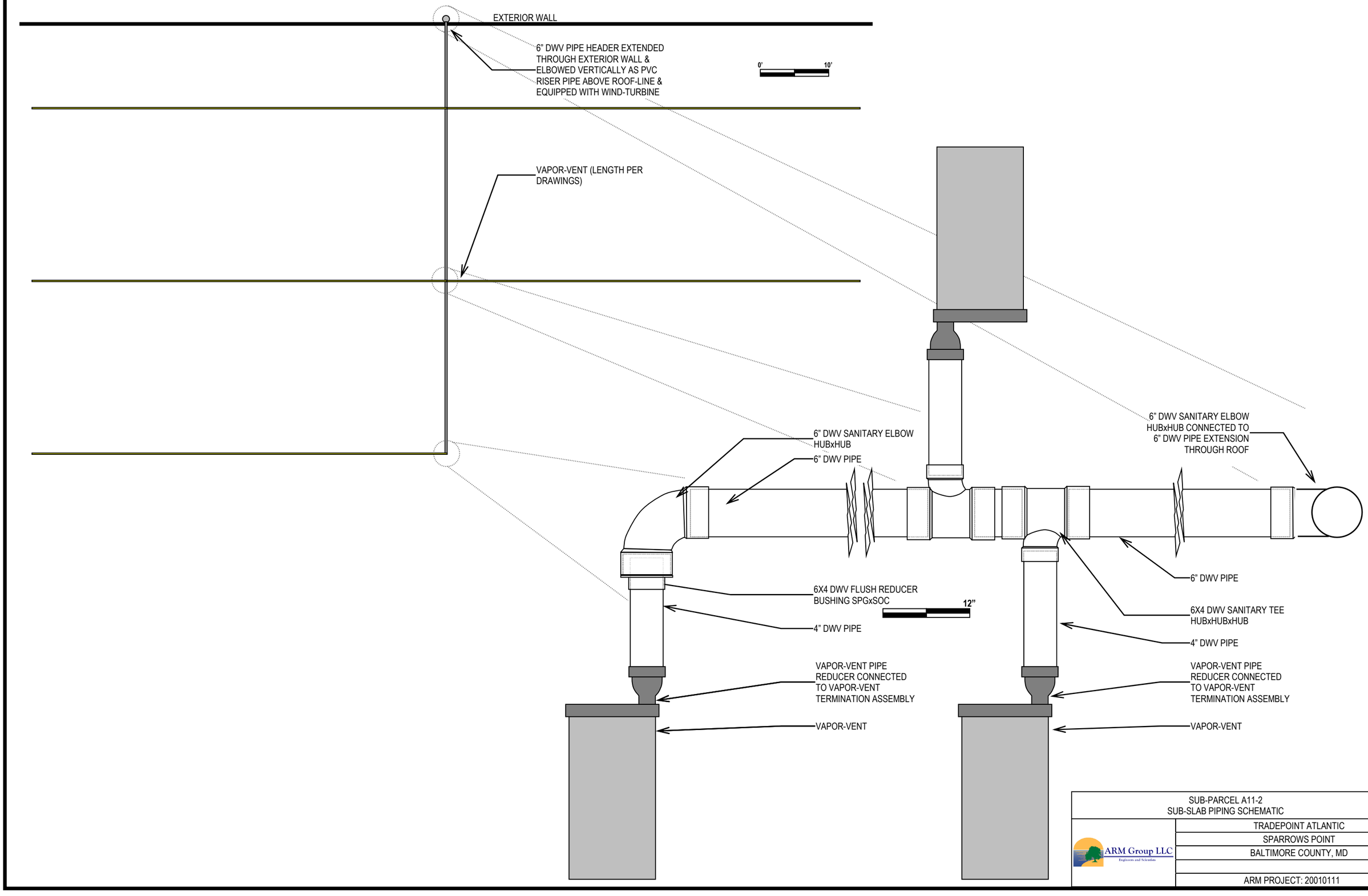
Sparrows Point

Baltimore County, MD

ARM Project 20010111



SUB-PARCEL A11-2 SUB-SLAB PIPING LAYOUT	FIGURE 13a
ARM Group LLC Engineers and Scientists	TRADEPOINT ATLANTIC
	SPARROWS POINT
	BALTIMORE COUNTY, MD
	ARM PROJECT: 20010111



SUB-PARCEL A11-2 SUB-SLAB PIPING SCHEMATIC	FIGURE 13b
ARM Group LLC Engineers and Scientists	TRADEPOINT ATLANTIC SPARROWS POINT BALTIMORE COUNTY, MD ARM PROJECT: 20010111

Parcel A5

Parcel A7

Parcel A11

Parcel A12

PENINSULA EXPRESSWAY (MD 157)

RESERVOIR ROAD

FR. RESERVOIR ROAD (PUBLIC ROAD)

PROPOSED 360,904 SF DISTRIBUTION CENTER

PROPOSED 107,342 SF DISTRIBUTION CENTER

EX. LANDFILL
TRADEPOINT ATLANTIC, LLC
T.M. 111, P. 318
DEED: 35478/0379
15-1502024000
IM - INDUSTRIAL

ALUMA/SAFWAY
EX. WAREHOUSE/DISTRIBUTION

TRADEPOINT ATLANTIC, LLC
T.M. 111, P. 499
PLAT REF: 31/846
15-2500015279
IM - INDUSTRIAL

EX. GRAVEL ROAD (TYP.)

PROPOSED OFFICE

EMPLOYEE PARKING

TRAILER PARKING

DEPRESSED LOADING BAYS

EX. OBSERVATION WELL (TYP.)

EX. PUMP STATION (RAISE TO EL. 11.0+)

NONTIDAL WETLANDS

N 514,500

N 513,500

E 1,450,000

E 1,452,000

Approx. Areas Containing NAPL or Elevated VOC/SVOC Impacts (Based on Figures 8a/8b)

Areas Requiring Mitigative Measures

A11-2 Site Boundary

Additional Construction Worker Areas

Parcel Boundary

Notes:

All utilities that are installed through areas containing NAPL or elevated chemical impacts and that have the potential to preferentially transmit contaminated vapors or groundwater along the utility line shall be either:

i) backfilled with low permeability backfill material (less than or equal to the permeability of the existing subgrade); or

ii) installed with trench plugs along the alignment in accordance with the details shown on Figure 1 of the Utility Excavation NAPL Contingency Plan.

Sub-Parcel A11-2
Areas Requiring Mitigative Measures to Prevent Contaminant Migration Along Utilities
March 5, 2021

Figure 14

ARM Group LLC
Engineers and Scientists

0 100 200 400 Feet

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111

Groundwater elevation contours were developed from depth to water measurements obtained on January 16, 2018. Elevations indicated are in feet above mean sea level (amsl).

- Phase II Piezometer
- Permanent Well
- Groundwater Contours (1 ft interval, amsl)
- A11-2 Site Boundary
- Additional Construction Worker Areas
- Parcel Boundary

SG01-PDP000 6.37
LF-01S 3.15
GL-03 (-3) 4.94
GL-18 (-3) 9.89
GL-08 (-3) 10.24
LF-02 11.15
A11-037-SB 6.1
A11-017-SB Damaged
LF-03S 6.51
LF-04S 6.86
GL-09 (-2) 10.92
LF-05 7.91
A11-043-SB 10.46

Parcel A5
Parcel A7
Parcel A8
Parcel A11
Parcel A12

PENINSULA EXPRESSWAY (MD 157)
PROPOSED 308,804 SF DISTRIBUTION CENTER
PROPOSED 107,392 SF DISTRIBUTION CENTER
PR. RESERVOIR RD. (PUBLIC ROAD)
RESERVOIR ROAD
EX. LANDFILL
ALUMA/SAFWAY
EX. WAREHOUSE/DISTRIBUTION

Sub-Parcel A11-2 Development Plan Layout and Shallow Groundwater Elevations

March 5, 2021

Figure 15

ARM Group LLC
Engineers and Scientists

0 100 200 400 Feet

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 20010111

TABLES

Table 1 - Sub-Parcel A11-2
Summary of Organics Detected in Soil

Parameter	Units	PAL	A11-001-SB-1* 8/1/2016	A11-001-SB-5* 8/1/2016	A11-002-SB-1* 8/1/2016	A11-002-SB-7* 8/1/2016	A11-003-SB-1* 8/1/2016	A11-003-SB-5* 8/1/2016	A11-017-SB-1 7/29/2016	A11-017-SB-5 7/29/2016	A11-017-SB-10 7/29/2016	A11-019-SB-1 7/29/2016	A11-019-SB-4 7/29/2016	A11-024AA-SB-5* 8/21/2018	A11-024AA-SB-10* 8/21/2018	A11-024A-SB-5* 6/12/2018	A11-024A-SB-10* 6/12/2018
Volatile Organic Compounds																	
1,1-Dichloroethane	mg/kg	16	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	0.0043 U	0.0043 U	0.0045 U	0.0041 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	0.0043 U	0.0043 U	0.0045 U	0.0041 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.01 U	0.011 U	0.011 U	0.0093 U	0.012 U	0.01 U	0.0081 U	0.011 U	N/A	0.012 U	0.015 U	0.0085 U	0.0086 U	0.009 U	0.0083 U
2-Butanone (MEK)	mg/kg	190,000	0.01 U	0.011 U	0.011 U	0.0093 U	0.012 U	0.01 U	0.0081 U	0.011 U	N/A	0.012 U	0.015 U	0.0085 U	0.0086 U	0.009 U	0.0083 U
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.01 U	0.011 U	0.011 U	0.0093 U	0.012 U	0.01 U	0.0081 U	0.011 U	N/A	0.012 U	0.015 U	0.0085 U	0.0086 U	0.009 U	0.0083 U
Acetone	mg/kg	670,000	0.01 U	**0.077**	**0.027**	**0.023**	**0.017**	0.01 U	**0.016 J**	**0.083 J**	N/A	0.012 UJ	**0.014 J**	**0.0074 J**	**0.034**	**0.081**	0.0083 U
Benzene	mg/kg	5.1	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	**0.025**	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	**0.0067**	**0.055**	0.0045 U	**0.083**
Carbon disulfide	mg/kg	3,500	0.0051 U	0.0054 U	0.0056 U	**0.0027 J**	**0.0037 J**	0.005 U	0.004 UJ	0.0056 UJ	N/A	0.006 UJ	0.0074 UJ	**0.0019 J**	0.0043 U	0.0045 U	**0.0024 J**
Chloroform	mg/kg	1.4	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	0.0043 U	0.0043 U	0.0045 U	0.0041 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	0.0043 U	0.0043 U	0.0045 U	0.0041 U
Cyclohexane	mg/kg	27,000	0.01 U	0.011 U	0.011 U	0.0093 U	0.012 U	0.01 U	0.0081 U	0.011 U	N/A	0.012 U	0.015 U	0.0085 U	0.0086 U	0.009 U	0.0083 U
Ethylbenzene	mg/kg	25	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	0.0043 U	0.0043 U	0.0045 U	0.0041 U
Isopropylbenzene	mg/kg	9,900	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	0.0043 U	0.0043 U	0.0045 U	0.0041 U
Methyl Acetate	mg/kg	1,200,000	0.051 U	0.054 U	0.056 U	0.047 U	0.062 U	0.05 U	0.04 R	0.056 R	N/A	0.06 R	0.074 R	0.043 U	0.043 U	**0.0044 J**	0.041 U
Methylene Chloride	mg/kg	1,000	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	0.0043 U	0.0043 U	0.0045 U	0.0041 U
Styrene	mg/kg	35,000	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	**0.0013 J**	0.0043 U	0.0045 U	0.0041 U
Tetrachloroethene	mg/kg	100	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	0.0043 U	0.0043 U	0.0045 U	0.0041 U
Toluene	mg/kg	47,000	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	**0.0025 J**	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	**0.007**	0.0043 U	0.0045 U	**0.0019 J**
trans-1,2-Dichloroethene	mg/kg	23,000	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	0.0043 U	0.0043 U	0.0045 U	0.0041 U
Trichloroethene	mg/kg	6	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	0.0043 U	0.0043 U	0.0045 U	0.0041 U
Vinyl chloride	mg/kg	1.7	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.004 U	0.0056 U	N/A	0.006 U	0.0074 U	0.0043 U	0.0043 U	0.0045 U	0.0041 U
Xylenes	mg/kg	2,800	0.015 U	0.016 U	0.017 U	0.014 U	0.018 U	0.015 U	0.012 U	0.017 U	N/A	0.018 U	0.022 U	**0.023**	**0.007 J**	0.014 U	**0.0047 J**
Semi-Volatile Organic Compounds^																	
1,1-Biphenyl	mg/kg	200	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	**0.11**	0.073 U	0.088 U	N/A	0.071 U	0.078 U	N/A	N/A	N/A	N/A
2,4-Dimethylphenol	mg/kg	16,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	**0.76**	0.073 U	0.088 U	N/A	0.071 U	0.078 UJ	N/A	N/A	N/A	N/A
2-Methylnaphthalene	mg/kg	3,000	**0.035**	**0.064**	**0.082**	**0.065**	**0.0086**	**0.35**	**0.064**	**0.12**	N/A	0.07 U	**0.0094**	**47**	**0.0069 J**	**0.047**	**0.18**
2-Methylphenol	mg/kg	41,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	**1.2**	0.073 U	0.088 U	N/A	0.071 U	0.078 UJ	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.15 U	0.15 U	0.15 U	**0.089 J**	0.16 U	**2.3**	0.15 U	**0.11 J**	N/A	0.14 U	0.16 UJ	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	45,000	**0.015**	**0.017**	**0.00072 J**	**0.0072 J**	**0.0013 J**	**0.11**	**0.11**	**0.074**	N/A	**0.014 J**	**0.00084 J**	**3.6**	0.0078 U	**0.19**	**0.25**
Acenaphthylene	mg/kg	45,000	**0.034**	**0.0033 J**	**0.0045 J**	**0.0053 J**	**0.0015 J**	**0.62**	**0.015**	**0.017**	N/A	0.07 U	**0.0018 J**	**30.4**	**0.0012 J**	**0.053**	**0.045**
Acetophenone	mg/kg	120,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	0.079 U	0.073 U	0.088 U	N/A	0.071 U	0.078 U	N/A	N/A	N/A	N/A
Anthracene	mg/kg	230,000	**0.066**	**0.0078**	**0.0051 J**	**0.015**	**0.0029 J**	**1**	**0.11**	**0.1**	N/A	**0.012 J**	**0.0054 J**	**50.7**	**0.0027 J**	**0.27**	**0.22**
Benz[a]anthracene	mg/kg	21	**0.18**	**0.016**	**0.015**	**0.026**	**0.0097**	**4.6**	**0.48**	**0.32**	N/A	**0.079**	**0.015**	**141**	**0.0064 J**	**0.84**	**0.56**
Benzaldehyde	mg/kg	120,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	**0.11**	0.073 UJ	**0.037 J**	N/A	0.071 UJ	0.078 UJ	N/A	N/A	N/A	N/A
Benzo[a]pyrene	mg/kg	2.1	**0.18**	**0.015**	**0.011**	**0.022**	**0.014**	**3.8**	**0.8**	**0.3**	**0.0012 J**	**0.15**	**0.015**	**144**	**0.0045 J**	**0.98**	**0.35**
Benzo[b]fluoranthene	mg/kg	21	**0.36**	**0.039**	**0.032**	**0.049**	**0.03**	**8**	**1.7 J**	**0.75**	N/A	**0.28**	**0.036**	**282**	**0.0066 J**	**1.2**	**0.58**
Benzo[g,h,i]perylene	mg/kg		**0.069**	**0.0067 J**	**0.008**	**0.011**	**0.012**	**1.2**	**0.2**	**0.051**	N/A	**0.072**	**0.0061 J**	**78.7**	**0.0027 J**	**0.58**	**0.13**
Benzo[k]fluoranthene	mg/kg	210	**0.33**	**0.035**	**0.029**	**0.045**	**0.027**	**7.3**	**1.5 J**	**0.69**	N/A	**0.25**	**0.032**	**72**	**0.0027 J**	**0.47**	**0.21**
bis(2-Ethylhexyl)phthalate	mg/kg	160	**0.019 J**	0.077 U	0.076 U	0.079 U	0.08 U	**0.039 J**	**0.026 J**	**0.078 J**	N/A	**0.19 J**	**0.016 J**	N/A	N/A	N/A	N/A
Caprolactam	mg/kg	400,000	0.19 U	0.19 U	0.19 U	0.2 U	0.2 U	**0.095 J**	0.18 U	0.22 U	N/A	0.18 U	0.2 U	N/A	N/A	N/A	N/A
Carbazole	mg/kg		**0.024 J**	0.077 U	0.076 U	0.079 U	0.08 U	**0.15**	**0.042 J**	**0.11**	N/A	0.071 U	0.078 U	N/A	N/A	N/A	N/A
Chrysene	mg/kg	2,100	**0.18**	**0.023**	**0.019**	**0.035**	**0.012**	**4.4**	**0.49**	**0.33**	N/A	**0.11**	**0.017**	**120**	**0.0043 J**	**0.76**	**0.42**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.03**	**0.003 J**	**0.0033 J**	**0.004 J**	**0.0037 J**	**0.58**	**0.067**	**0.025**	N/A	**0.024 J**	**0.0025 J**	**33**	0.0078 U	**0.21**	**0.062**
Diethylphthalate	mg/kg	660,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	0.079 U	0.073 U	0.088 U	N/A	0.071 U	0.078 U	N/A	N/A	N/A	N/A
Fluoranthene	mg/kg	30,000	**0.33**	**0.049**	**0.038**	**0.069**	**0.015**	**8.3**	**0.72**	**0.7**	N/A	**0.11**	**0.031**	**465**	**0.011**	**1.3**	**1**
Fluorene	mg/kg	30,000	**0.036**	**0.012**	**0.0012 J**	**0.015**	**0.0016 J**	**0.38**	**0.043**	**0.074**	N/A	0.07 U	**0.0012 J**	**10.6**	**0.0015 J**	**0.077**	**0.43**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.076**	**0.007 J**	**0.0076 J**	**0.01**	**0.01**	**1.4**	**0.24**	**0.067**	N/A	**0.07 J**	**0.0067 J**	**79.9**	**0.0024 J**	**0.56**	**0.14**
Naphthalene	mg/kg	8.6	**0.077**	**0.06**	**0.057**	**0.047**	**0.01**	**0.58**	**0.064**	**0.12**	N/A	0.026 B	**0.0095**	**150**	**0.23**	**0.069**	**0.39**
N-Nitrosodiphenylamine	mg/kg	470	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	0.079 U	0.073 U	0.088 U	N/A	0.071 U	0.078 U	N/A	N/A	N/A	N/A
Phenanthrene	mg/kg		**0.25**	**0.046**	**0.02**	**0.073**	**0.015**	**2.5**	**0.46**	**0.48**	N/A	0.056 B	**0.022**	**120**	**0.0088**	**0.88**	**1.2**
Phenol	mg/kg	250,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	**0.094**	0.073 U	0.088 U	N/A	0.071 U	0.078 UJ	N/A	N/A	N/A	N/A
Pyrene	mg/kg	23,000	**0.27**	**0.035**	**0.031**	**0.053**	**0.012**	**6.2**	**0.65**	**0.54**	N/A	**0.099**	**0.024**	**372**	**0.0089**	**1.1**	**0.8**
PCBs																	
Aroclor 1248	mg/kg	0.94	0.0577 U	N/A	**0.439**	N/A	0.0539 U	N/A	0.0601 U	N/A	N/A	0.0535 U	N/A	N/A	N/A	N/A	N/A
Aroclor 1254	mg/kg	0.97	0.0577 U	N/A	**0.257**	N/A	0.0539 U	N/A	0.0601 U	N/A	N/A	0.0535 U	N/A	N/A	N/A	N/A	N/A
Aroclor 1260	mg/kg	0.99	0.0577 U	N/A	**0.0857**	N/A	0.0539 U	N/A	0.0601 U	N/A	N/A	**0.033 J**	N/A	N/A	N/A	N/A	N/A
PCBs (total)	mg/kg	0.97	0.0577 U	N/A	**0.7817**	N/A	0.0539 U	N/A	0.0601 U	N/A	N/A	**0.033 J**	N/A	N/A	N/A	N/A	N/A
TPH/Oil and Grease																	
Diesel Range Organics	mg/kg	6,200	**47.9**	**63.6**	**36.9**	**96.5**	**23.1**	**172**	**147 J**	**52.8 J**	N/A	**85.7 J**	**39.2 J**	**1,520**	**5.3 J**	**207**	**301**
Gasoline Range Organics	mg/kg	6,200	10.3 U	11.8 U	16.1 U	10.7 U	14.3 U	**16.2**	11 U	13.6 U	N/A	8.9 U	13.4 U	10.1 U	9.5 U	9.5 U	**11.5**
Oil and Grease	mg/kg	6,200	**817**	**735**	**380**	**1,120**	**519**	**1,020**	**801**	**1,330**	N/A	**1,970**	**359**	**2,560**	**389**	**1,340**	**2,170**

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

N/A indicates that the parameter was not analyzed for this sample
* Non-validated data

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.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
UJ: This analye was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

Table 1 - Sub-Parcel A11-2
Summary of Organics Detected in Soil

Parameter	Units	PAL	A11-024A-SB-15*	A11-024BB-SB-5*	A11-024BB-SB-10*	A11-024BB-SB-15*	A11-024B-SB-5*	A11-024B-SB-10*	A11-024B-SB-15*	A11-024CC-SB-5*	A11-024CC-SB-10*	A11-024CC-SB-13.5*	A11-024C-SB-5*	A11-024C-SB-10*	A11-024C-SB-15*	A11-024DD-SB-5*	A11-024DD-SB-10*	A11-024DD-SB-14.5*
			6/12/2018	8/21/2018	8/21/2018	8/21/2018	6/12/2018	6/12/2018	6/12/2018	8/21/2018	8/21/2018	8/21/2018	6/12/2018	6/12/2018	6/13/2018	8/22/2018	8/22/2018	8/22/2018
Volatile Organic Compounds																		
1,1-Dichloroethane	mg/kg	16	0.0041 U	0.0093 U	0.0056 U	0.0048 U	0.0066 U	0.0047 U	0.0045 U	0.0047 U	0.0051 U	0.0042 U	0.0045 U	0.004 U	0.0036 U	0.0045 U	0.005 U	0.0047 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.0041 U	0.0093 U	0.0056 U	0.0048 U	0.0066 U	0.0047 U	0.0045 U	0.0047 U	0.0051 U	0.0042 U	0.0045 U	0.004 U	0.0036 U	0.0045 U	0.005 U	0.0047 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.0083 U	0.019 U	0.011 U	0.0095 U	0.013 U	0.0093 U	0.009 U	0.0094 U	0.01 U	0.0083 U	0.0089 U	0.0081 U	0.0072 U	0.009 U	0.01 U	0.0094 U
2-Butanone (MEK)	mg/kg	190,000	0.0083 U	0.019 U	0.011 U	0.0095 U	**0.0059 J**	0.0093 U	0.009 U	**0.0032 J**	0.01 U	0.0083 U	0.0089 U	0.0081 U	0.0072 U	**0.0064 J**	0.01 U	0.0094 U
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	**0.0018 J**	0.019 U	0.011 U	0.0095 U	0.013 U	0.0093 U	0.009 U	0.0094 U	0.01 U	0.0083 U	0.0089 U	0.0081 U	0.0072 U	0.009 U	0.01 U	0.0094 U
Acetone	mg/kg	670,000	**0.035**	**0.04**	0.011 U	0.0095 U	**0.083**	**0.1**	**0.019**	0.0094 U	0.01 U	0.0083 U	**0.026**	**0.018**	0.0072 U	**0.047**	0.01 U	0.0094 U
Benzene	mg/kg	5.1	**0.057**	**0.067**	**0.79**	**0.99**	**452**	**0.046**	**7.3**	**3.5**	**0.35**	**0.056**	**0.003 J**	**0.0022 J**	0.0036 U	**0.31**	**0.26**	**0.18**
Carbon disulfide	mg/kg	3,500	0.0041 U	0.0093 U	0.0056 U	0.0048 U	**0.16**	0.0047 U	0.0045 U	0.0047 U	0.0051 U	0.0042 U	0.0045 U	**0.0018 J**	**0.0049**	0.0045 U	0.005 U	0.0047 U
Chloroform	mg/kg	1.4	0.0041 U	0.0093 U	0.0056 U	0.0048 U	0.0066 U	0.0047 U	0.0045 U	0.0047 U	0.0051 U	0.0042 U	0.0045 U	0.004 U	0.0036 U	0.0045 U	0.005 U	0.0047 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.0041 U	0.0093 U	0.0056 U	0.0048 U	0.0066 U	0.0047 U	0.0045 U	0.0047 U	0.0051 U	0.0042 U	0.0045 U	0.004 U	0.0036 U	0.0045 U	0.005 U	0.0047 U
Cyclohexane	mg/kg	27,000	0.0083 U	0.019 U	0.011 U	0.0095 U	**0.025**	0.0093 U	0.009 U	0.0094 U	0.01 U	0.0083 U	0.0089 U	0.0081 U	0.0072 U	0.009 U	0.01 U	0.0094 U
Ethylbenzene	mg/kg	25	0.0041 U	0.0093 U	**0.0023 J**	0.0048 U	**0.24**	0.0047 U	**0.0017 J**	**0.011**	0.0051 U	0.0042 U	0.0045 U	0.004 U	0.0036 U	**0.0015 J**	0.005 U	0.0047 U
Isopropylbenzene	mg/kg	9,900	0.0041 U	0.0093 U	0.0056 U	0.0048 U	**0.053**	0.0047 U	0.0045 U	0.0047 U	0.0051 U	0.0042 U	0.0045 U	0.004 U	0.0036 U	0.0045 U	0.005 U	0.0047 U
Methyl Acetate	mg/kg	1,200,000	**0.0014 J**	0.093 U	0.056 U	0.048 U	0.066 U	**0.0042 J**	0.045 U	0.047 U	0.051 U	0.042 U	**0.013 J**	**0.051**	0.036 U	0.045 U	0.05 U	0.047 U
Methylene Chloride	mg/kg	1,000	0.0041 U	0.0093 U	0.0056 U	0.0048 U	0.0066 U	0.0047 U	0.0045 U	0.0047 U	0.0051 U	0.0042 U	0.0045 U	0.004 U	0.0036 U	0.0045 U	0.005 U	0.0047 U
Styrene	mg/kg	35,000	0.0041 U	0.0093 U	0.0056 U	0.0048 U	0.0066 U	0.0047 U	0.0045 U	0.0047 U	0.0051 U	0.0042 U	0.0045 U	0.004 U	0.0036 U	0.0045 U	0.005 U	0.0047 U
Tetrachloroethene	mg/kg	100	0.0041 U	0.0093 U	0.0056 U	0.0048 U	0.0066 U	0.0047 U	0.0045 U	0.0047 U	0.0051 U	0.0042 U	0.0045 U	0.004 U	0.0036 U	0.0045 U	0.005 U	0.0047 U
Toluene	mg/kg	47,000	**0.0034 J**	**0.0037 J**	**0.0051 J**	0.0048 U	**183**	**0.0056**	**0.084**	**0.0056**	**0.0035 J**	0.0042 U	0.0045 U	0.004 U	0.0036 U	**0.0017 J**	**0.0062**	0.0047 U
trans-1,2-Dichloroethene	mg/kg	23,000	0.0041 U	0.0093 U	0.0056 U	0.0048 U	0.0066 U	0.0047 U	0.0045 U	0.0047 U	0.0051 U	0.0042 U	0.0045 U	0.004 U	0.0036 U	0.0045 U	0.005 U	0.0047 U
Trichloroethene	mg/kg	6	0.0041 U	0.0093 U	0.0056 U	0.0048 U	0.0066 U	0.0047 U	0.0045 U	0.0047 U	0.0051 U	0.0042 U	0.0045 U	0.004 U	0.0036 U	0.0045 U	0.005 U	0.0047 U
Vinyl chloride	mg/kg	1.7	**0.0067**	0.0093 U	0.0056 U	0.0048 U	0.0066 U	0.0047 U	0.0045 U	0.0047 U	0.0051 U	0.0042 U	0.0045 U	0.004 U	0.0036 U	0.0045 U	0.005 U	0.0047 U
Xylenes	mg/kg	2,800	0.012 U	**0.013 J**	**0.032**	**0.005 J**	**234**	**0.0057 J**	**0.09**	**0.024**	**0.025**	0.013 U	0.013 U	0.012 U	0.011 U	**0.011 J**	**0.018**	**0.0081 J**
Semi-Volatile Organic Compounds^																		
1,1-Biphenyl	mg/kg	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	N/A	N/A	N/A	N/A
2,4-Dimethylphenol	mg/kg	16,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	mg/kg	3,000	**0.0069 J**	**0.02**	**0.007 J**	**0.0046 J**	**403**	**0.028**	**0.72**	**12**	**0.011**	0.0077 U	**0.0043 J**	**0.0044 J**	**0.0046 J**	**0.7**	**0.006 J**	**0.014**
2-Methylphenol	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	45,000	**0.0034 J**	**0.0079 J**	**0.0021 J**	**0.0028 J**	**60.8**	**0.039**	**0.16**	**17**	**0.0056 J**	0.0077 U	**0.015**	**0.0082**	**0.011**	**0.23**	0.0078 U	**0.012**
Acenaphthylene	mg/kg	45,000	0.0085 U	**0.022**	**0.0022 J**	**0.0074 J**	**102**	**0.05**	**0.25**	**98.7**	**0.017**	0.0077 U	**0.012**	**0.01**	**0.01**	**0.39**	0.0078 U	**0.0084**
Acetophenone	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	mg/kg	230,000	**0.0023 J**	**0.042**	**0.0061 J**	**0.018**	**695**	**0.076**	**1.5**	**385**	**0.037**	0.0077 U	**0.015**	**0.016**	**0.024**	**1.1**	**0.0014 J**	**0.054**
Benz[a]anthracene	mg/kg	21	**0.0044 J**	**0.069**	**0.01**	**0.034**	**495**	**0.054**	**1.4**	**691**	**0.075**	0.0077 U	**0.033**	**0.017**	**0.053**	**2.7**	**0.0038 J**	**0.058**
Benzaldehyde	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[a]pyrene	mg/kg	2.1	**0.013**	**0.074**	**0.0096**	**0.035**	**316**	**0.082**	**0.91**	**675**	**0.078**	0.0077 U	**0.037**	**0.024**	**0.047**	**2.2**	**0.002 J**	**0.048**
Benzo[b]fluoranthene	mg/kg	21	**0.011**	**0.12**	**0.013**	**0.047**	**481**	**0.13**	**1.5**	**869**	**0.11**	0.0077 U	**0.039**	**0.026**	**0.061**	**3.4**	**0.0028 J**	**0.06**
Benzo[g,h,i]perylene	mg/kg		**0.0023 J**	**0.038**	**0.0049 J**	**0.017**	**148**	**0.12**	**0.3**	**157**	**0.038**	0.0077 U	**0.02**	**0.011**	**0.014**	**0.88**	0.0078 U	**0.023**
Benzo[k]fluoranthene	mg/kg	210	**0.0025 J**	**0.036**	**0.0046 J**	**0.016**	**172**	**0.11**	**0.54**	**394**	**0.037**	0.0077 U	**0.014**	**0.0086**	**0.027**	**1**	**0.0015 J**	**0.032**
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Caprolactam	mg/kg	400,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	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	N/A	N/A	N/A	N/A
Chrysene	mg/kg	2,100	**0.0057 J**	**0.06**	**0.0079 J**	**0.029**	**396**	**0.044**	**1.1**	**614**	**0.063**	**0.00048 J**	**0.032**	**0.017**	**0.045**	**2.3**	**0.0023 J**	**0.056**
Dibenz[a,h]anthracene	mg/kg	2.1	0.0085 U	**0.012**	0.0082 U	**0.0056 J**	**50**	**0.023**	**0.11**	**80.1**	**0.012**	0.0077 U	**0.0042 J**	**0.003 J**	**0.0062 J**	**0.4**	0.0078 U	**0.0073 J**
Diethylphthalate	mg/kg	660,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	mg/kg	30,000	**0.012**	**0.17**	**0.022**	**0.074**	**1,600**	**0.14**	**5.1**	**2,540**	**0.17**	**0.0017 J**	**0.064**	**0.036**	**0.12**	**6.8**	**0.0078 J**	**0.17**
Fluorene	mg/kg	30,000	**0.0058 J**	**0.032**	**0.0057 J**	**0.01**	**732**	**0.095**	**1.7**	**157**	**0.023**	0.0077 U	**0.012**	**0.012**	**0.016**	**2.1**	**0.0022 J**	**0.033**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.0022 J**	**0.037**	**0.0046 J**	**0.017**	**153**	**0.085**	**0.33**	**308**	**0.035**	0.0077 U	**0.013**	**0.0086**	**0.014**	**0.97**	0.0078 U	**0.023**
Naphthalene	mg/kg	8.6	**0.022**	**0.3**	**0.44**	**0.14**	**5,660**	**0.21**	**6.7**	**169**	**0.84**	**0.002 J**	**0.025**	**0.02**	**0.018**	**9**	**0.19**	**0.19**
N-Nitrosodiphenylamine	mg/kg	470	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phenanthrene	mg/kg		**0.021**	**0.14**	**0.02**	**0.057**	**4,380**	**0.23**	**7.4**	**1,120**	**0.12**	**0.0016 J**	**0.06**	**0.037**	**0.064**	**7.2**	**0.0072 J**	**0.16**
Phenol	mg/kg	250,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	mg/kg	23,000	**0.0092**	**0.13**	**0.017**	**0.057**	**1,030**	**0.099**	**3.3**	**1,380**	**0.14**	**0.0013 J**	**0.072**	**0.028**	**0.092**	**4.8**	**0.0057 J**	**0.12**
PCBs																		
Aroclor 1248	mg/kg	0.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aroclor 1254	mg/kg	0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aroclor 1260	mg/kg	0.99	N/A	N/A	N/A	N/A	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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TPH/Oil and Grease																		
Diesel Range Organics	mg/kg	6,200	**43.1**	**40.8**	**9.5**	**5.6 J**	**21,300**	**19.7**	**138**	**20,000**	**15.9**	**2 J**	**22.9**	**126**	**672**	**40.1**	**4 J**	**10.6**
Gasoline Range Organics	mg/kg	6,200	13.1 U	14.7 U	10.2 U	9.2 U	**2,560**	10.2 U	**16.7**	**11.3**	10 U	8.8 U	13 U	8.4 U	9.9 U	9.1 U	9.6 U	9.2 U
Oil and Grease	mg/kg	6,200	**623**	**1,280**	**695**	**654**	**43,800**	**240**	**436**	**13,800**	**652**	**736**	**267 J**	**1,070**	**2,870**	**858**	**295**	**682**

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

N/A indicates that the parameter was not analyzed for this sample
* Non-validated data

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.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
UJ: This analye was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

Table 1 - Sub-Parcel A11-2
Summary of Organics Detected in Soil

Parameter	Units	PAL	A11-024D-SB-5* 6/13/2018	A11-024D-SB-10* 6/13/2018	A11-024EE-SB-5* 8/22/2018	A11-024EE-SB-10* 8/22/2018	A11-024EE-SB-15* 8/22/2018	A11-024E-SB-5* 6/13/2018	A11-024E-SB-10* 6/13/2018	A11-024E-SB-15* 6/13/2018	A11-024FF-SB-4.5* 8/22/2018	A11-024F-SB-5* 6/14/2018	A11-024F-SB-10* 6/14/2018	A11-024GG-SB-1* 8/22/2018	A11-024GG-SB-5* 8/22/2018	A11-024G-SB-5* 6/14/2018	A11-024G-SB-10* 6/14/2018	A11-024G-SB-15* 6/14/2018
Volatile Organic Compounds																		
1,1-Dichloroethane	mg/kg	16	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	0.0047 U	0.0055 U	0.0059 U	0.0053 U	0.0042 U	0.0046 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	0.0047 U	0.0055 U	0.0059 U	0.0053 U	0.0042 U	0.0046 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.014 U	0.0081 U	0.019 U	0.0099 U	0.009 U	0.0082 U	0.0087 U	0.0085 U	0.011 U	0.013 U	0.0094 U	0.011 U	0.012 U	0.0082 U	0.0084 U	0.0092 U
2-Butanone (MEK)	mg/kg	190,000	0.014 U	0.0081 U	0.019 U	0.0099 U	0.009 U	0.0082 U	0.0087 U	0.0085 U	0.011 U	0.013 U	0.0094 U	0.011 U	0.012 U	0.011 U	0.0084 U	0.0092 U
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.014 U	0.0081 U	0.019 U	0.0099 U	0.009 U	0.0082 U	0.0087 U	0.0085 U	0.011 U	0.013 U	0.0094 U	0.011 U	0.012 U	0.011 U	0.0084 U	0.0092 U
Acetone	mg/kg	670,000	**0.012 J**	0.0081 U	0.019 U	**0.017**	0.009 U	**0.037**	**0.01**	**0.018**	0.011 U	**0.084**	**0.074**	**0.016**	**0.072**	**0.16**	**0.081**	**0.16**
Benzene	mg/kg	5.1	0.0068 U	0.004 U	0.0097 U	**0.0034 J**	**0.0038 J**	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	**0.0017 J**	0.0055 U	0.0059 U	**0.36**	**32.7**	**40.6**
Carbon disulfide	mg/kg	3,500	**0.0038 J**	**0.0025 J**	0.0097 U	0.0049 U	0.0045 U	0.0041 U	**0.0025 J**	**0.002 J**	0.0056 U	0.0067 U	**0.002 J**	0.0055 U	0.0059 U	**0.005 J**	**0.0046**	**0.0049**
Chloroform	mg/kg	1.4	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	0.0047 U	0.0055 U	0.0059 U	0.0053 U	0.0042 U	0.0046 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	0.0047 U	0.0055 U	0.0059 U	0.0053 U	0.0042 U	0.0046 U
Cyclohexane	mg/kg	27,000	0.014 U	0.0081 U	0.019 U	0.0099 U	0.009 U	0.0082 U	0.0087 U	0.0085 U	0.011 U	0.013 U	0.0094 U	0.011 U	0.012 U	0.011 U	0.0084 U	0.0092 U
Ethylbenzene	mg/kg	25	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	0.0047 U	0.0055 U	0.0059 U	0.0053 U	**0.0096**	**0.0066**
Isopropylbenzene	mg/kg	9,900	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	0.0047 U	0.0055 U	0.0059 U	0.0053 U	0.0042 U	0.0046 U
Methyl Acetate	mg/kg	1,200,000	**0.0056 J**	0.04 U	0.097 U	0.049 U	0.045 U	**0.0013 J**	0.044 U	0.042 U	0.056 U	**0.068**	**0.18**	0.055 U	0.059 U	**0.0099 J**	**0.009 J**	**0.0048 J**
Methylene Chloride	mg/kg	1,000	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	0.0047 U	0.0055 U	**0.028**	0.0053 U	0.0042 U	0.0046 U
Styrene	mg/kg	35,000	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	0.0047 U	0.0055 U	0.0059 U	0.0053 U	0.0042 U	0.0046 U
Tetrachloroethene	mg/kg	100	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	0.0047 U	0.0055 U	0.0059 U	0.0053 U	0.0042 U	0.0046 U
Toluene	mg/kg	47,000	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	**0.0015 J**	0.0055 U	0.0059 U	**0.0072**	**0.32**	**2 J**
trans-1,2-Dichloroethene	mg/kg	23,000	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	0.0047 U	0.0055 U	0.0059 U	0.0053 U	0.0042 U	0.0046 U
Trichloroethene	mg/kg	6	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	0.0047 U	0.0055 U	0.0059 U	0.0053 U	0.0042 U	0.0046 U
Vinyl chloride	mg/kg	1.7	0.0068 U	0.004 U	0.0097 U	0.0049 U	0.0045 U	0.0041 U	0.0044 U	0.0042 U	0.0056 U	0.0067 U	0.0047 U	0.0055 U	0.0059 U	0.0053 U	0.0042 U	0.0046 U
Xylenes	mg/kg	2,800	0.02 U	0.012 U	0.029 U	0.015 U	0.013 U	0.012 U	0.013 U	0.013 U	0.017 U	0.02 U	0.014 U	0.016 U	0.018 U	**0.059**	**0.46**	**0.33**
Semi-Volatile Organic Compounds^																		
1,1-Biphenyl	mg/kg	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	N/A	N/A	N/A	N/A
2,4-Dimethylphenol	mg/kg	16,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	mg/kg	3,000	**0.021**	**0.0044 J**	**0.094**	0.0078 U	**0.0033 J**	**0.024**	**0.14**	**0.3**	**0.18**	**0.13**	**0.059**	**0.079**	**0.01**	**0.22**	**0.065**	**0.1**
2-Methylphenol	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	45,000	**0.056**	**0.0045 J**	**0.097**	**0.0021 J**	**0.0027 J**	**0.11**	**0.16**	**0.093**	**1.2**	**0.037**	**0.02**	**0.45**	**0.004 J**	**0.081**	**0.011**	**0.027**
Acenaphthylene	mg/kg	45,000	**0.013**	**0.0062 J**	**0.13**	**0.011**	**0.039**	**0.16**	**0.044**	**0.067**	**0.26**	**0.096**	**0.031**	**0.027**	0.008 U	**0.57**	**0.0086**	**0.033**
Acetophenone	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	mg/kg	230,000	**0.081**	**0.0076 J**	**0.86**	**0.032**	**0.083**	**0.71**	**0.43**	**0.21**	**1.1**	**0.15**	**0.091**	**0.22**	**0.0037 J**	**2.2**	**0.08**	**0.31**
Benz[a]anthracene	mg/kg	21	**0.28**	**0.024**	**3.6**	**0.091**	**0.28**	**2.2**	**0.77**	**0.77**	**5.7**	**0.44**	**0.25**	**2.3**	**0.0084**	**3.7**	**0.065**	**0.28**
Benzaldehyde	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[a]pyrene	mg/kg	2.1	**0.29**	**0.028**	**3.1**	**0.08**	**0.23**	**1.4**	**0.58**	**0.79**	**11.2**	**0.39**	**0.24**	**5.3**	**0.0095**	**3.1**	**0.041**	**0.19**
Benzo[b]fluoranthene	mg/kg	21	**0.36**	**0.045**	**4.4**	**0.18**	**0.4**	**2.7**	**0.85**	**1.1**	**11.5**	**0.74**	**0.46**	**6.4**	**0.012**	**7.3**	**0.083**	**0.37**
Benzo[g,h,i]perylene	mg/kg		**0.12**	**0.0091**	**1.2**	**0.048**	**0.13**	**0.5**	**0.2**	**0.31**	**5.6**	**0.12**	**0.06**	**1.3**	**0.0063 J**	**0.8**	**0.021**	**0.097**
Benzo[k]fluoranthene	mg/kg	210	**0.17**	**0.035**	**1.4**	**0.16**	**0.15**	**0.95**	**0.3**	**0.48**	**5.4**	**0.57**	**0.34**	**2.5**	**0.0054 J**	**5.6**	**0.059**	**0.27**
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Caprolactam	mg/kg	400,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	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	N/A	N/A	N/A	N/A
Chrysene	mg/kg	2,100	**0.23**	**0.018**	**3**	**0.085**	**0.26**	**1.3**	**0.62**	**0.71**	**5**	**0.36**	**0.25**	**2.3**	**0.011**	**3.2**	**0.052**	**0.24**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.047**	**0.0026 J**	**0.57**	**0.015**	**0.048**	**0.21**	**0.082**	**0.13**	**2.1**	**0.052**	**0.027**	**0.77**	**0.0018 J**	**0.31**	**0.0063 J**	**0.03**
Diethylphthalate	mg/kg	660,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	mg/kg	30,000	**0.46**	**0.049**	**7.4**	**0.23**	**0.65**	**3.9**	**2.1**	**1.2**	**6.8**	**0.85**	**0.44**	**2.2**	**0.019**	**9**	**0.23**	**0.88**
Fluorene	mg/kg	30,000	**0.038**	**0.0048 J**	**0.16**	**0.0091**	**0.022**	**0.18**	**0.22**	**0.12**	**0.75**	**0.068**	**0.063**	**0.085**	**0.0041 J**	**0.9**	**0.12**	**0.34**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.12**	**0.008**	**1.3**	**0.047**	**0.13**	**0.58**	**0.21**	**0.31**	**5.6**	**0.12**	**0.068**	**2.3**	**0.0056 J**	**0.91**	**0.021**	**0.099**
Naphthalene	mg/kg	8.6	**0.07**	**0.011**	**0.27**	**0.0087**	**0.02**	**0.086**	**0.54**	**0.35**	**0.32**	**0.55**	**0.37**	**0.18**	**0.14**	**1.1**	**2.1**	**0.8**
N-Nitrosodiphenylamine	mg/kg	470	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phenanthrene	mg/kg		**0.24**	**0.031**	**4.6**	**0.088**	**0.24**	**1.7**	**1.5**	**0.71**	**5.2**	**0.68**	**0.33**	**0.8**	**0.017**	**5.9**	**0.42**	**1.4**
Phenol	mg/kg	250,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	mg/kg	23,000	**0.38**	**0.035**	**5.7**	**0.17**	**0.5**	**3.4**	**1.4**	**1.1**	**6.3**	**0.66**	**0.36**	**2.1**	**0.016**	**6.5**	**0.14**	**0.58**
PCBs																		
Aroclor 1248	mg/kg	0.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aroclor 1254	mg/kg	0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aroclor 1260	mg/kg	0.99	N/A	N/A	N/A	N/A	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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TPH/Oil and Grease																		
Diesel Range Organics	mg/kg	6,200	**190**	**21.9**	**83.8**	**20.2**	**15.1**	**27**	**65.2**	**275**	**134**	**274**	**587**	**269**	**38.9**	**243**	**16.9**	**26.7**
Gasoline Range Organics	mg/kg	6,200	9.6 U	8.9 U	17.1 U	11.6 U	13.5 U	9.5 U	9.1 U	10.2 U	15.3 U	12.7 U	11.8 U	8.3 U	11 U	7.6 U	**64.3**	**78.4**
Oil and Grease	mg/kg	6,200	**558**	**578**	**462**	**582**	**521**	**272**	**1,420**	**1,880**	**1,500**	**2,890**	**3,020**	**1,410**	**1,560**	**646**	**509**	**538**

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

N/A indicates that the parameter was not analyzed for this sample
* Non-validated data

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.

B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
UJ: This analye was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

Table 1 - Sub-Parcel A11-2
Summary of Organics Detected in Soil

Parameter	Units	PAL	A11-024HH-SB-4*	A11-024H-SB-5*	A11-024H-SB-10*	A11-024H-SB-15*	A11-024II-SB-4*	A11-024I-SB-5*	A11-024I-SB-10*	A11-024I-SB-15*	A11-024J-SB-5*	A11-024J-SB-10*	A11-024KK-SB-4.5*	A11-024K-SB-5*	A11-024K-SB-10*	A11-024L-SB-3*	A11-024L-SB-5*	A11-024L-SB-10*	A11-024MM-SB-4*
			8/23/2018	6/14/2018	6/14/2018	6/14/2018	8/23/2018	6/14/2018	6/14/2018	6/14/2018	6/15/2018	6/15/2018	8/23/2018	6/15/2018	6/15/2018	6/15/2018	6/15/2018	6/15/2018	8/23/2018
Volatile Organic Compounds																			
1,1-Dichloroethane	mg/kg	16	0.007 U	0.0068 U	0.0043 U	0.004 U	0.0041 U	0.0044 U	0.0038 U	0.0043 U	0.0053 U	0.0042 U	0.0057 U	0.0057 U	0.0053 U	0.005 U	0.0049 U	0.0043 U	0.0054 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.007 U	0.0068 U	0.0043 U	0.004 U	0.0041 U	0.0044 U	0.0038 U	0.0043 U	0.0053 U	0.0042 U	0.0057 U	0.0057 U	0.0053 U	0.005 U	0.0049 U	0.0043 U	0.0054 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.014 U	0.014 U	0.0086 U	0.0081 U	0.0081 U	0.0087 U	0.0076 U	0.0085 U	0.011 U	0.0083 U	0.011 U	0.011 U	0.011 U	0.01 U	0.0098 U	0.0086 U	0.011 U
2-Butanone (MEK)	mg/kg	190,000	0.014 U	**0.017**	0.0086 U	0.0081 U	0.0081 U	**0.0056 J**	0.0076 U	0.0085 U	0.011 U	**0.0066 J**	**0.0099 J**	0.011 U	**0.011**	0.01 U	**0.0046 J**	**0.0043 J**	0.011 U
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.014 U	0.014 U	0.0086 U	0.0081 U	0.0081 U	0.0087 U	0.0076 U	0.0085 U	0.011 U	0.0083 U	0.011 U	0.011 U	0.011 U	0.01 U	0.0098 U	0.0086 U	0.011 U
Acetone	mg/kg	670,000	0.014 U	**0.26**	**0.098**	**0.034**	0.0081 U	**0.18**	**0.025**	**0.072**	**0.14**	**0.11**	**0.024**	**0.27**	**0.35**	**0.11**	**0.19**	**0.11**	**0.0071 J**
Benzene	mg/kg	5.1	0.007 U	**16.8**	**1.1**	**0.96**	0.0041 U	**0.013**	**0.034**	**0.0024 J**	0.0053 U	**48.4**	**0.42**	**0.0047 J**	**14.5**	0.005 U	**0.0024 J**	**0.02**	0.0054 U
Carbon disulfide	mg/kg	3,500	0.007 U	0.0068 U	0.0043 U	0.004 U	0.0041 U	0.0044 U	**0.0042**	0.0043 U	**0.0035 J**	0.0042 U	**0.015**	**0.0034 J**	**0.0029 J**	0.005 U	0.0049 U	**0.0024 J**	**0.0036 J**
Chloroform	mg/kg	1.4	0.007 U	0.0068 U	0.0043 U	0.004 U	0.0041 U	0.0044 U	0.0038 U	0.0043 U	0.0053 U	0.0042 U	0.0057 U	0.0057 U	0.0053 U	0.005 U	0.0049 U	0.0043 U	0.0054 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.007 U	0.0068 U	0.0043 U	0.004 U	0.0041 U	0.0044 U	0.0038 U	0.0043 U	0.0053 U	0.0042 U	0.0057 U	0.0057 U	0.0053 U	0.005 U	0.0049 U	0.0043 U	0.0054 U
Cyclohexane	mg/kg	27,000	0.014 U	0.014 U	0.0086 U	0.0081 U	0.0081 U	0.0087 U	0.0076 U	0.0085 U	0.011 U	**0.0025 J**	**0.0074 J**	0.011 U	0.011 U	0.01 U	0.0098 U	0.0086 U	0.011 U
Ethylbenzene	mg/kg	25	0.007 U	**0.013**	0.0043 U	0.004 U	0.0041 U	0.0044 U	**0.0046**	0.0043 U	0.0053 U	**0.013**	**0.0025 J**	0.0057 U	**0.013**	0.005 U	0.0049 U	0.0043 U	0.0054 U
Isopropylbenzene	mg/kg	9,900	0.007 U	0.0068 U	0.0043 U	0.004 U	0.0041 U	0.0044 U	0.0038 U	0.0043 U	0.0053 U	**0.0015 J**	**0.003 J**	0.0057 U	**0.0035 J**	0.005 U	0.0049 U	0.0043 U	0.0054 U
Methyl Acetate	mg/kg	1,200,000	0.07 U	**0.04 J**	**0.015 J**	**0.0025 J**	0.041 U	0.044 U	0.038 U	**0.0086 J**	**0.041 J**	**0.0097 J**	0.057 U	0.057 U	**0.016 J**	**0.0071 J**	0.049 U	**0.0089 J**	0.054 U
Methylene Chloride	mg/kg	1,000	0.007 U	0.0068 U	0.0043 U	0.004 U	0.0041 U	0.0044 U	0.0038 U	0.0043 U	0.0053 U	0.0042 U	0.0057 U	0.0057 U	0.0053 U	0.005 U	0.0049 U	0.0043 U	0.0054 U
Styrene	mg/kg	35,000	0.007 U	**0.019**	0.0043 U	0.004 U	0.0041 U	0.0044 U	0.0038 U	0.0043 U	0.0053 U	0.0042 U	0.0057 U	0.0057 U	0.0053 U	0.005 U	0.0049 U	0.0043 U	0.0054 U
Tetrachloroethene	mg/kg	100	0.007 U	0.0068 U	0.0043 U	0.004 U	0.0041 U	0.0044 U	0.0038 U	0.0043 U	0.0053 U	0.0042 U	0.0057 U	0.0057 U	0.0053 U	0.005 U	0.0049 U	0.0043 U	0.0054 U
Toluene	mg/kg	47,000	0.007 U	**11.8**	**0.031**	**0.018**	0.0041 U	**0.0034 J**	0.0038 U	0.0043 U	**0.0016 J**	**0.013**	**0.014**	0.0057 U	**0.027**	0.005 U	0.0049 U	0.0043 U	**0.0017 J**
trans-1,2-Dichloroethene	mg/kg	23,000	0.007 U	0.0068 U	0.0043 U	0.004 U	0.0041 U	0.0044 U	0.0038 U	0.0043 U	0.0053 U	0.0042 U	0.0057 U	0.0057 U	0.0053 U	0.005 U	0.0049 U	0.0043 U	0.0054 U
Trichloroethene	mg/kg	6	0.007 U	0.0068 U	0.0043 U	0.004 U	0.0041 U	0.0044 U	0.0038 U	0.0043 U	0.0053 U	0.0042 U	0.0057 U	0.0057 U	0.0053 U	0.005 U	0.0049 U	0.0043 U	0.0054 U
Vinyl chloride	mg/kg	1.7	0.007 U	0.0068 U	0.0043 U	0.004 U	0.0041 U	0.0044 U	0.0038 U	0.0043 U	0.0053 U	0.0042 U	0.0057 U	0.0057 U	0.0053 U	0.005 U	0.0049 U	0.0043 U	0.0054 U
Xylenes	mg/kg	2,800	0.021 U	**0.51**	**0.029**	**0.021**	0.012 U	**0.004 J**	0.011 U	0.013 U	0.016 U	**0.087**	**0.019**	0.017 U	**0.22**	0.015 U	0.015 U	0.013 U	0.016 U
Semi-Volatile Organic Compounds^																			
1,1-Biphenyl	mg/kg	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	N/A	N/A	N/A	N/A	N/A
2,4-Dimethylphenol	mg/kg	16,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	mg/kg	3,000	**0.075**	**763**	**0.021**	**0.1**	**0.0055 J**	**0.19**	**0.0067 J**	**0.0061 J**	**0.0043 J**	**1**	**0.3**	**0.028**	**32.7**	**0.039**	**0.027**	**0.036**	**0.78**
2-Methylphenol	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	45,000	**0.028**	**541**	**0.0065 J**	**0.036**	**0.0063 J**	**0.16**	**0.0015 J**	**0.0024 J**	**0.0012 J**	**2.3**	**0.31**	**0.022**	**36**	**0.026**	**0.0064 J**	**0.43**	**0.97**
Acenaphthylene	mg/kg	45,000	**0.018**	**950**	**0.03**	**0.082**	**0.009**	**0.16**	0.0074 U	0.008 U	**0.0014 J**	**5.6**	**0.12**	**0.0029 J**	**94.3**	**0.036**	**0.0042 J**	**0.17**	**3.3**
Acetophenone	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	mg/kg	230,000	**0.032**	**3,820**	**0.077**	**0.2**	**0.015**	**0.51**	**0.0059 J**	**0.009**	**0.0049 J**	**15.8**	**0.35**	**0.024**	**601**	**0.1**	**0.007 J**	**0.44**	**6.1**
Benz[a]anthracene	mg/kg	21	**0.13**	**4,330**	**0.094**	**0.23**	**0.028**	**1**	**0.0058 J**	**0.0086**	**0.0074 J**	**26.8**	**1.3**	**0.031**	**596**	**0.36**	**0.0067 J**	**0.92**	**11**
Benzaldehyde	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[a]pyrene	mg/kg	2.1	**0.12**	**3,880**	**0.078**	**0.19**	**0.045**	**0.94**	**0.0032 J**	**0.0038 J**	**0.0056 J**	**13.2**	**1.4**	**0.041**	**412**	**0.31**	**0.0035 J**	**0.74**	**11.1**
Benzo[b]fluoranthene	mg/kg	21	**0.25**	**7,820**	**0.14**	**0.25**	**0.087**	**2.3**	**0.0068 J**	**0.01**	**0.012**	**26.1**	**3.5**	**0.058**	**689**	**0.49**	**0.0078 J**	**0.94**	**25.2**
Benzo[g,h,i]perylene	mg/kg		**0.058**	**648**	**0.037**	**0.094**	**0.021**	**0.26**	**0.0018 J**	**0.0024 J**	**0.0043 J**	**3.3**	**0.56**	**0.041**	**192**	**0.09**	**0.002 J**	**0.34**	**3.3**
Benzo[k]fluoranthene	mg/kg	210	**0.23**	**6,030**	**0.099**	**0.081**	**0.079**	**1.5**	**0.0047 J**	**0.0072 J**	**0.0084**	**7**	**3.2**	**0.02**	**230**	**0.13**	**0.0055 J**	**0.31**	**8.2**
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Caprolactam	mg/kg	400,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	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	N/A	N/A	N/A	N/A	N/A
Chrysene	mg/kg	2,100	**0.28**	**3,120**	**0.068**	**0.17**	**0.028**	**0.8**	**0.0039 J**	**0.0066 J**	**0.0049 J**	**12.5**	**1.6**	**0.035**	**499**	**0.3**	**0.004 J**	**0.64**	**9.7**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.013**	**256**	**0.011**	**0.029**	**0.0067 J**	**0.096**	0.0074 U	0.008 U	0.0076 U	**1.5**	**0.17**	**0.0094**	**64.1**	**0.039**	0.0094 U	**0.12**	**1.3**
Diethylphthalate	mg/kg	660,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	mg/kg	30,000	**0.36**	**10,100**	**0.23**	**0.59**	**0.037**	**2.1**	**0.016**	**0.026**	**0.017**	**80.1**	**2.7**	**0.077**	**1,790**	**0.66**	**0.015**	**2.5**	**36**
Fluorene	mg/kg	30,000	**0.029**	**2,640**	**0.052**	**0.18**	**0.0023 J**	**0.37**	**0.0097**	**0.013**	**0.0058 J**	**40.5**	**0.37**	**0.012**	**358**	**0.032**	**0.011**	**0.059**	**3.2**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.035**	**701**	**0.038**	**0.089**	**0.017**	**0.26**	**0.0016 J**	**0.0024 J**	**0.0036 J**	**3.9**	**0.52**	**0.031**	**208**	**0.1**	**0.0018 J**	**0.36**	**3.5**
Naphthalene	mg/kg	8.6	**0.62**	**10,200**	**0.38**	**1.5**	**0.012**	**1.3**	**0.098**	**0.068**	**0.039**	**9.5**	**0.31**	**0.37**	**416**	**0.16**	**0.55**	**0.59**	**3.8**
N-Nitrosodiphenylamine	mg/kg	470	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phenanthrene	mg/kg		**0.16**	**11,600**	**0.25**	**0.75**	**0.027**	**1.9**	**0.028**	**0.046**	**0.022**	**116**	**2.1**	**0.12**	**3,350**	**0.44**	**0.023**	**0.36**	**15.3**
Phenol	mg/kg	250,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	mg/kg	23,000	**0.47**	**7,420**	**0.17**	**0.43**	**0.038**	**2.1**	**0.011**	**0.015**	**0.012**	**54.9**	**2.6**	**0.063**	**1,240**	**0.57**	**0.011**	**1.5**	**28.7**
PCBs																			
Aroclor 1248	mg/kg	0.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aroclor 1254	mg/kg	0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aroclor 1260	mg/kg	0.99	N/A	N/A	N/A	N/A	N/A	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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TPH/Oil and Grease																			
Diesel Range Organics	mg/kg	6,200	**470**	**28,900**	**13**	**31.1**	**43.3**	**166**	**4.9 J**	**5.8 J**	**22.5**	**1,540**	**2,830**	**21.9**	**6,720**	**123**	**8.7 J**	**113**	**593**
Gasoline Range Organics	mg/kg	6,200	15.1 U	**95.5**	8.8 U	9.1 U	10.2 U	14.8 U	8 U	10.1 U	12.2 U	**99.6**	**14.9**	6.9 U	**38.4**	9.9 U	10.4 U	8.4 U	9.5 U
Oil and Grease	mg/kg	6,200	**6,290**	**44,100**	**394**	**361**	**1,350**	**1,040**	**823**	**443**	**213**	**2,010**	**14,300**	**511**	**9,720**	**1,270**	**748**	**615**	**813**

Detections in bold
Values in red indicate an exceedance of the Project Action Limit (PAL)
N/A indicates that the parameter was not analyzed for this sample
* Non-validated data

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.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
UJ: This analye was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

Table 1 - Sub-Parcel A11-2
Summary of Organics Detected in Soil

Parameter	Units	PAL	A11-024M-SB-5*	A11-024M-SB-10*	A11-024M-SB-15*	A11-024N-SB-2*	A11-024OO-SB-5*	A11-024O-SB-3*	A11-024P-SB-5*	A11-024P-SB-10*	A11-024P-SB-15*	A11-024Q-SB-5*	A11-024Q-SB-10*	A11-024Q-SB-15*	A11-024-SB-1*	A11-024-SB-5*	A11-024-SB-9*	A11-024-SB-10*	A11-024-SB-10*	A11-024-SB-15*
			6/15/2018	6/15/2018	6/15/2018	8/8/2018	8/23/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2018	8/9/2016	6/14/2018	8/9/2016	6/14/2018	8/9/2016	6/14/2018
Volatile Organic Compounds																				
1,1-Dichloroethane	mg/kg	16	0.0056 U	0.006 U	0.4 U	0.0044 U	0.0051 U	0.0052 U	0.0045 U	0.0049 U	0.0043 U	0.0054 U	3.3 U	2.8 U	0.0079 U	0.0046 U	0.006 U	0.0049 U	N/A	0.0054 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.0056 U	0.006 U	0.4 U	0.0044 U	0.0051 U	0.0052 U	0.0045 U	0.0049 U	0.0043 U	0.0054 U	3.3 U	2.8 U	0.0079 U	0.0046 U	0.006 U	0.0049 U	N/A	0.0054 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.011 U	0.012 U	0.81 U	0.0087 U	0.01 U	0.01 U	0.009 U	0.0098 U	0.0085 U	0.011 U	6.5 U	5.7 U	0.016 U	0.0092 U	0.012 U	0.0098 U	N/A	0.011 U
2-Butanone (MEK)	mg/kg	190,000	0.011 U	0.012 U	0.81 U	0.0087 U	**0.0031 J**	**0.027**	**0.016**	**0.013**	**0.0096**	0.011 U	6.5 U	5.7 U	0.016 U	0.0092 U	**0.014**	**0.011**	N/A	0.011 U
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.011 U	0.012 U	0.81 U	0.0087 U	0.01 U	0.01 U	0.009 U	0.0098 U	0.0085 U	0.011 U	6.5 U	5.7 U	0.016 U	0.0092 U	0.012 U	0.0098 U	N/A	0.011 U
Acetone	mg/kg	670,000	**0.026**	**0.19**	0.81 U	**0.17**	**0.023**	0.64 U	0.51 U	0.77 U	**0.046**	**0.25**	6.5 U	5.7 U	0.016 U	**0.12**	**0.068**	0.65 U	N/A	**0.1**
Benzene	mg/kg	5.1	0.0056 U	**12.1**	**588**	0.0044 U	**0.02**	**0.055**	0.0045 U	**0.028**	**0.0078**	**0.0027 J**	**551**	**170**	**0.0038 J**	0.0046 U	**51.9**	**7.4**	**19.1**	**1.9**
Carbon disulfide	mg/kg	3,500	**0.0029 J**	0.006 U	**0.67**	0.0044 U	**0.0034 J**	**0.012**	0.0045 U	**0.0022 J**	0.0043 U	0.0054 U	3.3 U	2.8 U	0.0079 U	0.0046 U	**0.016**	**0.013**	N/A	0.0054 U
Chloroform	mg/kg	1.4	0.0056 U	0.006 U	0.4 U	0.0044 U	0.0051 U	0.0052 U	0.0045 U	0.0049 U	0.0043 U	0.0054 U	3.3 U	2.8 U	0.0079 U	0.0046 U	0.006 U	0.0049 U	N/A	0.0054 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.0056 U	0.006 U	0.4 U	0.0044 U	0.0051 U	0.0052 U	0.0045 U	0.0049 U	0.0043 U	0.0054 U	3.3 U	2.8 U	0.0079 U	0.0046 U	0.006 U	0.0049 U	N/A	0.0054 U
Cyclohexane	mg/kg	27,000	0.011 U	0.012 U	**0.21 J**	0.0087 U	0.01 U	0.01 U	0.009 U	0.0098 U	0.0085 U	0.011 U	6.5 U	5.7 U	0.016 U	0.0092 U	**0.012**	**0.012**	N/A	0.011 U
Ethylbenzene	mg/kg	25	0.0056 U	**0.0033 J**	**3.8**	0.0044 U	**0.022**	0.0052 U	0.0045 U	**0.0022 J**	0.0043 U	0.0054 U	**1.6 J**	2.8 U	0.0079 U	0.0046 U	**0.081**	**0.094**	N/A	**0.0051 J**
Isopropylbenzene	mg/kg	9,900	0.0056 U	0.006 U	**1.1**	0.0044 U	**0.064**	0.0052 U	0.0045 U	0.0049 U	0.0043 U	0.0054 U	3.3 U	2.8 U	0.0079 U	0.0046 U	**0.015**	**0.025**	N/A	0.0054 U
Methyl Acetate	mg/kg	1,200,000	0.056 U	**0.058 J**	**0.33 J**	0.044 U	0.051 U	**0.087**	**0.043 J**	**0.0027 J**	0.043 U	0.054 U	32.5 U	28.3 U	0.079 U	**0.26**	0.06 U	**0.066**	N/A	**0.012 J**
Methylene Chloride	mg/kg	1,000	0.0056 U	0.006 U	0.4 U	0.0044 U	0.0051 U	0.0052 U	0.0045 U	0.0049 U	0.0043 U	0.0054 U	3.3 U	**2.7 J**	0.0079 U	0.0046 U	0.006 U	0.0049 U	N/A	0.0054 U
Styrene	mg/kg	35,000	0.0056 U	**0.0041 J**	0.4 U	0.0044 U	0.0051 U	0.0052 U	0.0045 U	0.0049 U	0.0043 U	0.0054 U	3.3 U	2.8 U	0.0079 U	0.0046 U	**0.0039 J**	0.0049 U	N/A	0.0054 U
Tetrachloroethene	mg/kg	100	0.0056 U	0.006 U	0.4 U	0.0044 U	0.0051 U	0.0052 U	0.0045 U	0.0049 U	0.0043 U	0.0054 U	3.3 U	2.8 U	0.0079 U	0.0046 U	0.006 U	0.0049 U	N/A	0.0054 U
Toluene	mg/kg	47,000	0.0056 U	**0.12**	**207**	0.0044 U	**0.3**	**0.0092**	0.0045 U	**0.053**	0.0043 U	0.0054 U	**67.8**	**31.6**	0.0079 U	0.0046 U	**14.7**	**2**	N/A	**0.0022 J**
trans-1,2-Dichloroethene	mg/kg	23,000	0.0056 U	0.006 U	0.4 U	0.0044 U	0.0051 U	0.0052 U	0.0045 U	0.0049 U	0.0043 U	0.0054 U	3.3 U	2.8 U	0.0079 U	0.0046 U	0.006 U	0.0049 U	N/A	0.0054 U
Trichloroethene	mg/kg	6	0.0056 U	0.006 U	0.4 U	0.0044 U	0.0051 U	0.0052 U	0.0045 U	0.0049 U	0.0043 U	0.0054 U	3.3 U	2.8 U	0.0079 U	0.0046 U	0.006 U	0.0049 U	N/A	0.0054 U
Vinyl chloride	mg/kg	1.7	0.0056 U	0.006 U	0.4 U	0.0044 U	0.0051 U	0.0052 U	0.0045 U	0.0049 U	0.0043 U	0.0054 U	3.3 U	2.8 U	0.0079 U	0.0046 U	0.006 U	0.0049 U	N/A	0.0054 U
Xylenes	mg/kg	2,800	0.017 U	**0.09**	**194**	0.013 U	**0.32**	**0.0087 J**	0.013 U	**0.041**	0.013 U	0.016 U	**73.6**	**23**	0.024 U	0.014 U	**20.7**	**13.6**	N/A	**0.028**
Semi-Volatile Organic Compounds^																				
1,1-Biphenyl	mg/kg	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	0.073 U	N/A	**51.2**	N/A	N/A	N/A
2,4-Dimethylphenol	mg/kg	16,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.073 U	N/A	**9.5**	N/A	N/A	N/A
2-Methylnaphthalene	mg/kg	3,000	**0.015**	**10.3**	**480**	**0.013**	**4.3**	**3**	**0.0085**	**0.64**	**0.0026 J**	**0.006 J**	**688**	**451**	**0.0052 J**	**0.95**	**117**	**173**	**35.3**	**0.038**
2-Methylphenol	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.073 U	N/A	**5**	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.15 U	N/A	**11.9**	N/A	N/A	N/A
Acenaphthene	mg/kg	45,000	**0.0046 J**	**9.9**	**116**	**0.084**	**3.3**	**13.3**	**0.017**	**0.23**	**0.0019 J**	**0.0082 J**	**320**	**149**	**0.0028 J**	**1.7**	**26.4**	**44.2**	**6**	**0.0065 J**
Acenaphthylene	mg/kg	45,000	**0.0015 J**	**37.2**	**92.4**	0.0072 U	**2.2**	**56.6**	**0.024**	**0.091**	**0.0052 J**	**0.0011 J**	**452**	**221**	**0.024**	**0.43**	**48.1**	**101**	**12.9**	**0.0077 J**
Acetophenone	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.073 U	N/A	**12.7**	N/A	N/A	N/A
Anthracene	mg/kg	230,000	**0.0067 J**	**133**	**798**	**0.056**	**7.2**	**257**	**0.019**	**0.082**	**0.0057 J**	**0.011**	**5,270**	**916**	**0.051**	**6.4**	**303**	**563**	**95.3**	**0.068**
Benz[a]anthracene	mg/kg	21	**0.018**	**175**	**792**	**0.35**	**8.6**	**295**	**0.038**	**0.14**	**0.024**	**0.0066 J**	**1,620**	**716**	**0.14**	**8.8**	**253**	**415**	**60.4**	**0.033**
Benzaldehyde	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.073 U	N/A	0.88 U	N/A	N/A	N/A
Benzo[a]pyrene	mg/kg	2.1	**0.035**	**145**	**492**	**0.67**	**5.7**	**283**	**0.036**	**0.14**	**0.023**	**0.0046 J**	**1,200**	**535**	**0.16**	**8**	**163**	**296**	**40.9**	**0.019**
Benzo[b]fluoranthene	mg/kg	21	**0.048**	**350**	**866**	**0.78**	**12.4**	**859**	**0.099**	**0.23**	**0.041**	**0.0092**	**7,640**	**1,610**	**0.34**	**13.2**	**227**	**478**	**58.4**	**0.038**
Benzo[g,h,i]perylene	mg/kg		**0.036**	**73.9**	**241**	**0.53**	**1.9**	**8**	**0.017**	**0.086**	**0.014**	**0.0045 J**	**121**	**56.1**	**0.076**	**2.3**	**65.9**	**68.1**	**15.9**	**0.0093**
Benzo[k]fluoranthene	mg/kg	210	**0.034**	**79.9**	**268**	**0.31**	**11.3**	**766**	**0.089**	**0.2**	**0.036**	**0.0082 J**	**6,810**	**1,440**	**0.12**	**10.9**	**108**	**163**	**23.5**	**0.027**
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.073 U	N/A	0.88 U	N/A	N/A	N/A
Caprolactam	mg/kg	400,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.18 U	N/A	2.2 U	N/A	N/A	N/A
Carbazole	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	0.073 U	N/A	**75**	N/A	N/A	N/A
Chrysene	mg/kg	2,100	**0.018**	**136**	**631**	**0.34**	**12.5**	**299**	**0.051**	**0.13**	**0.021**	**0.0069 J**	**1,580**	**688**	**0.22**	**6.8**	**236**	**295**	**51.7**	**0.023**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.0077 J**	**13.7**	**85.1**	**0.17**	**0.61 J**	**4.6**	0.0081 U	**0.027**	**0.0044 J**	0.0085 U	**42.5**	8.3 U	**0.022**	**0.62**	**24.4**	**25.4**	**5.9**	**0.0027 J**
Diethylphthalate	mg/kg	660,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.073 U	N/A	0.88 U	N/A	N/A	N/A
Fluoranthene	mg/kg	30,000	**0.021**	**598**	**3,770**	**0.38**	**28.9**	**670**	**0.075**	**0.25**	**0.047**	**0.024**	**9,370**	**3,010**	**0.23**	**32**	**639**	**1,330**	**154**	**0.13**
Fluorene	mg/kg	30,000	**0.0031 J**	**48.7**	**938**	**0.021**	**8**	**70.3**	**0.015**	**0.48**	**0.004 J**	**0.014**	**3,930**	**962**	**0.015**	**2**	**353**	**512**	**83.4**	**0.078**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.025**	**76.8**	**264**	**0.43**	**1.9**	**10.6**	**0.012**	**0.076**	**0.013**	**0.0034 J**	**136**	**62.2**	**0.083**	**2.1**	**79.8**	**80.3**	**20**	**0.0092 J**
Naphthalene	mg/kg	8.6	**0.019**	**87.8**	**5,880**	**0.046**	**30.7**	**11.3**	**0.017**	**11**	**0.018**	**0.014**	**15,000**	**7,780**	**0.047**	**0.93**	**621**	**1,520**	**199**	**0.33**
N-Nitrosodiphenylamine	mg/kg	470	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.073 U	N/A	0.88 U	N/A	N/A	N/A
Phenanthrene	mg/kg		**0.029**	**357**	**5,340**	**0.2**	**31**	**456**	**0.076**	**0.55**	**0.025**	**0.047**	**14,400**	**4,420**	**0.1**	**37.9**	**968**	**2,810**	**217**	**0.25**
Phenol	mg/kg	250,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**0.02 J**	N/A	**8.2**	N/A	N/A	N/A
Pyrene	mg/kg	23,000	**0.025**	**516**	**1,550**	**0.36**	**31.6**	**557**	**0.059**	**0.25**	**0.037**	**0.021**	**5,940**	**1,470**	**0.2**	**31.7**	**615**	**879**	**136**	**0.087**
PCBs																				
Aroclor 1248	mg/kg	0.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0559 U	N/A	N/A	N/A	N/A	N/A
Aroclor 1254	mg/kg	0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0559 U	N/A	N/A	N/A	N/A	N/A
Aroclor 1260	mg/kg	0.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0559 U	N/A	N/A	N/A	N/A	N/A
PCBs (total)	mg/kg	0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0559 U	N/A	N/A	N/A	N/A	N/A
TPH/Oil and Grease																				
Diesel Range Organics	mg/kg	6,200	**85**	**2,520**	**12,700**	**34**	**30,400**	**2,430**	**36.4**	**124**	**15**	**15.1**	**22,800**	**16,200**	**13.3**	**88.3**	**7,640**	**9,450**	**6,290**	**10.7**
Gasoline Range Organics	mg/kg	6,200	15.3 U	**29.9**	**2,220**	11.4 U	**37.4**	11.6 U	9.8 U	14.8 U	8.7 U	8.3 U	**1,500**	**1,060**	18.5 U	9.9 U	**214**	**44.8**	N/A	10.3 U
Oil and Grease	mg/kg	6,200	**358**	**3,330**	**8,280**	**205**	**54,200**	**20,100**	**210**	**527**	**238**	**930**	**21,100**	**13,300**	**618**	**2,930**	**21,300**	**11,700**	N/A	**335**

Detections in bold
Values in red indicate an exceedance of the Project Action Limit (PAL)
N/A indicates that the parameter was not analyzed for this sample
* Non-validated data

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.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
UJ: This analye was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

Table 1 - Sub-Parcel A11-2
Summary of Organics Detected in Soil

Parameter	Units	PAL	A11-024S-SB-4* 8/15/2018	A11-024U-SB-5* 8/15/2018	A11-024V-SB-2* 8/16/2018	A11-024V-SB-4* 8/16/2018	A11-024W-SB-1.5* 8/17/2018	A11-024X-SB-3* 8/17/2018	A11-024Y-SB-4* 8/17/2018	A11-029-SB-1 8/10/2016	A11-029-SB-5 8/10/2016	A11-030-SB-1 8/10/2016	A11-030-SB-4 8/10/2016	A11-033-SB-1* 8/9/2016	A11-034-SB-1* 8/9/2016	A11-034-SB-5* 8/9/2016	A11-035-SB-1 8/12/2016	A11-035-SB-4 8/12/2016	A11-036-SB-1 8/15/2016	A11-036-SB-5 8/15/2016	A11-037-SB-1* 8/1/2016	A11-037-SB-5* 8/1/2016
Volatile Organic Compounds																						
1,1-Dichloroethane	mg/kg	16	0.011 U	0.0041 U	0.0053 U	0.0041 U	0.0047 U	0.0042 U	0.0045 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	0.005 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.011 U	0.0042 U	0.0053 U	0.0041 U	0.0047 U	0.0042 U	0.0045 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	0.005 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.022 U	0.0082 U	0.011 U	0.0082 U	0.0093 U	0.0083 U	0.0091 U	0.012 U	0.012 U	0.011 U	0.012 U	0.0093 U	0.0097 U	0.01 U	0.0081 U	0.0089 U	0.01 U	0.011 U	0.01 U	0.01 U
2-Butanone (MEK)	mg/kg	190,000	**0.012 J**	**0.0055 J**	0.011 U	0.0082 U	0.0093 U	0.0083 U	0.0091 U	**0.0047 J**	0.012 U	0.011 U	0.012 U	0.0093 U	0.0097 U	0.01 U	0.0081 U	0.0089 U	0.01 U	0.011 U	0.01 U	0.01 U
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.022 U	0.0083 U	0.011 U	0.0082 U	0.0093 U	0.0083 U	0.0091 U	0.012 U	0.012 U	0.011 U	0.012 U	0.0093 U	0.0097 U	0.01 U	0.0081 U	0.0089 U	0.01 U	0.011 U	0.01 U	0.01 U
Acetone	mg/kg	670,000	**0.44**	**0.11**	**0.0076 J**	**0.0088**	0.0093 U	**0.013**	0.0091 U	0.014 B	0.0079 B	0.0059 B	0.012 UJ	0.0093 U	0.0097 U	0.01 U	0.0081 UJ	0.0089 UJ	**0.013 J**	**0.017 J**	0.01 U	**0.044**
Benzene	mg/kg	5.1	**113**	**2.8**	0.0053 U	**0.067**	0.0047 U	0.0042 U	**0.16**	**0.0029 J**	**0.015**	0.0054 U	0.0062 U	**0.0063**	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	0.005 U
Carbon disulfide	mg/kg	3,500	**0.0086 J**	0.0042 U	0.0053 U	**0.0034 J**	0.0047 U	0.0042 U	**0.004 J**	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	0.005 U
Chloroform	mg/kg	1.4	**0.012**	0.0042 U	**0.0023 J**	0.0041 U	0.0047 U	0.0042 U	0.0045 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	**0.0045**	0.0052 U	0.0056 U	0.005 U	0.005 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.011 U	0.0041 U	0.0053 U	0.0041 U	0.0047 U	0.0042 U	0.0045 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	0.005 U
Cyclohexane	mg/kg	27,000	0.022 U	**0.0056 J**	0.011 U	0.0082 U	0.0093 U	0.0083 U	0.0091 U	0.012 U	0.012 U	0.011 U	0.012 U	0.0093 U	0.0097 U	0.01 U	0.0081 U	0.0089 U	0.01 U	0.011 U	0.01 U	0.01 U
Ethylbenzene	mg/kg	25	**0.12**	**0.02**	0.0053 U	**0.012**	0.0047 U	0.0042 U	**0.018**	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	0.005 U
Isopropylbenzene	mg/kg	9,900	**0.014**	**0.0018 J**	0.0053 U	**0.0024 J**	0.0047 U	0.0042 U	**0.0029 J**	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	0.005 U
Methyl Acetate	mg/kg	1,200,000	0.11 U	0.042 U	0.053 U	0.041 U	0.047 U	0.042 U	0.045 U	0.061 R	0.059 R	0.054 R	0.062 R	0.047 U	0.048 U	0.05 U	0.04 R	0.045 R	0.052 R	0.056 R	0.05 U	0.05 U
Methylene Chloride	mg/kg	1,000	**0.29**	0.0042 U	0.0053 U	0.0041 U	0.0047 U	0.0042 U	0.0045 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 UJ	0.0045 UJ	0.0052 UJ	0.0056 UJ	0.005 U	0.005 U
Styrene	mg/kg	35,000	**0.013**	0.0042 U	0.0053 U	**0.0027 J**	0.0047 U	0.0042 U	0.0045 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	0.005 U
Tetrachloroethene	mg/kg	100	**0.012**	0.0042 U	0.0053 U	0.0041 U	0.0047 U	0.0042 U	0.0045 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	0.005 U
Toluene	mg/kg	47,000	**138**	**12.8**	0.0053 U	**5.9**	0.0047 U	0.0042 U	**0.3**	**0.0025 J**	**0.011**	**0.0018 J**	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	**0.0018 J**
trans-1,2-Dichloroethene	mg/kg	23,000	0.011 U	0.0041 U	0.0053 U	0.0041 U	0.0047 U	0.0042 U	0.0045 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	0.005 U
Trichloroethene	mg/kg	6	**0.03**	0.0042 U	0.0053 U	0.0041 U	0.0047 U	0.0042 U	0.0045 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	0.005 U
Vinyl chloride	mg/kg	1.7	0.011 U	0.0042 U	0.0053 U	0.0041 U	0.0047 U	0.0042 U	0.0045 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.0047 U	0.0048 U	0.005 U	0.004 U	0.0045 U	0.0052 U	0.0056 U	0.005 U	0.005 U
Xylenes	mg/kg	2,800	**54.7**	**0.38**	0.016 U	**0.15**	0.014 U	0.013 U	**0.35**	0.018 U	**0.012 J**	**0.0031 J**	0.019 U	0.014 U	0.015 U	0.015 U	0.012 U	0.013 U	0.016 U	0.017 U	0.015 U	0.015 U
Semi-Volatile Organic Compounds^																						
1,1-Biphenyl	mg/kg	200	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.079 U	**0.27 J**	**0.02 J**	0.087 U	0.072 U	**0.026 J**	**0.13**	**0.26**	**0.024 J**	0.075 U	0.071 U	0.076 U	0.082 U
2,4-Dimethylphenol	mg/kg	16,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.079 U	**0.087 J**	0.073 U	0.087 R	0.072 U	0.074 U	0.075 U	0.073 R	0.081 U	0.075 R	0.071 R	0.076 U	0.082 U
2-Methylnaphthalene	mg/kg	3,000	**674**	**0.89**	**0.12**	**496**	**0.0093**	**0.11**	**6.9**	**0.047**	**2**	**0.025**	**0.0072 J**	**0.021**	**0.025**	**0.56**	**0.17**	**0.089**	0.075 U	**0.022**	**0.012**	**0.0086**
2-Methylphenol	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.079 U	**0.055 J**	0.073 U	0.087 R	0.072 U	0.074 U	0.075 U	0.073 R	0.081 U	0.075 R	0.071 R	0.076 U	0.082 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.16 U	**0.1 J**	0.15 U	0.17 R	0.14 U	0.15 U	**0.028 J**	0.15 R	0.16 U	0.15 R	0.14 R	0.15 U	0.16 U
Acenaphthene	mg/kg	45,000	**425**	**0.2 J**	**0.65**	**192**	**0.0023 J**	**1.1**	**5.4**	**0.61**	**1.3**	**0.049**	**0.0036 J**	**0.013**	**0.0071 J**	**0.077**	**0.21**	**0.03**	0.075 U	**0.0016 J**	**0.0064 J**	**0.0032 J**
Acenaphthylene	mg/kg	45,000	**578**	**0.11 J**	**0.016**	**672**	0.0071 U	**0.027**	**8.5**	**0.008 J**	**1.1**	**0.014**	**0.0018 J**	**0.053**	**0.0035 J**	**0.83**	**0.067**	**0.053**	0.075 U	**0.0006 J**	**0.0042 J**	**0.0095**
Acetophenone	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.079 U	**0.29 J**	0.073 U	0.087 U	0.072 U	0.074 U	0.075 U	0.073 U	**0.027 J**	0.075 U	0.071 U	0.076 U	0.082 U
Anthracene	mg/kg	230,000	**2,110**	**0.39 J**	**0.19**	**1,410**	**0.0024 J**	**0.53**	**101**	**0.13**	**4.3**	**0.068**	**0.006 J**	**0.038**	**0.015**	**0.73**	**0.52**	**0.079**	0.075 U	**0.006 J**	**0.02**	**0.0079 J**
Benz[a]anthracene	mg/kg	21	**1,880**	0.75 U	**1.6**	**1,650**	**0.0099**	**3.1**	**116**	**1.2**	**5.7**	**0.39**	**0.02**	**0.2**	**0.043**	**0.82**	**0.95**	**0.32**	**0.014 J**	**0.027**	**0.092**	**0.043**
Benzaldehyde	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.079 UJ	0.085 UJ	0.073 UJ	0.087 UJ	0.072 U	0.074 U	0.075 U	0.073 U	0.081 U	0.075 U	0.071 U	0.076 U	0.082 U
Benzo[a]pyrene	mg/kg	2.1	**1,460**	**0.81**	**3.8**	**1,380**	**0.018**	**6.7**	**95.8**	**3.1**	**4.5**	**0.71**	**0.026**	**0.27**	**0.06**	**0.64**	**0.67**	**0.26**	**0.01 J**	**0.036**	**0.11**	**0.052**
Benzo[b]fluoranthene	mg/kg	21	**2,570**	**2.1**	**5.4**	**2,500**	**0.029**	**10.2**	**179**	**3.6**	**6.3**	**0.94**	**0.036**	**0.51**	**0.099**	**0.93**	**1.3**	**0.63**	**0.013 J**	**0.076**	**0.19**	**0.11**
Benzo[g,h,i]perylene	mg/kg		**649**	**0.45 J**	**1.3**	**601**	**0.018**	**1.4**	**5.5**	**1.2**	**2.2**	**0.41**	**0.016**	**0.14**	**0.034**	**0.39**	**0.25**	**0.06**	0.075 U	**0.04**	**0.07**	**0.022**
Benzo[k]fluoranthene	mg/kg	210	**2,290**	**1.9**	**4.8**	**2,230**	**0.026**	**9.1**	**160**	**0.98**	**2.5**	**0.37**	**0.016**	**0.46**	**0.045**	**0.36**	**1.2**	**0.58**	0.075 U	**0.069**	**0.06**	**0.1**
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.079 UJ	0.085 UJ	**0.079 J**	0.087 UJ	**0.15**	0.074 U	**0.064 J**	0.022 B	0.081 UJ	0.019 B	0.071 U	**0.017 J**	0.082 U
Caprolactam	mg/kg	400,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.2 U	0.21 U	0.18 U	0.22 U	0.18 U	0.18 U	0.19 U	0.18 U	0.2 U	**0.023 J**	0.18 U	0.19 U	0.21 U
Carbazole	mg/kg		N/A	N/A	N/A	N/A	N/A	N/A	N/A	**0.063 J**	**1.2 J**	**0.041 J**	0.087 U	0.072 U	0.074 U	**0.45**	**0.1**	0.081 UJ	0.075 UJ	0.071 U	0.076 U	0.082 U
Chrysene	mg/kg	2,100	**1,620**	**4.6**	**1.6**	**1,450**	**0.011**	**2.9**	**113**	**1.2**	**5.3**	**0.44**	**0.023**	**0.19**	**0.065**	**0.83**	**0.89**	**0.3**	**0.0074 J**	**0.036**	**0.13**	**0.05**
Dibenz[a,h]anthracene	mg/kg	2.1	**232**	**0.18 J**	**0.61**	**208**	**0.0051 J**	**0.62**	**3.1**	**0.65**	**0.8**	**0.15**	**0.0053 J**	**0.049**	**0.009**	**0.14**	**0.13**	**0.026**	0.075 U	**0.0099**	**0.024**	**0.0096**
Diethylphthalate	mg/kg	660,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.079 U	0.085 U	**0.045 J**	**0.032 J**	0.072 U	0.074 U	0.075 U	0.073 U	0.081 U	0.075 U	0.071 U	0.076 U	0.082 U
Fluoranthene	mg/kg	30,000	**5,410**	**2.6**	**1.6**	**4,490**	**0.016**	**3.1**	**383**	**1.1**	**14.5**	**0.46**	**0.034**	**0.26**	**0.073**	**2.3**	**2.5**	**0.65**	**0.011 J**	**0.039**	**0.13**	**0.075**
Fluorene	mg/kg	30,000	**1,770**	**0.33 J**	**0.12**	**1,220**	**0.00083 J**	**0.23**	**63.4**	**0.072**	**4**	**0.015**	**0.002 J**	**0.0053 J**	**0.0026 J**	**0.81**	**0.22**	**0.026**	0.075 U	**0.0013 J**	**0.0018 J**	**0.0027 J**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**673**	**0.4 J**	**1.5**	**624**	**0.015**	**3.5**	**7.9**	**1.2**	**2.4**	**0.43**	**0.014**	**0.15**	**0.032**	**0.39**	**0.27**	**0.067**	0.075 U	**0.029**	**0.062**	**0.023**
Naphthalene	mg/kg	8.6	**3,950**	**5**	**0.73**	**2,530**	**0.02**	**0.28**	**227**	**0.15**	**20**	**0.1**	**0.014**	**0.042**	**0.06**	**3.9**	**0.35**	**0.18**	0.075 U	**0.059**	**0.021**	**0.017**
N-Nitrosodiphenylamine	mg/kg	470	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.079 U	0.085 U	0.073 U	0.087 U	0.072 U	0.074 U	0.075 U	0.073 U	0.081 UJ	0.075 UJ	0.071 U	0.076 U	0.082 U
Phenanthrene	mg/kg		**7,130**	**2**	**0.74**	**4,980**	**0.015**	**1.8**	**293**	**0.5**	**16.7**	**0.24**	**0.032**	**0.11**	**0.079**	**2.8**	**2.8**	**0.23**	0.016 B	**0.037**	**0.087**	**0.029**
Phenol	mg/kg	250,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.079 U	**0.043 J**	0.073 U	0.087 R	0.072 U	0.074 U	**0.018 J**	0.073 R	0.081 U	0.075 R	0.071 R	0.076 U	0.082 U
Pyrene	mg/kg	23,000	**3,840**	**3**	**1.6**	**3,150**	**0.013**	**3**	**277**	**1.1**	**10.7**	**0.43**	**0.029**	**0.21**	**0.057**	**1.7**	**1.4**	**0.59**	**0.01 J**	**0.032**	**0.12**	**0.062**
PCBs																						
Aroclor 1248	mg/kg	0.94	1 U	N/A	N/A	N/A	N/A	N/A	N/A	0.0573 U	N/A	0.0519 U	N/A	0.053 U	0.0543 U	N/A	0.0552 U	N/A	0.0681 U	N/A	0.0552 U	N/A
Aroclor 1254	mg/kg	0.97	1 U	N/A	N/A	N/A	N/A	N/A	N/A	0.0573 U	N/A	0.0519 U	N/A	0.053 U	0.0543 U	N/A	0.0552 U	N/A	0.0681 U	N/A	0.0552 U	N/A
Aroclor 1260	mg/kg	0.99	1 U	N/A	N/A	N/A	N/A	N/A	N/A	0.0573 U	N/A	0.0519 U	N/A	0.053 U	0.0543 U	N/A	0.0552 U	N/A	0.0681 U	N/A	0.0552 U	N/A
PCBs (total)	mg/kg	0.97	9.1 U	N/A	N/A	N/A	N/A	N/A	N/A	0.0573 U	N/A	0.0519 U	N/A	0.053 U	0.0543 U	N/A	0.0552 U	N/A	0.0681 U	N/A	0.0552 U	N/A
TPH/Oil and Grease																						
Diesel Range Organics	mg/kg	6,200	N/A	**6,110**	**67.8**	**5,780**	**14.4**	**271**	**1,210**	**60.2 J**	**802 J**	**59.2 J**	**19.5 J**	**27**	**49.6**	**79.1**	**138 J**	**240 J**	**39.2 J**	**19.5 J**	**24.9**	**25.5**
Gasoline Range Organics	mg/kg	6,200	N/A	**89.3**	13.1 U	25.4 U	9.4 U	11.8 U	**18.1**	11.4 U	10.8 U	12.4 U	15.4 U	10.4 U	10.7 U	11.5 U	9.7 U	9.1 U	11.9 U	12.2 U	10.6 U	9.9 U
Oil and Grease	mg/kg	6,200	N/A	**11,000**	**414**	**6,820**	**311 J**	**897**	**2,560**	**803**	**3,910**	**367**	**764**	**433**	**381**	**1,400**	**1,190**	**1,760**	**183**	**77.4 J**	181 B	**439**

Detections in bold
Values in red indicate an exceedance of the Project Action Limit (PAL)
N/A indicates that the parameter was not analyzed for this sample
* Non-validated data

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.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
UJ: This analye was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

Table 1 - Sub-Parcel A11-2
Summary of Organics Detected in Soil

Parameter	Units	PAL	A11-040A-SB-5* 6/15/2018	A11-040A-SB-10* 6/15/2018	A11-040A-SB-15* 6/15/2018	A11-040B-SB-5* 6/15/2018	A11-040B-SB-10* 6/15/2018	A11-040C-SB-5* 6/18/2018	A11-040C-SB-10* 6/18/2018	A11-040D-SB-5* 6/18/2018	A11-040D-SB-10* 6/18/2018	A11-040E-SB-5* 6/18/2018	A11-040E-SB-6.5* 6/18/2018	A11-040F-SB-5* 6/20/2018	A11-040F-SB-10* 6/20/2018	A11-040F-SB-15* 6/20/2018	A11-040G-SB-5* 6/20/2018	A11-040G-SB-10* 6/20/2018	A11-040G-SB-15* 6/20/2018
Volatile Organic Compounds																			
1,1-Dichloroethane	mg/kg	16	0.0036 U	0.0045 U	0.0055 U	0.0038 U	0.0045 U	0.0061 U	0.0044 U	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	0.0052 U	0.0056 U	0.0041 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.0036 U	0.0045 U	0.0055 U	0.0038 U	0.0045 U	0.0061 U	0.0044 U	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	0.0052 U	0.0056 U	0.0041 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.0072 U	0.009 U	0.011 U	0.0075 U	0.009 U	0.012 U	0.0087 U	0.011 U	0.0099 U	0.0098 U	0.0089 U	0.0092 U	0.0079 U	0.01 U	0.01 U	0.011 U	0.0082 U
2-Butanone (MEK)	mg/kg	190,000	0.0072 U	**0.009**	**0.048**	0.0075 U	0.009 U	0.012 U	0.0087 U	**0.0063 J**	0.0099 U	0.0098 U	0.0089 U	0.0092 U	0.0079 U	**0.0097 J**	0.01 U	0.011 U	**0.007 J**
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.0072 U	**0.0042 J**	**0.017**	0.0075 U	0.009 U	0.012 U	0.0087 U	0.011 U	0.0099 U	0.0098 U	0.0089 U	0.0092 U	0.0079 U	0.01 U	0.01 U	0.011 U	0.0082 U
Acetone	mg/kg	670,000	**0.098**	**0.055**	**0.39**	**0.078**	**0.2**	**0.073**	**0.05**	**0.23**	**0.23**	**0.2**	**0.11**	**0.18**	**0.023**	**0.28**	**0.095**	**0.045**	**0.15**
Benzene	mg/kg	5.1	**0.0034 J**	72.6	232	0.0038 U	**0.018**	0.0061 U	**0.18**	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	**0.0085**	**0.0019 J**	13.6
Carbon disulfide	mg/kg	3,500	0.0036 U	**0.0079**	**0.0034 J**	0.0038 U	**0.0042 J**	0.0061 U	0.0044 U	0.0056 U	0.0049 U	**0.0022 J**	**0.0023 J**	0.0046 U	0.0039 U	0.0051 U	**0.0034 J**	**0.0034 J**	0.0041 U
Chloroform	mg/kg	1.4	0.0036 U	0.0045 U	0.0055 U	0.0038 U	0.0045 U	0.0061 U	0.0044 U	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	0.0052 U	0.0056 U	0.0041 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.0036 U	0.0045 U	0.0055 U	0.0038 U	0.0045 U	0.0061 U	0.0044 U	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	0.0052 U	0.0056 U	0.0041 U
Cyclohexane	mg/kg	27,000	0.0072 U	**0.0065 J**	**0.0077 J**	0.0075 U	0.009 U	0.012 U	0.0087 U	0.011 U	0.0099 U	0.0098 U	0.0089 U	0.0092 U	0.0079 U	0.01 U	0.01 U	0.011 U	0.0082 U
Ethylbenzene	mg/kg	25	0.0036 U	**0.041**	**0.079**	0.0038 U	0.0045 U	0.0061 U	**0.0017 J**	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	**0.0054**	0.0056 U	**0.0084**
Isopropylbenzene	mg/kg	9,900	0.0036 U	**0.0066**	**0.015**	0.0038 U	0.0045 U	0.0061 U	0.0044 U	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	0.0052 U	0.0056 U	0.0041 U
Methyl Acetate	mg/kg	1,200,000	0.036 U	**0.013 J**	**0.031 J**	0.038 U	**0.039 J**	**0.019 J**	**0.034 J**	0.056 U	0.049 U	**0.076**	**0.034 J**	**0.0094 J**	0.039 U	**0.015 J**	0.052 U	0.056 U	**0.0066 J**
Methylene Chloride	mg/kg	1,000	0.0036 U	0.0045 U	0.0055 U	0.0038 U	0.0045 U	0.0061 U	0.0044 U	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	0.0052 U	0.0056 U	0.0041 U
Styrene	mg/kg	35,000	0.0036 U	**0.0037 J**	**0.0075**	0.0038 U	0.0045 U	0.0061 U	0.0044 U	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	0.0052 U	0.0056 U	0.0041 U
Tetrachloroethene	mg/kg	100	0.0036 U	0.0045 U	0.0055 U	0.0038 U	0.0045 U	0.0061 U	0.0044 U	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	0.0052 U	0.0056 U	0.0041 U
Toluene	mg/kg	47,000	**0.0055**	**5.3**	**6.2**	0.0038 U	**0.0014 J**	0.0061 U	**0.0052**	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	**0.004 J**	0.0056 U	**0.24**
trans-1,2-Dichloroethene	mg/kg	23,000	0.0036 U	0.0045 U	0.0055 U	0.0038 U	0.0045 U	0.0061 U	0.0044 U	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	0.0052 U	0.0056 U	0.0041 U
Trichloroethene	mg/kg	6	0.0036 U	0.0045 U	0.0055 U	0.0038 U	0.0045 U	0.0061 U	0.0044 U	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	0.0052 U	0.0056 U	0.0041 U
Vinyl chloride	mg/kg	1.7	0.0036 U	0.0045 U	0.0055 U	0.0038 U	0.0045 U	0.0061 U	0.0044 U	0.0056 U	0.0049 U	0.0049 U	0.0045 U	0.0046 U	0.0039 U	0.0051 U	0.0052 U	0.0056 U	0.0041 U
Xylenes	mg/kg	2,800	0.011 U	**11.8**	**34.8**	0.011 U	0.014 U	0.018 U	**0.028**	0.017 U	0.015 U	0.015 U	0.013 U	0.014 U	0.012 U	0.015 U	**0.0063 J**	0.017 U	**0.32**
Semi-Volatile Organic Compounds^																			
1,1-Biphenyl	mg/kg	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	N/A	N/A	N/A	N/A	N/A
2,4-Dimethylphenol	mg/kg	16,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	mg/kg	3,000	**0.03**	**85**	**743**	**0.16**	**0.013**	**0.022**	**0.27**	0.76 U	**0.024**	**0.13**	**0.18**	**0.051**	**0.023**	**0.0075 J**	**0.065**	**0.016**	**0.85**
2-Methylphenol	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	45,000	**0.028**	**21**	**238**	**0.048**	**0.035**	**0.013**	**0.074**	0.76 U	**0.031**	**0.22**	**0.081**	**0.026**	**0.014**	**0.0076 J**	**0.024**	**0.0092**	**0.37**
Acenaphthylene	mg/kg	45,000	**0.033**	**52.5**	**389**	**0.079**	**0.042**	**0.0056 J**	**0.11**	0.76 U	**0.002 J**	**0.021**	**0.036**	**0.059**	**0.0034 J**	**0.0083 J**	**0.034**	**0.00095 J**	**0.39**
Acetophenone	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	mg/kg	230,000	**0.07**	**155**	**1,270**	**0.42**	**0.074**	**0.05**	**0.32**	0.76 U	**0.035**	**0.64**	**0.27**	**0.07**	**0.019**	**0.023**	**0.037**	**0.01**	**1.1**
Benz[a]anthracene	mg/kg	21	**0.22**	152	1,230	**0.49**	**0.25**	**0.11**	**0.29**	0.76 U	**0.011**	**0.87**	**0.6**	**0.43**	**0.013**	**0.065**	**0.2**	**0.016**	**1.2**
Benzaldehyde	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[a]pyrene	mg/kg	2.1	**0.23**	112	916	**0.35**	**0.19**	**0.095**	**0.25**	**0.25 J**	**0.014**	**0.73**	**0.53**	**0.56**	**0.0092**	**0.057**	**0.3**	**0.015**	**1.1**
Benzo[b]fluoranthene	mg/kg	21	**0.31**	344	1,370	**0.5**	**0.28**	**0.25**	**0.5**	**0.53 J**	**0.017**	**1.1**	**1.2**	**0.67**	**0.013**	**0.092**	**0.47**	**0.029**	**1.9**
Benzo[g,h,i]perylene	mg/kg		**0.14**	**51.7**	**440**	**0.18**	**0.1**	**0.084**	**0.13**	0.76 U	**0.012**	**0.42**	**0.17**	**0.32**	**0.005 J**	**0.027**	**0.11**	**0.0053 J**	**0.28**
Benzo[k]fluoranthene	mg/kg	210	**0.1**	**149**	422	**0.17**	**0.086**	**0.17**	**0.34**	**0.35 J**	**0.0082 J**	**0.32**	**0.8**	**0.27**	**0.0048 J**	**0.032**	**0.15**	**0.021**	**0.49**
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Caprolactam	mg/kg	400,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	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	N/A	N/A	N/A	N/A	N/A
Chrysene	mg/kg	2,100	**0.19**	**110**	**894**	**0.38**	**0.19**	**0.12**	**0.28**	**0.83**	**0.0075 J**	**0.66**	**0.6**	**0.33**	**0.013**	**0.051**	**0.19**	**0.014**	**0.84**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.047**	18.2	157	**0.059**	**0.034**	**0.023**	**0.042**	0.76 U	**0.0034 J**	**0.14**	**0.086**	**0.12**	0.0086 U	**0.0095**	**0.043**	0.0088 U	**0.13**
Diethylphthalate	mg/kg	660,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	mg/kg	30,000	**0.38**	**663**	**6,230**	**1.4**	**0.59**	**0.3**	**0.76**	**0.54 J**	**0.022**	**2.6**	**1.3**	**0.45**	**0.047**	**0.12**	**0.24**	**0.046**	**3.7**
Fluorene	mg/kg	30,000	**0.027**	**266**	**1,290**	**0.41**	**0.11**	**0.01**	**0.36**	0.76 U	**0.026**	**0.34**	**0.11**	**0.01**	**0.018**	**0.011**	**0.014**	**0.015**	**1.9**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.14**	54.5	423	**0.19**	**0.1**	**0.071**	**0.12**	0.76 U	**0.011**	**0.4**	**0.2**	**0.33**	**0.0053 J**	**0.031**	**0.11**	**0.0058 J**	**0.37**
Naphthalene	mg/kg	8.6	**0.2**	1,600	17,000	**1.4**	**0.23**	**0.03**	**6.1**	0.76 U	**0.039**	**0.14**	**0.38**	**0.15**	**0.093**	**0.029**	**0.42**	**0.025**	34.3
N-Nitrosodiphenylamine	mg/kg	470	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phenanthrene	mg/kg		**0.2**	**923**	**8,100**	**1.9**	**0.32**	**0.14**	**0.89**	**0.16 J**	**0.17**	**2.4**	**1.1**	**0.2**	**0.081**	**0.067**	**0.16**	**0.064**	**5.9**
Phenol	mg/kg	250,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	mg/kg	23,000	**0.32**	**464**	**4,520**	**1**	**0.44**	**0.31**	**0.56**	**0.65 J**	**0.015**	**1.5**	**1**	**0.38**	**0.032**	**0.096**	**0.21**	**0.036**	**2.4**
PCBs																			
Aroclor 1248	mg/kg	0.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aroclor 1254	mg/kg	0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aroclor 1260	mg/kg	0.99	N/A	N/A	N/A	N/A	N/A	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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TPH/Oil and Grease																			
Diesel Range Organics	mg/kg	6,200	**48.3**	**3,770**	21,300	**8.8**	**40.7**	**24.2**	**96.7**	**2,340**	**14.8**	**84.6**	**165**	**58.6**	**12.6**	**23.4**	**50.4**	**15.3**	**143**
Gasoline Range Organics	mg/kg	6,200	9.7 U	**136**	**600**	9.7 U	9.8 U	9.4 U	10.3 U	12.3 U	9.1 U	12.1 U	10 U	10.9 U	8.6 U	10.3 U	12.7 U	19.1 U	**30.3**
Oil and Grease	mg/kg	6,200	**215**	**2,110**	10,500	**437**	123 U	**554**	**347**	9,860	**607**	**688**	**1,270**	**317**	**441**	**519**	**1,320**	**345**	**577**

Detections in bold
Values in red indicate an exceedance of the Project Action Limit (PAL)
N/A indicates that the parameter was not analyzed for this sample
* Non-validated data

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.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
UJ: This analye was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

Table 1 - Sub-Parcel A11-2
Summary of Organics Detected in Soil

Parameter	Units	PAL	A11-040H-SB-5*	A11-040H-SB-10*	A11-040H-SB-12.5*	A11-040J-SB-19*	A11-040J-SB-24*	A11-040J-SB-27*	A11-040K-SB-13*	A11-040K-SB-18*	A11-040K-SB-23*	A11-040L-SB-5*	A11-040L-SB-9.5*	A11-040M-SB-5*	A11-040N-SB-5*	A11-040O-SB-8*	A11-040Q-SB-5*	A11-040R-SB-4*	A11-040-SB-1*	A11-040-SB-4*
			6/20/2018	6/20/2018	6/20/2018	6/25/2018	6/25/2018	6/25/2018	6/25/2018	6/25/2018	6/25/2018	8/20/2018	8/20/2018	8/20/2018	8/20/2018	8/20/2018	8/21/2018	8/21/2018	8/9/2016	8/9/2016
Volatile Organic Compounds																				
1,1-Dichloroethane	mg/kg	16	0.0041 U	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	0.0039 U	0.004 U	0.0048 U	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.0041 U	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	0.0039 U	0.004 U	0.0048 U	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.0083 U	0.009 U	0.0085 U	0.017 U	0.0081 U	0.0097 U	0.008 U	0.01 U	0.0079 U	**0.0068 J**	**0.015**	0.012 U	0.0093 U	0.011 U	0.0095 U	0.0093 U	0.0079 U	0.011 U
2-Butanone (MEK)	mg/kg	190,000	**0.011**	**0.0091**	0.0085 U	**0.013 J**	**0.0077 J**	0.0097 U	**0.011**	0.01 U	**0.0074 J**	0.008 U	0.0096 U	0.012 U	0.0093 U	0.011 U	**0.0081 J**	0.0093 U	0.0079 U	0.011 U
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.0083 U	0.009 U	0.0085 U	0.017 U	0.0081 U	0.0097 U	0.008 U	0.01 U	0.0079 U	0.008 U	0.0096 U	0.012 U	0.0093 U	0.011 U	0.0095 U	0.0093 U	0.0079 U	0.011 U
Acetone	mg/kg	670,000	**0.14**	**0.31**	**0.21**	**0.43**	**0.11**	**0.083**	0.48 U	**0.15**	**0.17**	**0.0072 J**	**0.025**	**0.019**	0.0093 U	**0.011 J**	**0.022**	0.0093 U	0.0079 U	0.011 U
Benzene	mg/kg	5.1	**0.018**	0.0045 U	**0.014**	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	**0.013**	0.004 U	**0.38**	0.006 U	**0.0031 J**	0.0057 U	**0.0027 J**	**0.0014 J**	0.004 U	0.0054 U
Carbon disulfide	mg/kg	3,500	**0.0019 J**	0.0045 U	**0.0025 J**	**0.014**	0.004 U	**0.0047 J**	0.004 U	**0.0028 J**	**0.0025 J**	0.004 U	**0.0037 J**	**0.0066**	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
Chloroform	mg/kg	1.4	0.0041 U	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	0.0039 U	0.004 U	0.0048 U	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.0041 U	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	0.0039 U	**0.0058**	**0.015**	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
Cyclohexane	mg/kg	27,000	0.0083 U	0.009 U	0.0085 U	0.017 U	0.0081 U	0.0097 U	0.008 U	0.01 U	0.0079 U	0.008 U	0.0096 U	**0.0059 J**	0.0093 U	0.011 U	0.0095 U	0.0093 U	0.0079 U	0.011 U
Ethylbenzene	mg/kg	25	0.0041 U	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	0.0039 U	0.004 U	**0.0025 J**	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
Isopropylbenzene	mg/kg	9,900	0.0041 U	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	0.0039 U	0.004 U	0.0048 U	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
Methyl Acetate	mg/kg	1,200,000	**0.014 J**	**0.0019 J**	**0.03 J**	0.087 U	**0.0069 J**	0.048 U	0.04 U	**0.0061 J**	**0.0092 J**	0.04 U	0.048 U	0.06 U	0.047 U	0.057 U	0.047 U	0.047 U	0.04 U	0.054 U
Methylene Chloride	mg/kg	1,000	0.0041 U	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	0.0039 U	0.004 U	0.0048 U	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
Styrene	mg/kg	35,000	0.0041 U	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	0.0039 U	0.004 U	0.0048 U	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
Tetrachloroethene	mg/kg	100	0.0041 U	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	0.0039 U	0.004 U	0.0048 U	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
Toluene	mg/kg	47,000	**0.0017 J**	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	**0.0016 J**	**0.0015 J**	**0.022**	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
trans-1,2-Dichloroethene	mg/kg	23,000	0.0041 U	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	0.0039 U	0.004 U	0.0048 U	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
Trichloroethene	mg/kg	6	0.0041 U	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	0.0039 U	**0.0044**	0.0048 U	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
Vinyl chloride	mg/kg	1.7	0.0041 U	0.0045 U	0.0043 U	0.0087 U	0.004 U	0.0048 U	0.004 U	0.0051 U	0.0039 U	**0.0071**	**0.0089**	0.006 U	0.0047 U	0.0057 U	0.0047 U	0.0047 U	0.004 U	0.0054 U
Xylenes	mg/kg	2,800	0.012 U	0.013 U	0.013 U	0.026 U	0.012 U	0.015 U	0.012 U	0.015 U	0.012 U	**0.0053 J**	**0.016**	0.018 U	0.014 U	0.017 U	0.014 U	0.014 U	0.012 U	0.016 U
Semi-Volatile Organic Compounds^																				
1,1-Biphenyl	mg/kg	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	N/A	N/A	N/A	N/A	0.075 U	0.087 U
2,4-Dimethylphenol	mg/kg	16,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.075 U	0.087 U
2-Methylnaphthalene	mg/kg	3,000	**0.39**	**0.0033 J**	**0.76**	**0.046**	0.0075 U	**0.059**	**0.028**	**0.0083 J**	**0.013**	**1.4**	**1.8**	**0.33**	**0.24**	**0.058**	**0.46**	**0.0029 J**	**0.0088**	**0.033**
2-Methylphenol	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.075 U	0.087 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.15 U	0.17 U
Acenaphthene	mg/kg	45,000	**0.29**	**0.0029 J**	**0.52**	**0.04**	**0.0065 J**	**0.17**	**0.013**	**0.015**	**0.041**	**0.53**	**0.98**	**0.092**	**0.06**	**0.075**	**0.18**	**0.001 J**	**0.018**	**0.052**
Acenaphthylene	mg/kg	45,000	**0.19**	**0.026**	**1.3**	**0.0075**	**0.0033 J**	**0.025**	**0.0098**	**0.0043 J**	**0.084**	**0.067 J**	**1.7**	**0.045**	**0.53**	**0.052**	**0.1**	**0.0012 J**	**0.0023 J**	**0.018**
Acetophenone	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.075 U	0.087 U
Anthracene	mg/kg	230,000	**0.52**	**0.031**	**38.8**	**0.032**	**0.082**	**0.09**	**0.029**	**0.095**	**0.15**	**1.7**	**5.3**	**0.3**	**0.49**	**0.1**	**0.14**	**0.0074 J**	**0.022**	**0.084**
Benz[a]anthracene	mg/kg	21	**0.82**	**0.21**	**9.8**	**0.19**	**0.31**	**0.39**	**0.13**	**0.046**	**0.36**	**5.1**	**9.5**	**0.39**	**1.3**	**0.32**	**0.59**	**0.025**	**0.19**	**0.38**
Benzaldehyde	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.075 U	0.087 U
Benzo[a]pyrene	mg/kg	2.1	**0.64**	**0.22**	**8.4**	**0.35**	**0.27**	**0.6**	**0.16**	**0.023**	**0.36**	**3.6**	**8.6**	**0.41**	**2.4**	**0.44**	**0.84**	**0.032**	**0.42**	**0.53**
Benzo[b]fluoranthene	mg/kg	21	**1.7**	**0.32**	**13.4**	**0.49**	**0.38**	**1.1**	**0.28**	**0.057**	**0.52**	**7.3**	**12.2**	**0.83**	**4**	**0.63**	**1.1**	**0.041**	**0.76**	**0.84**
Benzo[g,h,i]perylene	mg/kg		**0.19**	**0.062**	**1.3**	**0.18**	**0.084**	**0.27**	**0.08**	**0.0072 J**	**0.15**	**0.88**	**2.9**	**0.16**	**0.68**	**0.26**	**0.32**	**0.023**	**0.32**	**0.27**
Benzo[k]fluoranthene	mg/kg	210	**1.2**	**0.1**	**3.8**	**0.19**	**0.17**	**1.1**	**0.12**	**0.017**	**0.22**	**6.6**	**4.8**	**0.62**	**1.2**	**0.19**	**0.42**	**0.015**	**0.69**	**0.77**
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.075 U	0.087 U
Caprolactam	mg/kg	400,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.19 U	0.22 U
Carbazole	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	N/A	N/A	N/A	N/A	0.075 U	**0.029 J**
Chrysene	mg/kg	2,100	**0.69**	**0.16**	**7.1**	**0.23**	**0.28**	**0.45**	**0.17**	**0.055**	**0.32**	**4.9**	**7.6**	**0.39**	**1.1**	**0.28**	**0.62**	**0.023**	**0.2**	**0.38**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.096**	**0.025**	**0.8**	**0.063**	**0.034**	**0.12**	**0.03**	**0.0031 J**	**0.058**	**0.52**	**1.3**	**0.071**	**0.33**	**0.092**	**0.1**	**0.0058 J**	**0.085**	**0.1**
Diethylphthalate	mg/kg	660,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.075 U	0.087 U
Fluoranthene	mg/kg	30,000	**2.7**	**0.27**	**47**	**0.29**	**0.63**	**0.58**	**0.3**	**0.34**	**0.67**	**9.6**	**36.3**	**0.65**	**1.4**	**0.47**	**0.78**	**0.035**	**0.18**	**0.55**
Fluorene	mg/kg	30,000	**1.2**	**0.004 J**	**7.4**	**0.012**	**0.012**	**0.046**	**0.0047 J**	**0.1**	**0.2**	**1.6**	**4.9**	**0.13**	**0.1**	**0.052**	**0.33**	**0.0021 J**	**0.0036 J**	**0.028**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.24**	**0.075**	**2.2**	**0.17**	**0.086**	**0.29**	**0.079**	**0.0073 J**	**0.16**	**0.97**	**3.1**	**0.14**	**0.76**	**0.24**	**0.26**	**0.018**	**0.3**	**0.24**
Naphthalene	mg/kg	8.6	**6.1**	**0.015**	**4.4**	**0.086**	0.0034 B	**0.073**	**0.082**	**0.011**	**0.11**	**0.76**	**9.5**	**0.45**	**0.41**	**0.088**	**0.99**	**0.013**	**0.066**	**0.34**
N-Nitrosodiphenylamine	mg/kg	470	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.075 U	0.087 U
Phenanthrene	mg/kg		**3.6**	**0.071**	**61**	**0.18**	**0.25**	**0.33**	**0.23**	**0.57**	**0.29**	**9.8**	**30.1**	**1.1**	**0.72**	**0.39**	**0.45**	**0.02**	**0.056**	**0.24**
Phenol	mg/kg	250,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.075 U	0.087 U
Pyrene	mg/kg	23,000	**1.4**	**0.23**	**32.6**	**0.25**	**0.48**	**0.47**	**0.23**	**0.21**	**0.46**	**8.5**	**15.4**	**0.56**	**2.4**	**0.43**	**0.82**	**0.031**	**0.18**	**0.55**
PCBs																				
Aroclor 1248	mg/kg	0.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0619 U	N/A
Aroclor 1254	mg/kg	0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0619 U	N/A
Aroclor 1260	mg/kg	0.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0619 U	N/A
PCBs (total)	mg/kg	0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0619 U	N/A
TPH/Oil and Grease																				
Diesel Range Organics	mg/kg	6,200	**99.6**	**7.6 J**	**200**	**67.2**	**14.5**	**505**	**47.5**	**57.7**	**37.8**	**8,100**	**1,280**	**125**	**105**	**106**	**743**	**13**	**19.5**	**51.4**
Gasoline Range Organics	mg/kg	6,200	9 U	10.1 U	8.6 U	9.4 U	8.3 U	9.8 U	9.5 U	10.9 U	8.9 U	**10.5**	11.3 U	10.4 U	8.7 U	11.5 U	9.7 U	10.7 U	10.2 U	12.6 U
Oil and Grease	mg/kg	6,200	**560**	**315**	**1,010**	**319**	**298**	**2,870**	**201**	**273**	**1,730**	**52,600**	**3,860**	**501**	**658**	**639**	**2,840**	**382**	**483**	**1,450**

Detections in bold
Values in red indicate an exceedance of the Project Action Limit (PAL)
N/A indicates that the parameter was not analyzed for this sample
* Non-validated data

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.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
UJ: This analye was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

Table 1 - Sub-Parcel A11-2
Summary of Organics Detected in Soil

Parameter	Units	PAL	A11-040-SB-10*	A11-040T-SB-4*	A11-050-SB-1*	A11-050-SB-4*	A11-054-SB-1*	A11-054-SB-4*	A11-055-SB-1*	A11-055-SB-5*	A11-056-SB-1*	A11-056-SB-5*	A11-057-SB-1	A11-057-SB-5
			8/9/2016	8/23/2018	8/1/2016	8/1/2016	8/9/2016	8/9/2016	8/9/2016	8/9/2016	8/9/2016	8/9/2016	8/10/2016	8/10/2016
Volatile Organic Compounds														
1,1-Dichloroethane	mg/kg	16	0.007 U	0.0043 U	0.0048 U	0.0048 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U	**0.0092**
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.007 U	0.0043 U	0.0048 U	0.0048 U	0.0048 U	**0.0032 J**	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U	0.0058 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.014 U	0.0086 U	0.0095 U	0.0097 U	0.0097 U	0.013 U	0.0094 U	**14.1**	0.0091 U	0.0099 U	0.0091 U	**0.0083 J**
2-Butanone (MEK)	mg/kg	190,000	**0.021**	0.0086 U	0.0095 U	0.0097 U	0.0097 U	0.013 U	0.0094 U	0.013 U	0.0091 U	0.0099 U	0.0091 U	**0.0075 J**
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	**0.011 J**	0.0086 U	0.0095 U	0.0097 U	0.0097 U	0.013 U	0.0094 U	0.013 U	0.0091 U	0.0099 U	0.0091 U	0.012 U
Acetone	mg/kg	670,000	**0.078**	0.0086 U	0.0095 U	**0.014**	0.0097 U	0.013 U	**0.031**	**0.011 J**	0.0091 U	0.0099 U	0.0092 B	0.024 B
Benzene	mg/kg	5.1	N/A	0.0043 U	0.0048 U	0.0048 U	**0.013**	**0.0052 J**	**0.002 J**	**0.015**	**0.0021 J**	0.005 U	0.0046 U	**6**
Carbon disulfide	mg/kg	3,500	**0.045**	0.0043 U	0.0048 U	**0.004 J**	0.0048 U	0.0064 U	0.0047 U	**0.0044 J**	0.0045 U	**0.0036 J**	0.0046 U	0.0058 U
Chloroform	mg/kg	1.4	0.007 U	0.0043 U	0.0048 U	0.0048 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U	0.0058 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.007 U	0.0043 U	0.0048 U	0.0048 U	0.0048 U	0.0064 U	0.0047 U	**14.1**	0.0045 U	0.005 U	0.0046 U	**0.0083**
Cyclohexane	mg/kg	27,000	**0.013 J**	0.0086 U	0.0095 U	0.0097 U	0.0097 U	0.013 U	0.0094 U	0.013 U	0.0091 U	0.0099 U	0.0091 U	**0.012 J**
Ethylbenzene	mg/kg	25	**0.34**	0.0043 U	0.0048 U	0.0048 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U	**0.13**
Isopropylbenzene	mg/kg	9,900	**0.14**	0.0043 U	0.0048 U	0.0048 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U	**0.13**
Methyl Acetate	mg/kg	1,200,000	0.07 U	0.043 U	0.048 U	0.048 U	0.048 U	0.064 U	0.047 U	0.066 U	0.045 U	0.05 U	0.046 R	0.058 R
Methylene Chloride	mg/kg	1,000	0.007 U	0.0043 U	0.0048 U	0.0048 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U	0.0058 U
Styrene	mg/kg	35,000	**0.08**	0.0043 U	0.0048 U	0.0048 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U	**0.062**
Tetrachloroethene	mg/kg	100	0.007 U	0.0043 U	0.0048 U	0.0048 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U	**0.071**
Toluene	mg/kg	47,000	N/A	0.0043 U	0.0048 U	0.0048 U	**0.0027 J**	0.0064 U	0.0047 U	**0.0064 J**	0.0045 U	0.005 U	0.0046 U	**29.2**
trans-1,2-Dichloroethene	mg/kg	23,000	0.007 U	0.0043 U	0.0048 U	0.0048 U	0.0048 U	0.0064 U	0.0047 U	**0.016**	0.0045 U	0.005 U	0.0046 U	0.0058 U
Trichloroethene	mg/kg	6	0.007 U	0.0043 U	0.0048 U	0.0048 U	0.0048 U	0.0064 U	0.0047 U	**0.11**	0.0045 U	0.005 U	0.0046 U	**0.025**
Vinyl chloride	mg/kg	1.7	0.007 U	0.0043 U	0.0048 U	0.0048 U	0.0048 U	0.0064 U	0.0047 U	**0.22**	0.0045 U	0.005 U	0.0046 U	0.0058 U
Xylenes	mg/kg	2,800	**46.3**	0.013 U	0.014 U	0.015 U	0.015 U	0.019 U	0.014 U	**0.0071 J**	0.014 U	0.015 U	0.014 U	**19.3**
Semi-Volatile Organic Compounds^														
1,1-Biphenyl	mg/kg	200	**155**	N/A	0.074 U	**0.063 J**	0.071 U	**0.034 J**	0.072 U	**0.089**	**0.041 J**	0.079 U	**0.049 J**	**2**
2,4-Dimethylphenol	mg/kg	16,000	**31.4**	N/A	0.074 U	**0.18**	0.071 U	0.086 U	0.072 U	**0.18**	0.071 U	**0.15**	0.073 R	**0.99**
2-Methylnaphthalene	mg/kg	3,000	**159**	**0.0083**	**0.092**	**0.25**	**0.037 J**	**0.035**	**0.023**	**0.012**	**0.023**	**0.037**	**0.021 J**	**17.4**
2-Methylphenol	mg/kg	41,000	**21**	N/A	0.074 U	**0.081**	0.071 U	0.086 U	0.072 U	**0.091**	0.071 U	0.079 U	0.073 R	**0.12 J**
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	**47.2**	N/A	0.15 U	**0.16**	0.14 U	0.17 U	0.14 U	**0.15 J**	0.14 U	**0.041 J**	0.14 R	**0.54 J**
Acenaphthene	mg/kg	45,000	**41.5**	**0.0016 J**	**0.0048 J**	**0.13**	**0.041 J**	**0.015**	**0.0034 J**	**0.00059 J**	**0.018**	**0.019**	**0.022 J**	**2.8**
Acenaphthylene	mg/kg	45,000	**116**	0.0071 U	**0.013**	**0.052**	**0.1**	**0.0084 J**	**0.0034 J**	0.0087 U	**0.012**	**0.0078 J**	**0.014 J**	**13.5**
Acetophenone	mg/kg	120,000	**51.9**	N/A	0.074 U	**0.028 J**	0.071 U	0.086 U	0.072 U	**0.22**	0.071 U	0.079 U	0.073 U	**2.1**
Anthracene	mg/kg	230,000	**288**	**0.0044 J**	**0.016**	**0.2**	**0.12**	**0.018**	**0.008**	**0.0027 J**	**0.038**	**0.012**	**0.045**	**15.3**
Benz[a]anthracene	mg/kg	21	**222**	**0.014**	**0.044**	**0.48**	**0.25**	**0.089**	**0.024**	**0.0017 J**	**0.16**	**0.031**	**0.22**	**23.6**
Benzaldehyde	mg/kg	120,000	4.3 U	N/A	0.074 U	0.074 U	0.071 U	0.086 U	0.072 U	**0.035 J**	0.071 U	0.079 U	0.073 UJ	0.4 UJ
Benzo[a]pyrene	mg/kg	2.1	**153**	**0.016**	**0.05**	**0.44**	**0.26**	**0.12**	**0.031**	**0.0012 J**	**0.24**	**0.035**	**0.3**	**24.4**
Benzo[b]fluoranthene	mg/kg	21	**189**	**0.035**	**0.089**	**0.9**	**0.37**	**0.18**	**0.051**	**0.0043 J**	**0.56**	**0.08**	**0.45**	**50.5**
Benzo[g,h,i]perylene	mg/kg		**86.2**	**0.014**	**0.044**	**0.19**	**0.23**	**0.072**	**0.02**	**0.0011 J**	**0.1**	**0.015**	**0.27 J**	**6.4**
Benzo[k]fluoranthene	mg/kg	210	**113**	**0.032**	**0.031**	**0.82**	**0.17**	**0.067**	**0.021**	**0.0039 J**	**0.52**	**0.074**	**0.18**	**46**
bis(2-Ethylhexyl)phthalate	mg/kg	160	4.3 U	N/A	**0.046 J**	**0.35**	0.071 U	0.086 U	0.072 U	0.088 U	0.071 U	0.079 U	0.073 UJ	0.4 UJ
Caprolactam	mg/kg	400,000	10.8 U	N/A	0.18 U	0.19 U	0.18 U	0.22 U	0.18 U	0.22 U	0.18 U	0.2 U	0.18 U	1 U
Carbazole	mg/kg		**477**	N/A	0.074 U	**0.38**	0.071 U	0.086 U	0.072 U	0.088 U	**0.023 J**	0.079 U	**0.02 J**	**1.9**
Chrysene	mg/kg	2,100	**196**	**0.021**	**0.065**	**0.48**	**0.31**	**0.12**	**0.037**	**0.0029 J**	**0.22**	**0.042**	**0.28 J**	**22.5**
Dibenz[a,h]anthracene	mg/kg	2.1	**32**	**0.0039 J**	**0.013**	**0.08**	**0.067 J**	**0.018**	**0.0048 J**	0.0087 U	**0.029**	**0.0054 J**	**0.08**	**3.4**
Diethylphthalate	mg/kg	660,000	4.3 U	N/A	0.074 U	0.074 U	0.071 U	0.086 U	0.072 U	0.088 U	0.071 U	0.079 U	0.073 U	0.4 U
Fluoranthene	mg/kg	30,000	**554**	**0.034**	**0.08**	**0.99**	**0.4**	**0.13**	**0.043**	**0.0092**	**0.3**	**0.054**	**0.34 J**	**62.3**
Fluorene	mg/kg	30,000	**244**	**0.002 J**	**0.0058 J**	**0.36**	**0.073**	**0.0051 J**	**0.0016 J**	**0.0013 J**	**0.0069 J**	**0.01**	**0.0092 J**	**18.5**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**105**	**0.012**	**0.038**	**0.2**	**0.21**	**0.066**	**0.018**	0.0087 U	**0.1**	**0.015**	**0.26 J**	**6.8**
Naphthalene	mg/kg	8.6	**3,400**	**0.018**	**0.08**	**1.4**	**0.51**	**0.25**	**0.027**	**0.14**	**0.11**	**0.13**	**0.1 J**	**101**
N-Nitrosodiphenylamine	mg/kg	470	4.3 U	N/A	0.074 U	0.074 U	0.071 U	**0.022 J**	0.072 U	0.088 U	0.071 U	0.079 U	0.073 U	0.4 U
Phenanthrene	mg/kg		**753**	**0.027**	**0.093**	**0.84**	**0.3**	**0.055**	**0.048**	**0.02**	**0.23**	**0.05**	**0.24**	**54.6**
Phenol	mg/kg	250,000	**23.7**	N/A	0.074 U	0.074 U	0.071 U	0.086 U	0.072 U	**0.024 J**	0.071 U	0.079 U	0.073 R	**0.29 J**
Pyrene	mg/kg	23,000	**423**	**0.03**	**0.076**	**0.83**	**0.4**	**0.17**	**0.037**	**0.0055 J**	**0.23**	**0.052**	**0.34 J**	**53.2**
PCBs														
Aroclor 1248	mg/kg	0.94	N/A	N/A	0.0563 U	N/A	0.0613 U	N/A	0.0529 U	N/A	0.0556 U	N/A	0.0524 U	N/A
Aroclor 1254	mg/kg	0.97	N/A	N/A	**0.0504 J**	N/A	0.0613 U	N/A	0.0529 U	N/A	0.0556 U	N/A	0.0524 U	N/A
Aroclor 1260	mg/kg	0.99	N/A	N/A	0.0563 U	N/A	0.0613 U	N/A	0.0529 U	N/A	0.0556 U	N/A	0.0524 U	N/A
PCBs (total)	mg/kg	0.97	N/A	N/A	**0.0504 J**	N/A	0.0613 U	N/A	0.0529 U	N/A	0.0556 U	N/A	0.0524 U	N/A
TPH/Oil and Grease														
Diesel Range Organics	mg/kg	6,200	**19,400**	**49.9**	**121**	**122**	**32.1**	**176**	**39.5**	**74.1**	**91.7**	**43.7**	**92.7 J**	**9,370 J**
Gasoline Range Organics	mg/kg	6,200	**937**	9.9 U	7.8 U	11.3 U	11.8 U	14.3 U	11.5 U	11.2 U	11.2 U	11.1 U	8.9 U	**119**
Oil and Grease	mg/kg	6,200	**36,900**	**251**	**988**	**1,240**	**861**	**997**	**199**	**1,510**	**423**	**1,060**	**493**	**50,600**

Detections in bold
Values in red indicate an exceedance of the Project Action Limit (PAL)
N/A indicates that the parameter was not analyzed for this sample
* Non-validated data

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.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank
UJ: This analye was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

Table 2 - Sub-Parcel A11-2
Summary of Inorganics Detected in Soil

Parameter	Units	PAL	A11-001-SB-1* 8/1/2016	A11-001-SB-5* 8/1/2016	A11-002-SB-1* 8/1/2016	A11-002-SB-7* 8/1/2016	A11-002-SB-10* 8/1/2016	A11-003-SB-1* 8/1/2016	A11-003-SB-5* 8/1/2016	A11-017-SB-1 7/29/2016	A11-017-SB-5 7/29/2016	A11-017-SB-10 7/29/2016	A11-019-SB-1 7/29/2016	A11-019-SB-4 7/29/2016
Metal														
Aluminum	mg/kg	1,100,000	**14,300**	**14,400**	**39,300**	**16,500**	N/A	**34,100**	**12,700**	**9,590**	**10,100**	N/A	**7,840**	**36,900**
Antimony	mg/kg	470	2.5 U	2.5 U	2.9 U	2.8 U	N/A	2.5 U	**13.9**	2.7 UJ	3.3 UJ	N/A	2.7 UJ	2.8 UJ
Arsenic	mg/kg	3	**4.6**	**3.1**	**2.4**	**7.9**	**4.3**	**4.9**	**7.5**	**4.1**	**8.4**	**3.6**	**2.3**	**2.7**
Barium	mg/kg	220,000	**70.5**	**69.4**	**528**	**171**	N/A	**294**	**66.9**	**106 J**	**124 J**	N/A	**188 J**	**389 J**
Beryllium	mg/kg	2,300	**0.68 J**	**0.56 J**	**4.9**	**1.1**	N/A	**5**	**0.49 J**	**0.5 J**	**0.46 J**	N/A	0.88 U	**4.6**
Cadmium	mg/kg	980	0.38 B	0.18 B	0.61 B	1.1 B	N/A	0.58 B	**2.2**	0.7 B	1 B	N/A	0.74 B	0.41 B
Chromium	mg/kg	120,000	**77.3**	**22.6**	**19.6**	**202**	N/A	**57.3**	**37.3**	**873**	**40.8**	N/A	**1,530**	**20.4**
Chromium VI	mg/kg	6.3	0.32 B	0.42 B	0.41 B	0.38 B	N/A	0.38 B	0.29 B	0.5 B	1.3 UJ	N/A	0.47 B	0.33 B
Cobalt	mg/kg	350	**9**	**7.9**	**2.2 J**	**8.6**	N/A	**3.1 J**	**8.6**	**7**	**11.1**	N/A	**3.2 J**	**2.4 J**
Copper	mg/kg	47,000	**26.2**	**11.8**	**14.5**	**34.6**	N/A	**16.5**	**2,890**	**72.1**	**54.3**	N/A	**60.8**	**10.3**
Iron	mg/kg	820,000	**24,600**	**18,000**	**13,200**	**56,700**	N/A	**50,100**	**58,900**	**218,000**	**18,700**	N/A	**229,000**	**14,100**
Lead	mg/kg	800	**46.8**	**23.9**	**11.8**	**90.2**	N/A	**13**	**1,020**	**225 J**	**124 J**	N/A	**20.5 J**	**19.4 J**
Manganese	mg/kg	26,000	**2,430**	**249**	**4,910**	**10,200**	N/A	**2,920**	**927**	**18,800**	**566**	N/A	**24,000**	**4,130**
Mercury	mg/kg	350	**0.084 J**	**0.065 J**	**0.0091 J**	**0.054 J**	N/A	**0.0039 J**	**0.037 J**	**0.026 J-**	**0.094 J-**	N/A	**0.0042 J-**	**0.0083 J-**
Nickel	mg/kg	22,000	**16.4**	**12.2**	**6 J**	**18.8**	N/A	**11.9**	**25.4**	**54.3**	**15.1**	N/A	**38.2**	**3.2 J**
Selenium	mg/kg	5,800	3.3 U	3.4 U	**2.9 J**	3.8 U	N/A	**3.6**	3.5 U	3.6 U	4.4 U	N/A	3.5 U	**2.9 J**
Silver	mg/kg	5,800	2.5 U	2.5 U	2.9 U	2.8 U	N/A	2.5 U	**0.76 J**	2.7 U	3.3 U	N/A	**1.1 J**	2.8 U
Thallium	mg/kg	12	8.3 U	8.5 U	9.8 U	**6.8 J**	N/A	8.5 U	8.8 U	**26.9**	11 U	N/A	**38.3**	9.3 U
Vanadium	mg/kg	5,800	**184**	**40**	**42.9**	**522**	N/A	**131**	**46.8**	**2,150 J**	**79.8 J**	N/A	**3,050 J**	**66.5 J**
Zinc	mg/kg	350,000	**136**	**68.9**	**45**	**391**	N/A	**62.4**	**1,490**	**171 J**	**230 J**	N/A	**133 J**	**30.8 J**
Other														
Cyanide	mg/kg	150	0.16 B	0.23 B	0.4 B	0.41 B	N/A	**1.4**	0.55 B	**0.28 J**	**0.19 J**	N/A	**0.3 J-**	**0.35 J-**

Detections in bold
Values in red indicate an exceedance of the Project Action Limit (PAL)
N/A indicates that the parameter was not analyzed for this sample
* Non-validated data

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.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
J-: The positive result reported for this analyte is a quantitative estimate, but may be biased low.
UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

Table 2 - Sub-Parcel A11-2
Summary of Inorganics Detected in Soil

Parameter	Units	PAL	A11-024-SB-1* 8/9/2016	A11-024-SB-9* 8/9/2016	A11-024-SB-10* 8/9/2016	A11-024S-SB-4* 8/15/2018	A11-029-SB-1 8/10/2016	A11-029-SB-5 8/10/2016	A11-030-SB-1 8/10/2016	A11-030-SB-4 8/10/2016	A11-033-SB-1* 8/9/2016	A11-034-SB-1* 8/9/2016	A11-034-SB-5* 8/9/2016	A11-035-SB-1 8/12/2016
Metal														
Aluminum	mg/kg	1,100,000	**40,400**	**7,370**	N/A	**19,300**	**10,200**	**12,600**	**7,520**	**3,410**	**37,100**	**7,710**	**3,390**	**20,800**
Antimony	mg/kg	470	2.4 U	3.3 U	N/A	2.8 U	2.5 UJ	3.9 UJ	2.6 UJ	3.3 UJ	2.2 U	2.6 U	2.3 U	2.4 UJ
Arsenic	mg/kg	3	**3.4**	**5.4**	**5.3**	**14.7**	**3.9**	**11.7**	**5.9**	2.7 U	**4.3**	2.2 U	**4.5**	2 U
Barium	mg/kg	220,000	**278**	**321**	N/A	**272**	**171 J**	**194 J**	**110 J**	**88.6 J**	**290**	**139**	**25.2**	**183 J**
Beryllium	mg/kg	2,300	**4.6**	**0.23 J**	N/A	0.93 U	**0.34 J**	**0.91 J**	**0.21 J**	1.1 U	**5**	0.88 U	0.76 U	**3.1**
Cadmium	mg/kg	980	0.55 B	0.9 B	N/A	**0.9 J**	**0.37 J**	**11**	**0.89 J**	**0.5 J**	1.6 B	0.8 B	0.45 B	**2.5**
Chromium	mg/kg	120,000	**27.5**	**432**	N/A	**989**	**365**	**173**	**898**	**1,090**	**130**	**2,850**	**86.9**	**722**
Chromium VI	mg/kg	6.3	0.49 B	0.48 B	N/A	N/A	0.52 B	0.4 B	0.48 B	**1.9**	0.35 B	**4.1**	0.41 B	0.34 B
Cobalt	mg/kg	350	**1.8 J**	**2.6 J**	N/A	**3.2 J**	**6.3 J**	**14.2 J**	**6.3 J**	5.4 U	**2.8 J**	**5.1**	**4**	**1.4 J**
Copper	mg/kg	47,000	**16.8**	**63.7**	N/A	**169**	**43.2 J**	**173 J**	**73.7 J**	**13.3 J**	**30.2**	**37.1**	**46.9**	**40.8**
Iron	mg/kg	820,000	**15,100**	**55,400**	N/A	**36,300**	**83,600**	**70,500**	**250,000**	**124,000**	**46,400**	**179,000**	**43,800**	**129,000 J**
Lead	mg/kg	800	**60.9**	**95.2**	N/A	**108**	**55.8**	**3,560**	**39.3**	**15.5**	**33.7**	**56.1**	**32.5**	**96.5**
Manganese	mg/kg	26,000	**2,720**	**20,300**	N/A	**17,400**	**9,620**	**4,030**	**23,900**	**23,500**	**4,870**	**23,500**	**3,790**	**17,200**
Mercury	mg/kg	350	0.11 U	**0.33**	N/A	**16.1**	**0.0089 J-**	**0.32 J-**	**0.019 J-**	0.13 UJ	0.1 U	**0.014 J**	**0.41**	**0.055 J-**
Nickel	mg/kg	22,000	**5.1 J**	**10.1 J**	N/A	**13.9**	**61.5 J**	**59.6 J**	**39 J**	6.9 B	**14.6**	**29.5**	**13.4**	**23.2**
Selenium	mg/kg	5,800	**3 J**	4.3 U	N/A	**2.9 J**	3.4 U	5.2 U	3.5 U	4.3 U	3 U	3.5 U	3 U	3.2 U
Silver	mg/kg	5,800	2.4 U	3.3 U	N/A	**34.1**	2.5 U	**1.5 J**	**1.8 J**	3.3 U	2.2 U	2.6 U	2.3 U	**1.3 J**
Thallium	mg/kg	12	7.9 U	**17.5**	10.6 U	9.3 U	8.4 U	13 U	**8.8 J**	10.9 U	7.5 U	**34.6**	7.6 U	**8 J**
Vanadium	mg/kg	5,800	**50.2**	**1,610**	N/A	**6,760**	**575**	**391**	**2,500**	**1,130**	**257**	**3,050**	**101**	**610 J**
Zinc	mg/kg	350,000	**165**	**165**	N/A	**86.4**	**129**	**1,380**	**152**	**30.8**	**226**	**141**	**151**	**1,250**
Other														
Cyanide	mg/kg	150	**0.71**	**2.6**	N/A	**1.6**	**0.46 J-**	**1.5 J-**	**1.6 J-**	**0.86 J-**	**0.53**	**0.52 J**	0.33 B	**2.1 J-**

Detections in bold
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Table 2 - Sub-Parcel A11-2
Summary of Inorganics Detected in Soil

Parameter	Units	PAL	A11-035-SB-4 8/12/2016	A11-035-SB-10 8/12/2016	A11-036-SB-1 8/15/2016	A11-036-SB-5 8/15/2016	A11-037-SB-1* 8/1/2016	A11-037-SB-5* 8/1/2016	A11-037-SB-10* 8/1/2016	A11-040-SB-1* 8/9/2016	A11-040-SB-4* 8/9/2016	A11-040-SB-10* 8/9/2016	A11-050-SB-1* 8/1/2016	A11-050-SB-4* 8/1/2016
Metal														
Aluminum	mg/kg	1,100,000	**10,800**	N/A	**4,570**	**3,310**	**6,460**	**13,100**	N/A	**5,190**	**25,900**	**7,770**	**23,500**	**16,700**
Antimony	mg/kg	470	3 UJ	N/A	2.6 UJ	2.5 UJ	2.7 U	3 U	N/A	2.8 U	3.3 U	2.8 U	2.5 U	2.3 U
Arsenic	mg/kg	3	**3.9 J**	**2.4 J**	2.2 U	2.1 U	2.3 U	**4**	**4.7**	**5**	**10**	**16.5**	**4.9**	**8.9**
Barium	mg/kg	220,000	**116 J**	N/A	**55.5 J**	**94.1 J**	**109**	**82.6**	N/A	**111**	**240**	**112**	**192**	**197**
Beryllium	mg/kg	2,300	**1.1**	N/A	**0.47 J**	0.85 U	0.91 U	**0.84 J**	N/A	**0.27 J**	**2.2**	**0.48 J**	**3.4**	**1.1**
Cadmium	mg/kg	980	1.1 B	N/A	0.39 B	0.61 B	1.2 B	0.45 B	N/A	1.3 B	2 B	**3.4**	**2.2**	**5.9**
Chromium	mg/kg	120,000	**654**	N/A	**303**	**848**	**1,620**	**42.8**	N/A	**805**	**521**	**321**	**390**	**362**
Chromium VI	mg/kg	6.3	0.35 B	N/A	0.54 B	**1.4 J-**	1 B	0.39 B	N/A	1.5 B	0.47 B	0.74 B	0.39 B	0.41 B
Cobalt	mg/kg	350	**6.5**	N/A	4.3 U	4.2 U	**0.65 J**	**9.3**	N/A	**5.8**	**52**	**6.8**	**6.1**	**8.7**
Copper	mg/kg	47,000	**68.5**	N/A	**3.7 J**	**26 J**	**31.9**	**20.9**	N/A	**84.9**	**105**	**428**	**54.1**	**81.7**
Iron	mg/kg	820,000	**138,000 J**	N/A	**90,800 J**	**208,000 J**	**185,000**	**19,300**	N/A	**225,000**	**120,000**	**62,500**	**81,800**	**96,500**
Lead	mg/kg	800	**106**	N/A	**5.4**	**7.5**	**50.3**	**73.6**	N/A	**57.7**	**234**	**375**	**84**	**217**
Manganese	mg/kg	26,000	**21,500**	N/A	**7,820**	**20,200**	**27,300**	**743**	N/A	**19,500**	**2,810**	**6,980**	**8,330**	**8,530**
Mercury	mg/kg	350	**0.026 J-**	N/A	0.11 U	0.11 U	**0.0064 J**	**0.14**	N/A	**0.024 J**	**0.041 J**	**0.18**	**0.057 J**	**0.068 J**
Nickel	mg/kg	22,000	**37.8**	N/A	**3.9 J**	**27.6**	**15.2**	**19.5**	N/A	**44.2**	**345**	**31.7**	**43.4**	**42.1**
Selenium	mg/kg	5,800	3.9 U	N/A	3.5 U	3.4 U	3.6 U	4 U	N/A	3.7 U	4.4 U	3.7 U	3.3 U	**1.9 J**
Silver	mg/kg	5,800	3 U	N/A	2.6 U	2.5 U	2.7 U	3 U	N/A	**1.9 J**	**0.99 J**	**0.78 J**	2.5 U	2.3 U
Thallium	mg/kg	12	**19.5 J**	10.5 U	8.6 UJ	8.5 UJ	**38.7**	10.1 U	N/A	**32.8**	11 U	**9.9**	**6.7 J**	**4.6 J**
Vanadium	mg/kg	5,800	**1,560 J**	N/A	**1,280**	**3,330**	**3,420**	**76.1**	N/A	**2,880**	**177**	**803**	**525**	**368**
Zinc	mg/kg	350,000	**300**	N/A	**27**	**28.6**	**279**	**131**	N/A	**235**	**1,460**	**1,640**	**486**	**764**
Other														
Cyanide	mg/kg	150	**2.9 J-**	N/A	0.6 UJ	**0.14 J-**	0.36 B	0.43 B	N/A	**0.8**	**1.4**	**17.9**	**3.5**	**0.64**

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Table 2 - Sub-Parcel A11-2
Summary of Inorganics Detected in Soil

Parameter	Units	PAL	A11-054-SB-1* 8/9/2016	A11-054-SB-4* 8/9/2016	A11-055-SB-1* 8/9/2016	A11-055-SB-5* 8/9/2016	A11-056-SB-1* 8/9/2016	A11-056-SB-5* 8/9/2016	A11-056-SB-10* 8/9/2016	A11-057-SB-1 8/10/2016	A11-057-SB-5 8/10/2016
Metal											
Aluminum	mg/kg	1,100,000	**14,900**	**4,250**	**6,140**	**8,190**	**4,970**	**13,800**	N/A	**6,550**	**18,300**
Antimony	mg/kg	470	2.5 U	3 U	2.6 U	**2 J**	2.3 U	2.5 U	N/A	2.3 UJ	2.9 UJ
Arsenic	mg/kg	3	**3.7**	**18.2**	2.2 U	**35**	**7.3**	**5**	**7.3**	**5**	**9.5**
Barium	mg/kg	220,000	**131**	**96.7**	**91.4**	**793**	**155**	**103**	N/A	**71.2 J**	**474 J**
Beryllium	mg/kg	2,300	**1.4**	0.99 U	0.87 U	**0.94 J**	0.77 U	**0.86**	N/A	0.78 U	**1.1**
Cadmium	mg/kg	980	2.2 B	0.62 B	1.1 B	**13.2**	0.81 B	0.62 B	N/A	**0.75 J**	**11.4**
Chromium	mg/kg	120,000	**446**	**1,010**	**1,220**	**384**	**792**	**55.9**	N/A	**1,200**	**353**
Chromium VI	mg/kg	6.3	0.48 B	0.83 B	**4**	0.37 B	2.4 B	0.39 B	N/A	0.94 B	0.33 B
Cobalt	mg/kg	350	**7.6**	**23.6**	4.3 U	**23.2**	**7.1**	**16.4**	N/A	**2.6 J**	**9.4 J**
Copper	mg/kg	47,000	**63.5**	**245**	**34.2**	**1,270**	**101**	**18.2**	N/A	**47.5 J**	**98.4 J**
Iron	mg/kg	820,000	**107,000**	**428,000**	**191,000**	**108,000**	**281,000**	**28,800**	N/A	**232,000**	**116,000**
Lead	mg/kg	800	**176**	**35.8**	**32.8**	**1,420**	**61.5**	**54.1**	N/A	**35.9**	**288**
Manganese	mg/kg	26,000	**11,500**	**23,000**	**30,300**	**4,090**	**20,900**	**1,210**	N/A	**22,900**	**9,710**
Mercury	mg/kg	350	**0.029 J**	**0.028 J**	**0.017 J**	**0.14**	**0.016 J**	**0.091 J**	N/A	**0.038 J-**	**0.12 J-**
Nickel	mg/kg	22,000	**26.3**	**104**	**11.5**	**227**	**49.8**	**42**	N/A	**29.6 J**	**135 J**
Selenium	mg/kg	5,800	3.3 U	4 U	3.5 U	4.9 U	3.1 U	3.4 U	N/A	3.1 U	3.9 U
Silver	mg/kg	5,800	**0.63 J**	**4.9**	2.6 U	**7.9**	**2.5**	2.5 U	N/A	**1.4 J**	**0.82 J**
Thallium	mg/kg	12	**12.5**	**29.1**	**19.1**	12.1 U	**29.3**	8.4 U	N/A	7.8 U	9.8 U
Vanadium	mg/kg	5,800	**1,050**	**2,530**	**1,620**	**92.3**	**2,640**	**61.8**	N/A	**1,650**	**834**
Zinc	mg/kg	350,000	**608**	**136**	**189**	**4,390**	**116**	**191**	N/A	**123**	**1,720**
Other											
Cyanide	mg/kg	150	**0.49 J**	**0.87**	**0.52 J**	**0.66 J**	**0.89**	**0.73**	N/A	**0.67 J-**	**0.78 J-**

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Table 3 - Sub-Parcel A11-2
Summary of Organics Detected in Groundwater

Parameter	Units	PAL	A11-014-PZ* 7/25/2018	A11-015-PZ* 7/24/2018	A11-016EE-PZ* 8/14/2018	A11-016F-PZ* 8/15/2018	A11-016J-PZ* 8/15/2018	A11-016LL-PZ* 8/13/2018
Volatile Organic Compounds								
1,1,2,2-Tetrachloroethane	µg/L	0.076	1 U	1 U	5 U	5 U	5 U	1 U
1,1-Dichloroethane	µg/L	2.7	1 U	1 U	5 U	5 U	5 U	1 U
1,2,4-Trichlorobenzene	µg/L	70	1 U	1 U	5 U	5 U	5 U	1 U
1,2,4-Trimethylbenzene	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dibromo-3-chloropropane	µg/L	0.2	5 U	5 U	25 U	25 U	25 U	5 U
1,2-Dichlorobenzene	µg/L	600	1 U	1 U	5 U	5 U	5 U	1 U
1,2-Dichloroethane	µg/L	5	1 U	1 U	5 U	5 U	5 U	1 U
1,2-Dichloroethene (Total)	µg/L	70	2 U	2 U	**8.9 J**	10 U	10 U	2 U
1,2-Dichloropropane	µg/L	5	1 U	1 U	5 U	5 U	5 U	1 U
1,3,5-Trimethylbenzene	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	µg/L		1 U	1 U	5 U	5 U	5 U	1 U
1,4-Dichlorobenzene	µg/L	75	1 U	1 U	5 U	5 U	5 U	1 U
2-Butanone (MEK)	µg/L	5,600	10 U	10 U	50 U	**19.7 J**	**14.3 J**	10 U
2-Hexanone	µg/L	38	10 U	10 U	50 U	50 U	50 U	10 U
4-Methyl-2-pentanone (MIBK)	µg/L	1,200	10U	10 U	50 U	50 U	50 U	10 U
Acetone	µg/L	14,000	**2.9 J**	**4.6 J**	**53.8**	**85.9**	**103**	**8.8 J**
Benzene	µg/L	5	**96.8**	**2,680**	**35,600**	**347,000**	**303,000**	1 U
Bromodichloromethane	µg/L	0.13	1 U	1 U	5 U	5 U	5 U	1 U
Bromoform	µg/L	3.3	1 U	1 U	5 U	5 U	5 U	1 U
Carbon disulfide	µg/L	810	1 U	1 U	5 U	**40.4**	**34.2**	1 U
Carbon tetrachloride	µg/L	5	1 U	1 U	5 U	**20.3**	5 U	1 U
Chlorobenzene	µg/L	100	1 U	1 U	5 U	**1.2 J**	**0.93 J**	1 U
Chloroform	µg/L	0.22	1 U	1 U	5 U	**21.7**	**8.7**	1 U
Chloromethane	µg/L	190	1 U	1 U	5 U	5 U	5 U	**1.3**
cis-1,2-Dichloroethene	µg/L	70	1 U	1 U	**8.9**	5 U	5 U	1 U
cis-1,3-Dichloropropene	µg/L		1 U	1 U	5 U	5 U	5 U	1 U
Cyclohexane	µg/L	13,000	10 U	10 U	50 U	**13.9 J**	**18.5 J**	10 U
Ethylbenzene	µg/L	700	1 U	**6.6**	**37**	**90.2**	**107**	1 U
Isopropylbenzene	µg/L	450	1 U	**0.74 J**	**3.1 J**	**7.4**	**8.7**	1 U
Methyl Acetate	µg/L	20,000	5 U	5 U	25 U	25 U	25 U	5 U
Methyl tert-butyl ether (MTBE)	µg/L	14	1 U	1 U	5 U	5 U	5 U	1 U
Methylene Chloride	µg/L	5	1 U	**2**	5 U	5 U	5 U	1 U
Naphthalene	µg/L	0.12	N/A	N/A	N/A	N/A	N/A	N/A
Styrene	µg/L	100	1 U	**0.48 J**	5 U	5 U	5 U	1 U
Tetrachloroethene	µg/L	5	1 U	1 U	5 U	5 U	5 U	1 U
Toluene	µg/L	1,000	**3.3**	**7.1**	**1,080**	**13,400**	**4,620**	1 U
trans-1,2-Dichloroethene	µg/L	100	1 U	1 U	5 U	5 U	5 U	1 U
Trichloroethene	µg/L	5	1 U	1 U	5 U	5 U	5 U	1 U
Trichlorofluoromethane	µg/L	1,100	1 U	1 U	5 U	5 U	5 U	1 U
Vinyl chloride	µg/L	2	1 U	1 U	**3.3 J**	5 U	5 U	1 U
Xylenes	µg/L	10,000	3 U	**52.5**	**832**	**2,960**	**2,320**	3 U
Semi-Volatile Organic Compounds								
1,1-Biphenyl	µg/L	0.83	N/A	N/A	N/A	N/A	N/A	N/A
1,2,4-Trichlorobenzene	µg/L	70	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	µg/L	600	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	µg/L	75	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dioxane	µg/L	0.46	0.097 U	0.098 U	0.098 U	0.099 U	0.098 U	0.1 U
2,4-Dimethylphenol	µg/L	360	N/A	N/A	N/A	N/A	N/A	N/A
2-Chlorophenol	µg/L	91	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	µg/L	36	**2.2**	**8.6**	**184**	**278**	**211**	**0.053 J**
2-Methylphenol	µg/L	930	N/A	N/A	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	µg/L	930	N/A	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	µg/L	0.12	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	µg/L	530	**0.23**	**23.6**	**18**	**1.8**	**5.5**	0.1 U
Acenaphthylene	µg/L	530	**0.14**	**7.4**	**105**	**0.4**	**2.2**	0.1 U
Acetophenone	µg/L	1,900	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	µg/L	1,800	**0.3**	**10.7**	**63.9**	**0.94**	**3.1**	**0.048 J**
Benz[a]anthracene	µg/L	0.03	**0.28**	**6.4**	**45.4**	**0.31**	**0.1**	0.1 U
Benzo[a]pyrene	µg/L	0.2	**0.11**	**5.3**	**19**	**0.19**	**0.049 J**	0.1 U
Benzo[b]fluoranthene	µg/L	0.25	**0.18**	**9**	**50.1**	**0.29**	**0.091 J**	0.1 U
Benzo[g,h,i]perylene	µg/L		**0.083 J**	**2.6**	**5.9**	**0.072 J**	0.098 U	0.1 U
Benzo[k]fluoranthene	µg/L	2.5	**0.082 J**	**8**	**16.7**	**0.13**	**0.047 J**	0.1 U
bis(2-Ethylhexyl)phthalate	µg/L	6	N/A	N/A	N/A	N/A	N/A	N/A
Caprolactam	µg/L	9,900	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	µg/L	25	**0.23**	**5.2**	**15.2**	**0.27**	**0.071 J**	0.1 U
Dibenz[a,h]anthracene	µg/L	0.025	0.097 U	**0.9**	**2.8**	0.099 U	0.098 U	0.1 U
Diethylphthalate	µg/L	15,000	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	µg/L	800	**1.2**	**21.1**	**178**	**1.3**	**2.1**	**0.081 J**
Fluorene	µg/L	290	**3.1**	**43.1**	**176**	**16.4**	**13.6**	**0.042 J**
Indeno[1,2,3-c,d]pyrene	µg/L	0.25	**0.076 J**	**2.6**	**7**	**0.072 J**	0.098 U	0.1 U
Naphthalene	µg/L	0.12	**39.5**	**640**	**14,100**	**7,600**	**7,730**	**0.6**
N-Nitroso-di-n-propylamine	µg/L	0.011	N/A	N/A	N/A	N/A	N/A	N/A
Pentachlorophenol	µg/L	1	N/A	N/A	N/A	N/A	N/A	N/A
Phenanthrene	µg/L		**3.8**	**59.9**	**311**	**11.5**	**116**	**0.14**
Phenol	µg/L	5,800	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	µg/L	120	**0.62**	**14.9**	**127**	**0.88**	**0.8**	**0.051 J**
Pyridine	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
TPH/Oil and Grease								
Diesel Range Organics	µg/L	47	**1,130**	**1,710**	**16,700**	**15,800**	**15,400**	**338**
Gasoline Range Organics	µg/L	47	**1,350**	**4,540**	**74,300**	**585,000**	**764,000**	200 U
Oil and Grease	µg/L	47	4,750 U	**1,100 J**	4,750 U	4,770 U	4,750 U	4,750 U

Detections in bold

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

N/A indicates that the parameter was not analyzed for this sample

* Non-validated data

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.

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 3 - Sub-Parcel A11-2
Summary of Organics Detected in Groundwater

Parameter	Units	PAL	A11-016L-PZ* 8/15/2018	A11-016MM-PZ* 8/13/2018	A11-016NN-PZ* 8/13/2018	A11-016-PZ* 7/24/2018	A11-016QQ-PZ* 8/14/2018	A11-016R-PZ* 8/14/2018
Volatile Organic Compounds								
1,1,2,2-Tetrachloroethane	µg/L	0.076	5 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	µg/L	2.7	5 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	µg/L	70	5 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dibromo-3-chloropropane	µg/L	0.2	25 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	µg/L	600	5 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	µg/L	5	5 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (Total)	µg/L	70	10 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	µg/L	5	5 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	µg/L		5 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	µg/L	75	5 U	1 U	1 U	1 U	1 U	1 U
2-Butanone (MEK)	µg/L	5,600	50 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	µg/L	38	50 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (MIBK)	µg/L	1,200	**5.9 J**	10 U	10 U	**0.55 J**	10 U	10 U
Acetone	µg/L	14,000	**51**	**10.1**	**36.6**	**8.5 J**	**10.3**	**6.3 J**
Benzene	µg/L	5	**282,000**	1 U	1 U	**6,890**	**1,920**	**664**
Bromodichloromethane	µg/L	0.13	5 U	1 U	1 U	1 U	1 U	1 U
Bromoform	µg/L	3.3	5 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	µg/L	810	**13.2**	1 U	1 U	1 U	**0.56 J**	**0.32 J**
Carbon tetrachloride	µg/L	5	5 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	µg/L	100	**0.8 J**	1 U	1 U	1 U	1 U	1 U
Chloroform	µg/L	0.22	**15.5**	1 U	1 U	1 U	1 U	1 U
Chloromethane	µg/L	190	5 U	**1.5**	**1.2**	1 U	1 U	1 U
cis-1,2-Dichloroethene	µg/L	70	5 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	µg/L		5 U	1 U	1 U	1 U	1 U	1 U
Cyclohexane	µg/L	13,000	**19.9 J**	10 U	10 U	**0.73 J**	**0.64 J**	10 U
Ethylbenzene	µg/L	700	**102**	1 U	1 U	**16.8**	**7.7**	**0.59 J**
Isopropylbenzene	µg/L	450	**10.1**	1 U	1 U	**2.4**	**1.6**	1 U
Methyl Acetate	µg/L	20,000	25 U	5 U	**1.1 J**	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	µg/L	14	5 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	µg/L	5	5 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	µg/L	0.12	N/A	N/A	N/A	N/A	N/A	N/A
Styrene	µg/L	100	5 U	1 U	1 U	**0.7 J**	1 U	1 U
Tetrachloroethene	µg/L	5	5 U	1 U	1 U	1 U	1 U	1 U
Toluene	µg/L	1,000	**12,100**	**0.36 J**	1 U	**934**	**234**	**7.1**
trans-1,2-Dichloroethene	µg/L	100	5 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	µg/L	5	5 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	µg/L	1,100	5 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	µg/L	2	5 U	1 U	1 U	1 U	1 U	1 U
Xylenes	µg/L	10,000	**2,860**	3 U	3 U	**318**	**264**	**7.8**
Semi-Volatile Organic Compounds								
1,1-Biphenyl	µg/L	0.83	N/A	N/A	N/A	N/A	N/A	N/A
1,2,4-Trichlorobenzene	µg/L	70	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	µg/L	600	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	µg/L	75	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dioxane	µg/L	0.46	0.097 U	0.099 U	0.099 U	0.098 U	0.099 U	0.099 U
2,4-Dimethylphenol	µg/L	360	N/A	N/A	N/A	N/A	N/A	N/A
2-Chlorophenol	µg/L	91	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	µg/L	36	**336**	**0.035 J**	0.099 U	**55.4**	**227**	**0.89**
2-Methylphenol	µg/L	930	N/A	N/A	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	µg/L	930	N/A	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	µg/L	0.12	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	µg/L	530	**2.1**	**0.04 J**	0.099 U	**7.1**	**6**	**0.18**
Acenaphthylene	µg/L	530	**0.65**	0.099 U	0.099 U	**14.7**	**6.2**	**0.25**
Acetophenone	µg/L	1,900	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	µg/L	1,800	**1.7**	**0.09 J**	**0.038 J**	**12.5**	**5.6**	**0.9**
Benz[a]anthracene	µg/L	0.03	**0.7**	**0.07 J**	0.099 U	**6.3**	**0.52**	**1.1**
Benzo[a]pyrene	µg/L	0.2	**0.52**	**0.041 J**	0.099 U	**5.1**	**0.13**	**0.75**
Benzo[b]fluoranthene	µg/L	0.25	**0.83**	**0.071 J**	0.099 U	**7.2**	**0.22**	**1.3**
Benzo[g,h,i]perylene	µg/L		**0.22**	0.099 U	0.099 U	**2.4**	**0.048 J**	**0.43**
Benzo[k]fluoranthene	µg/L	2.5	**0.27**	**0.023 J**	0.099 U	**2.1**	**0.09 J**	**0.49**
bis(2-Ethylhexyl)phthalate	µg/L	6	N/A	N/A	N/A	N/A	N/A	N/A
Caprolactam	µg/L	9,900	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	µg/L	25	**0.66**	**0.048 J**	0.099 U	**4.7**	**0.38**	**0.9**
Dibenz[a,h]anthracene	µg/L	0.025	**0.073 J**	0.099 U	0.099 U	**0.85**	0.099 U	**0.14**
Diethylphthalate	µg/L	15,000	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	µg/L	800	**3.4**	**0.21**	**0.07 J**	**31.5**	**7.3**	**3**
Fluorene	µg/L	290	**4.6**	**0.081 J**	0.099 U	**52**	**121**	**1.7**
Indeno[1,2,3-c,d]pyrene	µg/L	0.25	**0.22**	0.099 U	0.099 U	**2.5**	**0.049 J**	**0.42**
Naphthalene	µg/L	0.12	**8,030**	**0.56**	0.18 B	**8,390**	**6,050**	**18.9**
N-Nitroso-di-n-propylamine	µg/L	0.011	N/A	N/A	N/A	N/A	N/A	N/A
Pentachlorophenol	µg/L	1	N/A	N/A	N/A	N/A	N/A	N/A
Phenanthrene	µg/L		**14**	**0.27**	**0.092 J**	**71.9**	**166**	**2.8**
Phenol	µg/L	5,800	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	µg/L	120	**2.2**	**0.15**	**0.053 J**	**14.7**	**4.1**	**1.8**
Pyridine	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
TPH/Oil and Grease								
Diesel Range Organics	µg/L	47	**9,740**	**187**	**235**	**5,660**	**3,600**	**636**
Gasoline Range Organics	µg/L	47	**470,000**	200 U	200 U	**13,300**	**4,600**	**1,210**
Oil and Grease	µg/L	47	4,770 U	4,750 U	4,750 U	**1,500 J**	4,770 U	4,750 U

Detections in bold

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

N/A indicates that the parameter was not analyzed for this sample

* Non-validated data

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.

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 3 - Sub-Parcel A11-2
Summary of Organics Detected in Groundwater

Parameter	Units	PAL	A11-016VV-PZ* 8/13/2018	A11-017-PZ* 8/18/2016	A11-018-PZ* 7/24/2018	A11-024-PZ* 7/25/2018	A11-037-PZ* 8/18/2016	A11-040-PZ* 7/25/2018
Volatile Organic Compounds								
1,1,2,2-Tetrachloroethane	µg/L	0.076	**1.9**	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	µg/L	2.7	**3.1**	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	µg/L	70	**0.63 J**	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dibromo-3-chloropropane	µg/L	0.2	**1.4 J**	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	µg/L	600	**0.65 J**	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	µg/L	5	**0.87 J**	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (Total)	µg/L	70	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	µg/L	5	**0.79 J**	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	µg/L		**1**	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	µg/L	75	**1.5**	1 U	1 U	1 U	1 U	1 U
2-Butanone (MEK)	µg/L	5,600	**3.7 J**	10 U	10 U	10 U	10 U	10 U
2-Hexanone	µg/L	38	**1.5 J**	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (MIBK)	µg/L	1,200	**3 J**	10 U	10 U	10 U	10 U	10 U
Acetone	µg/L	14,000	**6.5 J**	10 U	**15.5**	**4.9 J**	**25.3**	**6.9 J**
Benzene	µg/L	5	**587**	1 U	**10.3**	**53**	1 U	**1.7**
Bromodichloromethane	µg/L	0.13	**2.4**	1 U	1 U	1 U	1 U	1 U
Bromoform	µg/L	3.3	**0.83 J**	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	µg/L	810	**0.78 J**	1 U	**1.7**	1 U	**1.7**	1 U
Carbon tetrachloride	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	µg/L	100	**1.4**	1 U	1 U	1 U	1 U	1 U
Chloroform	µg/L	0.22	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	µg/L	190	**2.1**	1 U	1 U	1 U	**3.9**	1 U
cis-1,2-Dichloroethene	µg/L	70	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	µg/L		**0.82 J**	1 U	1 U	1 U	1 U	1 U
Cyclohexane	µg/L	13,000	**0.45 J**	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	µg/L	700	**3.5**	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	µg/L	450	**0.74 J**	1 U	1 U	1 U	1 U	1 U
Methyl Acetate	µg/L	20,000	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	µg/L	14	**2.5**	**1.2**	1 U	1 U	1 U	1 U
Methylene Chloride	µg/L	5	**2.9**	1 U	1 U	1 U	1 U	1 U
Naphthalene	µg/L	0.12	N/A	N/A	N/A	N/A	N/A	N/A
Styrene	µg/L	100	**3**	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	µg/L	5	**2.8**	1 U	1 U	1 U	1 U	1 U
Toluene	µg/L	1,000	**8.3**	1 U	1.2	**0.4 J**	1 U	1 U
trans-1,2-Dichloroethene	µg/L	100	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	µg/L	5	**2.2**	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	µg/L	1,100	**1.8**	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	µg/L	2	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes	µg/L	10,000	**23.9**	3 U	3 U	**1.9 J**	**0.74 J**	3 U
Semi-Volatile Organic Compounds								
1,1-Biphenyl	µg/L	0.83	N/A	1 U	N/A	N/A	1 U	N/A
1,2,4-Trichlorobenzene	µg/L	70	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	µg/L	600	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	µg/L	75	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dioxane	µg/L	0.46	0.099 U	**0.072 J**	**0.097 U**	0.099 U	**0.23**	0.098 U
2,4-Dimethylphenol	µg/L	360	N/A	1 U	N/A	N/A	1 U	N/A
2-Chlorophenol	µg/L	91	N/A	1 U	N/A	N/A	1 U	N/A
2-Methylnaphthalene	µg/L	36	**42.2**	0.1 U	**2**	0.099 U	0.1 U	**0.28**
2-Methylphenol	µg/L	930	N/A	1 U	N/A	N/A	1 U	N/A
3&4-Methylphenol(m&p Cresol)	µg/L	930	N/A	2 U	N/A	N/A	2 U	N/A
3,3'-Dichlorobenzidine	µg/L	0.12	N/A	1 U	N/A	N/A	1 U	N/A
Acenaphthene	µg/L	530	**3.8**	0.1 U	**0.31**	**0.19**	0.1 U	**0.42**
Acenaphthylene	µg/L	530	**4.9**	0.1 U	**0.82**	**0.25**	0.1 U	**0.21**
Acetophenone	µg/L	1,900	N/A	1 U	N/A	N/A	1 U	N/A
Anthracene	µg/L	1,800	**3.5**	**0.031 J**	**0.39**	**0.31**	**0.044 J**	**0.57**
Benz[a]anthracene	µg/L	0.03	**0.52**	0.1 U	**0.074 J**	**0.26**	0.1 U	**0.48**
Benzo[a]pyrene	µg/L	0.2	**0.19**	0.1 U	**0.036 J**	**0.2**	0.1 U	**0.4**
Benzo[b]fluoranthene	µg/L	0.25	**0.26**	0.1 U	**0.055 J**	**0.29**	0.1 U	**0.51**
Benzo[g,h,i]perylene	µg/L		**0.064 J**	0.1 U	0.097 U	**0.11**	0.1 U	**0.21**
Benzo[k]fluoranthene	µg/L	2.5	**0.1**	0.1 U	**0.025 J**	**0.12**	0.1 U	**0.25**
bis(2-Ethylhexyl)phthalate	µg/L	6	N/A	**0.25 J**	N/A	N/A	1 U	N/A
Caprolactam	µg/L	9,900	N/A	**0.67 J**	N/A	N/A	2.5 U	N/A
Carbazole	µg/L		N/A	1 U	N/A	N/A	1 U	N/A
Chrysene	µg/L	25	**0.39**	0.1 U	**0.07 J**	**0.17**	0.1 U	**0.44**
Dibenz[a,h]anthracene	µg/L	0.025	0.099 U	0.1 U	0.097 U	**0.031 J**	0.1 U	**0.07 J**
Diethylphthalate	µg/L	15,000	N/A	**0.36 J**	N/A	N/A	**0.36 J**	N/A
Fluoranthene	µg/L	800	**5.4**	**0.02 J**	**0.44**	**0.87**	0.1 U	**1.4**
Fluorene	µg/L	290	**15.1**	0.1 U	**1.5**	**0.38**	0.1 U	**0.6**
Indeno[1,2,3-c,d]pyrene	µg/L	0.25	**0.062 J**	0.1 U	0.097 U	**0.1**	0.1 U	**0.22**
Naphthalene	µg/L	0.12	**736**	0.04 B	**41.6**	0.078 B	0.031 B	**1.7**
N-Nitroso-di-n-propylamine	µg/L	0.011	N/A	1 U	N/A	N/A	1 U	N/A
Pentachlorophenol	µg/L	1	N/A	2.5 U	N/A	N/A	2.5 U	N/A
Phenanthrene	µg/L		**49**	**0.025 J**	**1.7**	**0.2**	0.1 U	**1.3**
Phenol	µg/L	5,800	N/A	1 U	N/A	N/A	1 U	N/A
Pyrene	µg/L	120	**3.5**	**0.016 J**	**0.28**	**0.63**	0.1 U	**0.83**
Pyridine	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
TPH/Oil and Grease								
Diesel Range Organics	µg/L	47	**1,850**	**304**	**1,270**	**182**	**938**	**241**
Gasoline Range Organics	µg/L	47	**974**	200 U	1,000 U	200 U	200 U	200 U
Oil and Grease	µg/L	47	4,770 U	3,100 B	4,770 U	4,750 U	1,300 B	4,750 U

Detections in bold

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

N/A indicates that the parameter was not analyzed for this sample

* Non-validated data

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.

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 3 - Sub-Parcel A11-2
Summary of Organics Detected in Groundwater

Parameter	Units	PAL	A11-043-PZ* 8/22/2016	GL-03 (-3)* 12/1/2020	GL-08 (-3)* 12/2/2020	GL-09 (-2)* 11/24/2020	GL-18 (-3)* 11/25/2020	LF-01S 8/19/2016
Volatile Organic Compounds								
1,1,2,2-Tetrachloroethane	µg/L	0.076	1 U	1 U	5 U	1 U	1 U	1 U
1,1-Dichloroethane	µg/L	2.7	1 U	1 U	5 U	1 U	**44.8**	1 U
1,2,4-Trichlorobenzene	µg/L	70	1 U	1 U	5 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	µg/L		N/A	1 U	**32.5**	**2.2**	**44.7**	N/A
1,2-Dibromo-3-chloropropane	µg/L	0.2	5 U	1 U	5 U	1 U	1 U	5 U
1,2-Dichlorobenzene	µg/L	600	1 U	1 U	5 U	1 U	1 U	1 U
1,2-Dichloroethane	µg/L	5	1 U	1 U	5 U	1 U	1 U	1 U
1,2-Dichloroethene (Total)	µg/L	70	2 U	N/A	N/A	N/A	N/A	2 U
1,2-Dichloropropane	µg/L	5	1 U	1 U	5 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	µg/L		N/A	1 U	**15.2**	**1.1**	**15.5**	N/A
1,3-Dichlorobenzene	µg/L		1 U	1 U	5 U	1 U	1 U	1 U
1,4-Dichlorobenzene	µg/L	75	1 U	1 U	5 U	1 U	1 U	1 U
2-Butanone (MEK)	µg/L	5,600	10 U	5 U	25 U	**44.4**	**5.5 J**	10 U
2-Hexanone	µg/L	38	10 U	5 U	25 U	5 U	5 U	10 U
4-Methyl-2-pentanone (MIBK)	µg/L	1,200	10 U	5 U	25 U	**5.1 J**	**13.7**	10 U
Acetone	µg/L	14,000	10 U	10 U	**219**	**305**	**27.3**	10 U
Benzene	µg/L	5	1 U	**4.4**	**80.8**	**1**	**912**	**55.4**
Bromodichloromethane	µg/L	0.13	1 U	1 U	5 U	1 U	1 U	1 U
Bromoform	µg/L	3.3	1 U	1 U	5 U	1 U	1 U	1 U
Carbon disulfide	µg/L	810	1 U	1 U	5 U	**1.3**	**1.2**	**1.4**
Carbon tetrachloride	µg/L	5	1 U	1 U	5 U	1 U	1 U	1 UJ
Chlorobenzene	µg/L	100	1 U	1 U	5 U	1 U	1 U	1 U
Chloroform	µg/L	0.22	1 U	1 U	5 U	1 U	1 U	1 U
Chloromethane	µg/L	190	1 U	1 U	5 U	1 U	1 U	1 UJ
cis-1,2-Dichloroethene	µg/L	70	1 U	1 U	5 U	1 U	**5.5**	1 U
cis-1,3-Dichloropropene	µg/L		1 U	1 U	5 U	1 U	1 U	1 U
Cyclohexane	µg/L	13,000	10 U	N/A	N/A	N/A	N/A	10 UJ
Ethylbenzene	µg/L	700	1 U	1 U	**7**	1 U	**9.5**	1 U
Isopropylbenzene	µg/L	450	1 U	1 U	5 U	1 U	**1.9**	1 U
Methyl Acetate	µg/L	20,000	5 U	N/A	N/A	N/A	N/A	5 U
Methyl tert-butyl ether (MTBE)	µg/L	14	1 U	1 U	5 U	1 U	1 U	1 U
Methylene Chloride	µg/L	5	1 U	1 U	5 U	1 U	1 U	1 U
Naphthalene	µg/L	0.12	N/A	**9.6**	**4,890**	**29**	**6,070**	N/A
Styrene	µg/L	100	1 U	1 U	**3.8 J**	1 U	**8.9**	1 U
Tetrachloroethene	µg/L	5	1 U	1 U	5 U	1 U	1 U	1 U
Toluene	µg/L	1,000	1 U	1 U	**358**	**3.4**	**400**	**0.47 J**
trans-1,2-Dichloroethene	µg/L	100	1 U	1 U	5 U	1 U	**0.41 J**	1 U
Trichloroethene	µg/L	5	1 U	1 U	5 U	1 U	1 U	1 U
Trichlorofluoromethane	µg/L	1,100	1 U	1 U	5 U	1 U	1 U	1 U
Vinyl chloride	µg/L	2	1 U	1 U	5 U	1 U	**7.4**	1 U
Xylenes	µg/L	10,000	3 U	3 U	**129**	3 U	**145**	**0.82 J**
Semi-Volatile Organic Compounds								
1,1-Biphenyl	µg/L	0.83	1 U	N/A	N/A	N/A	N/A	1 U
1,2,4-Trichlorobenzene	µg/L	70	N/A	0.96 U	4.8 U	10 U	98 U	N/A
1,2-Dichlorobenzene	µg/L	600	N/A	0.96 U	0.96 U	10 U	9.8 U	N/A
1,3-Dichlorobenzene	µg/L		N/A	0.96 U	0.96 U	10 U	9.8 U	N/A
1,4-Dichlorobenzene	µg/L	75	N/A	0.96 U	0.96 U	10 U	9.8 U	N/A
1,4-Dioxane	µg/L	0.46	**0.87**	N/A	N/A	N/A	N/A	**0.069 J**
2,4-Dimethylphenol	µg/L	360	1 U	**1.2**	**109**	**73.6**	**955**	**0.59 J**
2-Chlorophenol	µg/L	91	1 U	0.96 U	0.96 U	10 U	9.8 U	1 U
2-Methylnaphthalene	µg/L	36	0.1 U	**1.1**	**102**	10 U	98 U	**0.058 J**
2-Methylphenol	µg/L	930	1 U	0.96 U	**27.2**	**43.6**	**414**	**0.47 J**
3&4-Methylphenol(m&p Cresol)	µg/L	930	2.1 U	1.9 U	**68.8**	**449**	**1,360**	2.1 U
3,3'-Dichlorobenzidine	µg/L	0.12	1 U	0.96 U	**2**	10 U	9.8 U	1 U
Acenaphthene	µg/L	530	0.1 U	**1.9**	**23**	10 U	**45.9**	**0.42**
Acenaphthylene	µg/L	530	0.1 U	0.96 U	**33.2**	10 U	**17.1**	**0.44**
Acetophenone	µg/L	1,900	1 U	0.96 U	**24.3**	10 U	**81**	**0.41 J**
Anthracene	µg/L	1,800	0.1 U	0.96 U	**9.3**	10 U	9.8 U	**0.5**
Benz[a]anthracene	µg/L	0.03	0.1 U	0.96 U	0.96 U	10 U	9.8 U	**0.05 J**
Benzo[a]pyrene	µg/L	0.2	0.1 U	0.96 U	0.96 U	10 U	9.8 U	**0.023 J**
Benzo[b]fluoranthene	µg/L	0.25	0.1 U	0.96 U	0.96 U	10 U	9.8 U	**0.041 J**
Benzo[g,h,i]perylene	µg/L		0.1 U	0.96 U	0.96 U	10 U	9.8 U	0.1 U
Benzo[k]fluoranthene	µg/L	2.5	0.1 U	0.96 U	0.96 U	10 U	9.8 U	0.1 U
bis(2-Ethylhexyl)phthalate	µg/L	6	**0.26 J**	2.4 U	2.4 U	25 U	24.5 U	**0.21 J**
Caprolactam	µg/L	9,900	**0.22 J**	N/A	N/A	N/A	N/A	2.6 UJ
Carbazole	µg/L		1 U	N/A	N/A	N/A	N/A	**4**
Chrysene	µg/L	25	0.1 U	0.96 U	0.96 U	10 U	9.8 U	**0.019 J**
Dibenz[a,h]anthracene	µg/L	0.025	0.1 U	0.96 U	0.96 U	10 U	9.8 U	0.1 U
Diethylphthalate	µg/L	15,000	**0.7 J**	0.96 U	0.96 U	10 U	9.8 U	**1.3**
Fluoranthene	µg/L	800	0.1 U	**1**	**4.8**	10 U	9.8 U	**0.21**
Fluorene	µg/L	290	0.1 U	**2.2**	**48.3**	10 U	**6.9 J**	**0.34**
Indeno[1,2,3-c,d]pyrene	µg/L	0.25	0.1 U	0.96 U	0.96 U	10 U	9.8 U	0.1 U
Naphthalene	µg/L	0.12	0.027 B	**4**	**3,350**	**24.7**	**2,140**	**0.033 J**
N-Nitroso-di-n-propylamine	µg/L	0.011	1 U	N/A	N/A	N/A	N/A	1 U
Pentachlorophenol	µg/L	1	2.6 U	2.4 U	**2 J**	25 U	24.5 U	2.6 U
Phenanthrene	µg/L		0.1 U	**2.7**	**47.2**	10 U	9.8 U	**0.053 J**
Phenol	µg/L	5,800	1 U	**0.64 J**	**14.9**	**342**	**714**	**0.48 J**
Pyrene	µg/L	120	0.1 U	**0.73 J**	**3**	10 U	9.8 U	**0.15**
Pyridine	µg/L		N/A	0.96 U	**0.55 J**	10 U	**69.9**	N/A
TPH/Oil and Grease								
Diesel Range Organics	µg/L	47	104 U	N/A	N/A	N/A	N/A	**761 J**
Gasoline Range Organics	µg/L	47	200 U	N/A	N/A	N/A	N/A	**144 J**
Oil and Grease	µg/L	47	**1,300 J**	N/A	N/A	N/A	N/A	4,800 U

Detections in bold

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Table 3 - Sub-Parcel A11-2
Summary of Organics Detected in Groundwater

Parameter	Units	PAL	LF-02 8/19/2016	LF-03S 8/19/2016	LF-03S* 7/24/2018	LF-04S* 7/24/2018	LF-04S* 8/22/2016	LF-05 8/19/2016
Volatile Organic Compounds								
1,1,2,2-Tetrachloroethane	µg/L	0.076	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	µg/L	2.7	**0.45 J**	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	µg/L	70	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dibromo-3-chloropropane	µg/L	0.2	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	µg/L	600	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (Total)	µg/L	70	2 U	2 U	2 U	**0.68 J**	**0.52 J**	2 U
1,2-Dichloropropane	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	µg/L		1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	µg/L	75	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone (MEK)	µg/L	5,600	**5.1 J**	10 U	10 U	10 U	10 U	10 U
2-Hexanone	µg/L	38	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (MIBK)	µg/L	1,200	**5.6 J**	10 U	10 U	10 U	10 U	10 U
Acetone	µg/L	14,000	**32.7**	**5.7 J**	10 U	**5.3 J**	10 U	10 U
Benzene	µg/L	5	**0.87 J**	**10.5**	**26**	**6.8**	**6.1**	1 U
Bromodichloromethane	µg/L	0.13	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	µg/L	3.3	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	µg/L	810	**7.6**	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	µg/L	5	1 UJ	1 UJ	1 U	1 U	1 U	1 UJ
Chlorobenzene	µg/L	100	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	µg/L	0.22	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	µg/L	190	1 UJ	1 UJ	1 U	1 U	1 U	1 UJ
cis-1,2-Dichloroethene	µg/L	70	1 U	1 U	1 U	**0.68 J**	**0.52 J**	1 U
cis-1,3-Dichloropropene	µg/L		1 U	1 U	1 U	1 U	1 U	1 U
Cyclohexane	µg/L	13,000	**0.19 J**	10 UJ	10 U	10 U	10 U	10 UJ
Ethylbenzene	µg/L	700	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	µg/L	450	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Acetate	µg/L	20,000	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	µg/L	14	1 U	1 U	1 U	**0.56 J**	**0.84 J**	1 U
Methylene Chloride	µg/L	5	1 U	1 U	**9.8**	1 U	1 U	1 U
Naphthalene	µg/L	0.12	N/A	N/A	N/A	N/A	N/A	N/A
Styrene	µg/L	100	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	µg/L	1,000	**0.58 J**	1 U	**0.67 J**	1 U	1 U	1 U
trans-1,2-Dichloroethene	µg/L	100	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	µg/L	5	1 U	1 U	1 U	**0.59 J**	**0.33 J**	1 U
Trichlorofluoromethane	µg/L	1,100	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	µg/L	2	1 U	1 U	1 U	**0.41 J**	1 U	1 U
Xylenes	µg/L	10,000	**2.9 J**	3 U	3 U	3 U	3 U	3 U
Semi-Volatile Organic Compounds								
1,1-Biphenyl	µg/L	0.83	1 U	**0.4 J**	N/A	N/A	1 U	1 U
1,2,4-Trichlorobenzene	µg/L	70	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	µg/L	600	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	µg/L	75	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dioxane	µg/L	0.46	**8.6**	**0.14**	0.098 U	**0.19**	**0.18**	0.1 U
2,4-Dimethylphenol	µg/L	360	**31.6**	1 U	N/A	N/A	**0.95 J**	1 U
2-Chlorophenol	µg/L	91	**0.62 J**	1 U	N/A	N/A	1 U	1 U
2-Methylnaphthalene	µg/L	36	**1.7**	**1.3**	**3.6**	0.098 U	0.1 U	0.1 U
2-Methylphenol	µg/L	930	**11.1**	1 U	N/A	N/A	1 U	1 U
3&4-Methylphenol(m&p Cresol)	µg/L	930	**41.8**	2 U	N/A	N/A	**0.61 J**	2 U
3,3'-Dichlorobenzidine	µg/L	0.12	1 U	1 U	N/A	N/A	1 U	1 U
Acenaphthene	µg/L	530	**0.3**	0.1 U	**0.08 J**	**0.043 J**	**0.054 J**	0.1 U
Acenaphthylene	µg/L	530	**0.061 J**	**0.021 J**	**0.076 J**	0.098 U	**0.023 J**	0.1 U
Acetophenone	µg/L	1,900	**1 J**	1 U	N/A	N/A	**0.48 J**	1 U
Anthracene	µg/L	1,800	**3**	0.1 U	0.098 U	**0.099**	**0.16**	0.1 U
Benz[a]anthracene	µg/L	0.03	0.1 U	0.1 U	0.098 U	0.098 U	1 U	0.1 U
Benzo[a]pyrene	µg/L	0.2	0.1 U	0.1 U	0.098 U	0.098 U	1 U	0.1 U
Benzo[b]fluoranthene	µg/L	0.25	0.1 U	0.1 U	0.098 U	0.098 U	1 U	0.1 U
Benzo[g,h,i]perylene	µg/L		0.1 U	0.1 U	0.098 U	0.098 U	1 U	0.1 U
Benzo[k]fluoranthene	µg/L	2.5	0.1 U	0.1 U	0.098 U	0.098 U	1 U	0.1 U
bis(2-Ethylhexyl)phthalate	µg/L	6	**0.43 J**	1 U	N/A	N/A	1 U	1 U
Caprolactam	µg/L	9,900	2.6 UJ	2.6 UJ	N/A	N/A	2.5 U	2.6 UJ
Carbazole	µg/L		**2.2**	1 U	N/A	N/A	1 U	1 U
Chrysene	µg/L	25	0.1 U	0.1 U	0.098 U	0.098 U	1 U	0.1 U
Dibenz[a,h]anthracene	µg/L	0.025	0.1 U	0.1 U	0.098 U	0.098 U	1 U	0.1 U
Diethylphthalate	µg/L	15,000	1 U	**1.6**	N/A	N/A	**2**	**0.42 J**
Fluoranthene	µg/L	800	**0.15**	0.1 U	0.098 U	**0.088 J**	**0.13**	0.1 U
Fluorene	µg/L	290	**0.18**	**0.11**	**0.34**	**0.12**	**0.19**	0.1 U
Indeno[1,2,3-c,d]pyrene	µg/L	0.25	0.1 U	0.1 U	0.098 U	0.098 U	1 U	0.1 U
Naphthalene	µg/L	0.12	**18.1**	**2.3**	**3.4**	0.071 B	0.075 B	**0.021 J**
N-Nitroso-di-n-propylamine	µg/L	0.011	**1.1**	1 U	N/A	N/A	1 U	1 U
Pentachlorophenol	µg/L	1	2.6 U	2.6 U	N/A	N/A	2.5 U	2.6 U
Phenanthrene	µg/L		**0.62**	**0.02 J**	**0.077 J**	0.098 U	**0.14**	0.1 U
Phenol	µg/L	5,800	**178**	1 U	N/A	N/A	1 U	1 U
Pyrene	µg/L	120	**0.14**	0.1 U	0.098 U	0.098 U	**0.045 J**	0.1 U
Pyridine	µg/L		N/A	N/A	N/A	N/A	N/A	N/A
TPH/Oil and Grease								
Diesel Range Organics	µg/L	47	**7,510 J**	**585 J**	**651**	**379**	**652**	**96.6 J**
Gasoline Range Organics	µg/L	47	200 U	200 U	200 U	200 U	200 U	200 U
Oil and Grease	µg/L	47	4,820 U	4,800 U	**1,800 J**	4,750 U	4,770 U	4,800 U

Detections in bold

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

N/A indicates that the parameter was not analyzed for this sample

* Non-validated data

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

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Table 3 - Sub-Parcel A11-2
Summary of Organics Detected in Groundwater

Parameter	Units	PAL	SG01-PDP000 8/19/2016	SG01-PDP000* 7/25/2018
Volatile Organic Compounds				
1,1,2,2-Tetrachloroethane	µg/L	0.076	1 U	1 U
1,1-Dichloroethane	µg/L	2.7	**1.3**	1 U
1,2,4-Trichlorobenzene	µg/L	70	1 U	1 U
1,2,4-Trimethylbenzene	µg/L		N/A	N/A
1,2-Dibromo-3-chloropropane	µg/L	0.2	5 U	5 U
1,2-Dichlorobenzene	µg/L	600	1 U	1 U
1,2-Dichloroethane	µg/L	5	1 U	1 U
1,2-Dichloroethene (Total)	µg/L	70	**4**	**0.73 J**
1,2-Dichloropropane	µg/L	5	1 U	1 U
1,3,5-Trimethylbenzene	µg/L		N/A	N/A
1,3-Dichlorobenzene	µg/L		1 U	1 U
1,4-Dichlorobenzene	µg/L	75	1 U	1 U
2-Butanone (MEK)	µg/L	5,600	10 U	10 U
2-Hexanone	µg/L	38	10 U	10 U
4-Methyl-2-pentanone (MIBK)	µg/L	1,200	10 U	10 U
Acetone	µg/L	14,000	**21.2**	**5.7 J**
Benzene	µg/L	5	**162**	**41.3**
Bromodichloromethane	µg/L	0.13	1 U	1 U
Bromoform	µg/L	3.3	1 U	1 U
Carbon disulfide	µg/L	810	**1.8**	1 U
Carbon tetrachloride	µg/L	5	1 UJ	1 U
Chlorobenzene	µg/L	100	1 U	1 U
Chloroform	µg/L	0.22	1 U	1 U
Chloromethane	µg/L	190	1 UJ	1 U
cis-1,2-Dichloroethene	µg/L	70	**3.7**	**0.73 J**
cis-1,3-Dichloropropene	µg/L		1 U	1 U
Cyclohexane	µg/L	13,000	10 UJ	10 U
Ethylbenzene	µg/L	700	**1.6**	1 U
Isopropylbenzene	µg/L	450	**0.29 J**	1 U
Methyl Acetate	µg/L	20,000	5 U	5 U
Methyl tert-butyl ether (MTBE)	µg/L	14	1 U	1 U
Methylene Chloride	µg/L	5	1 U	1 U
Naphthalene	µg/L	0.12	N/A	N/A
Styrene	µg/L	100	1 U	1 U
Tetrachloroethene	µg/L	5	1 U	1 U
Toluene	µg/L	1,000	**31.1**	**4.8**
trans-1,2-Dichloroethene	µg/L	100	**0.31 J**	1 U
Trichloroethene	µg/L	5	1 U	1 U
Trichlorofluoromethane	µg/L	1,100	1 U	1 U
Vinyl chloride	µg/L	2	**1.3**	1 U
Xylenes	µg/L	10,000	**27.2**	**3.8**
Semi-Volatile Organic Compounds				
1,1-Biphenyl	µg/L	0.83	1 U	N/A
1,2,4-Trichlorobenzene	µg/L	70	N/A	N/A
1,2-Dichlorobenzene	µg/L	600	N/A	N/A
1,3-Dichlorobenzene	µg/L		N/A	N/A
1,4-Dichlorobenzene	µg/L	75	N/A	N/A
1,4-Dioxane	µg/L	0.46	**0.29**	**0.26**
2,4-Dimethylphenol	µg/L	360	**30.4**	N/A
2-Chlorophenol	µg/L	91	1 U	N/A
2-Methylnaphthalene	µg/L	36	**1.1**	**0.17**
2-Methylphenol	µg/L	930	**4.4**	N/A
3&4-Methylphenol(m&p Cresol)	µg/L	930	**7.5**	N/A
3,3'-Dichlorobenzidine	µg/L	0.12	1 U	N/A
Acenaphthene	µg/L	530	**0.76**	**0.12**
Acenaphthylene	µg/L	530	**0.14**	**0.09 J**
Acetophenone	µg/L	1,900	**2.9**	N/A
Anthracene	µg/L	1,800	**0.19**	**0.13**
Benz[a]anthracene	µg/L	0.03	**0.08 J**	0.098 U
Benzo[a]pyrene	µg/L	0.2	**0.032 J**	**0.025 J**
Benzo[b]fluoranthene	µg/L	0.25	**0.055 J**	**0.036 J**
Benzo[g,h,i]perylene	µg/L		**0.02 J**	**0.04 J**
Benzo[k]fluoranthene	µg/L	2.5	**0.022 J**	**0.032 J**
bis(2-Ethylhexyl)phthalate	µg/L	6	1 U	N/A
Caprolactam	µg/L	9,900	2.6 UJ	N/A
Carbazole	µg/L		**3.2**	N/A
Chrysene	µg/L	25	**0.048 J**	0.098 U
Dibenz[a,h]anthracene	µg/L	0.025	0.1 U	0.098 U
Diethylphthalate	µg/L	15,000	1 U	N/A
Fluoranthene	µg/L	800	**0.51**	0.098 U
Fluorene	µg/L	290	**0.73**	**0.092 J**
Indeno[1,2,3-c,d]pyrene	µg/L	0.25	0.1 U	0.098 U
Naphthalene	µg/L	0.12	**56.7**	**11**
N-Nitroso-di-n-propylamine	µg/L	0.011	1 U	N/A
Pentachlorophenol	µg/L	1	2.6 U	N/A
Phenanthrene	µg/L		**1.1**	**0.044 J**
Phenol	µg/L	5,800	**0.43 J**	N/A
Pyrene	µg/L	120	**0.36**	0.098 U
Pyridine	µg/L		N/A	N/A
TPH/Oil and Grease				
Diesel Range Organics	µg/L	47	**897 J**	**359**
Gasoline Range Organics	µg/L	47	**502**	200 U
Oil and Grease	µg/L	47	4,800 U	4,750 U

Detections in bold

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

N/A indicates that the parameter was not analyzed for this sample

* Non-validated data

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.

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 4 - Sub-Parcel A11-2
Summary of Inorganics Detected in Groundwater

Parameter	Units	PAL	A11-017-PZ* 8/18/2016	A11-037-PZ* 8/18/2016	A11-043-PZ* 8/22/2016	GL-03 (-3)* 12/1/2020	GL-08 (-3)* 12/2/2020	GL-09 (-2)* 11/24/2020	GL-18 (-3)* 11/25/2020	LF-01S 8/19/2016	LF-02 8/19/2016	LF-03S 8/19/2016	LF-04S* 8/22/2016	LF-05 8/19/2016	SG01-PDP000 8/19/2016
Total Metals															
Aluminum	µg/L	20,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**63.9**	**463**	**558**	**159**	**2,640**	**303**
Antimony	µg/L	6	N/A	N/A	N/A	**0.33 J**	**0.28 J**	**1.1**	**0.34 J**	6 U	6 U	6 U	6 U	6 U	6 U
Arsenic	µg/L	10	N/A	N/A	N/A	**1.7**	**5.7**	**27**	**10.4**	**11**	**19**	**26.5**	**8.4**	5 U	**6.9**
Barium	µg/L	2,000	N/A	N/A	N/A	**54**	**32.4**	**35.3**	**49.1**	**21.8**	**60.7**	**9.7 J**	**11.2**	**25.9**	**35.4**
Beryllium	µg/L	4	N/A	N/A	N/A	0.2 U	0.2 U	0.2 U	0.2 U	1 U	1 U	**2.7**	1 U	**2.4**	1 U
Cadmium	µg/L	5	N/A	N/A	N/A	0.08 U	0.08 U	**0.13**	**0.052 J**	3 U	3 U	**48.4**	**1.4 J**	**1.1 J**	3 U
Calcium	µg/L		N/A	N/A	N/A	**161,000**	**111,000**	**123,000**	**357,000**	N/A	N/A	N/A	N/A	N/A	N/A
Chromium	µg/L	100	N/A	N/A	N/A	**0.72**	**0.52**	**3.3**	**0.61**	5 U	**4.1 J**	**1.2 J**	5 U	**1.1 J**	**2.2 J**
Chromium VI	µg/L	0.035	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8 B	8 B	4 B	10 U	10 U	8 B
Cobalt	µg/L	6	N/A	N/A	N/A	0.5 U	**0.35 J**	**1.4**	**1.2**	5 U	**3.2 J**	**91.9**	**19.8**	**90.6**	5 U
Copper	µg/L	1,300	N/A	N/A	N/A	**0.81 J**	1 U	**6.1**	1 U	**2.7 J**	5 U	**17.8**	5 U	**16.3**	5 U
Iron	µg/L	14,000	N/A	N/A	N/A	**30.3 J**	**144**	**1,520**	**480**	**124**	**625**	**14,900**	**67,600**	**6,950**	**199**
Lead	µg/L	15	N/A	N/A	N/A	**0.54**	**0.22**	**3.1**	**0.059 J**	5 U	25 U	5 U	5 U	**9.2**	5 U
Magnesium	µg/L		N/A	N/A	N/A	**23.4**	**31.1**	**268**	**38.3**	N/A	N/A	N/A	N/A	N/A	N/A
Manganese	µg/L	430	N/A	N/A	N/A	**0.54**	**2.7**	**36.1**	**2.8**	**120**	**16.5**	**368**	**9,440**	**1,040**	**9.4**
Nickel	µg/L	390	N/A	N/A	N/A	**0.75**	**5.1**	**9.8**	**23**	1.8 B	**14.2**	**137**	**33.5**	**110**	1.2 B
Potassium	µg/L		N/A	N/A	N/A	**17,700**	**54,900**	**56,600**	**151,000**	N/A	N/A	N/A	N/A	N/A	N/A
Selenium	µg/L	50	N/A	N/A	N/A	**2.3**	**2.1**	**2.1**	**3.9**	8 U	8 U	8 U	8 U	8 U	8 U
Sodium	µg/L		N/A	N/A	N/A	**13,900**	**89,700**	**208,000**	**202,000**	N/A	N/A	N/A	N/A	N/A	N/A
Vanadium	µg/L	86	N/A	N/A	N/A	**29.7**	**28.7**	**20.6**	**22.5**	**66.1**	**43.2**	**0.55 J**	5 U	**3.5 J**	**96.1**
Zinc	µg/L	6,000	N/A	N/A	N/A	**2.8 J**	5 U	**15.9**	**3.4 J**	**3.6 J**	**5.1 J**	**246**	**44.8**	**161**	**11.2**
Dissolved Metals															
Aluminum, Dissolved	µg/L	20,000	**328**	**72.6**	50 U	N/A	N/A	N/A	N/A	**52**	**302**	**374**	**86.4**	**297**	**263**
Arsenic, Dissolved	µg/L	10	**25.5**	**95.6**	5 U	N/A	N/A	N/A	N/A	**7.9**	**17.3**	**29.4**	**9.6**	5 U	**5.6**
Barium, Dissolved	µg/L	2,000	**27**	**88.9**	**73.9**	N/A	N/A	N/A	N/A	**22.3**	**57.2**	**9.5 J**	**9 J**	**12.5**	**33.8**
Beryllium, Dissolved	µg/L	4	**0.66 J**	1 U	1 U	N/A	N/A	N/A	N/A	1 U	1 U	**2.7**	**0.37 J**	**1.5**	1 U
Cadmium, Dissolved	µg/L	5	3 U	3 U	3 U	N/A	N/A	N/A	N/A	3 U	3 U	**33.5**	**1.3 J**	**0.95 J**	3 U
Chromium VI, Dissolved	µg/L	0.035	9 B	100 U	10 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10 U	N/A	N/A
Chromium, Dissolved	µg/L	100	**0.92 J**	5 U	5 U	N/A	N/A	N/A	N/A	5 U	**0.95 J**	**0.89 J**	5 U	5 U	5 U
Cobalt, Dissolved	µg/L	6	**56.8**	**2.1 J**	5 U	N/A	N/A	N/A	N/A	5 U	25 U	**85.1**	**15.6**	**85.8**	5 U
Copper, Dissolved	µg/L	1,300	5 U	5 U	5 U	N/A	N/A	N/A	N/A	**1.6 J**	5 U	**12.1**	5 U	**3.9 J**	5 U
Iron, Dissolved	µg/L	14,000	**33,600**	**125,000**	**40,700**	N/A	N/A	N/A	N/A	**30.2 J**	**396**	**16,200**	**74,600**	**6,900**	**27 J**
Manganese, Dissolved	µg/L	430	**1,390**	**1,150**	**2,240**	N/A	N/A	N/A	N/A	**103**	5 U	**351**	**9,690**	**1,040**	5 U
Mercury, Dissolved	µg/L	2	0.2 U	0.2 U	0.2 U	N/A	N/A	N/A	N/A	0.2 UJ	0.06 B	0.2 UJ	0.2 U	0.05 B	0.2 UJ
Nickel, Dissolved	µg/L	390	**55.7**	**3.7 J**	**0.64 J**	N/A	N/A	N/A	N/A	**0.97 J**	**11.2**	**127**	**27.1**	**106**	**0.76 J**
Selenium, Dissolved	µg/L	50	8 U	8 U	8 U	N/A	N/A	N/A	N/A	8 U	**7.2 J**	8 U	8 U	8 U	8 U
Silver, Dissolved	µg/L	94	6 U	6 U	**1.1 J**	N/A	N/A	N/A	N/A	6 U	6 U	6 U	**2.3 J**	6 U	6 U
Thallium, Dissolved	µg/L	2	10 U	10 U	10 U	N/A	N/A	N/A	N/A	10 U	50 U	10 U	**3.5 J**	10 U	10 U
Vanadium, Dissolved	µg/L	86	**1.4 J**	**3.1 J**	**1.1 J**	N/A	N/A	N/A	N/A	**76.8**	**35.6**	5 U	5 U	5 U	**77.9**
Zinc, Dissolved	µg/L	6,000	**108**	10 U	1.9 B	N/A	N/A	N/A	N/A	1.5 B	1.3 B	**238**	**34.5**	**150**	1.7 B
Other															
Cyanide	µg/L	200	10 U	2.7 J	10 U	N/A	N/A	N/A	N/A	**44.6**	**148**	10 U	**16.1**	5.2 J	**16**

Detections in bold
Values in red indicate an exceedance of the Project Action Limit (PAL)
N/A indicates that the parameter was not analyzed for this sample
* Non-validated data

U: This analte ws 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.
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 5 - Sub-Parcel A11-2
Summary of Remedial Alternatives Evaluation

	POTENTIAL REMEDIAL ALTERNATIVES			
CRITERIA	**Alternative 1** **No Action**	**Alternative 2** **In-Place Containment** **w/Cap and Vapor Barrier**	**Alternative 3** **In-Situ Treatment** **by Chemical Stabilization**	**Alternative 4** **Removal and Disposal**
Description	- No remedial actions taken.	- In-place containment of materials below concrete slab, asphalt pavement, or soil cap. - Vapor barrier and venting system (passive/active) below floor slab of new building, and utility backfill controls to restrict contaminant migration. - Property use restrictions and long-term monitoring and maintenance to ensure that controls remain effective.	- Injection of chemical reagent using direct push technology or injection wells -Two step process consisting of permeability reduction followed by chemical weathering and NAPL encapsulation.	- Excavate contaminated materials and transport to approved off-site disposal facility. - RCRA-hazardous materials would require treatment and/or disposal at an approved hazardous waste facility.
Long-Term Effectiveness	- Does not mitigate long-term direct contact and vapor inhalation risks.	- Capping will provide for long-term control of direct contact exposures. - Sub-slab vapor barrier and venting system and utility backfill controls will prevent unacceptable inhalation risks. - Long-term monitoring will be conducted to ensure long-term effectiveness.	- Long-term effectiveness is unknown and would have to be estimated from treatability studies. - May increase contaminant mobility.	- Has the potential to be effective in the long-term.
Reduction of Toxicity, Mobility and Volume (TMV) by Treatment	- No reduction in TMV.	- No reduction in TMV by treatment, but treatment of similar materials is commonly regarded as technically impracticable.	- Treatability studies required to confirm potential reduction in TMV. - In-situ chemical treatment has the potential to increase contaminant mobility.	- May involve some reduction of TMV through treatment, but primarly just relocates a relativey large volume of waste.
Short-Term Effectiveness	- Not effective.	- Can be quickly implemented with minimal short-term exposure risks.	- Short-term effectiveness is unknown and would have to be estimated from treatability studies. - May increase short-term exposure risks because of material exposure, handling, and treatment.	- Expected to significantly increase short-term exposure risks because of the exposure, handling, and transportation of a relatively large volume of waste.
Implementability	- Does not present any technical implementation concerns, but not expected to be administratively implementable because it does not address remedial objectives.	- Can be readily implemented with available and proven technologies.	- Requires specialized equipment and materials. - Treatability studies required to confirm technical implementability.	- Potential short-term exposure risks, air emission controls, excavation of materials from below the groundwater table, materials handling and transportation, and other factors present significant implementation concerns.
Community Acceptance	- Not anticipated to be favorable because it does not address remedial objectives.	- Expected to be acceptable because it meets remedial objectives without increasing exposure risks to the community.	- Potentially acceptable depending on results of treatability studies and supplemental studies.	- Transportation of large volumes of waste through any community is generally not favorable. - Fugutive chemical emissions and odors are a potential concern.
State Acceptance	- Not anticipated to be favorable because it does not address remedial objectives.	- Expected to be acceptable because it meets remedial objectives and evaluation criteria.	- Potentially acceptable depending on results of treatability studies and supplemental studies.	- Potentially acceptable, but the relocation of large volumes of waste is generally not favorable.
Estimated Cost	$0	$1.2 million	$7 million	$12 million
Conclusion	Does not meet cleanup objectives. **NOT RECOMMENDED**.	Cost-effectively meets cleanup objectives and evaluation criteria. **RECOMMENDED**.	Questionable effectiveness, implementation concerns, increased short-term exposure risks, and high cost. **NOT RECOMMENDED**.	Implementation concerns, increased short-term exposure risks, and extremely high cost. **NOT RECOMMENDED**.

Notes:
- Estimated costs are prelminary order-of-magnitde costs developed for comparison purposes and may not account for all required items and components.

APPENDIX A

TRADEPOINT
ATLANTIC
1600 Sparrows Point Boulevard
Baltimore, Maryland 21219

February 22, 2021

Maryland Department of Environment
1800 Washington Boulevard
Baltimore MD, 21230

Attention: Ms. Barbara Brown

Subject: Request to Enter Temporary CHS Review
Tradepoint Atlantic Parcel A11-2

Dear Ms. Brown:

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 A11-2 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

TRADEPOINT
ATLANTIC
1600 Sparrows Point Boulevard
Baltimore, Maryland 21219

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 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 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,

Peter Haid

Vice President Environmental
TRADEPOINT ATLANTIC
1600 Sparrows Point Boulevard
Baltimore, Maryland 21219
T 443.649.5055 C 732.841.7935
phaid@tradepointatlantic.com

APPENDIX B

Sparrows Point Development - PPE Standard Operational Procedure, Revision 3

Planning, Tracking/Supervision, Enforcement, and Documentation

Planning

- Response and Development Work Plan (RDWP) for each individual redevelopment sub-parcel 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:
    - 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.

APPENDIX C

LEGEND

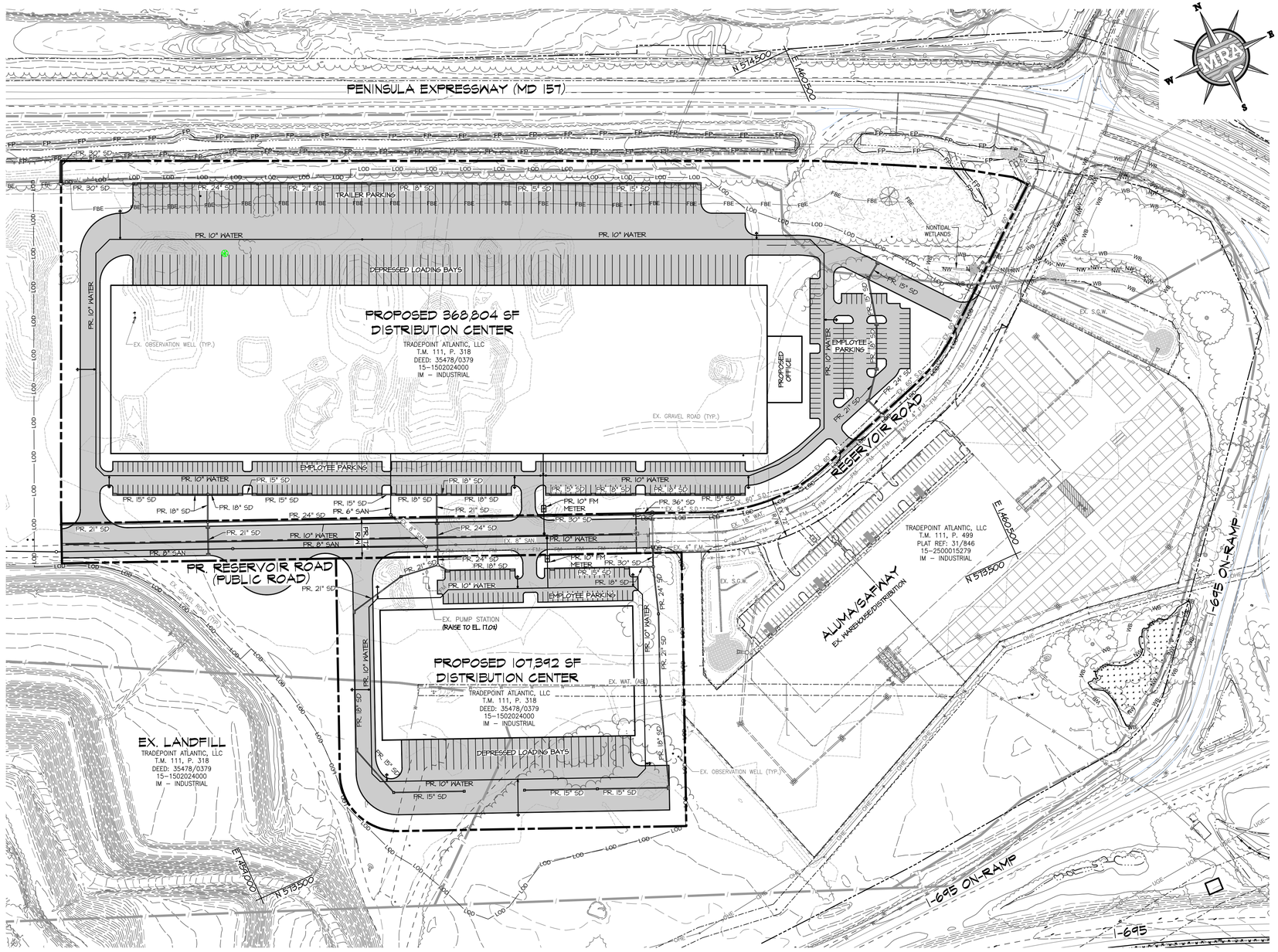
EXISTING

- EX. 1' CONTOUR
- EX. 5' CONTOUR
- EX. BUILDING
- EX. CONCRETE
- EX. CURB
- EX. EASEMENT
- EX. LOT LINE
- EX. RIGHT-OF-WAY
- CRITICAL AREA (IDA)
- CAE — CAE — CRITICAL AREA EASEMENT
- NW — NW — NONTIDAL WETLANDS
- WB — WB — NONTIDAL WETLANDS BUFFER
- FP — FP — 100-YR FLOODPLAIN
- FBE — FBE — FOREST BUFFER EASEMENT
- EX. WOODS
- EX. METAL FENCE
- EX. PVC FENCE
- EX. WOODEN FENCE
- G — G — EX. GAS LINE
- EX. GRAVEL
- EX. GUARDRAIL
- P.P. — OH — OH — L.P. EX. OVERHEAD LINE
- EX. RAILROAD
- MH — C/O — EX. SANITARY SEWER LINE
- FM — FM — FM — EX. FORCE MAIN
- MH — INLET — EX. STORM DRAIN LINE
- UG — UG — EX. UNDERGROUND LINE
- UGE — UGE — EX. UNDERGROUND ELECTRIC LINE
- FO — FO — EX. UNDERGROUND FIBER OPTIC LINE
- UGT — UGT — EX. UNDERGROUND TELEPHONE LINE
- EX. RETAINING WALL
- VALVE — F.H. — METER — EX. WATER LINE

PROPOSED

- PR. 1' CONTOUR
- PR. 5' CONTOUR
- PR. BUILDING
- PR. EDGE OF PAVING
- PR. CURB
- PR. EASEMENT
- PR. LOT LINE
- PR. TRACT BOUNDARY
- PR. RIGHT-OF-WAY
- PR. LIMIT OF CLEARING
- LOD — LOD — PR. LIMIT OF DISTURBANCE

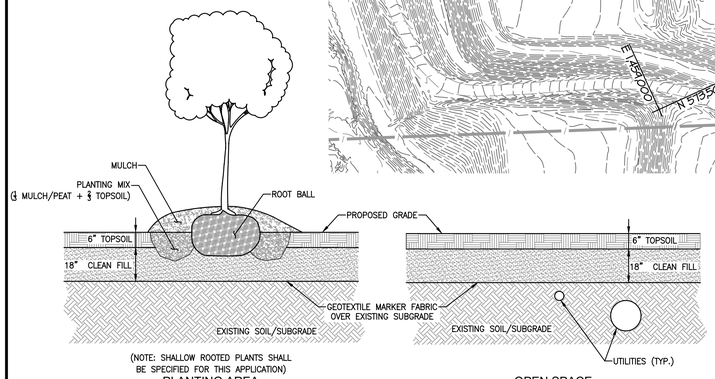
THE CORRECTNESS OR COMPLETENESS OF EXISTING INFORMATION SHOWN ON THE DRAWING IS NOT WARRANTED OR GUARANTEED. THE CONTRACTOR SHALL VERIFY THE LOCATION OF UTILITIES AND UNDERGROUND FACILITIES, BY TEST PITS OR OTHER METHODS APPROVED BY THE OWNER'S REPRESENTATIVE, AS REQUIRED TO VERIFY EXACT LOCATIONS AND DEPTHS WITHIN THE LIMIT OF DISTURBANCE. ALL DISCREPANCIES BETWEEN INFORMATION SHOWN ON THE DRAWINGS AND THAT VERIFIED IN THE FIELD SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK.



PLAN
SCALE: 1"=100'

100 0 100
Scale 1" = 100'

NOTE:
NO BASEMENTS ARE BEING PROPOSED AS PART OF THIS PLAN. ALL BUILDINGS SHALL CONSIST OF SLAB ON GRADE CONSTRUCTION.

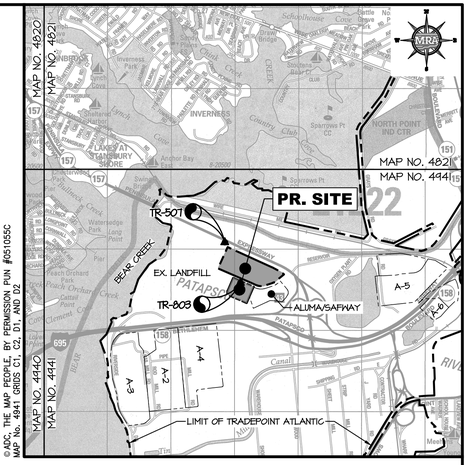


(NOTE: SHALLOW ROOTED PLANTS SHALL BE SPECIFIED FOR THIS APPLICATION)

PLANTING AREA

OPEN SPACE

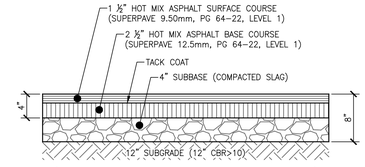
LANDSCAPED AREA TYPICAL SECTIONS
NOT TO SCALE



VICINITY MAP
SCALE: 1"=2,000'

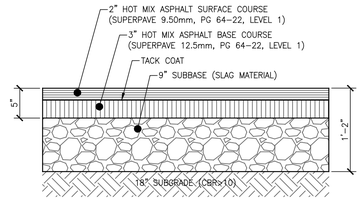
BENCHMARKS:

TR-507 – PIN & CAP	N 574,994.45
ELEV. 14.16	E 1,4459,142.35
TR-883 – PIN & CAP	N 573,861.45
ELEV. 13.83	E 1,459,579.01



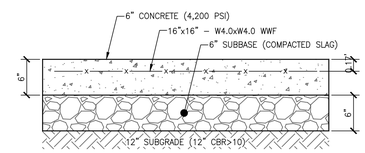
(FOR USE WITHIN PASSENGER CAR PARKING SPACES ONLY)

CONCEPT LIGHT DUTY ASPHALT PAVING SECTION
NOT TO SCALE



(FOR USE WITHIN DRIVE LANES)

CONCEPT HEAVY DUTY ASPHALT PAVING SECTION
NOT TO SCALE



(FOR USE IN LOADING BAYS AND TRASH PADS)

CONCEPT CONCRETE PAVEMENT SECTION
NOT TO SCALE

SITE ANALYSIS

AREA OF SITE (LEASE AREA & R/W):		31.87 AC.±
LIMIT OF DISTURBANCE:	1,428,769 S.F.	/ 32.80 AC.±
AREA TO BE VEGETATED:	438,386 S.F.	/ 10.06 AC.±
AREA TO BE PAVED/IMPERVIOUS:	990,383 S.F.	/ 22.74 AC.±
WATERSHED:	BEAR CREEK / PATAPSCO RIVER [PATAPSCO RIVER AREA SUB-BASIN 02-13-09]	
TOTAL CUT:		110,000 CY±
TOTAL FILL:		116,700 CY±
TOPSOIL:		N/A

"THE EARTHWORK QUANTITIES SHOWN HEREON ARE FOR INFORMATION PURPOSES ONLY. MRA MAKES NO GUARANTEE OF ACCURACY OF QUANTITIES OR BALANCE OF SITE. THE DEVELOPER AND CONTRACTOR SHALL TAKE FULL RESPONSIBILITY OF ACTUAL EARTHWORK QUANTITIES ENCOUNTERED DURING CONSTRUCTION."

DESIGN & DRAWING BASED ON MARYLAND COORDINATE SYSTEM (MCS): HORIZONTAL NAD 83 (1991) VERTICAL NAVD 88

DATE	REVISIONS

OWNER/DEVELOPER

TRADEPOINT ATLANTIC LLC

1600 SPARROWS POINT BOULEVARD
BALTIMORE, MARYLAND 21219
PHONE: (443) 452-1509
ATTN: MR. JOHN M. MARTIN

PROFESSIONAL CERTIFICATION:
I ("ANDREW J. HALTER") HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 50283, EXPIRATION DATE: 12.15.2022.

MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, ARCHITECTS, PLANNERS, SURVEYORS & LANDSCAPE ARCHITECTS
3445-A BOX HILL CORPORATE CENTER DRIVE
ABINGDON, MARYLAND 21009
PHONE (410) 515-9000
FAX (410) 515-9002
MRAGTA.COM

NEW WAREHOUSE/DISTRIBUTION CENTER

MDE DEVELOPMENT PLAN

FOR

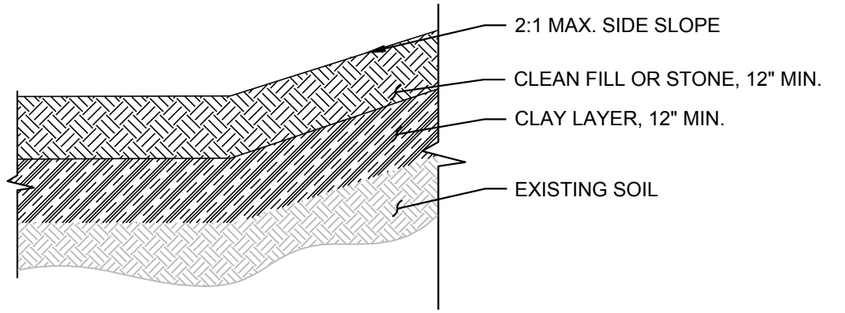
A11 SPECULATIVE BUILDING

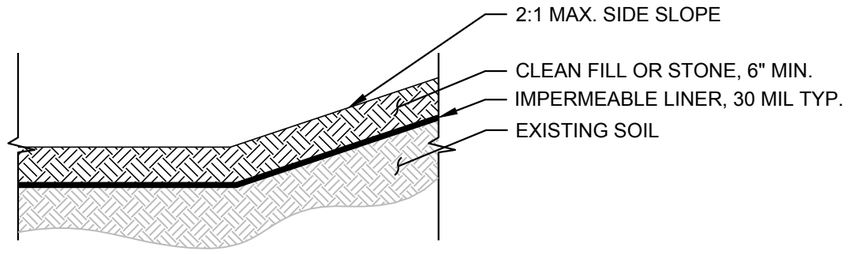
15TH ELECTION DISTRICT AT TRADEPOINT ATLANTIC SPARROWS POINT, MARYLAND

JOB NO:	20772
SCALE:	1"=100'
DATE:	02/06/2021
DESIGN BY:	AJH
REVIEW BY:	/AGD

MDE-01

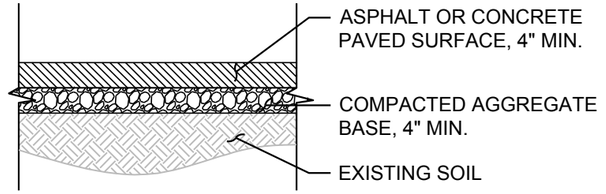
APPENDIX D



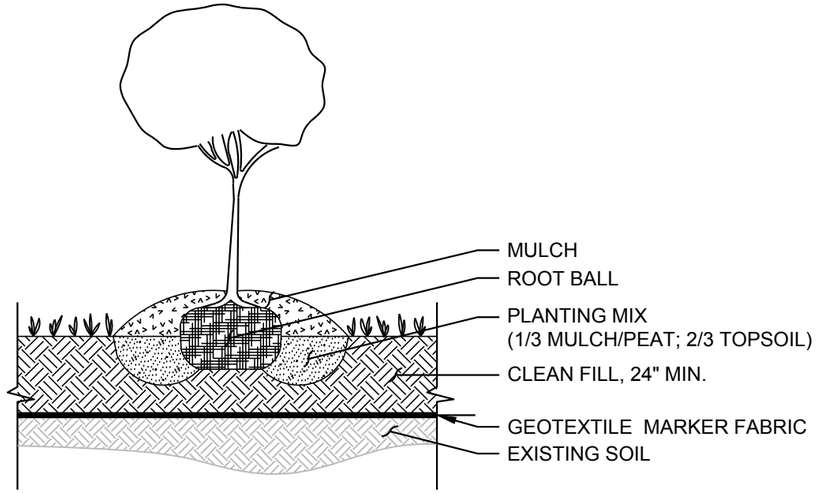


TYPICAL POND SECTIONS
NOT TO SCALE

TYPICAL LANDSCAPE SECTION
NOT TO SCALE



TYPICAL PAVING SECTION
NOT TO SCALE



TYPICAL PLANTING SECTION
NOT TO SCALE

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

TABLE 1

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			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	ASTM D6241	lbs (N)	310 (1380)	
			Maximum Opening Size	
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	70 (0.212)	
			Minimum Roll Value	
Permittivity	ASTM D4491	sec^{-1}	1.7	
Flow Rate	ASTM D4491	$gal/min/ft^2$ ($l/min/m^2$)	135 (5500)	
			Minimum Test Value	
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	70	

ARM Group LLC
Engineers and Scientists

designed RJC
checked TNP
drawn RJC
scale N/A
date 9/8/2020
project no. 160443M

drawing title: MINIMUM CAPPING SECTION DETAILS

project title: SPARROWS POINT TRADEPOINT ATLANTIC

SPARROWS POINT
BALT. COUNTY, MARYLAND

Sheet 1

APPENDIX E

Vapor-Vent™
SOIL GAS COLLECTION SYSTEM
Version 1.5

Land Science | 1011 Calle Sombra San Clemente, CA 92673 | T: (949) 481-8118 | www.landsciencetech.com

SECTION 02 56 19 - GAS CONTROL
PART 1: GENERAL

1.1 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 Summary

A. This Section includes the following:

1. Substrate preparation.
2. Vapor-Vent™ installation.
3. Vapor-Vent accessories.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 2 Section “Earthwork,” “Pipe Materials,” “Sub-drainage systems,” ”Gas Control System,” “Fluid-Applied gas barrier”.

2. Division 3 Section “Cast-in-Place Concrete” for concrete placement, curing, and finishing.

3. Division 5 Section “Expansion Joint Cover Assemblies,” for expansion-joint covers assemblies and installation.

1.3 Performance Requirements

A. General: Provide a gas venting material that collects gas vapors and directs them to discharge or to collection points as specified in the gas vapor collection system drawings and complies with the physical requirements set forth by the manufacturer.

1.4 Submittals

A. Submit Product Data for each type of gas venting system specified, including manufacturer’s specifications.

B. Sample – Submit representative samples of the following for approval:
1. Gas venting, Vapor-Vent.
2. Vapor-Vent accessories.

1.5 Quality Assurance

A. Installer Qualifications: Engage an experienced Installer who is certified in writing and approved by vapor intrusion barrier manufacturer Land Science, a division of REGENESIS for the installation of the Geo-Seal vapor intrusion barrier system.

B. Manufacturer Qualification: Obtain gas venting, vapor intrusion barrier and system components from a single manufacturer Land Science.

C. Pre-installation Conference: A pre-installation conference shall be held prior to installation of the venting system, vapor intrusion barrier and waterproofing system to assure proper site and installation conditions, to include contractor, applicator, architect/engineer and special inspector (if any).

1.6 Delivery, Storage and Handling

A. Deliver materials to project site as specified by manufacturer labeled with manufacturer's name, product brand name and type, date of manufacture, shelf life, and directions for handling.

B. Store materials as specified by the manufacturer in a clean, dry, protected location and within the temperature range required by manufacturer. Protect stored materials from direct sunlight.

C. Remove and replace material that is damaged.

PART 2: PRODUCTS

2.1 Manufacturer

A. Land Science, a division of REGENESIS, San Clemente, CA (949) 481-8118
   1. Vapor-Vent™

2.2 Gas Vent Materials

A. Vapor-Vent – Vapor-Vent is a low profile, trenchless, flexible, sub slab vapor collection system used in lieu or in conjunction with perforated piping. Vapor-Vent is offered with two different core materials, Vapor-Vent POLY is recommended for sites with inert methane gas and Vapor-Vent is recommended for sites with aggressive chlorinated volatile organic or petroleum vapors. Manufactured by Land Science.

B. Vapor-Vent physical properties

VENT PROPERTIES	TEST METHOD	VAPOR-VENT POLY	VAPOR-VENT
Material		Polystyrene	HDPE
Comprehensive Strength	ASTM D-1621	9,000 lbs / ft^2	11,400 lbs / ft^2
In-plane flow (Hydraulic gradient-0.1)	ASTM D-4716	30 gpm / ft of width	30 gpm / ft of width
Chemical Resistance		N/A	Excellent
FABRIC PROPERTIES	**TEST METHOD**	**VAPOR-VENT POLY**	**VAPOR-VENT**
Grab Tensile Strength	ASTM D-4632	100 lbs.	110 lbs.
Puncture Strength	ASTM D-4833	65 lbs.	30 lbs.
Mullen Burst Strength	ASTM D-3786	N/A	90 PSI
AOS	ASTM D-4751	70 U.S. Sieve	50 U.S. Sieve
Flow Rate	ASTM D-4491	140 gpm / ft^2	95 gpm / ft^2
UV Stability (500 hours)	ASTM D-4355	N/A	70% Retained
DIMENSIONAL DATA			
Thickness		1”	1”
Standard Widths		12”	12”
Roll Length		165 ft	165 ft
Roll Weight		65 lbs	68 lbs

2.3 Auxillary Materials

A. Vapor-Vent End Out
B. Reinforced Tape.

PART 3: EXECUTION

3.1 Examination

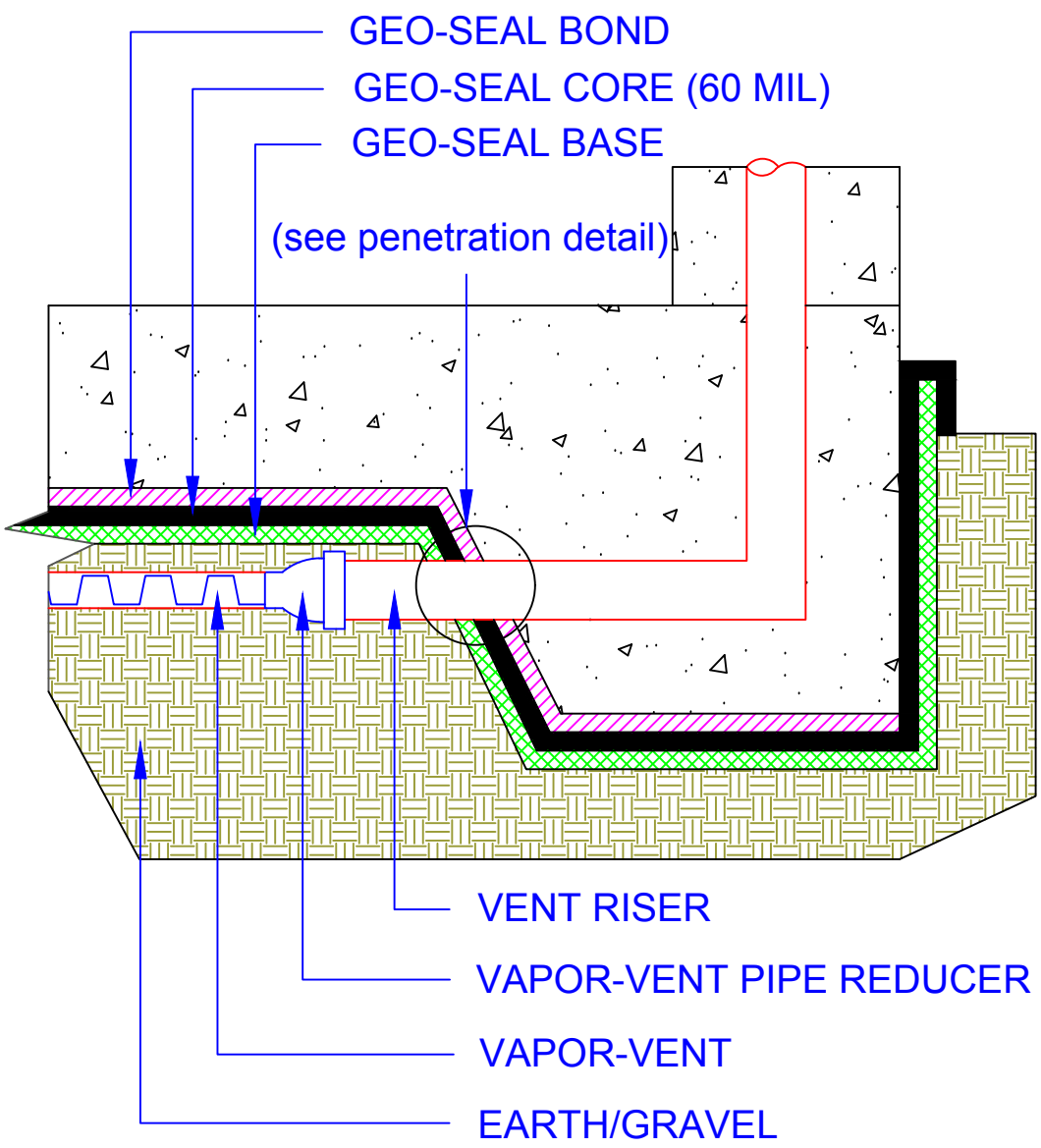
A. Examine substrates, areas, and conditions under which gas vent system will be installed, with installer present, for compliance with requirements. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 Substrate Preparation

A. Verify substrate is prepared according to project requirements.

3.3 Preparation for Strip Composite

A. Mark the layout of strip geocomposite per layout design developed by engineer.



Land Science Technologies
1011 CALLE SOMBRA
SAN CLEMENTE, CA 92673
949.366.8000 OFFICE
WWW.LANDSCIENCETECH.COM

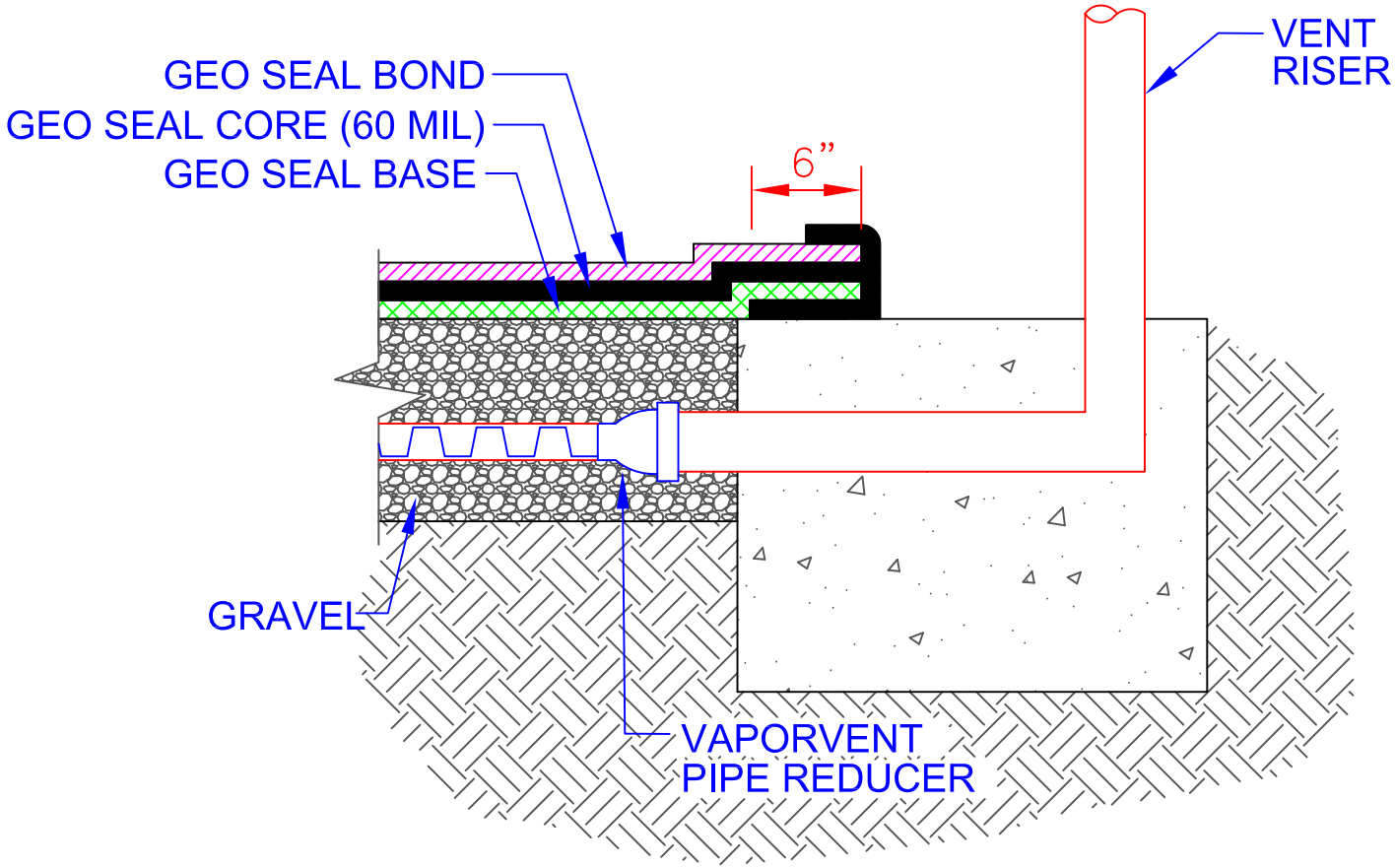
Geo-Seal® Vapor Intrusion Barrier

DATE

SCALE

TITLE

VAPOR-VENT VENT RISER



Land Science Technologies
1011 CALLE SOMBRA
SAN CLEMENTE, CA 92673
949.366.8000 OFFICE
WWW.LANDSCIENCETECH.COM

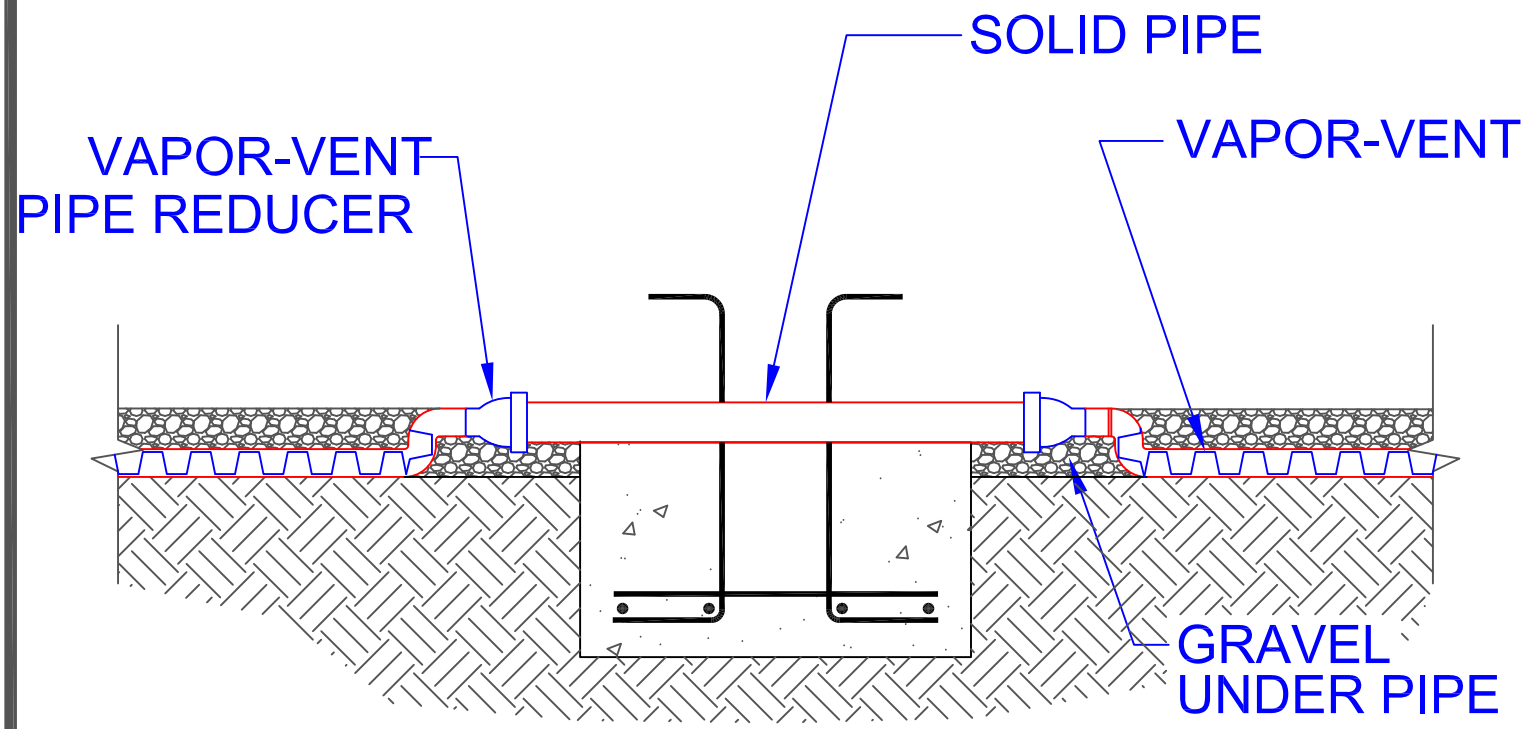
Geo-Seal® Vapor Intrusion Barrier

DATE

SCALE

TITLE

VAPORVENT VENT RISER



Land Science Technologies
1011 CALLE SOMBRA
SAN CLEMENTE, CA 92673
949.366.8000 OFFICE
WWW.LANDSCIENCETECH.COM

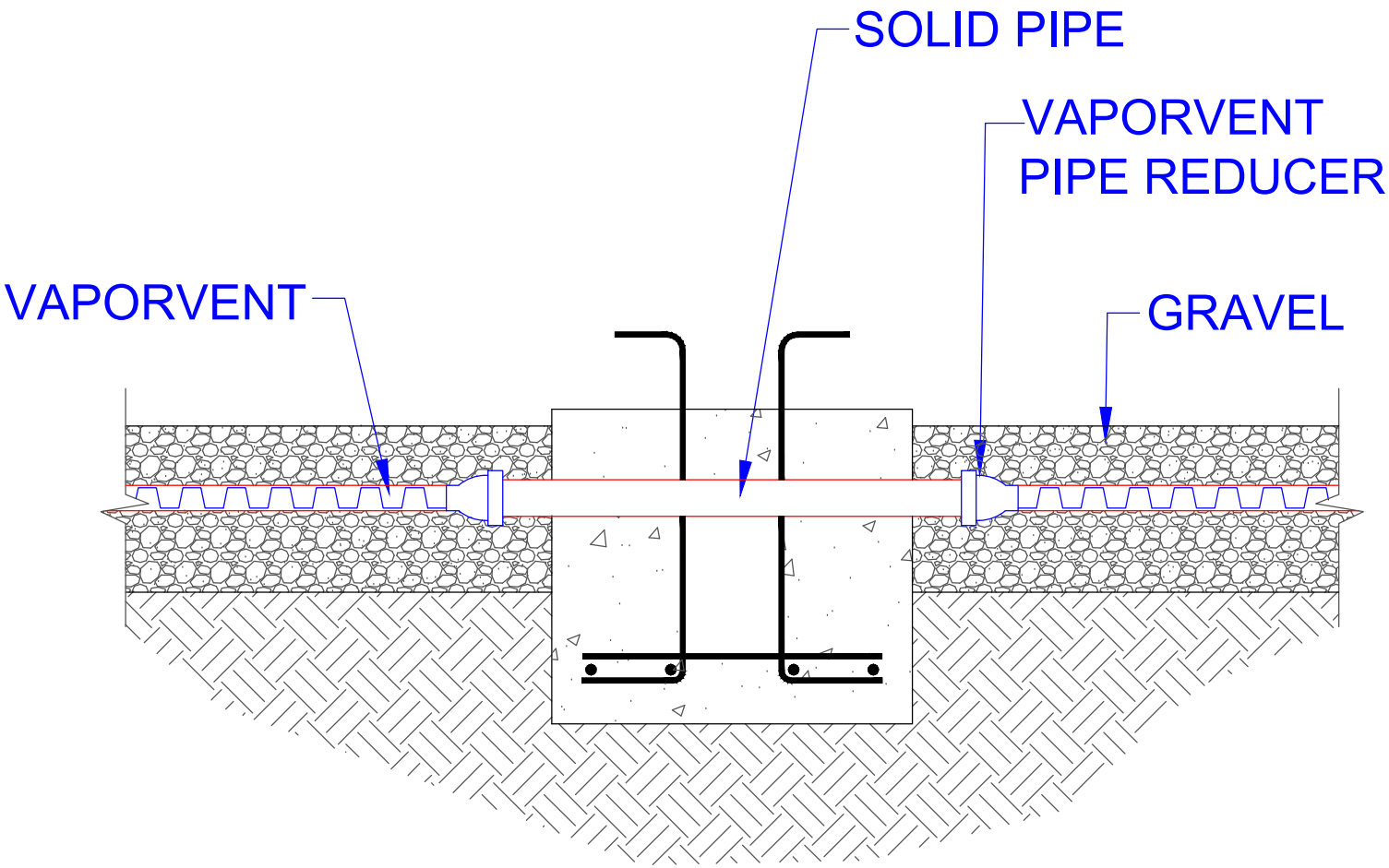
Geo-Seal® Vapor Intrusion Barrier

DATE

SCALE

TITLE

VAPOR-VENT OVER FOOTING



Land Science Technologies
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WWW.LANDSCIENCETECH.COM

Geo-Seal® Vapor Intrusion Barrier

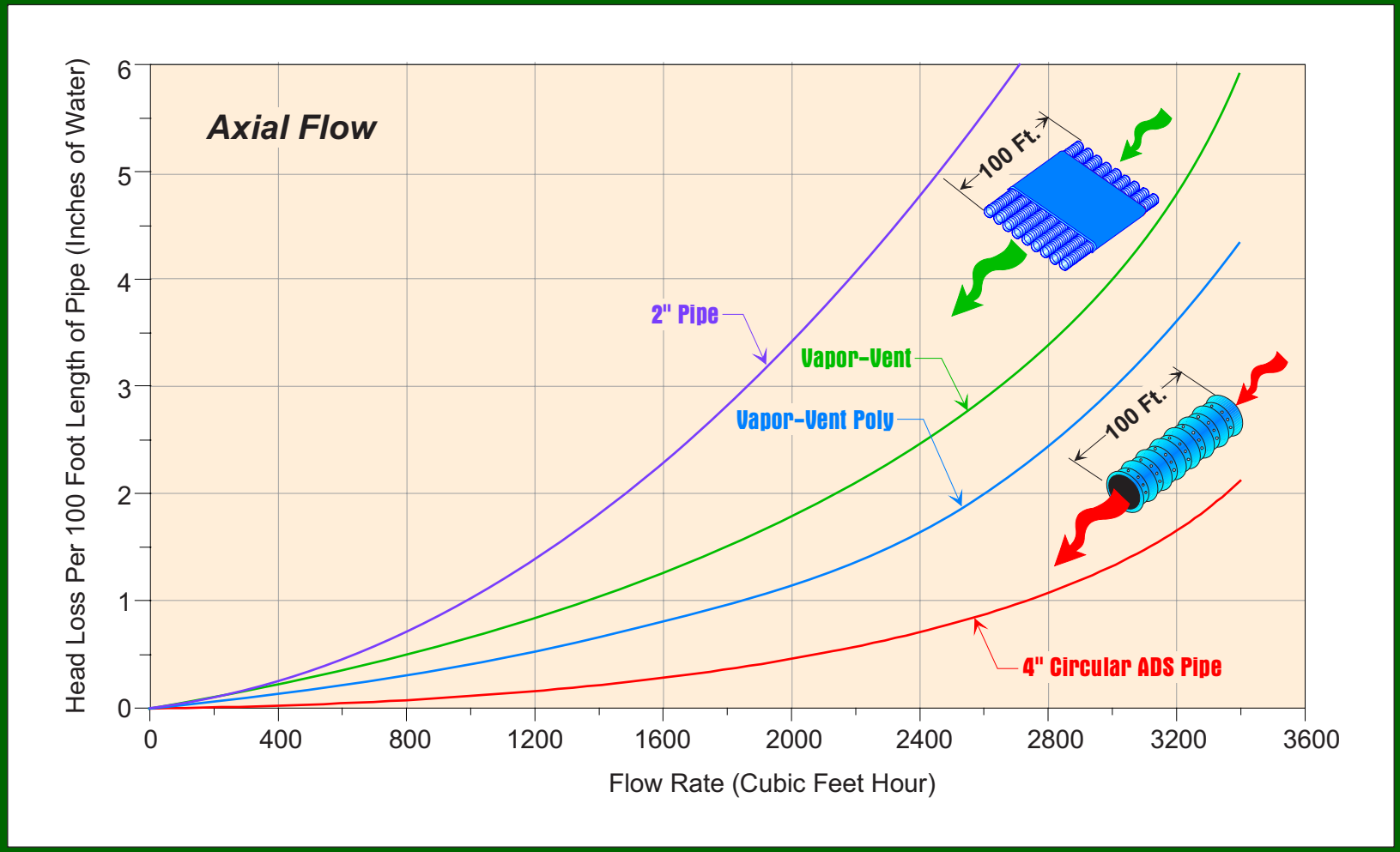
DATE

SCALE

TITLE

VAPORVENT THROUGH FOOTING

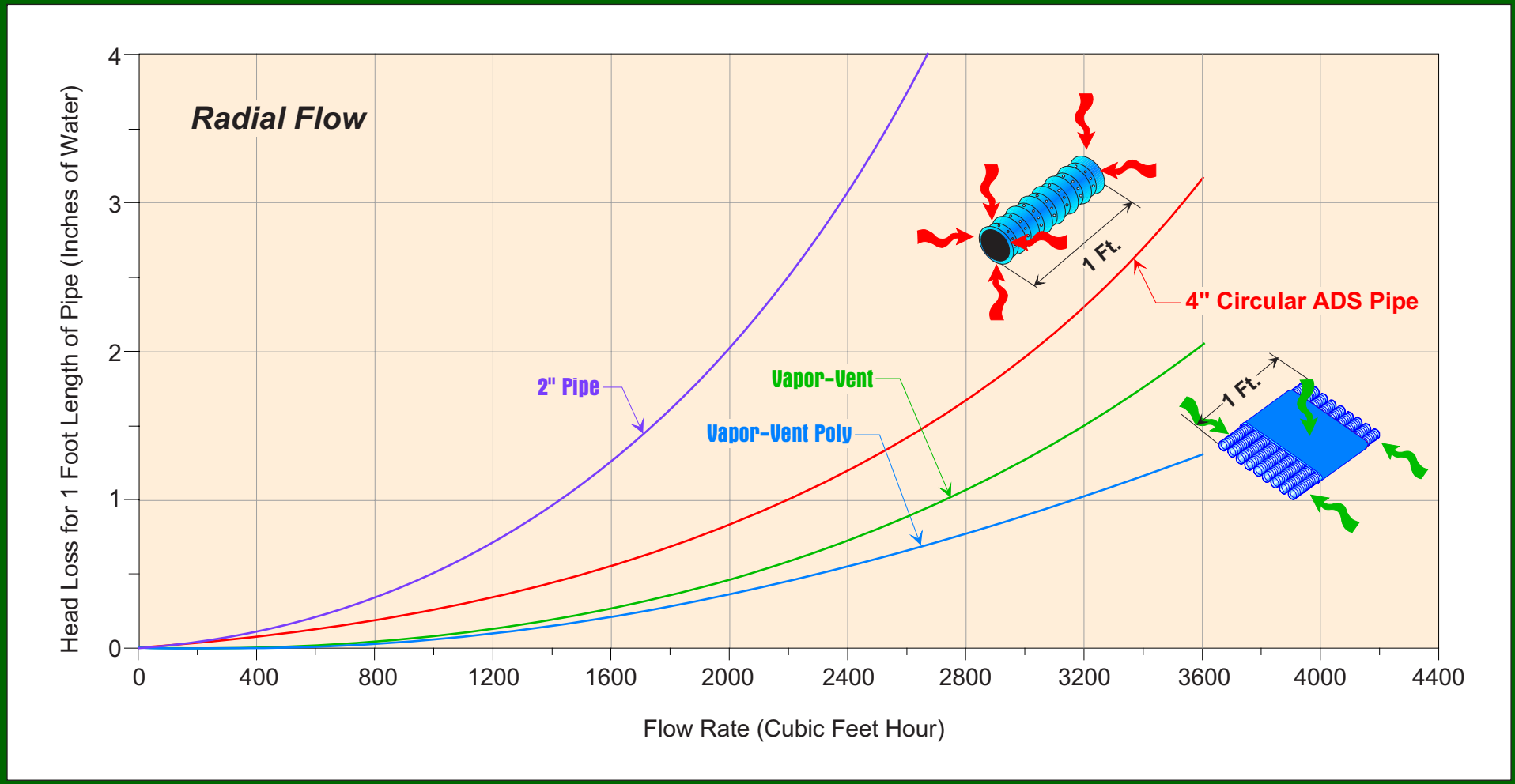
Axial Flow Characteristics for Vent Piping



GeoKinetics
Geotechnical & Environmental Engineers

Land Science Technologies

Radial Flow Characteristics for Vent Piping



SAFETY DATA SHEET

Trade Name: VAPOR-VENT™ & VAPOR-VENT™ POLY

Land Science
1011 Calle Sombra
San Clemente, CA 92673

PHONE: 949-366-8000
EMAIL: CustomerService@landsciencetech.com

1. PRODUCT IDENTIFICATION

1.1. Product Identifier

Product Description: Dimpled HDPE and Polystyrene Sheet
Product Name: VAPOR-VENT™ and VAPOR-VENT™ POLY
Synonyms: Polyolefin

2. HAZARD(S) IDENTIFICATION

2.1. NO HAZARDOUS INGREDIENTS

This product is considered "article" and is not hazardous under OSHA Hazard Communication Standard (29 CFR 1910.1200). GSH Label Elements not required.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. This product does not meet the definition given in 29 CFR 1910.1200 for hazardous material and composition is not required.

Components	CAS No.	OSHA PEL
Polyethylene	9002-88-4	Not established
Polypropylene	9003-07-0	Not established
Polystyrene	9003-53-6	Not established
Proprietary	Mixtures	Not established

4. FIRST-AID MEASURES

4.1. Inhalation: Not likely in current form
4.2. Ingestion: Not likely in current form
4.3. Eye Contact: As with any foreign object, flush with water. If pain or irritation persists, consult physician.
4.4. Skin Contact: Wash with soap and water. In case of irritation, consult physician.

5. FIRE-FIGHTING MEASURES

5.1. Flash Point: N/A

5.2. Flammable Limit %: Lower N/A Upper N/A
5.3. Extinguishing Media: Dry chemical, carbon dioxide or foam.
Special Fire Fighting Procedures: Wear NIOSH approved, positive pressure, self-contained breathing apparatus (SCBA) and full protective clothing. Extinguish fires with foam or dry chemical. Do not use water jet.
5.4. Unusual Fire and Explosion Hazards: Avoid accumulation and dispersion of dust to reduce explosion potential.
5.5. Explosion Hazard: Fire may produce irritating gases and dense smoke.

6. ACCIDENTAL RELEASE MEASURES

6.1. Spill is not applicable. Material is normally in solid form.

7. HANDLING AND STORAGE

7.1. Storage: Store in a dry place and away from heat, ignition sources and open flame in accordance with applicable regulations.
7.2. Handling: Wear safety glasses during cutting and fabricating processes. Electrostatic charge may build up during handling. Grounding of equipment is recommended

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Respiratory Protection: Not required under normal process conditions. NIOSH approved dust mask recommended if dust condition exist.
8.2. Ventilation: Local exhaust. If handling results in dust generation, special ventilation may be needed to ensure that dust exposure does not exceed the OSHA PEL for nuisance dust.
8.3. Protective Gloves: Not normally required. Gloves required when handling hot material.
8.4. Eye Protection: As required by site-specific conditions. Not normally required.
8.5. Eye Contact: Solid flakes or dust may cause transient irritation as a result of mechanical abrasion.
8.6. Skin Contact: Essentially no irritation to skin. Mechanical injury only. Hot solid may cause thermal burns
8.7. Inhalation: Exposure to dust at high concentration may cause irritation to respiratory tract.
8.8. Ingestion: May cause choking if swallowed.
8.9. Medical Conditions Aggravated by Overexposure: Not expected. Film is generally accepted as being biologically inert. No specific antidotal treatment, symptomatic support required.
8.10. Work/Hygienic Practices: Minimize contact with skin. Do not eat, drink or smoke in work area. Wash hands thoroughly after handling, especially before eating drinking, smoking, chewing or using restroom facility. Dusted clothing and shoes should be thoroughly cleaned before use.

Components	OSHA-PEL	ACGIH-TLV
Polyethylene	None	None
Polypropylene	None	None
Polystyrene	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Flash Point: Greater than 400° F
9.2. Flammable Limits in Air (LEL,%): Not applicable **(UEL,%):** Not applicable
9.3. Physical Form: Solid
9.4. Color: Black
9.5. Odor: Insignificant
9.6. Boiling Point: Not applicable
9.7. Melting Point: ~320° F
9.8. Freezing Point: Not applicable
9.9. Solubility in Water: None
9.10. Specific Gravity: Less than 1 (water = 1)
9.11. Vapor Density: Not applicable (air = 1)
9.12. Evaporation Rate: None (Butyl acetate = 1)
9.13. Vapor Pressure: Not applicable

9.14. %Volatile: None
9.15. pH: Not applicable

10. STABILITY AND REACTIVITY

10.1. Stability: Stable
10.2. Conditions to avoid: Keep away from ignition sources and strong oxidizers
10.3. Incompatibility (material to avoid): None identified
10.4. Hazardous Decomposition or Byproducts: Incomplete burning can produce carbon monoxide and/or carbon dioxide and other harmful products.
10.5. Hazardous Polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

11.1. Skin Contact: Prolonged contact may cause irritation to some individuals

11.2. Inhalation: Not likely under normal use

11.3. Ingestion: Not likely under normal use

11.4. Eye Effects: Not toxic, may cause irritate eyes

11.5. Skin Effects: Not toxic, may cause irritate skin

11.6. Chronic: No known health effects for long term use or contact

11.7. Carcinogenicity: The IARC evaluation is the "Carbon black (airborne, unbound particles of respirable size) is possible carcinogenic to humans (Group 2B)"

11.8. Mutagenicity & Reproductive Effects: Not believed to be mutagenic or a reproductive hazard

12. ECOLOGICAL INFORMATION

12.1. Environmental Data: Not expected to be hazardous to the environment in present form.

13. DISPOSAL CONSIDERATIONS

13.1. Dispose in accordance to State and Local regulations.

14. TRANSPORT INFORMATION

14.1. DOT Shipping Name: Not listed

14.2. DOT Label: Not regulated

14.3. DOT Hazard Class: Not applicable

14.4. UN/NA Number: Not applicable

14.5. Hazard Label(s): Not applicable

14.6. Hazard Placard(s): Not applicable

14.7. Packing Group: Not applicable

14.8. Bulk Packaging: Not applicable

14.9. RQ: Not applicable

14.10. Emergency Response Guide (ERG) No.: Not applicable

15. REGULATORY INFORMATION

1.1. FEDERAL REGULATION INFORMATION: Polyethylene, Polypropylene and Polystyrene

1.2. OSHA Status: None

1.3. EPA Clean Air Act Status: None

1.4. EPA Clean Water Act Status: None

1.5. TSCA Status: All ingredients are listed on TSCA Inventory (40CFR710)

1.6. CERCLA RQ: None

1.7. USA TSCA: This product is considered an article and is exempt from TSCA requirements.

1.8. Canada Domestic Substances List (DSL): This product is not specified on the DSL or NDSL.

1.9. SARA Title III Polyethylene, Polypropylene, Polystyrene

Section 302*	Section 313**	Section311/312***
None	None	None

*Reportable quantity of extremely hazardous substance, Sec. 302

*Threshold planning quantity, extremely hazardous substance, Sec.302

**Toxic chemical. Sec.313

**Category as required by Sec 313 (40CFR372.65C). Must be used on Toxic Release Inventory form.

***Hazard category for SARA Sec311/312 reporting H1=acute health hazard, H2=chronic health hazard, P3=fire hazard, P4=sudden release of pressure hazard, P5=reactive hazard

1.10. California Proposition 65: Carbon Black (airborne, unbound particles of respirable size), CAS# 1333-86-4 is listed as a possible carcinogen.

1.11. Canada Regulations (WHMIS): Not listed

1.12. RCRA Status: If disposed of in its purchased form, this would not be a RCRA hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product used to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste (40CFR261.20-24).

1.13. International: None

16. OTHER INFORMATION

NFPA	HMIS
Fire – 1	Health – 0
Health – 0	Flammability – 1
Reactivity – 0	Reactivity – 0
Specific Hazard – None	Personal Protective Index - E

Other Information : This document has been prepared in accordance with Regulation (EC) No 1907/2006 (REACH)

This information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designated only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

SDS US (GHS HazCom)

Geo-Seal® Vapor-Vent
SOIL GAS COLLECTION SYSTEM
Version 1.2

SECTION 02292 – BROWNFIELD/METHANE GAS CONTROL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Substrate preparation.
2. Strip Composite installation.
3. Strip Composite accessories.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 2 Section “Earthwork”, “Pipe Materials”, “Sub-drainage systems”, ”Gas Control System”, “Vapor intrusion barrier”.
2. Division 3 Section “Cast-in-Place Concrete” for concrete placement, curing, and finishing.
3. Division 5 Section “Expansion Joint Cover Assemblies”, for expansion-joint covers assemblies and installation.

1.3 PERFORMANCE REQUIREMENTS

A. General: Provide a gas venting material that collects gas vapors and directs them to discharge or to collection points as specified in the gas vapor collection system drawings and complies with the physical requirements set forth by the manufacturer.

1.4 SUBMITTALS

A. Submit Product Data for each type of gas venting system specified, including manufacturer’s specifications.

B. Sample – Submit representative samples of the following for approval:

1. Gas venting, strip geocomposite.
2. Strip composite accessories.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who is certified in writing and approved by Vapor intrusion barrier manufacturer Land Science Technologies for the installation of the Geo-Seal® Vapor intrusion barrier System.

B. Manufacturer Qualification: Obtain gas venting, vapor intrusion barrier and system components from a single manufacturer Land Science Technologies

C. Pre-installation Conference: A pre-installation conference shall be held prior to installation of the venting system, vapor intrusion barrier and waterproofing system to assure proper site and installation conditions, to include contractor, applicator, architect/engineer and special inspector (if any).

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site as specified by manufacturer labeled with manufacturer’s name, product brand name and type, date of manufacture, shelf life, and directions for handling.

B. Store materials as specified by the manufacturer in a clean, dry, protected location and within the temperature range required by manufacturer. Protect stored materials from direct sunlight.

C. Remove and replace material that is damaged.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Land Science Technologies, San Clemente, CA. 949-366-8000

1. Strip Geocomposite – Geo-Seal Vapor-Vent

2.2 GAS VENT MATERIALS

A. Strip Geocomposite – Geo-Seal Vapor-Vent is a low profile, trenchless, flexible, sub slab vapor collection system used in lieu or in conjunction with perforated piping. Vapor-Vent is offered with two different core materials, Vapor-Vent PS is recommended for sites with inert methane gas and Vapor-Vent HD is recommended for sites with aggressive chlorinated volatile organic or petroleum vapors. Manufactured by Land Science Technologies

B. Strip Geocomposite physical properties

VENT PROPERTIES	**TEST METHOD**	**VAPOR-VENT PS**	**VAPOR-VENT HD**
Material		Polystyrene	HDPE
Comprehensive Strength	ASTM D-1621	9,000 lbs / ft^2	9,200 lbs / ft^2
Shear Strength	ASTM D-1621	9,500 lbs / ft^2	N/A
Peel Strength	ASTM D-1876	38 lbs / ft	35 lbs / ft
Fungus Resistance (core)	ASTM G-21	No Growth	No Growth
In-plane flow (Hydraulic gradient-0.1, loading-10 psi)	ASTM D-4716	21 gpm / ft of width	21 gpm / ft of width
Unobstructed inflow area Pavement side		85%	85%
Chemical Resistance		N/A	Excellent
FABRIC PROPERTIES	**TEST METHOD**	**VAPOR-VENT-PS**	**VAPOR-VENT-HD**
Weight	ASTM D-3776	4.0 oz.	4.5 oz.
Grab Tensile Strength	ASTM D-4632	115 lbs.	120 lbs.
Puncture Strength	ASTM D-3787	70 psi	65 psi
Trapezoidal Tear	ASTM D-4533	50 lbs.	30 lbs.
Mullen Burst Strength	ASTM D-3786	240 psi	50 psi
Elongation	ASTM D-4632	50%	50%
EOS (AOS)	ASTM D-4751	80	70
Permeability	ASTM D-4491	20 cm/sec	21 cm / sec
Flow Rate	ASTM D-4491	170 gpm / ft^2	135 gpm / ft^2
UV Stability (500 hours)	ASTM D-4355	85% Retained	70% Retained
Fungus Resistance	ASTM D-G21	No Growth	No Growth
DIMENSIONAL DATA			
Thickness		1”	1”
Standard Widths		12”	12”
Roll Length		150 ft	150 ft
Roll Diameter		7 ft	7 ft
Roll Weight		60 lbs	60 lbs

2.3 AUXILIARY MATERIALS

A. Geo-Seal Vapor-Vent pipe reducers.

B. Reinforced Tape.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions under which gas vent system will be installed, with installer present, for compliance with requirements. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 SUBSTRATE PREPARATION

A. Verify substrate is prepared according to project requirements.

3.3 PREPARATION FOR STRIP COMPOSITE

A. Mark the layout of strip geocomposite per layout design developed by engineer.

3.4 STRIP GEOCOMPOSITE INSTALLATION

A. Install Geo-Seal Vapor-Vent over substrate material where designated on drawings with the flat base of the core placed down and shall be overlapped in accordance with manufacturer's recommendations.

B. At areas where Geo-Seal Vapor-Vent strips intersect cut and fold back fabric to expose the dimpled core. Arrange the strips so that the top strip interconnects into the bottom strip. Unfold fabric to cover the core and use reinforcing tape, as approved by the manufacturer, to seal the connection to prevent sand or gravel from entering the core.

C. When crossing Geo-Seal Vapor-Vent over footings or grade beams, **consult with the specifying environmental engineer and structural engineer for appropriate use and placement of solid pipe materials**. Place solid pipe over or through concrete surface and attach a Geo-Seal Vapor-Vent pipe reducer at both ends of the pipe before connecting the Geo-Seal Vapor-Vent to the pipe reducer. Seal the Geo-Seal Vapor-Vent to the Geo-Seal Vapor-Vent pipe reducer using fabric reinforcement tape. Refer to Vapor-Vent detail provided by Land Science Technologies.

D. Place vent risers per specifying engineer's project specifications. Connect Geo-Seal Vapor-Vent to Geo-Seal Vapor-Vent pipe reducer and seal with fabric reinforced tape. Use Geo-Seal Vapor-Vent pipe reducer with the specified diameter piping as shown on system drawings.

3.5 PLACEMENT OF OVERLYING AND ADJACENT MATERIALS

A. All overlying and adjacent material shall be placed or installed using approved procedures and guidelines to prevent damage to the strip geocomposite.

B. Equipment shall not be directly driven over and stakes or any other materials may not be driven through the strip geocomposite.

APPENDIX F

STEGO® WRAP VAPOR BARRIER

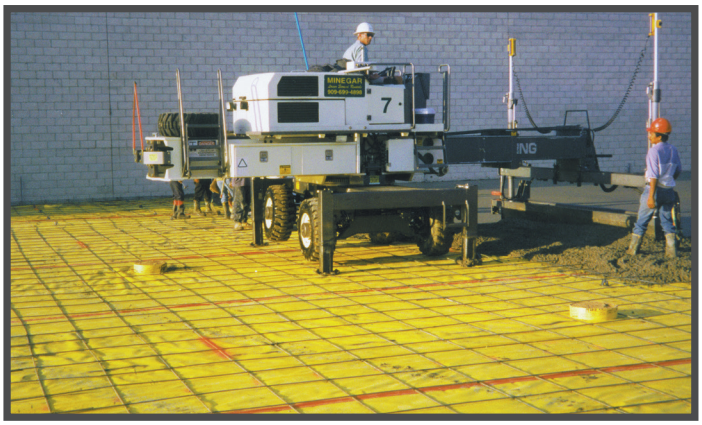
A STEGO INDUSTRIES, LLC INNOVATION | VAPOR RETARDERS 07 26 00, 03 30 00 | VERSION: JULY 20, 2018

1. PRODUCT NAME

STEGO WRAP VAPOR BARRIER

2. MANUFACTURER

Stego Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
contact@stegoindustries.com
www.stegoindustries.com



3. PRODUCT DESCRIPTION

USES: Stego Wrap Vapor Barrier is used as a below-slab vapor barrier.

COMPOSITION: Stego Wrap Vapor Barrier is a multi-layer plastic extrusion manufactured with only high grade prime, virgin, polyolefin resins.

ENVIRONMENTAL FACTORS: Stego Wrap Vapor Barrier can be used in systems for the control of soil gases (radon, methane), soil poisons (oil by-products) and sulfates.

4. TECHNICAL DATA

TABLE 1: PHYSICAL PROPERTIES OF STEGO WRAP VAPOR BARRIER

PROPERTY	TEST	RESULTS
Under Slab Vapor Retarders	ASTM E1745 Class A, B & C– Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs	Exceeds Class A, B & C
Water Vapor Permeance	ASTM F1249 – Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor	0.0086 perms
Permeance After Conditioning (ASTM E1745 Sections 7.1.2 - 7.1.5)	ASTM E154 Section 8, F1249 – Permeance after wetting, drying, and soaking ASTM E154 Section 11, F1249 – Permeance after heat conditioning ASTM E154 Section 12, F1249 – Permeance after low temperature conditioning ASTM E154 Section 13, F1249 – Permeance after soil organism exposure	0.0098 perms 0.0091 perms 0.0097 perms 0.0095 perms
Methane Transmission Rate	ASTM D1434 – Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting	192.8 GTR* (mL(STP)/m^2*day)
Radon Diffusion Coefficient	K124/02/95	8.8 x 10^{-12} m^2/second
Puncture Resistance	ASTM D1709 – Test Method for Impact Resistance of Plastic Film by Free-Falling Dart Method	2,266 grams
Tensile Strength	ASTM D882 – Test Method for Tensile Properties of Thin Plastic Sheeting	70.6 lbf/in
Thickness		15 mil
Roll Dimensions	width x length: area:	14' x 140' 1,960 ft^2
Roll Weight		140 lb

Note: perm unit = grains/(ft^2*hr*in-Hg)
*GTR = Gas Transmission Rate

Continued...
Note – legal notice on page 2.

STEGO® WRAP VAPOR BARRIER

A STEGO INDUSTRIES, LLC INNOVATION | VAPOR RETARDERS 07 26 00, 03 30 00 | VERSION: JULY 20, 2018

5. INSTALLATION

UNDER SLAB: Unroll Stego Wrap Vapor Barrier over an aggregate, sand or tamped earth base. Overlap all seams a minimum of 6 inches and tape using Stego® Tape or Stego® Crete Claw® Tape. All penetrations must be sealed using a combination of Stego Wrap and Stego Accessories.

For additional information, please refer to Stego's complete installation instructions.

6. AVAILABILITY & COST

Stego Wrap Vapor Barrier is available through our network of building supply distributors. For current cost information, contact your local Stego distributor or Stego Industries' Sales Representative.

7. WARRANTY

Stego Industries, LLC believes to the best of its knowledge, that specifications and recommendations herein are accurate and reliable. However, since site conditions are not within its control, Stego Industries does not guarantee results from the use of the information provided herein. Stego Industries, LLC does offer a limited warranty on Stego Wrap. Please see www.stegoindustries.com/legal.

8. MAINTENANCE

None required.

9. TECHNICAL SERVICES

Technical advice, custom CAD drawings, and additional information can be obtained by contacting Stego Industries or by visiting the website.

Email: contact@stegoindustries.com
Contact Number: (877) 464-7834
Website: www.stegoindustries.com

10. FILING SYSTEMS

- www.stegoindustries.com

STEGO® WRAP VAPOR BARRIER/RETARDER INSTALLATION INSTRUCTIONS

IMPORTANT: Please read these installation instructions completely, prior to beginning any Stego Wrap installation. The following installation instructions are based on ASTM E1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs. If project specifications call for compliance with ASTM E1643, then be sure to review the specific installation sections outlined in the standard along with the techniques referenced in these instructions.

UNDER-SLAB INSTRUCTIONS:

FIGURE 1: UNDER-SLAB INSTALLATION

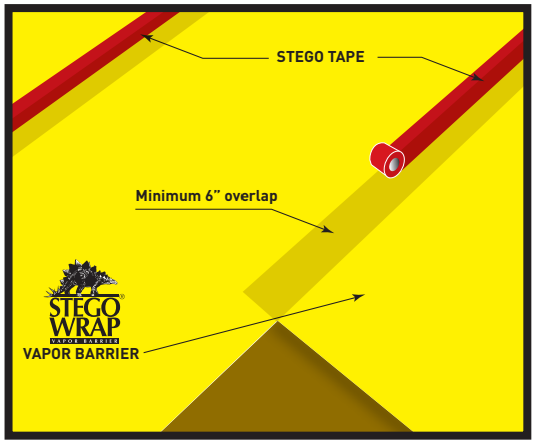


FIGURE 2a: SEAL TO SLAB AT PERIMETER

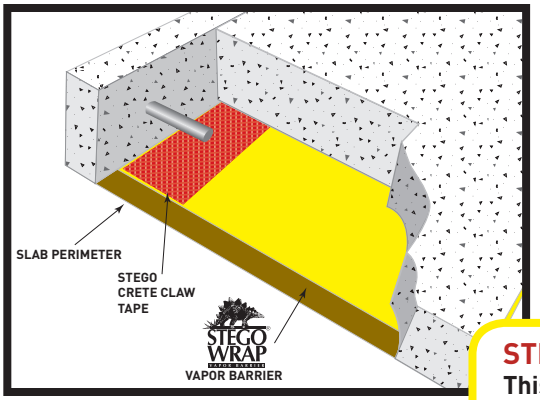
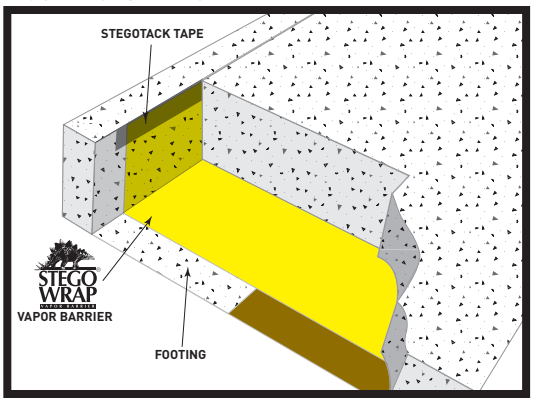


FIGURE 2b: SEAL TO PERIMETER WALL



1. Stego Wrap can be installed over an aggregate, sand, or tamped earth base. It is not necessary to have a cushion layer or sand base, as Stego Wrap is tough enough to withstand rugged construction environments.

2. Unroll Stego Wrap over the area where the slab is to be placed. Stego Wrap should completely cover the concrete placement area. All joints/seams both lateral and butt should be overlapped a minimum of 6" and taped using Stego® Tape.

   NOTE: The area of adhesion should be free from dust, dirt, moisture, and frost to allow maximum adhesion of the pressure-sensitive tape.

3. ASTM E1643 requires sealing the perimeter of the slab. *Extend vapor retarder over footings and seal to foundation wall, grade beam, or slab at an elevation consistent with the top of the slab or terminate at impediments such as waterstops or dowels.* Consult the structural engineer of record before proceeding.

SEAL TO SLAB AT PERIMETER:*

NOTE: Clean the surface of Stego Wrap to ensure that the area of adhesion is free from dust, dirt, moisture, and frost to allow maximum adhesion of the pressure-sensitive adhesive.

a. Install Stego® Crete Claw® Tape on the entire perimeter edge of Stego Wrap.

b. Prior to the placement of concrete, ensure that the top of Stego Crete Claw Tape is free of dirt, debris, or mud to maximize the bond to the concrete.

STEGO LABOR SAVER!

This method not only complies with ASTM E1643, but it also:

- **reduces labor compared to other perimeter sealing techniques.**
- **can be used even without an existing wall or footing, unlike alternatives.**

OR **SEAL TO PERIMETER WALL WITH STEGOTACK® TAPE:***

a. Make sure area of adhesion is free of dust, dirt, debris, moisture, and frost to allow maximum adhesion.

b. Remove release liner on one side and stick to desired surface.

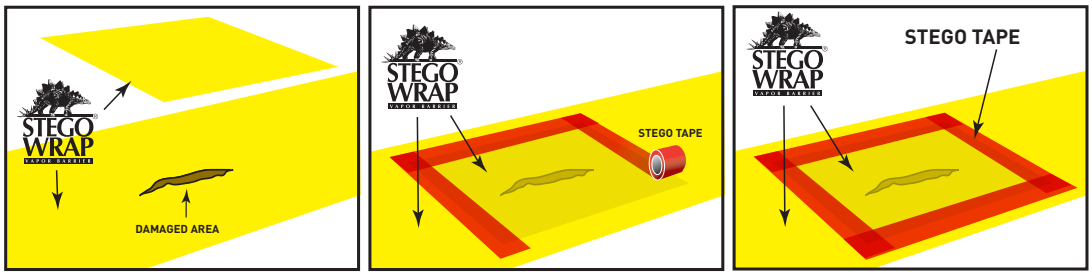
c. When ready to apply Stego Wrap, remove the exposed release liner and press Stego Wrap firmly against StegoTack Tape to secure.

* If ASTM E1643 is specified, consult with project architect and structural engineer to determine which perimeter seal technique should be employed for the project.

Continued...
Note – legal notice on page 2.

4. In the event that Stego Wrap is damaged during or after installation, repairs must be made. For holes, cut a piece of Stego Wrap to a size and shape that covers any damage by a minimum overlap of 6" in all directions. Clean all adhesion areas of dust, dirt, moisture, and frost. Tape down all edges using Stego Tape **(See Figure 3)**.

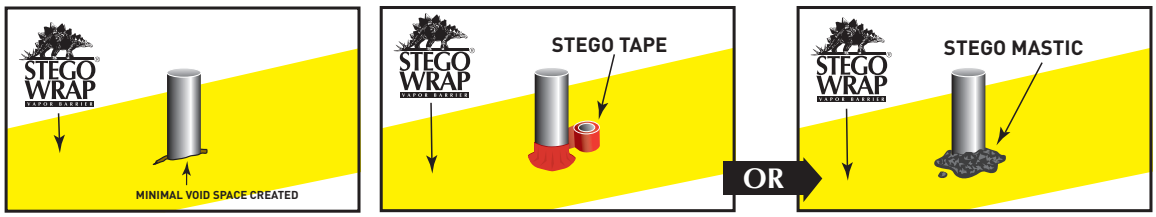
FIGURE 3: SEALING DAMAGED AREAS



NOTE: Stego Industries recommends the use of vapor barrier-safe concrete accessories, like Beast® Screed, to help minimize the amount of penetrations in a Stego Wrap Installation.

5. **IMPORTANT: ALL PENETRATIONS MUST BE SEALED.** All pipe, ducting, rebar, wire penetrations and block outs should be sealed using Stego Wrap, Stego Tape and/or Stego Mastic **(See Figure 4a)**. If penetrations are encased in other materials, such as expansive materials like foam, unless otherwise specified, Stego Wrap should be sealed to the underlying penetration directly.

FIGURE 4a: PIPE PENETRATION SEALING



STEGO WRAP PIPE PENETRATION REPAIR DETAIL:

1: Install Stego Wrap around pipe penetrations by slitting/cutting material as needed. Try to minimize the void space created.

2: If Stego Wrap is close to pipe and void space is minimized then seal around pipe penetration with Stego Tape and/or Stego Mastic. **(See Figure 4a)**

3: If detail patch is needed to minimize void space around penetration, then cut a detail patch to a size and shape that creates a 6" overlap on all edges around the void space at the base of the pipe. Stego Pre-Cut Pipe Boots are also available to speed up the installation.

4: Cut an "X" the size of the pipe diameter in the center of the pipe boot and slide tightly over pipe.

5: Tape down all sides of the pipe boot with Stego Tape.

6: Seal around the base of the pipe using Stego Tape and/or Stego Mastic. **(See Figure 4b)**

FIGURE 4b: DETAIL PATCH FOR PIPE PENETRATION SEALING

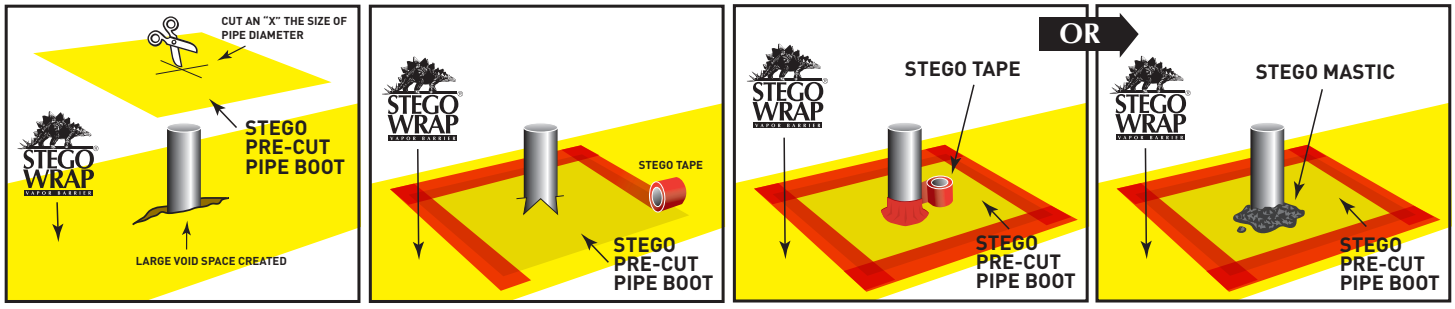
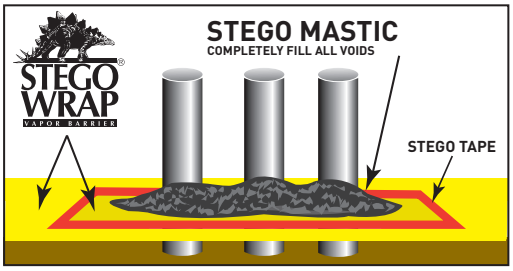


FIGURE 5: MULTIPLE PIPE PENETRATION SEALING



MULTIPLE PIPE PENETRATION SEALING:
Multiple pipe penetrations in close proximity and very small pipes may be sealed using Stego Wrap and Stego Mastic for ease of installation **(See Figure 5)**.

NOTE: Stego Industries, LLC's ("Stego") installation instructions are based on ASTM E1643 - *Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.* These instructions are meant to be used as a guide, and do not take into account specific job site situations. Consult local building codes and regulations along with the building owner or owner's representative before proceeding. If you have any questions regarding the above mentioned installation instructions or Stego products, please call us at 877-464-7834 for technical assistance. While Stego employees and representatives may provide technical assistance regarding the utility of a specific installation practice or Stego product, they are not authorized to make final design decisions.

SUB-SLAB VAPOR BARRIER INSTALLATION SPECIFICATIONS

PART 1 – GENERAL

1.1 SUMMARY

A. Products supplied under this section:
   1. Vapor barrier and installation accessories for installation under concrete slabs.

B. Related sections (to be developed by the general contractor within the Construction Drawings):
   1. Cast-in-Place Concrete
   2. Vapor Collection Piping

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM E1745-17 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.
   2. ASTM E1643-11 Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

B. Technical Reference – American Concrete Institute (ACI):
   1. ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.
   2. ACI 302.1R-15 Guide to Concrete Floor and Slab Construction.

1.3 SUBMITTALS

A. Quality control/assurance:
   1. Summary of test results per paragraph 9.3 of ASTM E1745.
   2. Manufacturer's samples and literature.
   3. Manufacturer's installation instructions for placement, seaming, penetration prevention and repair, and perimeter seal per ASTM E1643.
   4. All mandatory ASTM E1745 testing must be performed on a single production roll per ASTM E1745 Section 8.1.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Vapor barrier shall have all of the following qualities:
   1. Maintain permeance of less than 0.01 Perms [grains/(ft^2 · hr · inHg)] as tested in accordance with mandatory conditioning tests per ASTM E1745 Section 7.1 (7.1.1-7.1.5).
   2. Other performance criteria:
      a. Strength: ASTM E1745 Class A.
      b. Thickness: 15 mils minimum
   3. Provide third party documentation that all testing was performed on a single production roll per ASTM E1745 Section 8.1

B. Vapor barrier products:
   1. Basis of Design: Stego Wrap Vapor Barrier (15-mil) by Stego Industries LLC., (877) 464-7834 www.stegoindustries.com.
   2. Alternate vapor barrier materials may be allowed if approved in advance by Engineer, MDE, and USEPA, and if documentation is provided to demonstrate that the proposed alternate is equal to or better than the specified material.

2.2 ACCESSORIES

A. Seams:
   1. Stego Tape by Stego Industries LLC

B. Sealing Penetrations of Vapor barrier:
   1. Stego Mastic by Stego Industries LLC
   2. Stego Tape by Stego Industries LLC

C. Perimeter/edge seal:
   1. Stego Crete Claw by Stego Industries LLC
   2. Stego Term Bar by Stego Industries LLC
   3. StegoTack Tape (double-sided sealant tape) by Stego Industries LLC

D. Penetration Prevention (if required):
   1. Beast Foot by Stego Industries LLC

E. Vapor Barrier-Safe Screed System (if used):
   1. Beast Screed by Stego Industries, LLC

PART 3 – EXECUTION

3.1 PREPARATION

A. Ensure that subsoil is approved by Engineer.
   1. Level and compact base material.

3.2 INSTALLATION

A. Install vapor barrier in accordance with ASTM E1643.
   1. Unroll vapor barrier with the longest dimension parallel with the direction of the concrete placement and face laps away from the expected direction of the placement whenever possible.
   2. Extend vapor barrier to the perimeter of the slab. If practicable, terminate it at the top of the slab, otherwise (a) at a point acceptable to the structural engineer or (b) where obstructed by impediments, such as dowels, waterstops, or any other site condition requiring early termination of the vapor barrier. At the point of termination, seal vapor barrier to the foundation wall, grade beam or slab itself.
      a. If sealing to the slab is practical, seal vapor barrier to the entire slab perimeter using Stego Crete Claw, per manufacturer's instructions.
      b. If sealing to a stem wall or wall, seal vapor barrier to the entire perimeter wall or footing/grade beam with double sided StegoTack Tape, or both Stego Term Bar and StegoTack Tape, per manufacturer's instructions. Ensure the concrete is clean and dry prior to adhering tape.
   3. Overlap joints 6 inches and seal with manufacturer's seam tape.
   4. Apply seam tape/Crete Claw to a clean and dry vapor barrier.
   5. Seal all penetrations (including pipes, footings, columns, utilities) per manufacturer's instructions.
   6. For interior forming applications, avoid the use of non-permanent stakes driven through vapor barrier. Use blunt-end and/or threaded nail stakes (screed pad posts) and insert them into Beast Foot. Ensure Beast Foot's peel-and-stick adhesive base is fully adhered to the vapor barrier.
   7. If non-permanent stakes must be driven through vapor retarder, repair as recommended by vapor retarder manufacturer.
   8. Use reinforcing bar supports with base sections that eliminate or minimize the potential for puncture of the vapor barrier.
   9. Repair damaged areas with vapor barrier material of similar (or better) permeance, puncture and tensile.
   10. For vapor barrier-safe concrete screeding applications (if used), install Beast Screed (vapor barrier-safe screed system) per manufacturer's instructions prior to placing concrete.

APPENDIX G

ARM Group LLC
Engineers and Scientists

March 2, 2021

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

Re: Sub-Slab Soil Gas & Indoor Air Monitoring Plan
Area A: Sub-Parcel A11-2
Tradepoint Atlantic
Sparrows Point, MD 21219

Dear Ms. Brown:

ARM Group LLC (ARM), on behalf of Tradepoint Atlantic, is proposing to conduct sub-slab soil gas and indoor air sampling within Sub-Parcel A11-2 (the Site), which is part of Area A of the Tradepoint Atlantic property located in Sparrows Point, Maryland. This plan is being submitted to the Maryland Department of the Environment (MDE) and the United States Environmental Protection Agency (USEPA) to propose pre- and post-occupancy monitoring to assess potential vapor intrusion (VI) risk. This Monitoring Plan provides specifications for the proposed indoor air and soil gas monitoring.

A total of 13 sub-slab soil gas monitoring points are proposed to be installed between the two logistics center buildings. The northern and southern logistics centers will have areas of approximately 368,800 square feet and 107,400 square feet, respectively. The northern logistics center will contain 10 monitoring points and the southern logistics center will contain three monitoring points. The points will be installed and sampled prior to each building's occupancy. The proposed monitoring point locations for both sub-slab soil gas and indoor air are shown on **Figure 1**. Minor adjustments to the final locations of the monitoring points may be necessary following construction based on the final interior layout of the buildings. Precautions will be taken to ensure that the sub-slab venting system (installed separately prior to building slab installation) is not disturbed by the installation of the sub-slab sampling points.

One round of pre-occupancy sub-slab soil gas sampling will be performed in each building using the new monitoring points following their installation. If the results of the initial round of sub-slab soil gas sampling are below the Project Action Limits (PALs), then the building will be occupied, and a subsequent post-occupancy round of indoor air and sub-slab soil gas sampling will be performed within 90 days of occupancy. If the pre-occupancy sub-slab soil gas results indicate

the presence of a potentially unacceptable VI risk (i.e., exceedances of the PALs), then a subsequent round of indoor air and sub-slab soil gas sampling will be performed prior to occupancy, and any additional monitoring and/or response measures will be coordinated with the MDE and USEPA as needed. The two buildings proposed for Sub-Parcel A11-2 may have separate tenants; therefore, occupancy requirements for each building may be implemented on separate schedules. The pre-occupancy indoor air and/or sub-slab soil gas sampling noted above for the two buildings will be completed based on the proposed occupancy schedule for each building.

Each sub-slab soil gas monitoring point will be installed in accordance with the following procedures. For each installation, a 6-inch diameter pilot-hole will be cored through the concrete floor. The vapor barrier (below the concrete slab) will be carefully cut and peeled back to gain access to the subsurface. A hammer drill and/or a hand auger will be used to create a shallow borehole that extends through the subgrade to a depth of 12 inches below the bottom of the floor slab. A 6-inch soil gas implant, constructed of double woven stainless-steel wire screen, will be attached to an appropriate length of polyethylene tubing and lowered to the bottom of the borehole. Once the implant and tubing are installed, the tubing will be capped with a three-way valve, and clean sand will be added around the implant to create a permeable layer that extends at least 2 inches above the implant. Bentonite will be added and hydrated to create a seal above the sand pack that extends to the vapor barrier, which will then be folded back into place prior to adding additional hydrated bentonite. Additional bentonite will be added until it is within the pilot-hole and at least 2 inches above the vapor barrier. The monitoring points will be finished with a flush-mount surface completion (manhole) with a concrete collar. Surface completions will be H-20 traffic rated (or equivalent).

Once installed, each sub-slab soil gas monitoring probe will be allowed to equilibrate for at least 24 hours. Following this equilibration period, leak testing will be performed at each location in accordance with the procedures referenced in the Quality Assurance Project Plan (QAPP) Worksheet 21 – Field Standard Operating Procedures (SOPs), SOP No. 002 to confirm no fresh air intrusion.

Sub-slab soil gas samples will be collected according to procedures outlined in QAPP Worksheet 21 – Field SOPs, SOP No. 002 – Sub-Slab Soil Gas Sampling. The sub-slab soil gas samples will be collected using 6-liter Summa Canisters set for an 8-hour collection time. The indoor air samples will be collected according to procedures outlined in QAPP Worksheet 21 – Field SOPs, SOP No. 001 – Indoor Air Sampling. The indoor air samples will be collected during the second round of monitoring at the same approximate time as the sub-slab soil gas samples; these will also be collected using 6-liter Summa Canisters set for an 8-hour collection time. All samples will be submitted to Pace Analytical Services, Inc. (PACE) and analyzed for VOCs via USEPA Method TO-15. The full list of TO-15 VOCs approved for property-wide investigations is included as **Attachment 1**. Sample containers, preservatives, and holding times for the TO-15 analysis are listed in the QAPP Worksheet 19 & 30 – Sample Containers, Preservation, and Holding Times.

Quality assurance and quality control (QA/QC) samples are collected during field studies for various purposes, among which are to isolate site effects (control samples), to define background conditions (background sample), and to evaluate field/laboratory variability (duplicates, etc.). The following QA/QC samples will be submitted for analysis during each scheduled monitoring event (as appropriate):

- Blind Field Duplicate – 1 sample of air or sub-slab soil gas (selected by field personnel).
- Field Blank – 1 sample of ambient air from an exterior area in the breathing zone during indoor air sampling.
- Equipment Blank – 1 sample of "clean" air provided by the laboratory.

The QA/QC samples will be collected and analyzed in accordance with the QAPP Worksheet 12 – Measurement Performance Criteria, QAPP Worksheet 20 – Field Quality Control, and QAPP Worksheet 28 – Analytical Quality Control and Corrective Action.

Following each monitoring event, a brief Letter Report will be submitted to the MDE and USEPA that will document the sample collection procedures and present and interpret the analytical results. All results will be presented in tabular and graphical formats as appropriate to best summarize the data for future use. Recommendations will be presented for any additional site investigation activities such as supplemental sampling, if warranted.

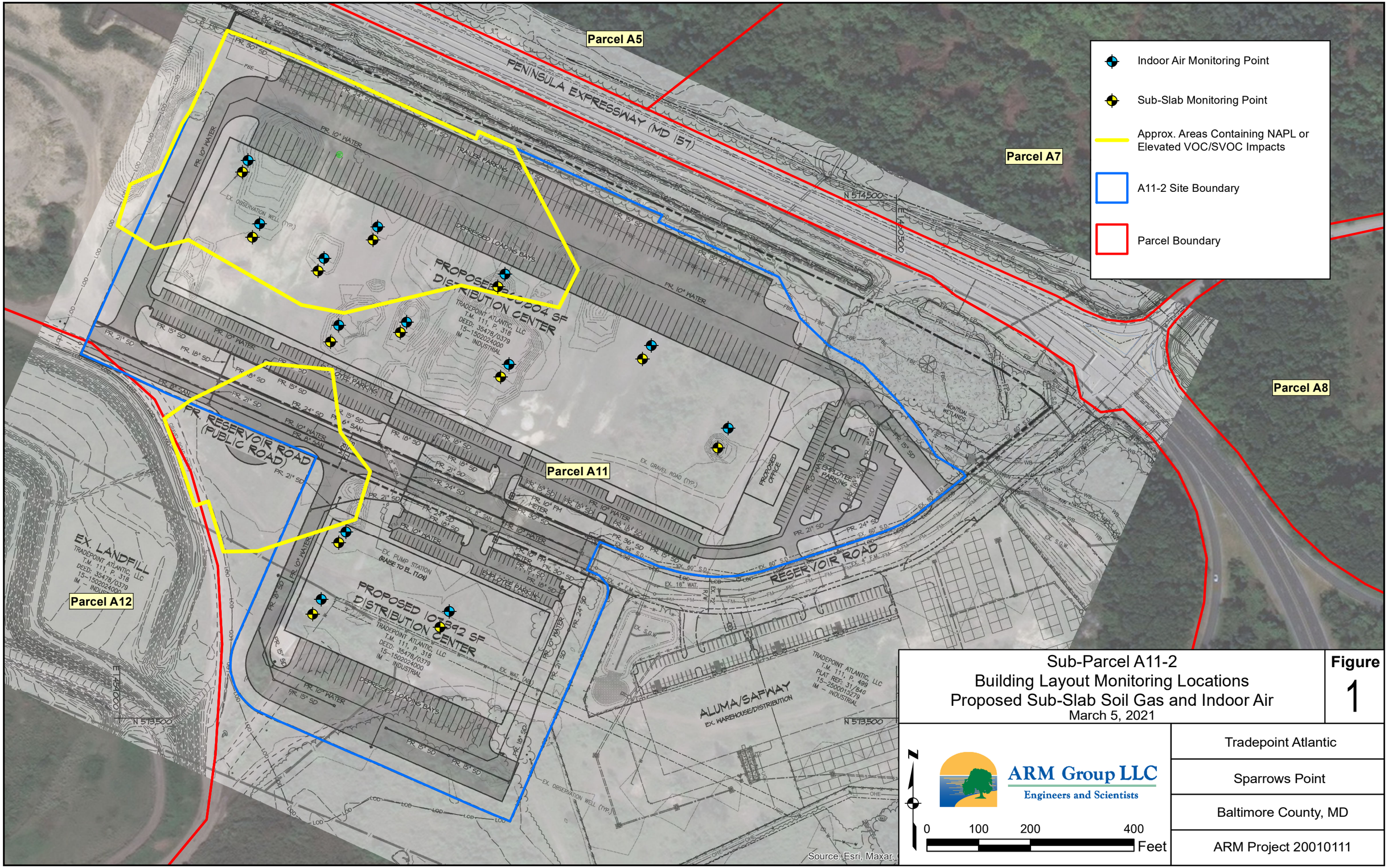
If you have any questions, or if we can provide any additional information at this time, please do not hesitate to contact ARM Group LLC at 410-290-7775.

Respectfully Submitted,
ARM Group LLC

Ryan Clancy, E.I.T.
Staff Engineer

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

FIGURES



Sub-Parcel A11-2
Building Layout Monitoring Locations
Proposed Sub-Slab Soil Gas and Indoor Air
March 5, 2021

Figure 1

ARM Group LLC
Engineers and Scientists

0 100 200 400 Feet

Tradepoint Atlantic

Sparrows Point

Baltimore County, MD

ARM Project 20010111

ATTACHMENT 1

Attachment 1 - Sub-Parcel A11-2
TO-15 VOC List

1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1,2-Trichlorotrifluoroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2,3-Trichlorobenzene
1,2,3-Trimethylbenzene
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane (EDB)
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloroethene (Total)
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,4-Dioxane (p-Dioxane)
2-Butanone (MEK)
2-Hexanone
4-Methyl-2-pentanone (MIBK)
Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
Cyclohexane
Dibromochloromethane
Dichlorodifluoromethane
Ethylbenzene
Hexachloro-1,3-butadiene
Isopropylbenzene (Cumene)
Methyl-tert-butyl ether
Methylene Chloride
Naphthalene
Styrene
Tetrachloroethene
Toluene
Trichloroethene
Trichlorofluoromethane
Vinyl chloride
Xylene (Total)
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene

APPENDIX H

GENERAL NOTES:

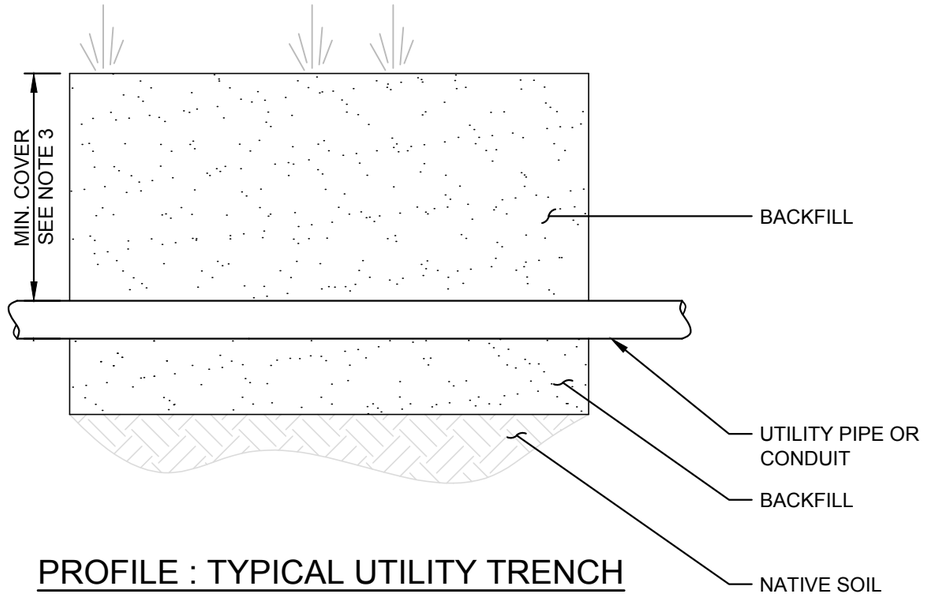
1. ALL PIPES OR CONDUIT SHALL BE LEAK-PROOF AND WATERTIGHT. ALL JOINTS SHALL BE SEALED OR GASKETED.

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.

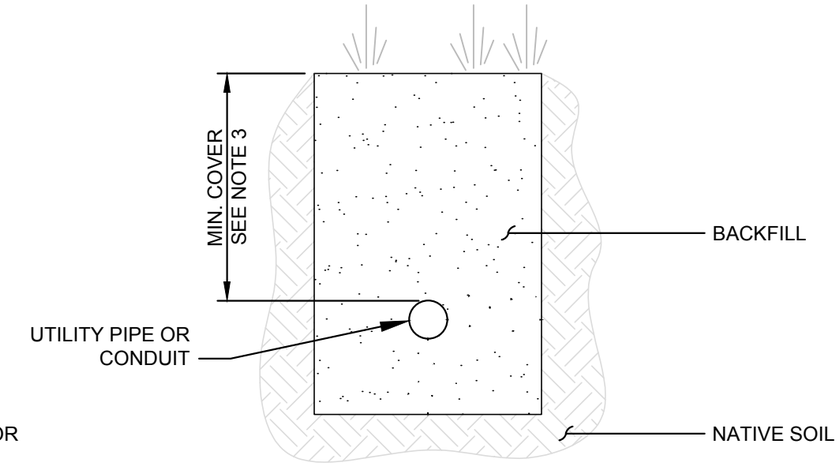
3. MINIMUM COVER ABOVE UTILITY SHALL BE BASED ON SPECIFIC UTILITY REQUIREMENTS.

4. TRENCHES SHALL BE BACKFILLED WITH BEDDING AND MATERIALS APPROVED BY MDE.

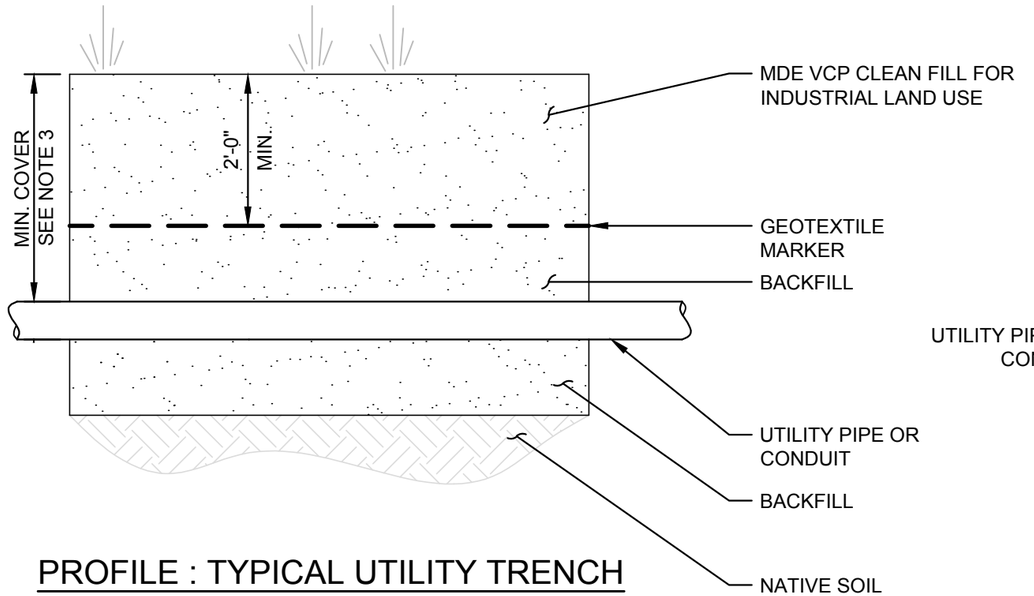
5. FOR ANY UTILITY SEGMENT WHICH GOES THROUGH AN AREA WHICH IS DESIGNATED TO RECEIVE A LANDSCAPED CAP, THE UPPER 2 FEET OF BACKFILL MUST MEET THE REQUIREMENTS OF MDE VCP CLEAN FILL FOR INDUSTRIAL LAND USE. IN THIS CASE THE MDE VCP CLEAN FILL WILL BE UNDERLAIN BY A GEOTEXTILE MARKER FABRIC. UTILITY SEGMENTS 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.



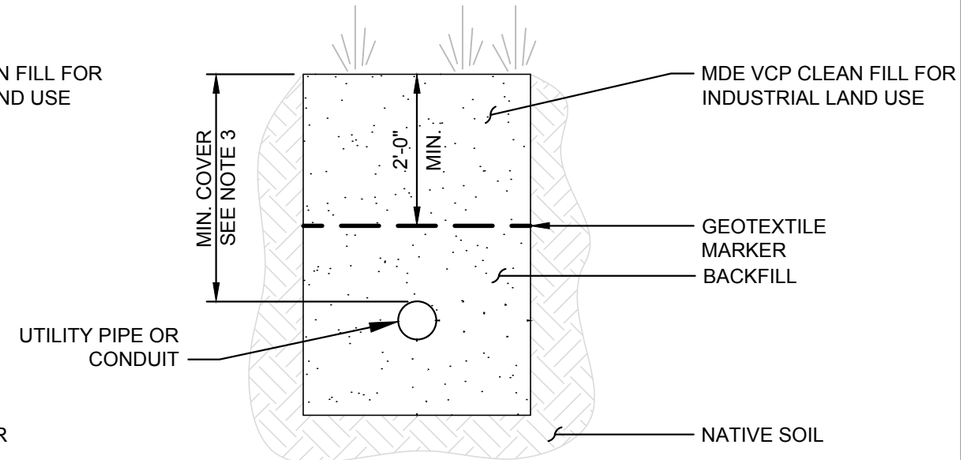
PROFILE : TYPICAL UTILITY TRENCH



SECTION : TYPICAL UTILITY



PROFILE : TYPICAL UTILITY TRENCH
(SEE NOTE 5)



SECTION : TYPICAL UTILITY
(SEE NOTE 5)

ARM Group LLC
Engineers and Scientists

TYPICAL UTILITY
CROSS SECTIONS
Sparrows Point Site
Tradepoint Atlantic

September 2020
1/2" = 1'-0"
160443M

Figure
1

APPENDIX I

Utility Excavation NAPL Contingency Plan

Revision 4 – June 19, 2017

Introduction:

Proposed underground utilities and excavations necessary for the redevelopment of the Tradepoint Atlantic property may encounter areas of petroleum and/or Oil & Grease contamination in soil. The assessment of total petroleum hydrocarbons (TPH) diesel range organics (DRO), gasoline range organics (GRO), Oil & Grease, and/or non-aqueous phase liquid (NAPL) completed as part of each Phase II Investigation includes the following:

- Each soil boring with evidence of NAPL (i.e., containing a sheen or free oil in the soil core), whether located near utilities or not, is investigated via the installation of a piezometer to assess mobility to groundwater. If measureable NAPL is present in the initial piezometer, additional soil borings and shallow temporary piezometers are installed surrounding the initial detection to delineate the impacts. Each piezometer installed to delineate the presence or absence of NAPL is checked with an oil-water interface probe immediately after installation, 48 hours after installation, and at least 30 days after installation.
- TPH-DRO/GRO and Oil & Grease data, once received, are assessed in their magnitude and location respective to subsurface utilities, stormwater conveyances, and surface waters.
- Locations that exhibit elevated detections of TPH/Oil & Grease or evidence of NAPL, that are within reasonable proximity (i.e. 25 feet) to subsurface utilities or stormwater conveyances and/or within reasonable proximity (i.e. 100 feet) to surface waters, are identified for further delineation and selective removal (if warranted).

Any NAPL identified in soil borings or piezometers during the Phase II Investigation would be noted on relevant logs and identified in Response and Development Work Plans for construction planning purposes. Despite these planning efforts, unidentified pockets of contamination (including NAPL) may still be encountered during construction. This contingency plan provides the procedures to be utilized during construction work to properly address response and construction techniques if any materials impacted with NAPL are encountered.

Objectives:

The purpose of this plan is to describe procedures to be followed in the event that 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 Oil & Grease and petroleum-contaminated soils.
2. To ensure proper worker protection for working in areas of Oil & Grease and petroleum contamination.
3. To ensure that the installation of new utilities does not create new preferential flow paths for the migration of free-phase hydrocarbons (Oil & Grease, TPH-DRO/GRO, etc.) 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 Oil & Grease or TPH present as NAPL during installation of utility trenches or other excavation activities completed during development. Oil & Grease or petroleum-contaminated soils can be identified by the presence of free oil, oil staining, a petroleum odor, or any combination of these conditions. 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 should be addressed via the same contingency measures provided herein (based on the judgement of the EP). The appearance of oil staining is not always consistent, but varies depending on the nature of the oil, the soil type, and the age of the release. Staining associated with old petroleum contamination often has a greenish hue, but may also be brown or black. The olfactory sense is the most sensitive instrument for identifying petroleum contamination in the field. Therefore, a petroleum odor may be noted although there is no visible sign of oil or staining. In some instances, decaying organic matter can produce an odor similar to petroleum, but this is rare.

If NAPL is encountered during construction, the extent of impacts shall be delineated by excavating trenches or installing four soil borings (two in each direction) perpendicular to the utility alignment or excavation to examine the soil for physical evidence of NAPL. Perpendicular transects will be investigated every 50 feet along the section of the utility trench or excavation where there is physical evidence of NAPL. Each transect will extend to a distance of 10 feet from the edge of the utility trench or excavation. This represents the maximum distance which would require mandatory excavation to mitigate potential migration risks (see below).

NAPL delineation will be guided primarily by screening observations from the perpendicular borings or trenches, and samples will be collected to test for extractable Oil & Grease or petroleum-contaminated soil using the Oil Sticks™ test kit. This test kit provides a determination of whether hydrocarbons are present in soil and extractable (i.e. could mobilize as a NAPL). Oil Sticks™ change from a pale blue to a deep blue color when they come in contact with free product. This instantaneous change in color occurs even when miniscule amounts of product come in contact with the strip. The sensitivity of Oil Sticks™ to determine the presence/absence of oil is reported by the manufacturer to be about 1,000 to 2,000 mg/kg. The

field test is performed by placing approximately 3 tablespoons of soil in a clean sample cup and adding enough water to cover the sample. After stirring the sample and waiting ~1 minute, the Oil Sticks™ test strip should be swished through the water, making sure to touch the strip to the sides of the cup where product may collect at the interface (meniscus) between the cup, water, and air. If the strip turns deep blue, or deep blue spots appear, oil or hydrocarbon is present. However, the MDE has observed that the Oil Sticks™ method may produce inconsistent results. Therefore, documentation of all screening methods is necessary during boring/trenching work. This documentation shall include an accurate record of visual and olfactory screening, along with a narrative with photographs. Field screening will be aided by photoionization detector (PID) results, and Oil Sticks™ samples should be biased to target elevated PID readings, if any. The agencies have requested that all soil samples prepared for the Oil Sticks™ field test be photographed for evidence of sheen/residue on the cup sides. Detailed records are required to be submitted with the project-specific Completion Report.

If petroleum or Oil & Grease impacts are identified in Site soils based on use of the Oil Sticks™ test kit or other field screening methods, disposal requirements will be determined using the quantitative PetroFLAG™ hydrocarbon analysis system or fixed laboratory analysis (see following section). The PetroFLAG™ hydrocarbon analysis system is a broad spectrum field test kit suitable for TPH contamination regardless of the source or state of degradation (Dexsil Corporation). PetroFLAG™ field test kits do not distinguish between aromatic and aliphatic hydrocarbons, but quantify all fuels, oils, and greases as TPH. Dilutions can be used to determine concentrations of TPH/Oil & Grease above the normal calibration range. Dexsil notes that positive results for TPH may occur if naturally occurring waxes and oils, such as vegetable oils, are present in the sample. Additional detail regarding the procedure for the PetroFLAG™ kit is given in **Attachment 1**.

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 PID for potential 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. Excavated material that is visibly stained or that exhibits a sustained PID reading of greater than 10 ppm will be segregated and containerized or placed in a stockpile on polyethylene or impervious surface until the material can be analyzed using the PetroFLAG™ test kit to characterize the material for appropriate disposal. If a PetroFLAG™ test kit is not available to the contractor, or if the contractor prefers to use fixed laboratory analysis, samples may be characterized via submittal to a laboratory for TPH/Oil & Grease analysis. However, any excavated material containing NAPL (i.e., containing free oil) cannot be characterized for waste disposal using the PetroFLAG™ test kit and must instead be characterized via fixed laboratory analysis, as described in the final paragraph of this section. In addition, any hydrocarbon contaminated soil discovered during construction activities that was not previously

characterized must also be analyzed for PCBs prior to removal and transport to an appropriate disposal facility. If excavated and stockpiled, such materials will be covered with a plastic tarp so that the entire stockpile is encapsulated, and anchored to prevent the elements from affecting the integrity of the containment. The MDE will be notified if such materials are encountered during utility work.

Soil exhibiting physical evidence of NAPL contamination or elevated TPH/Oil & Grease with detections in the low percentage range, which is located within 10 feet of 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 any required PCB analytical testing. Impacted soil which is located greater than 10 feet away from the proposed utility or subsurface structure may be left in place and undisturbed. The extent of the excavation will be determined in the field following visual/olfactory screening supplemented by the PID and Oil Sticks™ test kit, but soil disposal requirements will be determined with the PetroFLAG™ test kit (since the Oil Sticks™ method is not quantitative) or via fixed laboratory analysis for TPH/Oil & Grease (if preferred by the contractor or if the PetroFLAG™ test kit is unavailable to the contractor).

Any recovered NAPL will be collected for off-site disposal. As required by the appropriate and MDE approved facility, samples impacted by NAPL (i.e., containing free oil) will be collected for profiling/waste characterization and submitted to a fixed laboratory, as mentioned above, for the following analyses: metals, VOCs, TPH-DRO/GRO, and/or additional analysis required by the selected disposal facility. Upon receipt of any additional characterization analytical results, the MDE will be notified of the proposed disposal facility. Non-impacted material with no evidence of NAPL (i.e. soils that may contain measureable concentrations of TPH/Oil & Grease but below percentage levels) may be placed on the Site in areas to be paved or capped as long as all other requirements specified in the Response and Development Work Plan (or similar governing document) are met.

Initial Reporting:

If evidence of NAPL in soil or groundwater is encountered during excavation, it will be reported to the MDE within two hours. Information regarding the location and characteristics of any NAPL contaminated soil will be documented as follows:

- Location (exact stationing);
- 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 Oil & Grease or petroleum 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. All trench backfill will meet the MDE definition of clean fill, or otherwise be approved by the MDE. Pipe bedding will be installed to minimize the potential for accumulation of water and concentrated infiltration. This can be achieved by using a relatively small amount of low-permeability pipe bedding; open-graded stone will be avoided or only used in thicknesses of 6 inches or less. Bedding must be properly placed and compacted below the haunches of the pipe. Clay, flowable fill, or concrete plugs will 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. Installation of each trench plug will follow the completion of the trench excavation, installation of granular pipe bedding (because dense-graded aggregate or soil or other pipe bedding is difficult to properly compact below the haunches of the pipe), and seating of the pipe. The trench plug will then be installed by digging out a 1-foot trench below and around the pipe corridor, and placing clay, flowable fill, or concrete to construct the plug. A specification drawing for installation of the trench plug has been provided as **Figure 1**.

Attachment 1 - PetroFLAG™ Procedure

PetroFLAG™ field test kits use a proprietary turbidimetric reaction to determine the TPH concentration of solvent extracted samples (USEPA). Calibration standards provided with the unit are used to perform a two-point calibration for the PetroFLAG™. A blank and a 1,000 ppm standard are run by the analyzer unit to create an internal calibration curve.

Analysis of a soil sample is performed using three simple steps: extraction, filtration, and analysis. The PetroFLAG™ analysis is performed as follows:

- Place a 10 gram soil sample in a test tube.
- Add extraction solvent to the tube.
- Shake the tube intermittently for four minutes.
- Filter the extract into a vial that contains development solution
- Allow the solution to react for 10 minutes.

The filtration step is important because the PetroFLAG™ analyzer measures the turbidity or "optical density" of the final solution. Approximately 25 samples can be analyzed per hour. The vial of developed solution is placed in the meter, and the instrument produces a quantitative reading that reveals the concentration of hydrocarbons in the soil sample. The PetroFLAG™ method quantifies all fuels, oils, and greases as TPH between 15 and 2000 ppm (Dexsil Corporation). A 10x dilution of the filtered extraction solvent will be completed to allow for quantification of soil concentrations in excess of 10,000 ppm. The specially designed PetroFLAG™ analyzer allows the user to select, in the field, the response factor that is appropriate for the suspected contaminant at each site. Vegetable-based oils have been shown to exhibit a response factor of 18% (EPA Method 9074). Using the selected response factor, the analyzer compensates for the relative response of each analyte and displays the correct concentration in parts per million (ppm).

References:

U.S. Environmental Protection Agency (EPA). Contaminated Site Clean-up Information (Clu-IN): Test Kits. Office of Superfund Remediation and Technology Innovation. http://www.clu-in.net/characterization/technologies/color.cfm

Dexsil Corporation. 2016. PetroFLAG Analyzer System (PF-MTR-01). http://www.dexsil.com/products/detail.php?product_id=23

EPA SW-846 Method Number 9074 - Turbidimetric Screening Procedure for Total Recoverable Hydrocarbons in Soil

GENERAL NOTES:

1. ALL PIPES OR CONDUIT PASSING THROUGH AREAS OF PETROLEUM CONTAMINATION 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. 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.

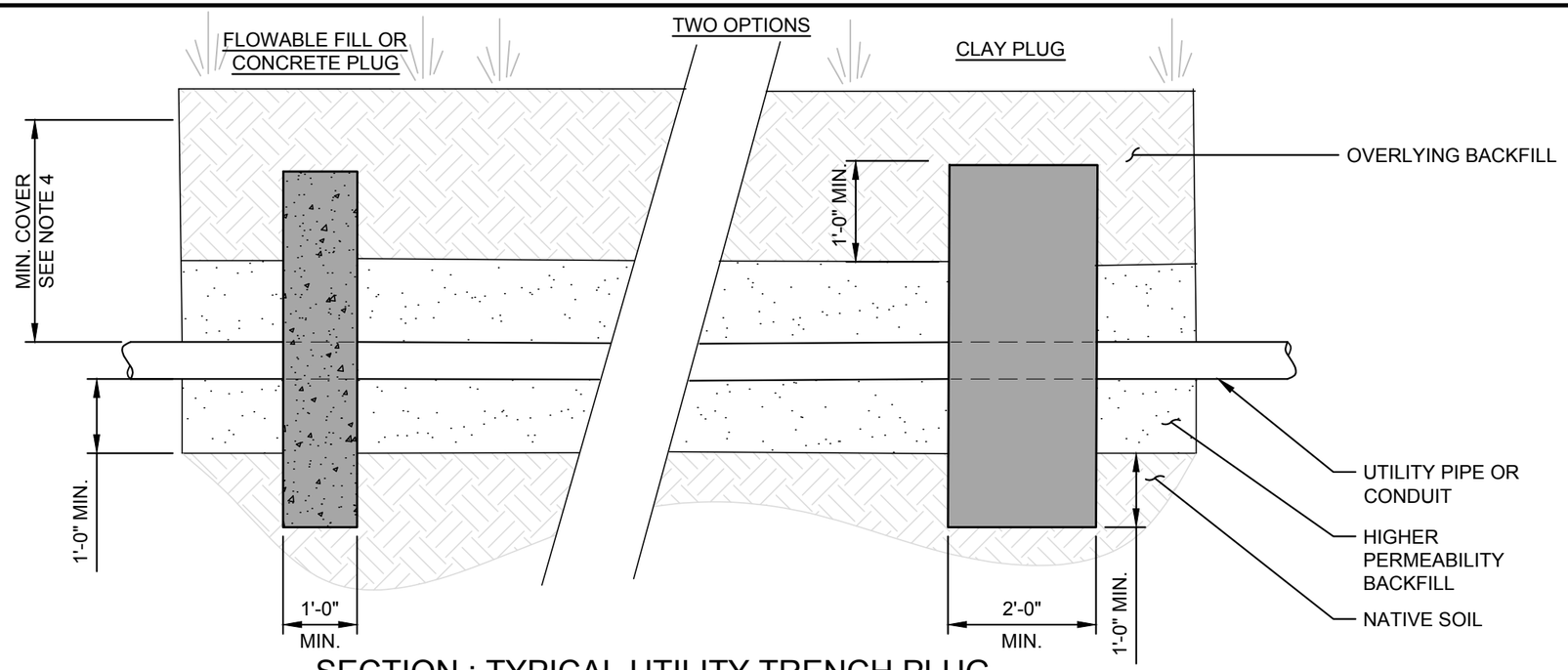
5. TRENCHES SHALL BE BACKFILLED WITH BEDDING AND MATERIALS APPROVED BY MDE.

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.

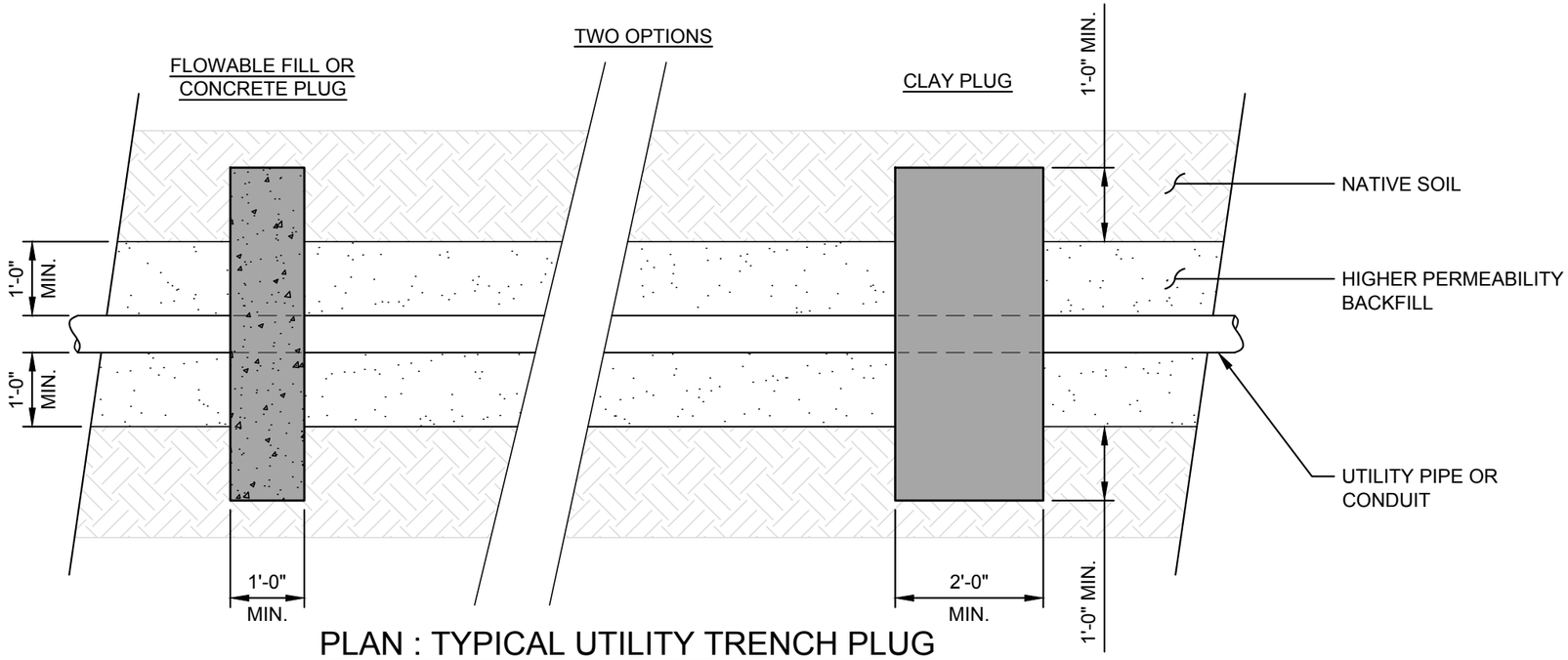
7. ALL UTILITIES INSTALLED THROUGH AREAS CONTAINING NAPL OR ELEVATED CHEMICAL IMPACTS WITH THE POTENTIAL TO TRANSMIT VAPORS ALONG PREFERENTIAL FLOW PATHWAYS SHALL BE EITHER 1) BACKFILLED WITH LOW PERMEABILITY BACKFILL MATERIAL (LESS THAN OR EQUAL TO THE PERMEABILITY OF THE EXISTING SUBGRADE), OR 2) INSTALLED 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.

   B.) 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).



SECTION : TYPICAL UTILITY TRENCH PLUG



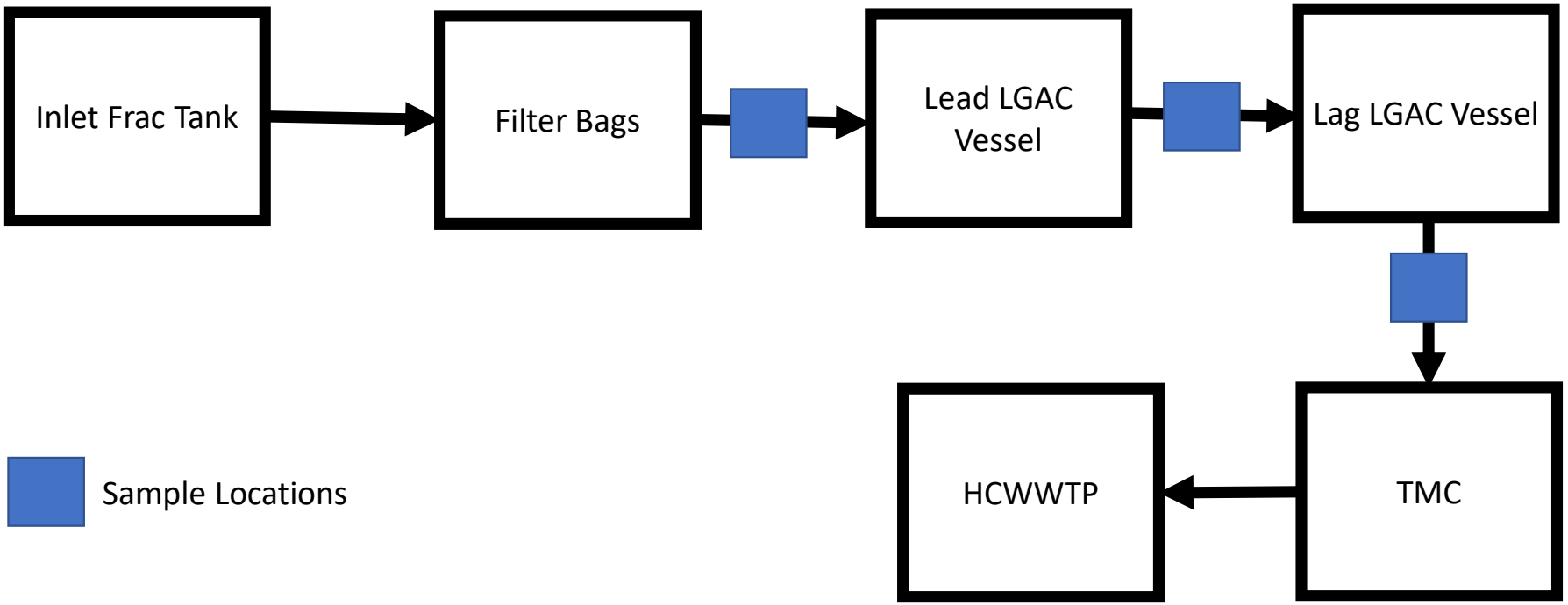
PLAN : TYPICAL UTILITY TRENCH PLUG

ARM Group LLC
Engineers and Scientists

UTILITY TRENCH PLUG
Sparrows Point Site
Tradepoint Atlantic

September 2020	Figure
Not to Scale	1
160443M	

APPENDIX J



Prepared by:

TRADEPOINT ATLANTIC