ARM Group LLC
Engineers and Scientists

May 22, 2020

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

Re: Comment Response Letter:
Phase II Investigation Report (Revision 1)
Area A: Parcel A11
Tradepoint Atlantic
Sparrows Point, MD 21219

Dear Ms. Brown:

On behalf of EnviroAnalytics Group, LLC (EAG), ARM Group LLC (ARM) is pleased to provide the following responses to comments provided by the Maryland Department of the Environment (MDE) via email on June 19, 2018 regarding the previous submission of the Phase II Investigation Report (Revision 0 dated March 27, 2018) for Parcel A11 of the Tradepoint Atlantic property located in Sparrows Point, Maryland.

Hard copy replacement pages are provided for incorporation into the Parcel A11 Phase II Investigation Report. The revised report text is included as **Attachment 1**, and additional revised attachments are provided as referenced below. The enclosed CD provides a compiled PDF of the entire report with the inserted replacement pages. Revised cover and spine cardstock sheets are also provided for insertion into the binders. Select attachments previously included in the Phase II Investigation Report can be discarded as noted below. Responses to specific MDE comments are given below; the original comments are included in italics with responses following.

1. *Please provide details regarding well redevelopment work conducted at historically existing wells SG06-PDM001 [correct ID SG01-PDP000], LF-01S, LF-02, LF03S, LF-04S, and LF-05. Also, these wells were to be gauged after development activities were completed to confirm depths to bottom of the wells. Provide that additional gauging data to go along with the previously submitted well inspection details. These can be provided as an attachment to this report.*

   Each of the historical monitoring wells was developed in accordance with standard methods prior to sampling. Development logs have been provided in a new appendix (**Appendix K**) that is attached to the Phase II Investigation Report. Total well depths are

included in this appendix, which includes a table to compare the depth information from before and after well development. A reference to the well development and the new appendix has been added in Section 3.3 of the text. Additionally, the well name SG01-PDP000 was incorrectly referenced as SG06- in three locations in the text, which has since been corrected. The historical well SG06-PDM001 is located in Parcel A10 of the Tradepoint Atlantic property and is not relevant for this investigation.

2. *Soil sampling for most boring locations in this parcel was completed in July and August 2016. It is noted that three soil borings were sampled on March 8, 2017. Please explain why these locations were sampled more than 6 months after the start of soil sampling activities.*

   The three soil borings A11-014-SB, A11-015-SB, and A11-016-SB were delayed due to access restrictions in this portion of the parcel when the fieldwork was initially implemented.

3. *Please provide groundwater sampling dates in the text and tables.*

   Groundwater sampling dates have been incorporated into Section 3.3 of the text. **Table 10** and **Table 11** have been updated to include groundwater sampling dates. Similarly, the soil sampling dates have been incorporated into Section 3.2 of the text (including an explanation of the delay for sampling A11-014-SB, A11-015-SB, and A11-016-SB per the response to comment #2). **Table 6** and **Table 7** have been updated to include soil sampling dates. The previous versions of the referenced tables should be discarded.

4. *Elevated Oil and Grease was detected in A11-023 and A11-024 above the PAL in the mid-depth sample interval. Please provide an explanation for not analyzing the deeper 10' sample interval for Oil and Grease in these two boring locations.*

   During the completion of the Parcel A11 Phase II Investigation, there was no established Oil & Grease Project Action Limit (PAL). After fieldwork and sample analysis were completed but before submission of the investigation report, an Oil & Grease PAL of 6,200 mg/kg was established. Therefore, at the time the deeper 10-foot samples were not required to be released for Oil & Grease analysis. PAL adjustments during the same time period have also affected polynuclear aromatic hydrocarbon (PAH) and total petroleum hydrocarbon (TPH) reporting. Some mid-depth sample results exceeded the original PALs for PAHs or DRO, which prompted release of the deeper (10-foot) soil samples for analysis. The PALs have since been adjusted upward, such that the mid-depth samples no longer exceed the revised PALs. **Table 6** has not been updated from Revision 0 (except for adding the sample collection dates per the response to comment #3) because the sample results were already shown compared against the updated/current PALs.

5. *Confirm whether ARM/EAG/TPA or any other entity is currently conducting any activities within EU2 on Parcel A11. If so, please provide details on the type of work.*

   In accordance with more recent agency guidance, the Screening Level Risk Assessment (SLRA) component of the Phase II Investigation Report has been removed. The removal of the SLRA is discussed in greater detail in the "Additional Revisions" section below. As a result, **Figure 5** and **Table 15** through **Table 20** of the Phase II Investigation Report provided in the prior version (Revision 0) should be discarded. The comment is no longer directly applicable. As the agencies are aware, the development of Sub-Parcel A11-1, which falls within the eastern portion of the parcel that was previously designated as EU2, was completed under an approved Response and Development Work Plan (RADWP). The RADWP included a project-specific SLRA for Sub-Parcel A11-1.

6. *It should be noted that additional delineation plans have been submitted and reviewed by the Department regarding naphthalene and arsenic contamination on this parcel. Comments on those particular investigations were provided separately from this Phase II report.*

   This comment is noted. The referenced delineation activities were completed outside of the scope of the original Phase II Investigation and reported separately. The agency comments on the delineation plans were addressed within the Work Plan for Delineation of Naphthalene (Revision 1) and associated Comment Response Letter dated June 7, 2018 and the Delineation Results: Interim Submittal for Arsenic and Lead Impacted Soil dated December 20, 2018.

Additional Revisions

7. The report has been updated in accordance with the Phase II Investigation Report Approach Letter: SLRAs for Parcel-Specific Statement of Basis (dated April 22, 2019). The United States Environmental Protection Agency (USEPA) and MDE have recommended that the SLRAs based upon hypothetical EUs be removed from Phase II Investigation Reports. As outlined in the referenced letter, the SLRA for Construction and Composite Workers should not be included in the Phase II Investigation Reports (with a few noted exceptions) since each development boundary will include its own site-specific SLRA. Therefore, the SLRA (previously Section 6.0 and Section 7.4) has been removed from this revised Parcel A11 Phase II Investigation Report. Some information previously contained in these deleted sections has been relocated to other sections, such as the discussion of borings exhibiting exceedances of the established NAPL/petroleum, lead, or PCB criteria (retained within Section 4.1.3); and the groundwater vapor intrusion (VI) evaluation results (retained within Section 6.2). In addition to removing the SLRA, the recommendations (previously Section 7.5 but now Section 6.4) have been revised to exclude the SLRA findings that are not relevant. The SLRA attachments (**Figure 5** and

Table 15 through **Table 20**) have been removed from this revised submission and can be discarded from the report copies currently held by the agencies. The attached CD delivers the revised electronic attachments which do not include the ProUCL Input/Output files or lead evaluation spreadsheet.

8. The status of the NAPL screening piezometer abandonments was updated in Section 6.3. There are currently no piezometers remaining at the Site.

9. Additional details have been added in Section 6.4 to reference the supplemental delineation work that has already been completed in select areas (beyond the scope of the Phase II Investigation). Specifically, this includes the delineation of arsenic (and associated lead) at A11-048-SB and A11-049-SB, as well as the delineation of NAPL and related chemical impacts in the central and eastern portions of the Site.

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

Taylor R. Smith, P.E.
Project Engineer

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

ATTACHMENT 1

PHASE II
INVESTIGATION REPORT

AREA A: PARCEL A11
TRADEPOINT ATLANTIC
SPARROWS POINT, MARYLAND

Prepared For:

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ARM Project No. 150298M-16

Respectfully Submitted,

Taylor R. Smith, P.E.
Project Engineer

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

Revision 1 – May 22, 2020

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APPENDICES

ELECTRONIC ATTACHMENTS

1.0 INTRODUCTION

ARM Group LLC (ARM), on behalf of EnviroAnalytics Group (EAG), has completed a Phase II Investigation of a portion of the Tradepoint Atlantic property (formerly Sparrows Point Terminal, LLC) that has been designated as Area A: Parcel A11 (the Site). Parcel A11 is comprised of 102 acres of the approximately 3,100-acre former steel making facility (**Figure 1**). The Site is bounded to the south by Greys Landfill (within Parcel A12) and I-695, to the north by wooded areas (within Parcel A5 and Parcel A7), to the west by Bear Creek and Greys Landfill, and to the east by the Peninsula Expressway and the former Oxygen Plant (within Parcel A8).

The Phase II Investigation was performed in accordance with procedures outlined in the approved Phase II Investigation Work Plan – Area A: Parcel A11. This Work Plan (Revision 1 dated May 18, 2016) was approved by the Maryland Department of the Environment (MDE) and the United States Environmental Protection Agency (USEPA) on June 16, 2016 in compliance with requirements pursuant to the following:

- Administrative Consent Order (ACO) between Tradepoint Atlantic (formerly Sparrows Point Terminal, LLC) and the MDE effective September 12, 2014; and
- Settlement Agreement and Covenant Not to Sue (SA) between Tradepoint Atlantic (formerly Sparrows Point Terminal, LLC) and the USEPA effective November 25, 2014.

Parcel A11 is part of the acreage that was removed (Carveout Area) from inclusion in the Multimedia Consent Decree between Bethlehem Steel Corporation, the USEPA, and the MDE (effective October 8, 1997) as documented in correspondence received from the USEPA on September 12, 2014. Based on this agreement, the USEPA determined that no further investigation or corrective measures will be required under the terms of the Consent Decree for the Carveout Area. However, the SA reflects that the property within the Carveout Area will remain subject to the USEPA's Resource Conservation and Recovery Act (RCRA) Corrective Action authorities.

An application to enter the full Tradepoint Atlantic property (3,100 acres) into the Maryland Department of the Environment 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 the next several years.

1.1. 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 Sparrows Point ceased in fall 2012.

Parcel A11 includes the County Lands 1A Parcel, which is one of five areas (1A, 1B, 2, 3A, and 3B) referred to as "County Lands" in the Description of Current Conditions (DCC) Report, prepared by Rust Environment and Infrastructure, dated January 1998. The DCC Report lists several former features within the contractor area (all of which have been removed), including an earthen oil pit, two underground storage tanks (USTs), two gas pumps and a pump island, unlabeled drums and containers with evidence of leaking and staining, and a small vegetated Coal Tar Area. In addition, the County Lands Summary Report identified numerous features (drums, tanks, fuel pumps, etc.) at risk for leaks and releases in specific contractor areas.

The eastern portion of the parcel was formerly used for contractor equipment storage and the western portion of the Site was formerly used as a spare parts storage yard. The southern area of the parcel also contained a trash transfer station. There is no evidence that iron and steel work processes were completed within the parcel boundary. Currently, the Site is largely vacant with piles of stockpiled materials (soil and/or slag). Additional information regarding historical activities completed within Parcel A11 can be found in the approved Phase II Investigation Work Plan dated May 18, 2016.

1.2. OBJECTIVES

The objective of this Phase II Investigation was to characterize the nature and extent of contamination at the Site. A summary table of the site investigation locations, including the boring identification numbers and the analyses performed, is provided as **Appendix A**. This report includes a summary of the work performed, including the environmental setting, site investigation methods, analytical results and data usability assessment, and findings and recommendations.

2.0 ENVIRONMENTAL SETTING

2.1. LAND USE AND SURFACE FEATURES

The Tradepoint Atlantic property consists of the former Sparrows Point steel mill. According to the Phase I Environmental Site Assessment (ESA) prepared by Weaver Boos dated May 19, 2014, the property is zoned Manufacturing Heavy-Industrial Major (MH-IM). Surrounding property zoning classifications (beyond Tradepoint Atlantic) include the following: Manufacturing Light (ML); Resource Conservation (RC); Density Residential (DR); Business Roadside (BR); Business Major (BM); Business Local (BL); and Residential Office (RO). Light industrial and commercial properties are located northeast of the property and northwest of the property across Bear Creek. Residential areas of Edgemere and Fort Howard are located northeast of the property across Jones Creek and to the southeast across Old Road Bay, respectively. Residential and commercial areas of Dundalk are located northwest of the property across Bear Creek.

According to topographic maps provided by EAG, the Site is at an elevation of approximately 13 to 18 feet above mean sea level (amsl). Elevations at the Site range from 0 to roughly 40 feet amsl across the parcel area; the highest elevations are the result of large material stockpiles. In the northern portion of the parcel that runs adjacent to Peninsula Expressway, the ground slopes sharply downward from 18 to 2 feet amsl in to a drainage ditch. Toward the southeastern portion of the Site, the ground slopes downward from 24 to 8 feet amsl into a surface pond just north of I-695. The western portion of the Site slopes sharply upward from Bear Creek (the western boundary of the Site with an elevation of 0 feet amsl). Across the central portion of the Site, elevations are fairly uniform with no clear discharge direction. According to Figure B-2 of the Stormwater Pollution Prevention Plan (SWPPP) Revision 6 dated February 22, 2018, runoff waters from Parcel A11 appear to flow to the western portion of the Site toward National Pollutant Discharge Elimination System (NPDES) permitted outfalls (Outfall 069, Outfall 071, and Outfall 070), which discharge to Bear Creek.

2.2. REGIONAL GEOLOGY

The Site is located within the Atlantic Coastal Plain Physiographic Province (Coastal Plain). The western boundary of the Coastal Plain is the “Fall Line”, which separates the Coastal Plain from the Piedmont Plateau Province. The Fall Line runs from northeast to southwest along the western boundary of the Chesapeake Bay, passing through Elkton (MD), Havre de Grace (MD), Baltimore City (MD), and Laurel (MD). The eastern boundary of the Coastal Plain is the off-shore Continental Shelf.

The unconsolidated sediments beneath the Site belong to the Talbot Formation (Pleistocene), which is then underlain by the Cretaceous formations which comprise the Potomac Group

(Patapsco Formation, Arundel Formation and the Patuxent Formation). The Potomac Group formations are comprised of unconsolidated sediments of varying thicknesses and types, which may be several hundred feet to several thousand feet thick. These unconsolidated formations may overlie deeper Mesozoic and/or Precambrian bedrock. Depth to bedrock is approximately 700 feet within the Site.

2.3. SITE GEOLOGY/HYDROGEOLOGY

Groundcover at the Site is comprised of 44% natural soils and 56% fill materials based on the approximate shoreline of the Sparrows Point Peninsula in 1916, as shown on **Figure 2** (adapted from Figure 2-20 in the DCC Report prepared by Rust Environment and Infrastructure dated January 1998).

In general, the encountered subsurface geology included natural soils, which included fine-grained sediments (clays and silts) and coarse-grained sediments (sands and gravel). Non-native slag materials were also encountered at thicknesses of up to several feet overlying the natural soils in many boring locations. Temporary stockpiled materials were encountered above the existing soils (including non-native slag fill) at depths of up to 14 feet below ground surface (bgs). These stockpiled materials, which were temporarily placed on Parcel A11 in support of ongoing development of the Tradepoint Atlantic property, were not characterized during this Phase II Investigation. Shallow groundwater was observed in soil cores from 3.5 to 25 feet bgs across the Site; however, groundwater was not encountered at every boring location. Soil boring observation logs are provided in **Appendix B**. Please note that unless otherwise indicated, all Unified Soil Classification System (USCS) group symbols provided on the attached boring logs are from visual observations, and not from laboratory testing.

Several monitoring wells in the shallow and intermediate hydrogeologic zones are located within the Site. A number of these wells (GL-02 (-5), GL-03 (-3), GL-08 (-3), GL-09 (-2), GL-11 (-1), GL-17 (-1), GL-18 (-3), GL-19, GL-20 (-5), and TS-01 (-7)) are regularly sampled and discussed in the semi-annual groundwater monitoring reports for Greys Landfill. As specified in the Parcel A11 Phase II Investigation Work Plan, data from the comparable semi-annual groundwater sampling event (fall 2016) is provided and discussed in this Phase II Investigation Report to supplement the shallow groundwater data obtained during this investigation. During the fall 2016 semi-annual groundwater monitoring event, sample location GL-20 (-5) was observed to be damaged and, therefore, no groundwater sample was collected from this well. Six existing wells which are not included in the semi-annual monitoring events (SG01-PDP000, LF-01S, LF-02, LF03S, LF-04S, and LF-05) were sampled for this Phase II Investigation as outlined in the Work Plan. Temporary groundwater sample collection points were installed at five locations across the Site (A11-017-PZ, A11-037-PZ, A11-042-PZ, A11-043-PZ, and A11-046-PZ) to provide additional sampling points to investigate shallow groundwater conditions. The locations of the groundwater sampling points (including the Greys Landfill monitoring wells which provided relevant data for this investigation) are indicated on **Figure 3**.

The temporary groundwater sample collection points and relevant permanent monitoring wells were surveyed by a Maryland-licensed surveyor. Supporting documentation from the surveys is included in **Appendix C**. A synoptic round of groundwater level measurements was collected on January 16, 2018 from each of the groundwater points included in the parcel-specific sampling plan, with the exception of location A11-017-PZ. Sample location A11-017-PZ could not be located in the field on the date that the groundwater level measurements were obtained. Surveyed top of casing (TOC) and ground surface elevations for all applicable locations can be found in **Table 1**, along with the depth to water (DTW) measurements from this date.

A groundwater potentiometric surface map was constructed for the shallow hydrogeologic zone based on field measurements. The localized potentiometric map for shallow groundwater has been included on **Figure 3**. The groundwater elevation contours indicate that groundwater flows radially to the north, east, and west from a mounded area in the southern portion of the Site near the eastern side of Greys Landfill (groundwater elevations of approximately 11 feet amsl). This finding is consistent with the groundwater contour maps presented in past semi-annual groundwater monitoring reports for Greys Landfill. Groundwater in the northern portion of the Site may discharge to the drainage ditch which runs along the northern boundary, but this has not been confirmed. Shallow groundwater in the western half of the Site appears to flow to the west toward the discharge point of Bear Creek, which is also consistent with semi-annual groundwater monitoring reports.

3.0 SITE INVESTIGATION

A total of 143 soil samples (from 62 boring locations) and 11 groundwater samples were collected for analysis between July 27, 2016 and March 8, 2017 as part of the Parcel A11 Phase II Investigation. Nine 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 from November 8 to 10, 2016 are provided and discussed to supplement the overall groundwater characterization of Parcel A11. This Phase II Investigation utilized methods and protocols that followed the procedures included in the Quality Assurance Project Plan (QAPP) dated April 5, 2016 which was approved by the agencies to support the investigation and remediation of the Tradepoint Atlantic property. Information regarding the project organization, field activities and sampling methods, sampling equipment, sample handling and management procedures, the selected laboratory and analytical methods, quality control and quality assurance procedures, investigation-derived waste (IDW) management methods, and reporting requirements are described in detail in the approved Parcel A11 Work Plan dated May 18, 2016, and the QAPP.

All site characterization activities were conducted under the site-specific health and safety plan (HASP) provided as Appendix I of the approved Work Plan.

3.1. SAMPLE TARGET IDENTIFICATION

Previous activities within and around the buildings and facilities located on the Tradepoint Atlantic property may have been historical sources of environmental contamination. If present, source areas were identified as targets for sampling through a careful review of historical documents. When a sampling target was identified, a boring was placed at or next to its location using Geographic Information Systems (GIS) software (ArcMap Version 10.2.2).

Sampling targets included, as applicable, 1) Recognized Environmental Conditions (RECs) shown on the REC Location Map provided in Weaver Boos' Phase I ESA, 2) additional findings (non-RECs) from the Phase I ESA which were identified as potential environmental concerns, and 3) Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) identified from the DCC Report prepared by Rust Environment and Infrastructure. The only REC identified in the Parcel A11 Work Plan was the on-site Contractor Equipment Storage (REC 16, Finding 256). There were no AOCs identified at the Site based on the DCC Report, but there was one additional SWMU identified as a trash transfer station (SWMU 95). Additional information regarding the identified REC and SWMU was provided in the approved Phase II Investigation Work Plan dated May 18, 2016.

Four sets of historical drawings were also reviewed to identify potential sampling targets for the Site. These drawings included the 5000 Set (Plant Arrangement), the 5100 Set (Plant Index), the 5500 Set (Plant Sewer Lines), and a set of drawings indicating coke oven gas distribution drip leg locations. Drip legs are points throughout the distribution system where coke oven gas condensate was removed from the gas pipelines. The condensate from the drip legs was typically discharged to drums, although it is possible some spilled out of the drums and on to the ground. There were no drip legs identified inside the boundary of Parcel A11. Several sampling targets were also added in specific areas of the spare parts storage yard (west) and the contractor storage area (east) based on a review of additional drawings provided by Tradepoint Atlantic personnel. A summary of the specific drawings covering the Site is presented in **Table 2**. Sampling target locations were identified if the historical drawings depicted industrial activities or a specific feature at a location that may have been a source of environmental contamination that potentially impacted the Site.

Based on the review of historical drawings and Phase I ESA documents (or based on direct agency guidance), a summary of the areas that were investigated, along with the applicable boring identification numbers and the analyses performed, has been provided as **Appendix A**. Additional sample locations were distributed to fill in large spatial gaps between proposed borings to provide complete coverage of the Site. During the completion of fieldwork, it was necessary to shift some borings from the approved locations given in the Work Plan, primarily due to access restrictions and/or refusal. **Table 3** provides the identification numbers of the field adjusted borings, the coordinates of the proposed and final locations, and the distance/direction of the field shifts.

The density of soil borings met the requirements set forth in QAPP Worksheet 17 – Sampling Design and Rationale. As defined in the Phase II Investigation Work Plan, Parcel A11 contained a total of 99.1 acres without engineered barriers and 2.9 acres with engineered barriers. Of the 2.9 acres with engineered barriers, 0.05 acres consisted of former building slabs (the trash transfer station) and 2.9 acres consisted of parking/roads. In accordance with the relevant sampling density requirements, a minimum of 40 soil borings were required to cover the area without engineered barriers, and a minimum of 2 soil borings were required to cover areas with barriers. A total of 42 borings were required to meet the density specification; 62 soil borings were completed during the Phase II Investigation.

3.2. SOIL INVESTIGATION

Continuous core soil borings were successfully advanced at 62 locations across the Site to assess the presence or absence of soil contamination, and to assess the vertical distribution of any encountered contamination (**Figure 4**). The majority of the soil samples were collected between July 27, 2016 and August 17, 2016. Samples from three borings (A11-014-SB, A11-015-SB,

and A11-016-SB) were collected several months later on March 7, 2017 and March 8, 2017 due to access restrictions in this portion of the parcel when the fieldwork was initially implemented.

The continuous core soil borings were advanced to depths between 7.5 and 35 feet bgs using the Geoprobe® MC-7 Macrocore soil sampler (surface to 10 feet bgs) and the Geoprobe® D-22 Dual-Tube Sampler (depths >10 feet bgs). At each location, each soil core was visually inspected and screened with a hand-held photoionization detector (PID) prior to logging soil types. Soil boring logs have been included as **Appendix B**, and the PID calibration log has been included as **Appendix D**. Unless otherwise indicated, all USCS group symbols provided on the attached boring logs are from visual observations.

One shallow sample was collected from the 0 to 1 foot depth interval, and a deeper sample was collected from the 4 to 5 foot depth interval from each continuous core soil boring. One additional set of samples was also collected from the 9 to 10 foot depth interval if groundwater had not been encountered; however, these samples were held by the laboratory pending the analysis of the 0 to 1 and 4 to 5 foot depth interval samples, and were only analyzed for parameters that were detected in the 5 foot depth samples at concentrations above the Project Action Limits (PALs). If the PID or other field observations indicated contamination to exist at a depth greater than 3 feet bgs but less than 9 feet bgs, and was above the water table, the sample from the deeper 4 to 5 foot interval was shifted to the alternate depth interval. It should be noted that soil samples were not collected from a depth that was below the water table.

As stated above, stockpiled materials had been temporarily placed on Parcel A11 in support of ongoing development elsewhere on the Tradepoint Atlantic property. There were seven borings (A11-021-SB, A11-026-SB, A11-027-SB, A11-028-SB, A11-031-SB, A11-041-SB, and A11-052-SB) that were completed in areas with clean soil stockpiles above the ground surface. At each of these locations, the Geoprobe® advanced through the soil stockpile and the field personnel identified the interval of the stockpiled material on the boring log. The 0 to 1 foot interval at each of these locations was collected at the true ground surface (below the stockpiled material) but was identified on the boring log as a lower sample ID. For example, sample A11-028-SB-6 is considered to be the shallow sample at this location because it was collected from beneath 5 feet of identified stockpile materials.

Soil sampling activities were conducted in accordance with the procedures and methods referenced in **Field Standard Operating Procedure (SOP) Numbers 008, 009, 012, and 013** provided in Appendix A of the QAPP. Down-hole soil sampling equipment was decontaminated after soil sampling had been concluded at a location, according to the procedures and methods referenced in **Field SOP Number 016** provided in Appendix A of the QAPP.

Soil samples were submitted to Pace Analytical Services, Inc. (PACE), and analyzed for Target Compound List (TCL) volatile organic compounds (VOCs) via USEPA Method 8260B, TCL semi-volatile organic compounds (SVOCs) via USEPA Methods 8270D and 8270D SIM, Oil &

Grease via USEPA Method 9071, total petroleum hydrocarbon (TPH) diesel range organics (DRO) and gasoline range organics (GRO) via USEPA Methods 8015B and 8015D, Target Analyte List (TAL) Metals via USEPA Methods 6010C and 7471C, hexavalent chromium via USEPA Method 7196A, and cyanide via USEPA Method 9012. Additionally, the shallow soil samples collected across the Site from the 0 to 1 foot bgs interval were analyzed for polychlorinated biphenyls (PCBs) via USEPA Method 8082. Sample containers, preservatives, and holding times for the sample analyses are listed in the QAPP Worksheet 19 & 30 – Sample Containers, Preservation, and Holding Times.

3.3. GROUNDWATER INVESTIGATION

Six shallow groundwater monitoring wells (SG01-PDP000, LF-01S, LF-02, LF-03S, LF-04S, and LF05) and five shallow temporary groundwater sample collection points (A11-017-SB, A11-037-SB, A11-042-SB, A11-043-SB, and A11-046-SB) were included in the parcel-specific sampling plan to characterize groundwater and to support the definition of the groundwater potentiometric surface. Groundwater samples were collected from these locations between August 18, 2016 and August 22, 2016.

As specified in the Work Plan, several Greys Landfill monitoring wells within or immediately adjacent to Parcel A11 that are sampled on a semi-annual basis have been included for discussion in this Phase II Investigation Report. These locations are: 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). Groundwater from these monitoring wells was sampled between November 8, 2016 and November 10, 2016. As stated above, sample location GL-20 (-5) was damaged and could not be sampled during the fall 2016 semi-annual groundwater monitoring event; therefore, groundwater data from this location (originally specified in the Work Plan) is not included. The locations where shallow groundwater samples were collected, including the Greys Landfill Wells, are provided on **Figure 3**.

At each location where a temporary groundwater sample collection point was installed, the Geoprobe® DT22 Dual Tube sampling system was advanced to a depth approximately 7 feet below where groundwater was identified in the associated soil cores, the 1.25-inch inner rod string was removed, and the temporary, 1-inch PVC groundwater sample collection point was installed through the outer casing. Following the installation of each sample collection point, the 0-hour depth to water was documented and the collection point was checked for the presence of non-aqueous phase liquid (NAPL) using an oil-water interface probe in accordance with the methods referenced in **Field SOP Number 019** provided in Appendix A of the QAPP. The temporary groundwater sample collection point construction logs have been included as **Appendix E**.

After the installation of each temporary groundwater sample collection point, down-hole equipment was decontaminated according to the procedures and methods referenced in **Field SOP Number 016** provided in Appendix A of the QAPP.

Each historical existing well that was sampled was first redeveloped according to procedures referenced in **Field SOP Number 018** provided in Appendix A of the QAPP. After redevelopment, the depth to bottom in each well was recorded to compare to the measured depth prior to development. Well Development Forms for the historical wells, as well as a table comparing pre- and post-development well depths, are included in **Appendix K**.

Groundwater samples were collected in accordance with methods referenced in **Field SOP Number 006** provided in Appendix A of the QAPP; which employed the use of laboratory supplied sample containers and preservatives, a peristaltic pump, dedicated polyethylene tubing, and a water quality multiparameter meter with a flow-through cell. Groundwater samples submitted for analysis of dissolved metals were filtered in the field with an in-line 0.45 micron filter. The sampling and purge logs have been included in **Appendix F**. Calibration of the multiparameter meter was performed before the start of each day of the sampling event, and a calibration post-check was completed at the end of the day. Appropriate documentation of the multiparameter meter calibration has also been included in **Appendix F**. Please note that only groundwater locations proposed for sampling as part of this Phase II Investigation (temporary sample collection points and permanent monitoring wells SG01-PDP000, LF-01S, LF-02, LF-03S, LF-04S, and LF05) have applicable purge logs and multiparameter meter calibration documentation. The remaining Greys Landfill monitoring wells were sampled outside of the scope of this Phase II Investigation.

Groundwater samples identified in the sampling plan table (**Appendix A**) were submitted to PACE, and analyzed for TCL-VOCs via USEPA Method 8260B, TCL-SVOCs via USEPA Methods 8270D and 8270D SIM, Oil & Grease via USEPA Method 1664A, TPH-DRO/GRO via USEPA Methods 8015B and 8015D, TAL-Dissolved Metals via USEPA Methods 6010C and 7470A, dissolved hexavalent chromium via USEPA Method 7196A, and total cyanide via USEPA Method 9012A. In addition, the permanent groundwater wells were sampled for TAL-Total Metals and total hexavalent chromium. Sample containers, preservatives, and holding times for the sample analyses are listed in the QAPP Worksheet 19 & 30 – Sample Containers, Preservation, and Holding Times. Groundwater samples that were collected as part of the semi-annual groundwater monitoring investigation (i.e., the Greys Landfill monitoring wells) were collected and analyzed for parameters specified in this separate monitoring plan. Please note that Greys Landfill groundwater monitoring wells sampled during the fall 2016 semi-annual groundwater monitoring event were not sampled for TPH/Oil & Grease, dissolved metals, or total cyanide.

3.4. MANAGEMENT OF INVESTIGATION-DERIVED WASTE (IDW)

In accordance with **Field SOP Number 005** provided in Appendix A of the QAPP, potentially impacted materials, or IDW, generated during this Phase II Investigation was containerized in 55-gallon (DOT-UN1A2) drums. The types of IDW that were generated during this Phase II Investigation included the following:

- soil cuttings generated from soil borings or the installation of the temporary groundwater points;
- purged groundwater;
- decontamination fluids; and
- used personal protective equipment

Following the completion of field activities, composite samples were gathered with aliquots from each of the Parcel A11 Phase II IDW soil drums for waste characterization. Following the analysis of each sample, the waste soil was characterized as non-hazardous. A list of all results from the soil waste characterization procedure can be found in **Table 4**. IDW drums containing aqueous materials (including aqueous waste generated during the Parcel A11 Phase II Investigation) were characterized by preparing composite samples from randomly selected drums. Each composite sample included aliquots from several individual drums that were chosen as a subset of the aqueous drums being staged on-site at the date of collection. Following the analysis of each sample, the aqueous waste was characterized as non-hazardous. A list of all results from the aqueous waste characterization procedure can be found in **Table 5**.

The parcel specific IDW drum log from the Phase II investigation is included as **Appendix G**. All IDW procedures were carried out in accordance with methods referenced in the QAPP Worksheet 21 – Field SOPs and Appendix A of the QAPP.

4.0 ANALYTICAL RESULTS

4.1. SOIL CONDITIONS

Soil analytical results were screened against the PALs established in the property-wide QAPP (or other direct guidance from the agencies; i.e. TPH/Oil & Grease) to determine PAL exceedances. PALs are generally based on the USEPA's Regional Screening Levels (RSLs) for the Composite Worker exposure to soil. The Composite Worker is defined by the USEPA as a long-term receptor exposed during the work day who is a full time employee that spends most of the workday conducting maintenance activities (which typically involve on-site exposures to surface soils) outdoors.

The analytical results for the detected parameters are summarized and compared to the PALs in **Table 6** (Organics) and **Table 7** (Inorganics). The laboratory Certificates of Analysis (including Chains of Custody) and Data Validation Reports (DVRs) have been included as electronic attachments. The DVRs contain a glossary of qualifiers for the final flags assigned to individual results in the attached summary tables.

4.1.1. Soil Conditions: Organic Compounds

As provided on **Table 6**, several VOCs were identified above the laboratory's method detection limits (MDLs) in the soil samples collected from across the Site. Benzene was the only VOC detected above its applicable PAL in seven total samples (from five boring locations) across the Site. The maximum detection of benzene was 2,120 mg/kg in sample A11-016-SB-10. Each location with a benzene PAL exceedance also had visual observations of NAPL in the soil core and/or exceedances of the TPH/Oil & Grease PAL, both of which are discussed further below. A summary of the VOC PAL exceedance locations and results has been provided on **Figure S-1**.

Table 6 provides a summary of SVOCs detected above the laboratory's MDLs in the soil samples collected from across the Site. The PALs for relevant polynuclear aromatic hydrocarbons (PAHs) have been adjusted upward based on revised toxicity data published in the USEPA RSL Composite Worker Soil Table. Therefore, exceedances for PAHs are based on the adjusted PALs rather than those presented in the QAPP. Six SVOCs, all of which are PAHs, were detected above their respective PALs. These SVOCs were benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenz[a,h]anthracene, indeno[1,2,3-c,d]pyrene, and naphthalene. Elevated SVOCs were documented to be present throughout Parcel A11, but the most elevated concentrations appear to be associated with a relatively low number of borings. A summary of the SVOC PAL exceedance locations and results has been provided on **Figure S-2**.

Shallow soil samples collected across the Site from the 0 to 1 foot bgs interval were analyzed for PCBs. **Table 6** provides a summary of the PCBs detected above the laboratory's MDLs. There were no PCB detections above the PALs.

Table 6 provides a summary of the TPH/Oil & Grease detections in the parcel. There were detections of DRO and Oil & Grease at numerous locations across the Site that exceeded the PAL (6,200 mg/kg). There were no GRO PAL exceedances in Parcel A11. The highest detections of DRO (43,200 mg/kg) and Oil & Grease (543,000 mg/kg) were identified in sample A11-016-SB-10, which targeted the J.B. Eurel Area within the contractor storage area. This sample also had elevated detections of both VOCs (benzene) and SVOCs (multiple PAHs). A summary of the TPH/Oil & Grease PAL exceedance locations and results has been provided on **Figure S-3**. There were also several boring locations where physical evidence of NAPL was identified in the soil cores. These borings are also identified on the exceedance figure, and are discussed further below.

4.1.2. Soil Conditions: Inorganic Constituents

Table 7 provides a summary of inorganic constituents detected above the laboratory's MDLs in the soil samples collected from across the Site. Six inorganic compounds (arsenic, cobalt, lead, manganese, thallium, and vanadium) were detected above their respective PALs. Arsenic was by far the most common inorganic exceedance, and was detected above the PAL in 107 (approximately 76%) of the soil samples analyzed for this compound. The maximum detection of arsenic was 210 mg/kg in sample A11-048-SB-5. In comparison, lead, manganese, and thallium exceeded their respective PALs in six, 12, and 23 samples, respectively. Cobalt and vanadium exceeded their respective PALs in only one sample each. A summary of the inorganic PAL exceedance locations and results has been provided on **Figure S-4**.

4.1.3. Soil Conditions: Results Summary

Table 6 and **Table 7** provide a summary of the detected organic compounds and inorganics in the soil samples submitted for laboratory analysis, and **Figure S-1** through **Figure S-4** present a summary of the soil sample results that exceeded the PALs. **Table 8** provides a summary of results for all PAL exceedances in soil, including maximum values and detection frequencies. **Table 9** indicates which soil impacts (PAL exceedances) were associated with the specific targets listed in the Parcel A11 Work Plan. There were no detections of PCBs above the applicable PALs, and these compounds are not considered to be significant contaminants in Parcel A11. Exceedances of the PALs in soil within Parcel A11 consisted of six inorganics (arsenic, cobalt, lead, manganese, thallium, and vanadium), one VOC (benzene), six SVOCs (benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenz[a,h]anthracene, indeno[1,2,3-c,d]pyrene, and naphthalene), DRO, and Oil & Grease.

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

- Concentrations of lead did not exceed the delineation criterion of 10,000 mg/kg in any soil samples collected at the Site.
- Concentrations of PCBs did not exceed the mandatory excavation criterion of 50 mg/kg in any soil samples collected at the Site.
- Concentrations of DRO and Oil & Grease exceeded the PAL (6,200 mg/kg) at numerous locations across the Site. Additionally, multiple boring locations exhibited physical evidence of NAPL as noted on the soil boring observation logs (**Appendix B**). The samples exceeding the PAL and the borings with observed physical evidence of NAPL are shown on **Figure S-3**. These locations are discussed in greater detail in Section 4.3 (Summary of NAPL Observations). Each location should be considered for proximity to proposed utilities in any future development plans.

4.2. GROUNDWATER CONDITIONS

The analytical results for the detected parameters in groundwater are summarized and compared to the PALs in **Table 10** (Organics) and **Table 11** (Inorganics). The groundwater results obtained from the Greys Landfill monitoring wells for the fall 2016 semi-annual groundwater monitoring event are included in the detection summary tables as well as the trailing sections of this report. Please note that the Greys Landfill groundwater monitoring wells were not sampled for TPH/Oil & Grease, dissolved metals, or total cyanide.

The laboratory Certificates of Analysis (including Chains of Custody) and DVRs have been included as electronic attachments for the groundwater samples collected during this Phase II Investigation. The Greys Landfill certificates are not included because these samples were collected outside of the scope of the Parcel A11 Work Plan. The DVRs contain a glossary of qualifiers for the final flags assigned to individual results in the attached summary tables.

4.2.1. Groundwater Conditions: Organic Compounds

As provided on **Table 10**, several VOCs were identified above the laboratory's MDLs in groundwater samples collected from across the Site. Vinyl chloride, benzene, and 1,1-dichloroethane were the only VOCs detected above their applicable aqueous PALs. There was only one PAL exceedance of vinyl chloride in groundwater at GL-18 (-3) with a detection of 4.9 µg/L. There was only one VOC PAL exceedance of either 1,1-dichloroethane or benzene at locations A11-042-PZ, GL-02 (-5), GL-03 (-3), GL-08 (-3), GL-19, LF-01S, LF-03S, LF-04S, and SG01-PDP000. Locations GL-17 (-1), GL-18 (-3), and TS-01 (-7) were the only groundwater points that exceeded more than one VOC PAL. A summary of the VOC PAL exceedance locations and results have been provided on **Figure GW-1**.

Table 10 provides a summary of SVOCs identified in groundwater samples above the laboratory's MDLs. Similar to the evaluation of soil data, the PALs for relevant PAHs have

been adjusted upward based on revised toxicity data published in the USEPA RSL Resident Tapwater Table. A total of nine SVOCs (1,4-dioxane, 2,6-dinitrolouene, benz[a]anthracene, benzo[b]fluoranthene, bis(2-chloroethyl)ether, naphthalene, nitrobenzene, n-nitroso-di-n-propylamine, and pentachlorophenol) were detected above their respective aqueous PALs. Benzo[b]fluoranthene, bis(2-chloroethyl)ether, nitrobenzene, and n-nitroso-di-n-propylamine exceeded their PALs at a single location each (GL-08 (-3), GL-03 (-3), GL-19, and LF-02, respectively). The remaining SVOCs were detected above their applicable PALs in at least two samples. A summary of the SVOC PAL exceedance locations and results has been provided as **Figure GW-2**.

Table 10 provides a summary of the Oil & Grease and TPH-DRO/GRO detections in groundwater. The Greys Landfill monitoring wells were not analyzed for this class of compounds. DRO was detected above its PAL in 10 groundwater samples (all of the locations for which it was analyzed except A11-043-PZ). GRO was responsible for three PAL exceedances, all of which also exceeded the DRO PAL. Oil & Grease only exceeded its PAL in A11-043-PZ, but elevated reporting limits were observed for most of the aqueous samples. The maximum detections of DRO, GRO, and Oil & Grease were 7,510 µg/L, 502 µg/L, and 1,300 µg/L, respectively. A summary of the TPH/Oil & Grease PAL exceedance locations is provided on **Figure GW-3**. Each location was checked for the potential presence of NAPL using an oil-water interface probe prior to sampling. During these checks, NAPL was not detected in any of the groundwater sampling locations. The potential presence of NAPL at the Site is discussed further below.

4.2.1. Groundwater Conditions: Inorganic Constituents

Table 11 provides a summary of inorganic constituents detected above the MDLs in the groundwater samples collected from across the Site. A total of seven total/dissolved metals (arsenic, cadmium, cobalt, iron, manganese, thallium, and vanadium) were detected above their respective PALs. Eight sample locations (A11-046-PZ, GL-08 (-3), GL-09 (-2), GL-11 (-1), GL-17 (-1), LF-01S, LF-02, and SG01-PDP000) had only one inorganic PAL exceedance each. Cadmium and thallium were only detected above their PALs at one location each (LF-03S and LF-04S, respectively). The remaining metals (total and/or dissolved) were detected above the applicable PALs at multiple locations. The inorganic PAL exceedance locations and results have been provided on **Figure GW-4**. For simplicity, **Figure GW-4** does not include duplicate exceedances of total and dissolved metals at relevant sample locations. If both total and dissolved concentrations exceeded the PAL for a specific compound, the value for total metals is displayed on the figure for each sample.

4.2.2. Groundwater Conditions: Results Summary

Groundwater data were screened to determine whether individual sample results may exceed the USEPA Vapor Intrusion (VI) Screening Levels (Target Cancer Risk (TCR) of 1E-5 and Target

Hazard Quotient (THQ) of 1) as determined by the Vapor Intrusion Screening Level (VISL) Calculator version 3.5 (https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-levels-visls). The PALs specified in the QAPP are based upon drinking water use, which is not a potential exposure pathway for groundwater at the Site. The results of the sample screening against the VI criteria are summarized in **Table 12**.

Two parameters exceeded the individual VI TCR criteria: benzene and naphthalene. There were no exceedances of the individual VI THQ criteria. As indicated in the table, naphthalene was detected above the acceptable VI limit (200 µg/L) at two shallow groundwater locations, and benzene was detected above its acceptable VI limit (69 µg/L) at four shallow groundwater locations. Following the initial screening, a cumulative risk assessment was also performed for each individual sample location, with the results separated by cancer versus non-cancer risk. All compounds with detections were included in the computation of the cumulative cancer risk, and all compounds with detections exceeding 10% of the THQ level were included in the evaluation of non-cancer hazard (total cyanide only). Please note that some of the wells (the Greys Landfill groundwater monitoring wells) were not sampled for cyanide.

The cumulative VI non-cancer hazards did not exceed 1 at any sample location. The cumulative cancer risks exceeded the allowable limit (1E-5) at locations GL-08 (-3), GL-17 (-1), GL-18 (-3), and SG01-PDP000 due primarily to the carcinogenic effects of naphthalene and benzene. The results of the cumulative VI comparisons are provided in **Table 13**, with the exceedances highlighted. The groundwater locations which exceeded the cumulative VI criteria are shown on **Figure GW-5**.

The presence and absence of groundwater impacts within the Site boundaries have been adequately described. Groundwater is not used on the Tradepoint Atlantic property (and is not proposed to be utilized). The VI risk evaluation identified the four locations listed above which are impacted by elevated benzene and naphthalene.

4.3. SUMMARY OF NAPL OBSERVATIONS

During the completion of the Phase II soil borings in Parcel A11, soil cores were screened for evidence of possible NAPL contamination. During the field screening completed by ARM representatives, eight boring locations exhibited physical evidence of possible NAPL. Soil borings A11-003-SB, A11-015-SB, A11-016-SB, A11-018-SB, A11-040-SB, A11-054-SB, A11-057-SB, and A11-058-SB had observations of sheen or NAPL in the soil cores, which were noted on the boring logs (**Appendix B**). These borings with observed physical evidence of NAPL are highlighted on **Figure S-3**.

Elevated detections of TPH/Oil & Grease above the PAL of 6,200 mg/kg were observed in 19 samples (from 14 boring locations) collected across the parcel, and many of these exceedances were co-located in borings which exhibited physical evidence of NAPL. Excluding the locations

with documented physical evidence of product, the following additional boring locations exceeded the DRO and/or Oil & Grease PAL of 6,200 mg/kg in their respective soil samples: A11-014-SB, A11-021-SB, A11-023-SB, A11-024-SB, A11-028-SB, A11-045-SB, A11-047-SB, A11-059-SB, and A11-061-SB.

Generally, observations of NAPL in the soil cores warranted the installation of a temporary NAPL screening piezometer in accordance with the Parcel A11 Work Plan to assess the potential mobility of free-phase product (i.e., NAPL) in the subsurface. Once the analytical data was received, the soil boring locations with elevated TPH/Oil & Grease detections were also assessed to determine if a NAPL piezometer was warranted at each location. Based on this evaluation process, temporary screening piezometers were successfully installed at 11 locations (A11-003-PZ, A11-014-PZ, A11-015-PZ, A11-016-PZ, A11-018-PZ, A11-024-PZ, A11-040-PZ, A11-045-PZ, A11-047-PZ, A11-054-PZ, and A11-061-PZ) to assess the potential mobility of NAPL to groundwater. Each screening piezometer was installed according to the same specifications as the temporary groundwater sample collection points completed throughout the Site. Following the installation of each NAPL screening piezometer, it was gauged using an oil-water interface probe after 0-hours, 48-hours, and at least 30-days. There was no measurable NAPL identified in any groundwater monitoring point during these gauging events. The water level measurements for the gauging events completed through January 4, 2018 have been included in **Appendix H**. This attachment also includes the specific installation date of each of the 11 screening piezometers, as well as relevant construction details (screen intervals, total depths, etc.).

As stated above, each location with evidence of NAPL and/or elevated detections of TPH/Oil & Grease was evaluated to determine whether a screening piezometer was warranted. Six locations were not investigated further (A11-021-SB, A11-023-SB, A11-028-SB, A11-057-SB, A11-058-SB, and A11-059-SB), with the following justifications:

- Due to the relatively low detection of Oil & Grease in boring A11-021-SB (7,310 mg/kg at 17 feet bgs; collected from below stockpiled material), and the close proximity to borings A11-014-SB, A11-015-SB, and A11-016-SB which were all investigated via screening piezometers, an additional piezometer was determined to be unnecessary at this nearby location.
- Review of the boring log for A11-023-SB determined that the Oil & Grease PAL exceedance in soil in the intermediate sample (9,200 mg/kg at 4 feet bgs) was confined above the water table based on a dry clay unit that was present from 6.5 to 15 feet bgs. No groundwater was encountered in this boring which was completed to 20 feet bgs. Therefore, a piezometer was determined to be unnecessary at this location.
- Boring locations A11-057-SB and A11-058-SB both had evidence of NAPL in the soil cores; however, piezometers were not installed at these locations due to their close proximity to Greys Landfill monitoring wells GL-08 (-3) and GL-17 (-1), respectively.

The sampling target for these boring locations is listed in **Appendix A** as the "Vicinity of Existing Monitoring Wells". The NAPL gauging measurements completed prior to the semi-annual sampling events have indicated the absence of NAPL in the groundwater in these monitoring wells.

- Attempts were made to install screening piezometers at boring locations A11-028-SB and A11-059-SB; however, refusal was encountered at both of these locations. Based on the relatively low magnitude of the detections of TPH/Oil & Grease at these two locations (maximum Oil & Grease detections of 8,330 mg/kg and 8,120 mg/kg, respectively) and a lack of physical evidence of NAPL contamination in the soil cores, no additional action is proposed at this time for either location.

5.0 DATA USABILITY ASSESSMENT

The approved property-wide QAPP specified a process for evaluating data usability in the context of meeting project goals. Specifically, the goal of the Phase II Investigation is to determine if potentially hazardous substances or petroleum products (VOCs, SVOCs, PCBs, TAL-Metals, cyanide, Oil & Grease, or TPH-DRO/GRO) are present in Site media (soil and groundwater) at concentrations that could pose an unacceptable risk to Site receptors. Individual results are compared to the PALs established in the QAPP (i.e., the most current USEPA RSLs) or based on other direct guidance from the agencies, to identify the presence of exceedances in each environmental medium.

Quality assurance and quality control (QA/QC) samples were collected during field studies to evaluate field/laboratory variability. A summary of QA/QC samples associated with this investigation has been included as **Appendix I**. The following QA/QC samples were submitted for analysis to support the data validation:

- Trip Blank – at a rate of one per cooler with VOC samples
  - Soil – VOCs only
  - Water – VOCs only
- Blind Field Duplicate – at a rate of one per twenty samples
  - Soil – VOCs, SVOCs, Metals, TPH-DRO, TPH-GRO, Oil & Grease, PCBs, Hexavalent Chromium, and Cyanide
  - Water – VOCs, SVOCs, Metals, TPH-DRO, TPH-GRO, Oil & Grease, Hexavalent Chromium, and Cyanide
- Matrix Spike/Matrix Spike Duplicate – at a rate of one per twenty samples
  - Soil – VOCs, SVOCs, Metals, TPH-DRO, TPH-GRO, Oil & Grease, PCBs, and Hexavalent Chromium
  - Water – VOCs, SVOCs, Metals, TPH-DRO, TPH-GRO, Oil & Grease, and Hexavalent Chromium
- Field Blank and Equipment Blank – at a rate of one per twenty samples
  - Soil – VOCs, SVOCs, Metals, TPH-DRO, TPH-GRO, Oil & Grease, Hexavalent Chromium, and Cyanide
  - Water – VOCs, SVOCs, Metals, TPH-DRO, TPH-GRO, Oil & Grease, Hexavalent Chromium, and Cyanide

The QA/QC samples were 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.

5.1. DATA VERIFICATION

A verification review was performed on documentation generated during sample collection and analysis. The verification included a review of field log books, field data sheets, and Chain of

Custody forms to ensure that all planned samples were collected, and to ensure consistency with the field methods and decontamination procedures specified in the QAPP Worksheet 21 – Field SOPs and Appendix A of the QAPP. In addition, calibration logs were reviewed to ensure that field equipment was calibrated at the beginning of each day and re-checked as needed. The logs have been provided in **Appendix D** (PID calibration log) and **Appendix F** (multiparameter meter calibration logs).

The laboratory deliverables were reviewed to ensure that all records specified in the QAPP as well as necessary signatures and dates are present. Sample receipt records were reviewed to ensure that the sample condition upon receipt was noted, and any missing/broken sample containers (if any) were noted and reported according to plan. The data packages were compared to the Chains of Custody to verify that results were provided for all collected samples. The data package case narratives were reviewed to ensure that all exceptions (if any) are described.

5.2. DATA VALIDATION

USEPA Stage 2B data validation was completed for a representative 50% of the environmental sample analyses performed by PACE and supporting Level IV Data Package information by Environmental Data Quality Inc. (EDQI). The DVRs provided by EDQI have been included as electronic attachments.

Sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. The Stage 2B review was performed as outlined in "Guide for Labeling Externally Validated Laboratory Analytical Data for Superfund Use", EPA-540-R-08-005. Results have been validated or qualified according to general guidance provided in "USEPA National Functional Guidelines for Inorganic Superfund Data Review (ISM02.1)", USEPA October 2013. Region III references this guidance for validation requirements. This document specifies procedures for validating data generated for Contract Laboratory Program (CLP) analyses. The approved property-wide QAPP dated April 5, 2016 and the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data.

The PACE-Greensburg (PA) laboratory facility implements quality assurance and reporting requirements through the TNI certification program with the State of Pennsylvania; which is accepted by Maryland. Since late-January 2017, these requirements include the flagging of contaminants with a "B" qualifier when an analyte is detected in an associated laboratory method blank, regardless of the level of the contaminant detected in the sample. A method blank is analyzed at a rate of one blank for each 20 sample analytical batch. The USEPA has previously specified that results flagged with the "B" qualifier do not represent legitimate detections. They have also specified that results flagged with a "JB" qualifier are invalid, and any such results should be revised to display the "B" qualifier only.

Although elevated sample results may be "B" qualified by the laboratory as non-detects due to low-level blank detections, EDQI corrects any erroneous "B" qualifiers during the data validation procedure to avoid under-reporting analytical detections. EDQI removes the "B" qualifiers for relevant samples according to the guidance given in the table below. Therefore, a result originally flagged with a "B" qualifier in the laboratory certificate may be reported as a legitimate detection without this qualifier. Likewise, a result originally flagged with a "JB" qualifier in the laboratory certificate may be reported as a "J" qualifier if the erroneous "B" qualifier can be eliminated, but would be reported as a "B" qualified non-detect result if the original "B" qualifier is legitimate.

Blank Result	Sample Result	Qualifying Action
Result less than RL	Result less than RL	Result is Qualified "B"
	Result greater than RL	Remove "B"
Result greater than RL	Result less than Blank Result	Result is Qualified "B"
	Result greater than Blank Result	Remove "B"

RL = Reporting Limit

As directed by EDQI, ARM has reviewed all non-validated laboratory reports (those which were not designated to be reviewed by EDQI) to apply validation corrections to any relevant "B" or "JB" qualified results. For laboratory certificates generated since the implementation of the new TNI guidance in late-January 2017, ARM has reviewed the method blank results and applied the same validation corrections as specified by EDQI in the table above. This review of the non-validated data ensures that any elevated detections of parameters, including those which may exceed the PALs, are not mistakenly reported as non-detect values simply because they did not undergo the formal validation procedure by EDQI. For laboratory certificates generated prior to implementation of the updated TNI guidance, "B" qualifiers were not broadly assigned irrespective of elevated sample detections. For these older reports, any result originally flagged with a "JB" qualifier in the laboratory certificate is reported as a "B" qualified non-detect result in this Phase II Investigation Report. ARM has also revised all of the non-validated results to eliminate any laboratory-specific, non-standardized qualifiers (L2, 6c, ip, 4c, etc.), which are customarily removed by EDQI during the validation procedure.

5.3. DATA USABILITY

The data were evaluated with respect to the quality control elements of precision, bias, representativeness, comparability, completeness and sensitivity relative to data quality indicators and performance measurement criteria outlined in QAPP Worksheet 12 – Measurement Performance Criteria. The following discussion details deviation from the performance measurement criteria, and the impact on data quality and usability.

The measurement performance criteria of precision and bias were evaluated in the data validation process as described in the DVRs provided as electronic attachments. Where appropriate, potential limitations in the results have been indicated through final data flags. These flags indicate whether particular data points were quantitative estimates, biased high/low, associated with blank contamination, etc. Individual data flags are provided with the results in the detection summary tables. A qualifier code glossary is included with each DVR provided by EDQI. Particular results may have been marked with the "R" flag if the result was deemed to be unreliable and was not included in any further data evaluation. A list of the analytical soil results that were rejected during data validation is provided as **Table 14**. None of the analytical groundwater results were rejected during validation. A discussion of data completeness (the proportion of valid data) is included below.

Representativeness is a measure of how accurately and precisely the data describe the Site conditions. Representativeness of the samples submitted for analysis was ensured by adherence to standard sampling techniques and protocols, as well as appropriate sample preservation prior to analysis. Sampling was conducted in accordance with the QAPP Worksheet 21 – Field SOPs and Appendix A of the QAPP. Specific Field SOPs applicable to the assessment of representativeness include **Field SOP Numbers 006, 008, 009, 010, 011, 017, and 024**. Review of the field notes and laboratory sample receipt records indicated that collection of soil and groundwater at the Site was representative, with no significant deviations from the SOPs.

Comparability describes the degree of confidence in comparing two sets of data. Comparability is maintained across multiple datasets by the use of consistent sampling and analytical methods across multiple project phases. Comparability of sample results was ensured through the use of approved standard sampling and analysis methods outlined in the QAPP. QA/QC protocols help to maintain the comparability of datasets, and in this case were assessed via blind duplicates, blank samples, and spiked samples, where applicable. No significant deviations from the QAPP were noted in the data set.

Sensitivity is a determination of whether the analytical methods and quantitation limits will satisfy the requirements of the project. The laboratory reports were reviewed to verify that reporting limits met the quantitation limits for specific analytes provided in QAPP Worksheet #15 – Project Action Limits and Laboratory-Specific Detection/Quantitation Limits. In general the laboratory reporting limits met the detection and quantitation limits specified in the QAPP.

Completeness is expressed as a ratio of the number of valid data points to the total number of analytical data results. Non-usable ("R" flagged) data results were determined through the data validation process. The approved QAPP specifies that the completeness of data is assessed by professional judgement, but should be greater than or equal to 90%. Data completeness for each compound is provided in **Appendix J**. This evaluation of completeness includes only the representative 50% of sample results which were randomly selected for validation.

All groundwater compounds had an overall completeness ratio of 100%, indicating that none of the aqueous results were rejected. The only soil compounds with overall completeness ratios below the 90% goal were 2,4-dinitrophenol (84%), bromomethane (55%), methyl acetate (0%), and 1,4-dioxane (0%). None of these compounds were detected in soil throughout the entirety of the parcel (including among the non-validated data results). All of the methyl acetate and 1,4-dioxane soil results which underwent the validation process were rejected; however, the rejection of the methyl acetate and 1,4-dioxane soil results has not been uncommon for data obtained from the Tradepoint Atlantic property. In addition, each of the four listed compounds had completeness ratios of 100% in groundwater, so sufficient data is available for groundwater conditions to evaluate the significance of these constituents at the Site.

Overall, the soil and groundwater data can be used as intended, and no significant data gaps were identified. While a limited set of compounds did not meet the completeness goal, these compounds (with the possible exception of 1,4-dioxane) do not appear to be significant contaminants at the Site.

6.0 FINDINGS AND RECOMMENDATIONS

The objective of this Phase II Investigation was to characterize the nature and extent of contamination at the Site. During the Phase II Investigation, a total of 20 groundwater samples (including those sampled during the fall 2016 Greys Landfill semi-annual groundwater monitoring event) and 143 soil samples (all locations/depths) were collected and analyzed to define the nature and extent of contamination in Parcel A11. The sampling and analysis plan for the parcel was developed to target specific features which represented a potential release of hazardous substances and/or petroleum products to the environment. Soil samples were analyzed for TCL-VOCs, TCL-SVOCs, TPH/Oil & Grease, TAL-Metals, hexavalent chromium, and cyanide. Shallow soil samples (0 to 1 foot bgs) were additionally analyzed for PCBs. Groundwater samples collected during this investigation were analyzed for TCL-VOCs, TCL-SVOCs, TPH/Oil & Grease, TAL-Metals (total and/or dissolved), hexavalent chromium, and cyanide. The Greys Landfill groundwater monitoring wells were not sampled for TPH/Oil & Grease, dissolved metals, or total cyanide.

6.1. SOIL

The concentrations of constituents in the soil have been characterized by the Phase II Investigation to provide estimates of exposure point concentrations to support risk assessment.

Lead and PCB concentrations are well below the levels that would warrant evaluation of a removal remedy. There were no locations where detections of lead exceeded 10,000 mg/kg, the designated threshold at which delineation would be required. There were no concentrations of total PCBs identified above the mandatory delineation criterion of 50 mg/kg, indicating that no further action is needed.

There were no soil PAL exceedances for PCBs, indicating that PCBs are not significant contaminants in soil at the Site. Exceedances of the PALs in soil within Parcel A11 consisted of one VOC (benzene), six inorganics (arsenic, cobalt, lead, manganese, thallium, and vanadium), six SVOCs (benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenz[a,h]anthracene, indeno[1,2,3-c,d]pyrene, and naphthalene), DRO, and Oil & Grease. Arsenic exceeded its PAL in the largest proportion of the samples analyzed site-wide. Arsenic was detected in 88% of the soil samples analyzed for this compound, with a maximum detection of 210 mg/kg in sample A11-048-SB-5. The remaining inorganic exceedances were less common in comparison. Cobalt, lead, manganese, thallium, and vanadium exceeded their PALs in one sample (detected in 94% of samples), six samples (detected in 100% of samples), 12 samples (detected in 100% of samples), 23 samples (detected in 37% of samples), and one sample (detected in 100% of samples), respectively. Benzene exceeded its soil PAL in seven samples at five boring locations. The two highest detections of benzene in soil were 2,120 mg/kg (A11-016-SB-10) and 802 mg/kg (A11-014-SB-5) which are located in the targeted J.B. Eurel Area within the contractor

storage area. The maximum detections for the six SVOCs identified with PAL exceedances were in samples A11-016-SB-10 (naphthalene with a detection of 108,000 mg/kg), A11-040-SB-10 (dibenz[a,h]anthracene with a detection of 32 mg/kg, and indeno[1,2,3-c,d]pyrene with a detection of 105 mg/kg), and A11-024-SB-9 (benz[a]anthracene with a detection of 253 mg/kg, benzo[a]pyrene with a detection of 163 mg/kg, and benzo[b]fluoranthene with a detection of 227 mg/kg). Petroleum impacts, including a discussion of the analytical exceedances of the TPH/Oil & Grease PAL as well as borings with physical evidence of NAPL in the soil cores, are further discussed in Section 6.3.

6.2. GROUNDWATER

The concentrations of constituents in the groundwater have also been characterized by the Phase II Investigation to provide estimates of exposure point concentrations to support risk assessment.

Exceedances of the PALs in groundwater below Parcel A11 consisted of seven total/dissolved metals (arsenic, cadmium, cobalt, iron, manganese, thallium, and vanadium), three VOCs (1,1-dichloroethane, benzene, and vinyl chloride), nine SVOCs (1,4-dioxane, 2,6-dinitrotoluene, benz[a]anthracene, benzo[b]fluoranthene, bis(2-chloroethyl)ether, naphthalene, nitrobenzene, n-nitroso-di-n-propylamine, and pentachlorophenol), DRO, GRO, and Oil & Grease.

The aqueous exceedances for vinyl chloride (GL-18 (-3)), benzo[b]fluoranthene (GL-08 (-3)), bis(2-chloroethyl)ether (GL-03 (-3)), nitrobenzene (GL-19), n-nitroso-di-n-propylamine (LF-02), cadmium (LF-03S), thallium (LF-04S), and Oil & Grease (A11-043-PZ), were relatively limited at the Site, and were documented at only one groundwater sample location each. Arsenic, cobalt, iron, manganese, and/or vanadium PAL exceedances were noted at numerous sample locations. Benzene was the most common VOC PAL exceedance, and was detected above its PAL in 11 groundwater samples (with a maximum detection of 6,570 µg/L reported in the sample collected from GL-17 (-1)). Among the nine SVOCs which were detected above their PALs, two of these analytes had exceedances observed in more than two aqueous samples (1,4-dioxane with three exceedances, and naphthalene with 11 exceedances). The SVOCs, in particular naphthalene, were generally observed to be widespread in groundwater at the Site. The maximum observed concentration of naphthalene (19,400 µg/L) was detected in GL-18 (-3), which is located directly to the northeast of Greys Landfill.

DRO was detected above its PAL in all groundwater locations for which it was analyzed excluding A11-043-PZ. However, Oil & Grease exceeded the aqueous PAL at A11-043-PZ with a detection of 1,300 µg/L. Oil & Grease and GRO were responsible for one and three PAL exceedances, respectively. Each groundwater sample location was checked for the potential presence of NAPL using an oil-water interface probe prior to sampling. During these checks, NAPL was not detected in any of the groundwater sample locations in Parcel A11.

Groundwater is not used on the Tradepoint Atlantic property (and is not proposed to be utilized); therefore, there is no potential for direct human exposure for a Composite Worker. In the event that future construction/excavation leads to a potential Construction Worker exposure to groundwater, health and safety plans should be implemented to limit exposure risk. The groundwater data were screened to determine whether any cumulative (or individual) sample results exceeded the USEPA VI TCR (carcinogen) or THQ (non-carcinogen) Screening Levels. Two parameters exceeded the individual VI TCR screening levels (benzene and naphthalene). There were no exceedances of the individual VI THQ criteria. The maximum detections of naphthalene (19,400 µg/L) and benzene (6,570 µg/L) were located at GL-18 (-3) and GL-17 (-1), respectively, both of which are located adjacent to Greys Landfill.

When the cumulative VI risks were evaluated based on the individual groundwater sample locations, sample locations GL-08 (-3), GL-17 (-1), GL-18 (-3), and SG01-PDP000 exceeded the acceptable VI criteria with computed cumulative cancer risks of 8E-4, 1E-3, 1E-3, and 3E-5, respectively. Further assessment or mitigation is recommended to address the potential VI risks identified at the four listed locations if development is proposed in these areas. The selection of appropriate response measures, based on the specific development plans, should be addressed in a project-specific Response and Development Work Plan.

6.3. NAPL

There were several elevated detections of DRO and Oil & Grease above the soil PAL throughout the parcel, which could be indicative of potential NAPL impacts. DRO exceeded the soil PAL in eight samples with a maximum detection of 43,200 mg/kg at Al1-016-SB-10. There were 18 Oil & Grease soil PAL exceedances in Parcel A11, with a maximum detection of 543,000 mg/kg at the same sample location (A11-016-SB-10).

During field screening of the soil cores installed during this investigation, borings A11-003-SB, A11-015-SB, A11-016-SB, A11-018-SB, A11-040-SB, A11-054-SB, A11-057-SB, and A11-058-SB had visible observations of product in the soil core. Excluding the locations with documented physical evidence of product, the additional boring locations which exceeded the DRO and/or Oil & Grease PAL of 6,200 mg/kg in their respective soil samples included A11-014-SB, A11-021-SB, A11-023-SB, A11-024-SB, A11-028-SB, A11-045-SB, A11-047-SB, A11-059-SB, and A11-061-SB

The potential mobility of NAPL to groundwater was investigated via the installation of 11 temporary NAPL piezometers at the following boring locations: A11-003-SB, A11-014-SB, A11-015-SB, A11-016-SB, A11-018-SB, A11-024-SB, A11-040-SB, A11-045-SB, A11-047-SB, A11-054-SB, and A11-061-SB. The remaining six soil boring locations were not investigated further, as described in detail in Section 4.3. Based on 0-hour, 48-hour, and 30-day gauging measurements of each screening piezometer using an oil-water interface probe, it was determined that mobile NAPL is not present in groundwater at quantities that are likely to

migrate at these locations. In addition to the NAPL screening piezometers, none of the temporary groundwater sample collection points installed in Parcel A11 showed any evidence of NAPL during the mandatory checks prior to sampling. Furthermore, the exiting permanent wells located within Parcel A11 (surrounding Greys Landfill) have not exhibited evidence of NAPL during gauging events which are completed prior to semi-annual sampling.

Since there was no NAPL detected in any groundwater location (historical wells and temporary points), each screening piezometer has since been abandoned in accordance with the Maryland abandonment standards as stated in COMAR 26.04.04.34 through 36. Each piezometer was gauged a final time on the abandonment date in accordance with current MDE guidance. The proximity of all TPH/Oil & Grease impacted borings and NAPL screening piezometers to proposed utilities should be evaluated in any future development planning for Parcel A11. Appropriate protocols should be documented in a Response and Development Work Plan (as necessary) to prevent the mobilization of any product if future utilities are proposed in the vicinity of these impacts.

6.4. RECOMMENDATIONS

Sufficient remedial investigation data has been collected to present this evaluation of the nature and extent of possible constituents of concern in Parcel A11. The presence and absence of soil and groundwater impacts within Parcel A11 have been adequately described and further investigation is not warranted to characterize overall conditions. Recommendations for the parcel are as follows:

- The maximum arsenic detection of 210 mg/kg in soil sample A11-048-SB-5 is elevated in comparison to most arsenic results collected at the Tradepoint Atlantic property to date. Supplemental delineation activities were completed outside of the scope of the Parcel A11 Phase II Investigation at boring A11-048-SB and the nearby boring A11-049-SB to the south, to determine the extent of elevated arsenic (as well as associated lead). The findings were reported within the Arsenic and Lead Impacted Soil Supplemental Investigation Report dated February 26, 2019, which was approved by the MDE via email on March 28, 2019. The need for additional action with respect to arsenic (or lead) would be determined in the future based on development plans and associated risk assessments presented in a Response and Development Work Plan.

- The soil boring locations with elevated detections of TPH/Oil & Grease and/or physical evidence of NAPL in the soil cores (**Figure S-3**) should be considered for proximity to proposed utilities in any future development planning. If future utilities are proposed in the vicinity of these borings, appropriate protocols for the mitigation of potential product (NAPL) mobility should be specified in a Response and Development Work Plan. Supplemental delineation activities for NAPL, TPH/Oil & Grease, and associated VOCs and SVOCs throughout the central and eastern portions of the Site were coordinated with

the MDE and USEPA and have been completed outside of the scope of the Parcel A11 Phase II Investigation. The need for additional action with respect to these known impacts would be determined in the future based on development plans and associated risk assessments presented in a Response and Development Work Plan.

- If an enclosed structure is proposed for construction in the vicinity of GL-08 (-3), GL-17 (-1), GL-18 (-3), or SG01-PDP000 further assessment or mitigation of the potential for human exposures via the vapor intrusion to indoor air pathway should be addressed in a Response and Development Work Plan. These four permanent wells exhibited elevated VI risks due to benzene and naphthalene.

7.0 REFERENCES

ARM Group Inc. (2019). *Arsenic and Lead Impacted Soil: Supplemental Investigation Report Area A: Parcel A11 (A11-048 & A11-049)*. February 26, 2019.

ARM Group Inc. (2016). *Phase II Investigation Work Plan: Parcel A11*. Revision 1. May 18, 2016.

ARM Group Inc. (2016). *Quality Assurance Project Plan: Sparrows Point Terminal Site*. Revision 3. April 5, 2016.

ARM Group Inc. (2018). *Stormwater Pollution Prevention Plan (SWPPP)*. Revision 6. February 22, 2018.

Rust Environment & Infrastructure (1998). *Description of Current Conditions: Bethlehem Steel Corporation*. Final Draft. January 1998.

USEPA (2017). Vapor Intrusion Screening Level (VISL) Calculator version 3.5. (https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-levels-visls).

Weaver Boos Consultants (2014). *Phase I Environmental Site Assessment: Former RG Steel Facility*. Final Draft. May 19, 2014.

TABLES

Table 6
Summary of Organics Detected in Soil
Tradepoint Atlantic
Parcel A11
Sparrows Point, Maryland

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	A11-004-SB-1 7/29/2016	A11-004-SB-5 7/29/2016	A11-004-SB-10 7/29/2016	A11-005-SB-1 7/29/2016	A11-005-SB-5 7/29/2016	A11-005-SB-10 7/29/2016	A11-006-SB-1 7/29/2016	A11-006-SB-4 7/29/2016	A11-006-SB-10 7/29/2016	A11-007-SB-1* 7/27/2016	A11-008-SB-1* 7/27/2016
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	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 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	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 U
1,2-Dichlorobenzene	mg/kg	9,300	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 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	0.01 U	0.0096 U	N/A	0.012 U	0.0098 U	N/A	0.013 U	0.012 U	N/A	0.013 U	0.01 U
1,3-Dichlorobenzene	mg/kg		0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 U
1,4-Dichlorobenzene	mg/kg	11	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 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	0.01 U	0.0096 U	N/A	0.012 U	0.0098 U	N/A	0.013 U	0.012 U	N/A	0.013 U	0.01 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	0.01 U	0.0096 U	N/A	0.012 U	0.0098 U	N/A	0.013 U	0.012 U	N/A	0.013 U	0.01 U
Acetone	mg/kg	670,000	0.01 U	**0.077**	**0.027**	**0.023**	**0.017**	0.01 U	0.01 UJ	**0.014 J**	N/A	**0.029 J**	**0.015 J**	N/A	**0.019 J**	0.012 UJ	N/A	0.013 U	0.01 U
Benzene	mg/kg	5.1	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	**0.025**	0.0052 U	0.0048 U	N/A	0.0061 U	**0.0017 J**	N/A	0.0063 U	**0.0074**	N/A	0.0063 U	0.005 U
Carbon disulfide	mg/kg	3,500	0.0051 U	0.0054 U	0.0056 U	**0.0027 J**	**0.0037 J**	0.005 U	0.0052 UJ	0.0048 UJ	N/A	0.0061 U	0.0049 UJ	N/A	0.0063 UJ	**0.0039 J**	N/A	0.0063 U	0.005 U
Chloroform	mg/kg	1.4	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 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	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 U
Cyclohexane	mg/kg	27,000	0.01 U	0.011 U	0.011 U	0.0093 U	0.012 U	0.01 U	0.01 U	0.0096 U	N/A	0.012 U	0.0098 U	N/A	0.013 U	0.012 U	N/A	0.013 U	0.01 U
Ethylbenzene	mg/kg	25	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 U
Isopropylbenzene	mg/kg	9,900	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 U
Styrene	mg/kg	35,000	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 U
Tetrachloroethene	mg/kg	100	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 U
Toluene	mg/kg	47,000	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	**0.0025 J**	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	**0.0022 J**	N/A	0.0063 U	0.005 U
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	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 U
Trichloroethene	mg/kg	6	0.0051 U	0.0054 U	0.0056 U	0.0047 U	0.0062 U	0.005 U	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 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	0.0052 U	0.0048 U	N/A	0.0061 U	0.0049 U	N/A	0.0063 U	0.0061 U	N/A	0.0063 U	0.005 U
Xylenes	mg/kg	2,800	0.015 U	0.016 U	0.017 U	0.014 U	0.018 U	0.015 U	0.016 U	0.014 U	N/A	0.018 U	0.015 U	N/A	0.019 U	0.018 U	N/A	0.019 U	0.015 U
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**	**0.018 J**	**0.019 J**	N/A	0.084 U	0.081 U	N/A	**0.018 J**	**0.22 J**	N/A	0.085 U	0.072 U
2,4-Dimethylphenol	mg/kg	16,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	**0.76**	0.081 U	0.073 U	N/A	0.084 UJ	0.081 U	N/A	0.08 U	0.075 U	N/A	0.085 U	0.072 U
2-Chloronaphthalene	mg/kg	60,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	0.079 U	0.081 U	0.073 U	N/A	0.084 U	0.081 U	N/A	0.08 U	0.075 U	N/A	0.085 U	0.072 U
2-Methylnaphthalene	mg/kg	3,000	**0.035**	**0.064**	**0.082**	**0.065**	**0.0086**	**0.35**	**0.1**	**0.062 J**	N/A	**0.032**	**0.081**	0.0079 U	**0.1**	**0.5**	N/A	0.0086 U	**0.011**
2-Methylphenol	mg/kg	41,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	**1.2**	0.081 U	0.073 U	N/A	0.084 UJ	0.081 U	N/A	0.08 U	0.075 U	N/A	0.085 U	0.072 U
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**	0.16 U	0.15 U	N/A	0.17 UJ	0.16 U	N/A	0.16 U	**0.037 J**	N/A	0.17 U	0.14 U
4-Chloroaniline	mg/kg	11	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	0.079 U	0.081 U	0.073 U	N/A	0.084 U	0.081 U	N/A	0.08 U	0.075 U	N/A	0.085 U	0.072 U
Acenaphthene	mg/kg	45,000	**0.015**	**0.017**	**0.00072 J**	**0.0072 J**	**0.0013 J**	**0.11**	**0.12**	**0.05**	N/A	**0.08**	**0.056**	0.0079 U	**0.66**	**0.46**	N/A	0.0086 U	**0.0099**
Acenaphthylene	mg/kg	45,000	**0.034**	**0.0033 J**	**0.0045 J**	**0.0053 J**	**0.0015 J**	**0.62**	**0.098**	**0.022 J**	N/A	**0.026**	**0.034**	0.0079 U	**0.015**	**0.59**	N/A	0.0086 U	**0.006 J**
Acetophenone	mg/kg	120,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	0.079 U	0.081 U	0.073 U	N/A	0.084 U	0.081 U	N/A	0.08 U	0.075 U	N/A	0.085 U	0.072 U
Anthracene	mg/kg	230,000	**0.066**	**0.0078**	**0.0051 J**	**0.015**	**0.0029 J**	**1**	**0.4**	**0.16 J**	N/A	**0.048**	**0.2**	0.0079 U	**0.14**	**2.5**	N/A	0.0086 U	**0.012**
Benz[a]anthracene	mg/kg	21	**0.18**	**0.016**	**0.015**	**0.026**	**0.0097**	**4.6**	**1.2**	**0.39**	N/A	**0.25**	**0.51**	0.0079 U	**1.1**	**5.1**	0.0083 U	**0.0018 J**	**0.3**
Benzaldehyde	mg/kg	120,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	**0.11**	**0.018 J**	0.073 UJ	N/A	0.084 UJ	0.081 UJ	N/A	0.08 UJ	0.075 UJ	N/A	0.085 U	0.072 U
Benzo[a]pyrene	mg/kg	2.1	**0.18**	**0.015**	**0.011**	**0.022**	**0.014**	**3.8**	**1**	**0.36**	0.0082 U	**0.42**	**0.44**	0.0079 U	**2.2 J**	**4.4**	0.0083 U	0.0086 U	**0.62**
Benzo[b]fluoranthene	mg/kg	21	**0.36**	**0.039**	**0.032**	**0.049**	**0.03**	**8**	**1.9**	**0.8**	N/A	**0.85**	**0.95**	0.0079 U	**4.4 J**	**9.8**	**0.00072 J**	**0.0011 J**	**0.87**
Benzo[g,h,i]perylene	mg/kg		**0.069**	**0.0067 J**	**0.008**	**0.011**	**0.012**	**1.2**	**0.28**	**0.076 J**	N/A	**0.14**	**0.11**	0.0079 U	**0.6**	**0.85**	N/A	0.0086 U	**0.19**
Benzo[k]fluoranthene	mg/kg	210	**0.33**	**0.035**	**0.029**	**0.045**	**0.027**	**7.3**	**0.63**	**0.72**	N/A	**0.77**	**0.86**	0.0079 U	**4 J**	**8.9**	N/A	0.0086 U	**0.36**
bis(2-chloroethoxy)methane	mg/kg	2,500	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	0.079 U	0.081 U	0.073 U	N/A	0.084 U	0.081 U	N/A	0.08 U	0.075 U	N/A	0.085 U	0.072 U
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**	**0.059 J**	0.073 UJ	N/A	**0.02 J**	**0.25 J**	N/A	**0.33 J**	**0.076 J**	N/A	0.085 U	0.072 U
Caprolactam	mg/kg	400,000	0.19 U	0.19 U	0.19 U	0.2 U	0.2 U	**0.095 J**	0.2 U	0.18 U	N/A	0.21 U	0.2 U	N/A	0.2 U	0.19 U	N/A	0.21 U	0.18 U
Carbazole	mg/kg		**0.024 J**	0.077 U	0.076 U	0.079 U	0.08 U	**0.15**	**0.056 J**	**0.23 J**	N/A	**0.033 J**	**0.03 J**	N/A	**0.076 J**	**2.4**	N/A	0.085 U	0.072 U
Chrysene	mg/kg	2,100	**0.18**	**0.023**	**0.019**	**0.035**	**0.012**	**4.4**	**1.2**	**0.4**	N/A	**0.26**	**0.46**	0.0079 U	**1.1**	**4.8**	N/A	**0.00075 J**	**0.35**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.03**	**0.003 J**	**0.0033 J**	**0.004 J**	**0.0037 J**	**0.58**	**0.12**	**0.038 J**	N/A	**0.056**	**0.048**	0.0079 U	**0.22**	**0.36**	0.0083 U	0.0086 U	**0.064**
Diethylphthalate	mg/kg	660,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	0.079 U	0.081 U	0.073 U	N/A	0.084 U	0.081 U	N/A	0.08 U	0.075 U	N/A	0.085 U	0.072 U
Di-n-butylphthalate	mg/kg	82,000	0.027 B	0.027 B	0.076 U	0.029 B	0.028 B	0.034 B	0.032 B	0.026 B	N/A	0.029 B	0.029 B	N/A	0.028 B	**0.17 J**	N/A	0.029 B	0.028 B
Fluoranthene	mg/kg	30,000	**0.33**	**0.049**	**0.038**	**0.069**	**0.015**	**8.3**	**2.4**	**0.86**	N/A	**0.28**	**1.1**	0.0079 U	**0.95**	**11**	N/A	**0.0013 J**	**0.23**
Fluorene	mg/kg	30,000	**0.036**	**0.012**	**0.0012 J**	**0.015**	**0.0016 J**	**0.38**	**0.14**	**0.091 J**	N/A	**0.014**	**0.098**	0.0079 U	**0.084**	**1.4**	N/A	0.0086 U	**0.0022 J**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.076**	**0.007 J**	**0.0076 J**	**0.01**	**0.01**	**1.4**	**0.32**	**0.095 J**	N/A	**0.15**	**0.14**	0.0079 U	**0.74**	**1**	0.0083 U	0.0086 U	**0.2**
Isophorone	mg/kg	2,400	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	0.079 U	0.081 U	0.073 U	N/A	0.084 U	0.081 U	N/A	0.08 U	0.075 U	N/A	0.085 U	0.072 U
Naphthalene	mg/kg	17	**0.077**	**0.06**	**0.057**	**0.047**	**0.01**	**0.58**	**0.13**	**0.089 J**	N/A	**0.081**	**0.13**	0.0079 U	**0.19**	**0.99**	N/A	0.0086 U	**0.057**
N-Nitrosodiphenylamine	mg/kg	470	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	0.079 U	0.081 U	0.073 U	N/A	0.084 U	0.081 U	N/A	0.08 U	0.075 U	N/A	0.085 U	0.072 U
Phenanthrene	mg/kg		**0.25**	**0.046**	**0.02**	**0.073**	**0.015**	**2.5**	**1.3**	**0.66**	N/A	**0.11**	**0.78**	**0.00063 J**	**0.45**	**9**	N/A	**0.0012 J**	**0.042**
Phenol	mg/kg	250,000	0.074 U	0.077 U	0.076 U	0.079 U	0.08 U	**0.094**	0.081 U	0.073 U	N/A	0.084 UJ	0.081 U	N/A	0.08 U	**0.027 J**	N/A	0.085 U	0.072 U
Pyrene	mg/kg	23,000	**0.27**	**0.035**	**0.031**	**0.053**	**0.012**	**6.2**	**2.1**	**0.72**	N/A	**0.3**	**0.88**	0.0079 U	**1**	**8.6**	N/A	**0.001 J**	**0.26**
PCBs																			
Aroclor 1242	mg/kg	0.97	0.0577 U	N/A	0.0548 U	N/A	0.0539 U	N/A	0.0577 U	N/A	N/A	0.0647 U	N/A	N/A	0.0538 U	N/A	N/A	0.0692 U	0.0546 U
Aroclor 1248	mg/kg	0.94	0.0577 U	N/A	**0.439**	N/A	0.0539 U	N/A	**0.0985**	N/A	N/A	**0.0998**	N/A	N/A	0.0538 U	N/A	N/A	0.0692 U	0.0546 U
Aroclor 1254	mg/kg	0.97	0.0577 U	N/A	**0.257**	N/A	0.0539 U	N/A	0.0577 U	N/A	N/A	**0.0501 J**	N/A	N/A	0.0538 U	N/A	N/A	0.0692 U	0.0546 U
Aroclor 1260	mg/kg	0.99	0.0577 U	N/A	**0.0857**	N/A	0.0539 U	N/A	0.0577 U	N/A	N/A	0.0647 U	N/A	N/A	0.0538 U	N/A	N/A	0.0692 U	0.0546 U
Aroclor 1262	mg/kg		0.0577 U	N/A	0.0548 U	N/A	0.0539 U	N/A	0.0577 U	N/A	N/A	0.0647 U	N/A	N/A	0.0538 U	N/A	N/A	0.0692 U	0.0546 U
Aroclor 1268	mg/kg		0.0577 U	N/A	0.0548 U	N/A	0.0539 U	N/A	0.0577 U	N/A	N/A	0.0647 U	N/A	N/A	0.0538 U	N/A	N/A	0.0692 U	0.0546 U
PCBs (total)	mg/kg	0.97	0.0577 U	N/A	**0.7817**	N/A	0.0539 U	N/A	**0.0985**	N/A	N/A	**0.1499**	N/A	N/A	0.0538 U	N/A	N/A	0.0692 U	0.0546 U
TPH/Oil and Grease																			
Diesel Range Organics	mg/kg	6,200	**47.9**	**63.6**	**36.9**	**96.5**	**23.1**	**172**	**80.3 J**	**352 J**	N/A	**117 J**	**143 J**	N/A	**138 J**	**1,090 J**	**4.8 J**	**3.7 J**	**7.8**
Gasoline Range Organics	mg/kg	6,200	10.3 U	11.8 U	16.1 U	10.7 U	14.3 U	**16.2**	15 U	10.7 U	N/A	11 U	11.6 U	N/A	12.5 U	11.6 U	N/A	12.6 U	11.9 U
Oil and Grease	mg/kg	6,200	**817**	**735**	**380**	**1,120**	**519**	**1,020**	**1,170**	**845**	N/A	**1,130**	**2,090**	N/A	**1,300**	**1,630**	N/A	**545**	**642**

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

* indicates non-validated data
^ PAH compounds were analyzed vis SIM

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte in the sample.

J: The positive result reported for this analyte is a quantitative estimate.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

Table 6
Summary of Organics Detected in Soil
Tradepoint Atlantic
Parcel A11
Sparrows Point, Maryland

Parameter	Units	PAL	A11-008-SB-4* 7/27/2016	A11-009-SB-1* 7/27/2016	A11-010-SB-1* 7/27/2016	A11-010-SB-5* 7/27/2016	A11-011-SB-1 7/28/2016	A11-011-SB-5 7/28/2016	A11-012-SB-1 7/28/2016	A11-012-SB-4 7/28/2016	A11-013-SB-1 7/28/2016	A11-013-SB-7 7/28/2016	A11-014-SB-1* 3/7/2017	A11-014-SB-5* 3/7/2017	A11-014-SB-10* 3/7/2017	A11-015-SB-1* 3/8/2017	A11-015-SB-4* 3/8/2017	A11-016-SB-1* 3/8/2017	A11-016-SB-4* 3/8/2017
Volatile Organic Compounds																			
1,1-Dichloroethane	mg/kg	16	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
1,2-Dichlorobenzene	mg/kg	9,300	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.011 U	0.013 U	0.0094 U	0.012 U	0.012 U	0.01 U	0.0098 U	0.0095 U	0.0097 U	0.0099 U	0.01 U	8.8 U	0.0093 U	0.55 U	0.011 U	0.01 U	0.62 U
1,3-Dichlorobenzene	mg/kg		0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
1,4-Dichlorobenzene	mg/kg	11	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
2-Butanone (MEK)	mg/kg	190,000	0.011 U	0.013 U	0.0094 U	0.012 U	0.012 U	0.01 U	0.0098 U	0.0095 U	0.0097 U	0.0099 U	**0.011**	8.8 U	0.0093 U	0.55 U	**0.017**	0.01 U	0.62 U
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.011 U	0.013 U	0.0094 U	0.012 U	0.012 U	0.01 U	0.0098 U	0.0095 U	0.0097 U	0.0099 U	0.01 U	8.8 U	0.0093 U	0.55 U	0.011 U	0.01 U	0.62 U
Acetone	mg/kg	670,000	**0.063**	0.013 U	0.0094 U	0.012 U	0.011 B	0.0092 B	0.0098 U	0.0095 U	0.0058 B	0.01 B	**0.021**	8.8 U	**0.012**	0.55 U	**0.085**	**0.023**	0.62 U
Benzene	mg/kg	5.1	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	**0.0032 J**	802	32.3	0.27 U	**0.059**	0.0051 U	**1.2**
Carbon disulfide	mg/kg	3,500	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
Chloroform	mg/kg	1.4	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
Cyclohexane	mg/kg	27,000	0.011 U	0.013 U	0.0094 U	0.012 U	0.012 U	0.01 U	0.0098 U	0.0095 U	0.0097 U	0.0099 U	0.01 U	8.8 U	0.0093 U	0.55 U	0.011 U	0.01 U	0.62 U
Ethylbenzene	mg/kg	25	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	**3.9 J**	**0.0087**	0.27 U	0.0053 U	0.0051 U	0.31 U
Isopropylbenzene	mg/kg	9,900	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
Styrene	mg/kg	35,000	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
Tetrachloroethene	mg/kg	100	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
Toluene	mg/kg	47,000	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	**0.0017 J**	**4.5**	**0.019**	0.27 U	**0.0025 J**	0.0051 U	**0.56**
trans-1,2-Dichloroethene	mg/kg	23,000	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
Trichloroethene	mg/kg	6	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
Vinyl chloride	mg/kg	1.7	0.0054 U	0.0065 U	0.0047 U	0.0062 U	0.006 U	0.005 U	0.0049 U	0.0047 U	0.0048 U	0.005 U	0.0051 U	4.4 U	0.0047 U	0.27 U	0.0053 U	0.0051 U	0.31 U
Xylenes	mg/kg	2,800	0.016 U	0.02 U	0.014 U	0.019 U	0.018 U	0.015 U	0.015 U	0.014 U	0.015 U	0.015 U	0.015 U	**251**	**0.22**	0.82 U	**0.0032 J**	**0.0038 J**	**0.32 J**
Semi-Volatile Organic Compounds^																			
1,1-Biphenyl	mg/kg	200	0.079 U	0.074 U	**0.018 J**	**0.096**	0.074 U	0.082 UJ	0.074 U	0.075 U	0.072 U	0.081 U	0.7 U	**25.8**	0.082 U	0.35 U	1.5 U	0.71 U	**7**
2,4-Dimethylphenol	mg/kg	16,000	0.079 U	0.074 U	0.072 U	0.081 U	0.074 U	0.082 UJ	0.074 U	0.075 U	0.072 U	0.081 U	0.7 U	**13.1**	**0.041 J**	0.35 U	1.5 U	0.71 U	1.6 U
2-Chloronaphthalene	mg/kg	60,000	0.079 U	0.074 U	0.072 U	**0.07 J**	0.074 U	0.082 UJ	0.074 U	0.075 U	0.072 U	0.081 U	0.7 U	2 U	0.082 U	0.35 U	1.5 U	0.71 U	1.6 U
2-Methylnaphthalene	mg/kg	3,000	0.008 U	0.074 U	**0.011**	**0.3**	0.0075 U	0.0082 UJ	**0.12**	0.0077 U	**0.0088**	0.0082 U	**0.065 J**	**20.1**	**0.029**	**0.048**	**4.1**	**0.22**	**7**
2-Methylphenol	mg/kg	41,000	0.079 U	0.074 U	0.072 U	0.081 U	0.074 U	0.082 UJ	0.074 U	0.075 U	0.072 U	0.081 U	0.7 U	**0.65 J**	**0.049 J**	0.35 U	1.5 U	0.71 U	1.6 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.16 U	0.15 U	0.14 U	0.16 U	0.15 U	0.16 UJ	0.15 U	0.15 U	0.14 U	0.16 U	1.4 U	**2.7 J**	**0.039 J**	0.7 U	**0.89 J**	1.4 U	**0.4 J**
4-Chloroaniline	mg/kg	11	0.079 U	0.074 U	0.072 U	0.081 U	0.074 U	0.082 UJ	0.074 U	0.075 U	0.072 U	0.081 U	0.7 U	2 U	0.082 U	0.35 U	1.5 U	0.71 U	1.6 U
Acenaphthene	mg/kg	45,000	**0.0011 J**	0.074 U	**0.0056 J**	**0.19**	**0.00048 J**	0.0082 U	**0.01**	0.0077 U	**0.0064 J**	0.0082 U	**0.18**	**11.3**	**0.0022 J**	**0.025**	**2.6**	**0.43**	**2.9**
Acenaphthylene	mg/kg	45,000	**0.0026 J**	0.074 U	**0.0024 J**	**0.053**	**0.0012 J**	0.0082 U	**0.12**	0.0077 U	**0.01**	0.0082 U	**0.072**	**8.9**	**0.0019 J**	**0.011**	**18.3**	**1.1**	**24.9**
Acetophenone	mg/kg	120,000	0.079 U	0.074 U	0.072 U	**0.02 J**	0.074 U	0.082 UJ	0.074 U	0.075 U	0.072 U	0.081 U	0.7 U	2 U	**0.047 J**	0.35 U	1.5 U	0.71 U	**1.5 J**
Anthracene	mg/kg	230,000	**0.003 J**	**0.0065 J**	**0.0055 J**	**0.48**	**0.0015 J**	0.0082 UJ	**0.1**	0.0077 U	**0.027**	0.0082 U	**0.16**	**121**	**0.012**	**0.03**	**36.9**	**1.3**	**64.9**
Benz[a]anthracene	mg/kg	21	**0.015**	**0.066 J**	**0.087**	**1.5**	**0.0092**	0.0082 U	**0.4**	0.0077 U	**0.18**	**0.0044 J**	**0.65**	95.1	**0.013**	**0.1**	51.1	**8**	90.1
Benzaldehyde	mg/kg	120,000	0.079 U	0.074 U	0.072 U	**0.049 J**	0.074 U	0.082 UJ	**0.028 J**	0.075 U	0.072 U	0.081 U	0.7 U	2 U	0.082 U	0.35 U	1.5 U	0.71 U	1.6 U
Benzo[a]pyrene	mg/kg	2.1	**0.016**	**0.066 J**	**0.16**	**1.4**	**0.014**	0.0082 U	**0.54**	0.0077 U	**0.2**	**0.0031 J**	**1**	57.3	**0.0073 J**	**0.12**	49.1	5.9	88.1
Benzo[b]fluoranthene	mg/kg	21	**0.053**	**0.11**	**0.34**	**3**	**0.023**	0.0082 U	**1.4**	**0.0014 J**	**0.46**	**0.0075 J**	**1.2**	106	**0.012**	**0.21**	88.4	15.7	118
Benzo[g,h,i]perylene	mg/kg		**0.0062 J**	**0.039 J**	**0.058**	**0.42**	**0.0055 J**	0.0082 U	**0.22**	0.0077 U	**0.062**	0.0082 U	**0.74**	**14.3**	**0.0058 J**	**0.12**	**12.2**	**4.1**	**22.2**
Benzo[k]fluoranthene	mg/kg	210	**0.048**	**0.1**	**0.31**	**2.7**	**0.011**	0.0082 U	**1.3**	0.0077 U	**0.41**	**0.0068 J**	**0.47**	**99.3**	**0.011**	**0.2**	**78.9**	**14.8**	**21.6**
bis(2-chloroethoxy)methane	mg/kg	2,500	0.079 U	0.074 U	0.072 U	0.081 U	0.074 U	0.082 UJ	0.074 U	0.075 U	0.072 U	0.081 U	0.7 U	2 U	0.082 U	0.35 U	1.5 U	0.71 U	1.6 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	**0.13**	**0.059 J**	**0.023 J**	**0.032 J**	0.074 U	0.082 UJ	**0.031 J**	0.075 U	0.072 U	0.081 U	0.7 U	2 U	0.082 U	0.35 U	1.5 U	0.71 U	1.6 U
Caprolactam	mg/kg	400,000	0.2 U	**0.039 J**	0.18 U	0.2 U	0.19 UJ	0.21 UJ	0.19 UJ	0.19 UJ	0.18 UJ	0.2 UJ	1.8 U	5.1 U	0.2 U	0.88 U	3.8 U	1.8 U	4 U
Carbazole	mg/kg		0.079 U	0.074 U	0.072 U	**0.6**	0.074 U	0.082 UJ	**0.032 J**	0.075 U	**0.037 J**	0.081 U	0.7 U	**13.4**	0.082 U	0.35 U	**5.4**	0.71 U	**16**
Chrysene	mg/kg	2,100	**0.019**	**0.12**	**0.11**	**1.5**	**0.011**	0.0082 U	**0.44**	**0.00065 J**	**0.22**	**0.0033 J**	**0.6**	**76.7**	**0.01**	**0.11**	**44.3**	**8**	**74.7**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.0022 J**	0.074 U	**0.017**	**0.16**	**0.0016 J**	0.0082 U	**0.075**	0.0077 U	**0.021**	0.0082 U	**0.25**	7.2	**0.0014 J**	**0.04**	5.1	**1.9**	**9**
Diethylphthalate	mg/kg	660,000	0.079 U	0.074 U	0.072 U	0.081 U	0.074 U	0.082 UJ	0.074 U	0.075 U	0.072 U	0.081 U	0.7 U	2 U	0.082 U	0.35 U	1.5 U	0.71 U	1.6 U
Di-n-butylphthalate	mg/kg	82,000	0.029 B	0.026 B	0.027 B	0.029 B	0.027 B	0.028 B	0.03 B	0.025 B	0.026 B	0.028 B	0.7 U	2 U	0.082 U	0.35 U	1.5 U	0.71 U	1.6 U
Fluoranthene	mg/kg	30,000	**0.023**	**0.038 J**	**0.096**	**3**	**0.012**	0.0082 U	**0.56**	**0.0011 J**	**0.34**	**0.006 J**	**0.71**	**321**	**0.037**	**0.13**	**138**	**8**	**128**
Fluorene	mg/kg	30,000	**0.0014 J**	0.074 U	**0.0016 J**	**0.31**	0.0075 U	0.0082 UJ	**0.012**	0.0077 U	**0.0068 J**	0.0082 U	**0.088**	**113**	**0.013**	**0.011**	**25.1**	**0.15**	**30.4**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.0065 J**	**0.018 J**	**0.056**	**0.48**	**0.0053 J**	0.0082 U	**0.23**	0.0077 U	**0.061**	0.0082 U	**0.73**	**19**	**0.0053 J**	**0.1**	**15.3**	**4.6**	26.3
Isophorone	mg/kg	2,400	0.079 U	0.074 U	0.072 U	0.081 U	0.074 U	0.082 UJ	0.074 U	0.075 U	0.072 U	0.081 U	0.7 U	2 U	0.082 U	0.35 U	1.5 U	0.71 U	1.6 U
Naphthalene	mg/kg	17	**0.005 J**	0.074 U	**0.028**	**0.7**	**0.0026 J**	0.0082 UJ	**0.091**	0.0077 U	**0.011**	0.0082 U	**0.26**	912	**1.3**	**1.2**	**13.9**	**0.92**	79.3
N-Nitrosodiphenylamine	mg/kg	470	0.079 U	0.074 U	0.072 U	0.081 U	0.074 U	0.082 UJ	0.074 U	0.075 U	0.072 U	0.081 U	0.7 U	2 U	0.082 U	0.35 U	1.5 U	0.71 U	1.6 U
Phenanthrene	mg/kg		**0.013**	**0.026 J**	**0.029**	**2.6**	**0.0058 J**	0.0082 U	**0.22**	0.0077 U	**0.14**	**0.0029 J**	**0.5**	**530**	**0.063**	**0.1**	**124**	**2.4**	**122**
Phenol	mg/kg	250,000	**0.042 J**	0.074 U	0.072 U	0.081 U	0.074 U	0.082 UJ	0.074 U	0.075 U	0.072 U	0.081 U	0.7 U	**1.7 J**	**0.075 J**	0.35 U	**1 J**	0.71 U	**0.5 J**
Pyrene	mg/kg	23,000	**0.019**	**0.1**	**0.096**	**2.2**	**0.011**	0.0082 U	**0.54**	**0.001 J**	**0.3**	**0.0049 J**	**0.56**	**178**	**0.021**	**0.12**	**98.4**	**10.5**	**160**
PCBs																			
Aroclor 1242	mg/kg	0.97	N/A	0.057 U	0.0539 U	N/A	0.0526 U	N/A	0.0566 U	N/A	0.0557 U	N/A	0.017 U	N/A	N/A	0.018 U	N/A	0.017 U	N/A
Aroclor 1248	mg/kg	0.94	N/A	0.057 U	0.0539 U	N/A	0.0526 U	N/A	0.0566 U	N/A	0.0557 U	N/A	0.017 U	N/A	N/A	0.018 U	N/A	0.017 U	N/A
Aroclor 1254	mg/kg	0.97	N/A	0.057 U	0.0539 U	N/A	0.0526 U	N/A	0.0566 U	N/A	**0.242**	N/A	0.017 U	N/A	N/A	0.018 U	N/A	0.017 U	N/A
Aroclor 1260	mg/kg	0.99	N/A	0.057 U	0.0539 U	N/A	0.0526 UJ	N/A	0.0566 UJ	N/A	**0.0522 J**	N/A	**0.048**	N/A	N/A	**0.017 J**	N/A	0.017 U	N/A
Aroclor 1262	mg/kg		N/A	0.057 U	0.0539 U	N/A	0.0526 U	N/A	**0.0524 J**	N/A	0.0557 U	N/A	0.017 U	N/A	N/A	0.018 U	N/A	0.017 U	N/A
Aroclor 1268	mg/kg		N/A	0.057 U	0.0539 U	N/A	0.0526 U	N/A	0.0566 U	N/A	0.0557 U	N/A	0.017 U	N/A	N/A	0.018 U	N/A	0.017 U	N/A
PCBs (total)	mg/kg	0.97	N/A	0.057 U	0.0539 U	N/A	0.0526 U	N/A	**0.0524 J**	N/A	**0.2942**	N/A	**0.048 J**	N/A	N/A	0.12 U	N/A	0.12 U	N/A
TPH/Oil and Grease																			
Diesel Range Organics	mg/kg	6,200	**38.1**	**25.6**	**52.5**	**175**	**8.5**	**9.2 J**	**71.7**	7.7 U	**25.5**	8.2 U	**117**	10,800	**13.2**	**50**	**2,960**	**234**	**319**
Gasoline Range Organics	mg/kg	6,200	9.8 U	10.6 U	11.3 U	13.2 U	11.4 U	11.3 U	9.7 U	8.5 U	10.7 U	9.7 U	11 U	**2,340**	**68.2**	10.6 U	9.8 U	10.3 U	12.2 U
Oil and Grease	mg/kg	6,200	**2,350**	**943**	**461**	**505**	**230**	**432**	**401**	**131**	**328**	**193**	**688**	17,700	**586**	**578**	14,300	**1,050**	8,040

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

* indicates non-validated data
^ PAH compounds were analyzed vis SIM

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte in the sample.

J: The positive result reported for this analyte is a quantitative estimate.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

Table 6
Summary of Organics Detected in Soil
Tradepoint Atlantic
Parcel A11
Sparrows Point, Maryland

Parameter	Units	PAL	A11-016-SB-10* 3/8/2017	A11-017-SB-1 7/29/2016	A11-017-SB-5 7/29/2016	A11-017-SB-10 7/29/2016	A11-018-SB-1 7/29/2016	A11-018-SB-8 7/29/2016	A11-018-SB-10 7/29/2016	A11-019-SB-1 7/29/2016	A11-019-SB-4 7/29/2016	A11-020-SB-1 7/29/2016	A11-020-SB-7 7/29/2016	A11-021-SB-17 8/15/2016	A11-022-SB-1 8/15/2016	A11-022-SB-4 8/15/2016	A11-022-SB-10* 8/15/2016	A11-023-SB-1 8/15/2016	A11-023-SB-4 8/15/2016	A11-023-SB-10* 8/15/2016
Volatile Organic Compounds																				
1,1-Dichloroethane	mg/kg	16	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	0.0051 U	0.006 U	0.0074 U	0.0086 U	0.0048 U	0.0059 U	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
1,2-Dibromo-3-chloropropane	mg/kg	0.064	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	0.0051 U	0.006 U	0.0074 U	0.0086 U	0.0048 U	0.0059 U	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
1,2-Dichlorobenzene	mg/kg	9,300	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	0.0051 U	0.006 U	0.0074 U	0.0086 U	0.0048 U	**0.0028 J**	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
1,2-Dichloroethene (Total)	mg/kg	2,300	168 U	0.0081 U	0.011 U	N/A	0.01 U	0.0068 U	0.01 U	0.012 U	0.015 U	0.017 U	0.0096 U	0.012 U	0.011 U	0.01 U	N/A	0.012 U	0.013 U	N/A
1,3-Dichlorobenzene	mg/kg		83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	0.0051 U	0.006 U	0.0074 U	0.0086 U	0.0048 U	**0.0016 J**	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
1,4-Dichlorobenzene	mg/kg	11	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	0.0051 U	0.006 U	0.0074 U	0.0086 U	0.0048 U	**0.002 J**	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
2-Butanone (MEK)	mg/kg	190,000	168 U	0.0081 U	0.011 U	N/A	0.01 U	0.0068 U	0.01 U	0.012 U	0.015 U	0.017 U	0.0096 U	0.012 UJ	0.011 U	0.01 U	N/A	0.012 U	0.013 U	N/A
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	168 U	0.0081 U	0.011 U	N/A	0.01 U	0.0068 U	0.01 U	0.012 U	0.015 U	0.017 U	0.0096 U	0.012 U	0.011 U	0.01 U	N/A	0.012 U	0.013 U	N/A
Acetone	mg/kg	670,000	168 U	**0.016 J**	**0.083 J**	N/A	**0.03 J**	0.0068 UJ	**0.025 J**	0.012 UJ	**0.014 J**	**0.033 J**	**0.058 J**	**0.019 J**	0.011 UJ	**0.017 J**	N/A	**0.047 J**	**0.09 J**	N/A
Benzene	mg/kg	5.1	**2,120**	0.004 U	0.0056 U	N/A	0.005 U	**0.06**	**2.7**	0.006 U	0.0074 U	0.0086 U	0.0048 U	**12.3**	0.0057 U	**0.025**	N/A	**0.015**	**0.2**	N/A
Carbon disulfide	mg/kg	3,500	83.8 U	0.004 UJ	0.0056 UJ	N/A	0.005 UJ	**0.0033 J**	**0.0062 J**	0.006 UJ	0.0074 UJ	0.0086 UJ	0.0048 UJ	0.0059 U	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
Chloroform	mg/kg	1.4	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	0.0051 U	0.006 U	0.0074 U	0.0086 U	0.0048 U	0.0059 U	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
cis-1,2-Dichloroethene	mg/kg	2,300	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	0.0051 U	0.006 U	0.0074 U	0.0086 U	0.0048 U	0.0059 U	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
Cyclohexane	mg/kg	27,000	168 U	0.0081 U	0.011 U	N/A	0.01 U	0.0068 U	0.01 U	0.012 U	0.015 U	0.017 U	0.0096 U	**0.0083 J**	0.011 U	0.01 U	N/A	0.012 U	**0.12 J**	N/A
Ethylbenzene	mg/kg	25	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	**0.0049 J**	0.006 U	0.0074 U	0.0086 U	0.0048 U	**0.096**	0.0057 U	**0.0017 J**	N/A	0.0061 U	**0.27**	N/A
Isopropylbenzene	mg/kg	9,900	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	0.0051 U	0.006 U	0.0074 U	0.0086 U	0.0048 U	**0.02**	0.0057 U	0.005 U	N/A	0.0061 U	**0.22**	N/A
Styrene	mg/kg	35,000	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	**0.0072**	0.006 U	0.0074 U	0.0086 U	0.0048 U	0.0059 U	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
Tetrachloroethene	mg/kg	100	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	0.0051 U	0.006 U	0.0074 U	0.0086 U	0.0048 U	0.0059 U	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
Toluene	mg/kg	47,000	**845**	0.004 U	0.0056 U	N/A	0.005 U	**0.012**	**0.11**	0.006 U	0.0074 U	0.0086 U	0.0048 U	**1.9**	0.0057 U	**0.0082**	N/A	**0.0041 J**	**0.11**	N/A
trans-1,2-Dichloroethene	mg/kg	23,000	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	0.0051 U	0.006 U	0.0074 U	0.0086 U	0.0048 U	0.0059 U	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
Trichloroethene	mg/kg	6	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	0.0051 U	0.006 U	0.0074 U	0.0086 U	0.0048 U	0.0059 U	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
Vinyl chloride	mg/kg	1.7	83.8 U	0.004 U	0.0056 U	N/A	0.005 U	0.0034 U	0.0051 U	0.006 U	0.0074 U	0.0086 U	0.0048 U	0.0059 U	0.0057 U	0.005 U	N/A	0.0061 U	0.0065 U	N/A
Xylenes	mg/kg	2,800	**681**	0.012 U	0.017 U	N/A	**0.0067 J**	**0.023**	**0.1**	0.018 U	0.022 U	0.026 U	0.014 U	**1.6**	0.017 U	**0.013 J**	N/A	**0.0044 J**	**1.8**	N/A
Semi-Volatile Organic Compounds^																				
1,1-Biphenyl	mg/kg	200	**13.1**	0.073 U	0.088 U	N/A	**0.39 J**	**0.55**	**5.2**	0.071 U	0.078 U	0.08 U	0.082 U	**0.41**	0.074 U	**0.083 J**	N/A	**0.2**	**2.5 J**	N/A
2,4-Dimethylphenol	mg/kg	16,000	2.1 U	0.073 U	0.088 U	N/A	**0.26 J**	0.098 U	**0.55 J**	0.071 U	0.078 UJ	0.08 U	0.082 U	**0.21**	0.074 U	**0.021 J**	N/A	0.073 U	0.09 U	N/A
2-Chloronaphthalene	mg/kg	60,000	2.1 U	0.073 U	0.088 U	N/A	0.069 U	0.098 U	0.088 U	0.071 U	0.078 U	0.08 U	0.082 U	0.088 U	0.074 U	0.073 U	N/A	0.073 U	0.09 U	N/A
2-Methylnaphthalene	mg/kg	3,000	**36.4**	**0.064**	**0.12**	N/A	**4.5**	**3.3**	**12.1**	0.07 U	**0.0094**	**0.016**	0.0083 U	**0.47**	0.029 B	**0.2**	0.0082 U	**0.2**	**15.8**	**0.011**
2-Methylphenol	mg/kg	41,000	2.1 U	0.073 U	0.088 U	N/A	0.069 U	0.098 U	**0.4 J**	0.071 U	0.078 UJ	0.08 U	0.082 U	**0.13**	0.074 U	0.073 U	N/A	0.073 U	**0.073 J**	N/A
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	**1.1 J**	0.15 U	**0.11 J**	N/A	**0.18 J**	**0.061 J**	**1.5 J**	0.14 U	0.16 UJ	0.16 U	0.16 U	**0.26**	0.15 U	0.15 U	N/A	0.15 U	**0.24**	N/A
4-Chloroaniline	mg/kg	11	2.1 U	0.073 U	0.088 U	N/A	0.069 U	0.098 U	0.088 U	0.071 U	0.078 U	0.08 U	0.082 U	0.088 U	0.074 U	0.073 U	N/A	0.073 U	0.09 R	N/A
Acenaphthene	mg/kg	45,000	**10**	**0.11**	**0.074**	N/A	**0.52**	**0.77**	**1.3**	**0.014 J**	**0.00084 J**	**0.0033 J**	0.0083 U	**0.3**	**0.0054 J**	**0.066 J**	**0.0016 J**	**0.018**	**1.3**	0.0088 U
Acenaphthylene	mg/kg	45,000	**27.9**	**0.015**	**0.017**	N/A	**0.14**	**2.9**	**7.1**	0.07 U	**0.0018 J**	**0.001 J**	0.0083 U	**0.29**	**0.12**	**0.19**	**0.0015 J**	**0.026**	**1.6**	**0.0014 J**
Acetophenone	mg/kg	120,000	2.1 U	0.073 U	0.088 U	N/A	0.069 U	0.098 U	**0.036 J**	0.071 U	0.078 U	0.08 U	0.082 U	**0.14**	0.074 U	**0.034 J**	N/A	0.073 U	0.09 U	N/A
Anthracene	mg/kg	230,000	**69.4**	**0.11**	**0.1**	N/A	**0.49**	**13.6**	**5.5**	**0.012 J**	**0.0054 J**	**0.007 J**	0.0083 U	**9.4**	**0.17**	**0.49**	0.0082 U	**0.048**	**2.6**	0.0088 U
Benz[a]anthracene	mg/kg	21	**32.9**	**0.48**	**0.32**	N/A	**0.3**	**4.4**	**4.7**	**0.079**	**0.015**	**0.018**	0.0083 U	**2.7**	**0.48**	**1.6**	0.0082 U	**0.4**	**8.5**	0.0088 U
Benzaldehyde	mg/kg	120,000	2.1 U	0.073 UJ	**0.037 J**	N/A	**0.22 J**	0.098 UJ	0.088 UJ	0.071 UJ	0.078 UJ	0.08 UJ	0.082 UJ	**0.12**	0.074 U	0.073 U	N/A	0.073 U	0.09 U	N/A
Benzo[a]pyrene	mg/kg	2.1	**23.6**	**0.8**	**0.3**	**0.0012 J**	**0.49**	**3.3**	**2.9**	**0.15**	**0.015**	**0.026**	0.0083 U	**1.8**	**0.67**	**1.3**	0.0082 U	**0.71**	**9.6**	0.0088 U
Benzo[b]fluoranthene	mg/kg	21	**39.7**	**1.7 J**	**0.75**	N/A	**1**	**6.8**	**5.9**	**0.28**	**0.036**	**0.052**	0.0083 U	**3.7**	**1.5**	**2.1**	0.0082 U	**1**	**16.1**	0.0088 U
Benzo[g,h,i]perylene	mg/kg		**7.2**	**0.2**	**0.051**	N/A	**0.29**	**0.88**	**0.75**	**0.072**	**0.0061 J**	**0.025**	0.0083 U	**0.71**	**0.65**	**0.8**	0.0082 U	**0.6**	**6.1**	0.0088 U
Benzo[k]fluoranthene	mg/kg	210	**37.3**	**1.5 J**	**0.69**	N/A	**0.91**	**6.1**	**5.4**	**0.25**	**0.032**	**0.048**	0.0083 U	**3.3**	**1.4**	**0.7**	0.0082 U	**0.42**	**5.1**	0.0088 U
bis(2-chloroethoxy)methane	mg/kg	2,500	**7.8**	0.073 U	0.088 U	N/A	0.069 U	0.098 U	0.088 U	0.071 U	0.078 U	0.08 U	0.082 U	0.088 U	0.074 U	0.073 U	N/A	0.073 U	0.09 U	N/A
bis(2-Ethylhexyl)phthalate	mg/kg	160	2.1 U	**0.026 J**	**0.078 J**	N/A	**6.2 J**	**0.64 J**	**1.1 J**	**0.19 J**	**0.016 J**	**0.023 J**	0.082 UJ	0.026 B	0.026 B	**0.11 J**	N/A	0.073 U	**0.5 J**	N/A
Caprolactam	mg/kg	400,000	5.3 U	0.18 U	0.22 U	N/A	0.17 U	0.25 U	0.22 U	0.18 U	0.2 U	0.2 U	0.21 U	0.22 U	0.19 U	0.18 U	N/A	0.18 U	0.22 U	N/A
Carbazole	mg/kg		**17.8**	**0.042 J**	**0.11**	N/A	0.069 UJ	**5.8**	**10.6**	0.071 U	0.078 U	0.08 U	0.082 U	**0.57**	**0.038 J**	**0.081 J**	N/A	**0.062 J**	**0.38**	N/A
Chrysene	mg/kg	2,100	**25.7**	**0.49**	**0.33**	N/A	**0.53**	**4.2**	**4.8**	**0.11**	**0.017**	**0.023**	0.0083 U	**3.6**	**0.62**	**1.5**	0.0082 U	**0.53**	**8.6**	0.0088 U
Dibenz[a,h]anthracene	mg/kg	2.1	**3**	**0.067**	**0.025**	N/A	**0.071**	**0.39**	**0.38**	**0.024 J**	**0.0025 J**	**0.0056 J**	0.0083 U	**0.23**	**0.17**	**0.22**	0.0082 U	**0.18**	**2.1**	0.0088 U
Diethylphthalate	mg/kg	660,000	2.1 U	0.073 U	0.088 U	N/A	0.069 U	0.098 U	0.088 U	0.071 U	0.078 U	0.08 U	0.082 U	0.088 U	0.074 U	0.073 U	N/A	0.073 U	0.09 U	N/A
Di-n-butylphthalate	mg/kg	82,000	2.1 U	0.026 B	0.038 B	N/A	0.069 UJ	0.098 UJ	0.088 UJ	0.026 B	0.027 B	0.027 B	0.028 B	0.088 U	0.074 UJ	0.073 UJ	N/A	0.073 U	**0.045 J**	N/A
Fluoranthene	mg/kg	30,000	**154**	**0.72**	**0.7**	N/A	**0.59**	**12.4**	**13.5**	**0.11**	**0.031**	**0.023**	0.0083 U	**8.4**	**0.65**	**4**	0.0082 U	**0.44**	**15.8**	0.0088 U
Fluorene	mg/kg	30,000	**80.2**	**0.043**	**0.074**	N/A	**0.36**	**6.7**	**11.7**	0.07 U	**0.0012 J**	**0.002 J**	0.0083 U	**2.6**	**0.014 J**	**0.21**	**0.0056 J**	**0.014**	**2.7**	0.0088 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**8.7**	**0.24**	**0.067**	N/A	**0.26**	**1.1**	**0.93**	**0.07 J**	**0.0067 J**	**0.02**	0.0083 U	**0.78**	**0.58**	**0.77**	0.0082 U	**0.53**	**6.3**	0.0088 U
Isophorone	mg/kg	2,400	2.1 U	0.073 U	0.088 U	N/A	0.069 U	0.098 U	**0.028 J**	0.071 U	0.078 U	0.08 U	0.082 U	0.088 U	0.074 U	0.073 U	N/A	0.073 U	0.09 U	N/A
Naphthalene	mg/kg	17	**108,000**	**0.064**	**0.12**	N/A	**0.78**	**14.9**	**54.1**	0.026 B	**0.0095**	**0.011**	0.0083 U	**11**	**0.11**	**1**	**0.012**	**0.14**	**5.5**	**0.025**
N-Nitrosodiphenylamine	mg/kg	470	2.1 U	0.073 U	0.088 U	N/A	0.069 UJ	0.098 U	0.088 U	0.071 U	0.078 U	0.08 U	0.082 U	0.088 U	0.074 UJ	0.073 UJ	N/A	0.073 U	0.09 U	N/A
Phenanthrene	mg/kg		**230**	**0.46**	**0.48**	N/A	**2.3**	**19.3**	**24.2**	0.056 B	**0.022**	**0.04**	0.0083 U	**9.3**	**0.28**	**1.6**	0.0082 U	**0.23**	**9.8**	**0.0013 J**
Phenol	mg/kg	250,000	2.1 U	0.073 U	0.088 U	N/A	**0.093 J**	**0.11**	**2.1**	0.071 U	0.078 UJ	0.08 U	0.082 U	**0.15**	0.074 U	0.073 U	N/A	0.073 U	**0.14**	N/A
Pyrene	mg/kg	23,000	**99.5**	**0.65**	**0.54**	N/A	**2.6**	**8.1**	**8.8**	**0.099**	**0.024**	**0.022**	0.0083 U	**5.1**	**0.58**	**3**	0.0082 U	**0.48**	**11.9**	0.0088 U
PCBs																				
Aroclor 1242	mg/kg	0.97	N/A	0.0601 U	N/A	N/A	0.0589 U	N/A	N/A	0.0535 U	N/A	0.0581 U	N/A	N/A	**0.0413 J**	N/A	N/A	0.0511 U	N/A	N/A
Aroclor 1248	mg/kg	0.94	N/A	0.0601 U	N/A	N/A	0.0589 U	N/A	N/A	0.0535 U	N/A	0.0581 U	N/A	N/A	0.0593 U	N/A	N/A	0.0511 U	N/A	N/A
Aroclor 1254	mg/kg	0.97	N/A	0.0601 U	N/A	N/A	0.0589 U	N/A	N/A	0.0535 U	N/A	0.0581 U	N/A	N/A	0.0593 U	N/A	N/A	0.0511 U	N/A	N/A
Aroclor 1260	mg/kg	0.99	N/A	0.0601 U	N/A	N/A	0.0589 U	N/A	N/A	**0.033 J**	N/A	0.0581 U	N/A	N/A	0.0593 U	N/A	N/A	0.0511 U	N/A	N/A
Aroclor 1262	mg/kg		N/A	0.0601 U	N/A	N/A	0.0589 U	N/A	N/A	0.0535 U	N/A	0.0581 U	N/A	N/A	0.0593 U	N/A	N/A	0.0511 U	N/A	N/A
Aroclor 1268	mg/kg		N/A	0.0601 U	N/A	N/A	0.0589 U	N/A	N/A	0.0535 U	N/A	0.0581 U	N/A	N/A	0.0593 U	N/A	N/A	0.0511 U	N/A	N/A
PCBs (total)	mg/kg	0.97	N/A	0.0601 U	N/A	N/A	0.0589 U	N/A	N/A	**0.033 J**	N/A	0.0581 U	N/A	N/A	**0.0413 J**	N/A	N/A	0.0511 U	N/A	N/A
TPH/Oil and Grease																				
Diesel Range Organics	mg/kg	6,200	**43,200**	**147 J**	**52.8 J**	N/A	**8,610 J**	**2,870 J**	**7,750 J**	**85.7 J**	**39.2 J**	**36.2 J**	**3.6 J**	**1,230 J**	**61.1 J**	**468 J**	N/A	**410 J**	**4,560 J**	**4.2 J**
Gasoline Range Organics	mg/kg	6,200	**3,520**	11 U	13.6 U	N/A	**45.7**	13.6 U	**13.4**	8.9 U	13.4 U	12.3 U	9.3 U	**35.1**	11.7 U	**21.7**	N/A	13.2 U	**110**	N/A
Oil and Grease	mg/kg	6,200	**543,000**	**801**	**1,330**	N/A	**26,600**	**26,100**	**35,800**	**1,970**	**359**	**554**	**327**	**7,310**	**767**	**1,030**	N/A	**1,240**	**9,200**	N/A

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

* indicates non-validated data
^ PAH compounds were analyzed vis SIM

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte in the sample.

J: The positive result reported for this analyte is a quantitative estimate.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

Table 6
Summary of Organics Detected in Soil
Tradepoint Atlantic
Parcel A11
Sparrows Point, Maryland

Parameter	Units	PAL	A11-024-SB-1* 8/9/2016	A11-024-SB-9* 8/9/2016	A11-024-SB-10* 8/9/2016	A11-025-SB-1 8/10/2016	A11-025-SB-4 8/10/2016	A11-026-SB-8.5 8/11/2016	A11-026-SB-12.5 8/11/2016	A11-027-SB-11 8/11/2016	A11-027-SB-15 8/11/2016	A11-028-SB-6 8/10/2016	A11-028-SB-10 8/10/2016	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	A11-031-SB-6 8/11/2016	A11-031-SB-10 8/11/2016
Volatile Organic Compounds																			
1,1-Dichloroethane	mg/kg	16	0.0079 U	0.006 U	N/A	0.0054 U	0.0052 U	0.0044 U	0.0041 U	0.005 U	0.0054 U	0.0063 U	**0.0028 J**	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	0.0052 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.0079 U	0.006 U	N/A	0.0054 U	0.0052 U	0.0044 UJ	0.0041 UJ	0.005 UJ	0.0054 UJ	0.0063 U	0.0053 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 UJ	0.0052 UJ
1,2-Dichlorobenzene	mg/kg	9,300	0.0079 U	0.006 U	N/A	0.0054 U	0.0052 U	0.0044 U	**0.0012 J**	0.005 U	0.0054 U	0.0063 U	0.0053 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	0.0052 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.016 U	0.012 U	N/A	0.011 U	0.01 U	0.0088 U	0.0082 U	0.01 U	0.011 U	0.013 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.01 U
1,3-Dichlorobenzene	mg/kg		0.0079 U	0.006 U	N/A	0.0054 U	0.0052 U	0.0044 U	0.0041 U	0.005 U	0.0054 U	0.0063 U	0.0053 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	0.0052 U
1,4-Dichlorobenzene	mg/kg	11	0.0079 U	0.006 U	N/A	0.0054 U	0.0052 U	0.0044 U	0.0041 U	0.005 U	0.0054 U	0.0063 U	0.0053 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	0.0052 U
2-Butanone (MEK)	mg/kg	190,000	0.016 U	**0.014**	N/A	0.011 U	0.01 U	0.0088 U	**0.0036 J**	**0.0084 J**	**0.0054 J**	0.013 U	0.011 U	**0.0047 J**	0.012 U	0.011 U	0.012 U	0.012 U	**0.0046 J**
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.016 U	0.012 U	N/A	0.011 U	0.01 U	0.0088 U	0.0082 U	0.01 U	0.011 U	0.013 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.01 U
Acetone	mg/kg	670,000	0.016 U	**0.068**	N/A	0.011 UJ	0.006 B	0.0048 B	0.016 B	**0.039 J**	0.023 B	0.016 B	0.019 B	0.014 B	0.0079 B	0.0059 B	0.012 UJ	0.01 B	0.018 B
Benzene	mg/kg	5.1	**0.0038 J**	51.9	19.1	0.0054 U	0.0052 U	0.0044 U	0.0041 U	**0.0037 J**	**0.11**	**0.0022 J**	**0.038**	**0.0029 J**	**0.015**	0.0054 U	0.0062 U	0.006 U	**0.0041 J**
Carbon disulfide	mg/kg	3,500	0.0079 U	**0.016**	N/A	0.0054 U	0.0052 U	0.0044 U	0.0041 U	0.005 U	0.0054 U	0.0063 U	0.0053 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	0.0052 U
Chloroform	mg/kg	1.4	0.0079 U	0.006 U	N/A	0.0054 U	0.0052 U	0.0044 U	0.0041 U	0.005 U	0.0054 U	0.0063 U	0.0053 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	0.0052 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.0079 U	0.006 U	N/A	0.0054 U	0.0052 U	0.0044 U	0.0041 U	0.005 U	0.0054 U	0.0063 U	0.0053 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	0.0052 U
Cyclohexane	mg/kg	27,000	0.016 U	**0.012**	N/A	0.011 U	0.01 U	0.0088 U	0.0082 U	0.01 U	0.011 U	0.013 U	**0.0082 J**	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.01 U
Ethylbenzene	mg/kg	25	0.0079 U	**0.081**	N/A	0.0054 U	0.0052 U	0.0044 U	**0.002 J**	0.005 U	**0.0012 J**	**0.0025 J**	**0.15**	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	**0.0023 J**
Isopropylbenzene	mg/kg	9,900	0.0079 U	**0.015**	N/A	0.0054 U	0.0052 U	0.0044 U	**0.0016 J**	0.005 U	0.0054 U	0.0063 U	**0.23**	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	**0.0027 J**
Styrene	mg/kg	35,000	0.0079 U	**0.0039 J**	N/A	0.0054 U	0.0052 U	0.0044 U	0.0041 U	0.005 U	0.0054 U	0.0063 U	0.0053 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	0.0052 U
Tetrachloroethene	mg/kg	100	0.0079 U	0.006 U	N/A	0.0054 U	0.0052 U	0.0044 U	0.0041 U	0.005 U	0.0054 U	0.0063 U	0.0053 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	0.0052 U
Toluene	mg/kg	47,000	0.0079 U	**14.7**	N/A	0.0054 U	0.0052 U	0.0044 U	0.0041 U	0.005 U	**0.0023 J**	0.0063 U	**0.027**	**0.0025 J**	**0.011**	**0.0018 J**	0.0062 U	0.006 U	0.0052 U
trans-1,2-Dichloroethene	mg/kg	23,000	0.0079 U	0.006 U	N/A	0.0054 U	0.0052 U	0.0044 U	0.0041 U	0.005 U	0.0054 U	0.0063 U	0.0053 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	0.0052 U
Trichloroethene	mg/kg	6	0.0079 U	0.006 U	N/A	0.0054 U	0.0052 U	0.0044 U	0.0041 U	0.005 U	0.0054 U	0.0063 U	0.0053 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	0.0052 U
Vinyl chloride	mg/kg	1.7	0.0079 U	0.006 U	N/A	0.0054 U	0.0052 U	0.0044 U	0.0041 U	0.005 U	0.0054 U	0.0063 U	0.0053 U	0.0061 U	0.0059 U	0.0054 U	0.0062 U	0.006 U	0.0052 U
Xylenes	mg/kg	2,800	0.024 U	**20.7**	N/A	0.016 U	0.016 U	0.013 U	**0.0048 J**	0.015 U	**0.0033 J**	**0.015 J**	**0.61**	0.018 U	**0.012 J**	**0.0031 J**	0.019 U	0.018 U	**0.003 J**
Semi-Volatile Organic Compounds^																			
1,1-Biphenyl	mg/kg	200	0.073 U	**51.2**	N/A	0.078 U	**0.021 J**	**0.016 J**	**0.11 J**	**0.029 J**	**0.053 J**	0.08 U	**0.025 J**	0.079 U	**0.27 J**	**0.02 J**	0.087 U	0.083 U	**0.14 J**
2,4-Dimethylphenol	mg/kg	16,000	0.073 U	**9.5**	N/A	0.078 U	0.074 U	0.07 U	**0.3 J**	0.071 U	**0.045 J**	0.08 U	**0.38**	0.079 U	**0.087 J**	0.073 U	0.087 R	0.083 UJ	**0.39 J**
2-Chloronaphthalene	mg/kg	60,000	0.073 U	0.88 U	N/A	0.078 U	0.074 U	0.07 U	0.074 U	0.071 U	0.077 U	0.08 U	0.071 U	0.079 U	0.085 U	0.073 U	0.087 U	0.083 U	**0.19 J**
2-Methylnaphthalene	mg/kg	3,000	**0.0052 J**	**117**	**35.3**	0.079 U	**0.075**	**0.033**	**0.28**	**0.066 J**	**0.2**	**0.029**	**0.29**	**0.047**	**2**	**0.025**	**0.0072 J**	**0.044**	**0.26**
2-Methylphenol	mg/kg	41,000	0.073 U	**5**	N/A	0.078 U	0.074 U	0.07 U	0.074 U	0.071 U	0.077 U	0.08 U	0.071 U	0.079 U	**0.055 J**	0.073 U	0.087 R	0.083 UJ	**0.36 J**
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.15 U	**11.9**	N/A	0.16 U	0.15 U	0.14 U	**0.65 J**	0.14 U	**0.039 J**	0.16 U	0.14 U	0.16 U	**0.1 J**	0.15 U	0.17 R	0.17 U	**0.42 J**
4-Chloroaniline	mg/kg	11	0.073 U	0.88 U	N/A	0.078 U	0.074 U	0.07 U	0.074 U	0.071 U	0.077 U	0.08 U	0.071 U	0.079 U	0.085 U	0.073 U	0.087 U	0.083 U	0.079 U
Acenaphthene	mg/kg	45,000	**0.0028 J**	**26.4**	**6**	**0.006 J**	**0.1**	**0.025**	**0.18**	**0.055 J**	**0.32**	**0.011**	**0.075**	**0.61**	**1.3**	**0.049**	**0.0036 J**	**0.081**	**0.22**
Acenaphthylene	mg/kg	45,000	**0.024**	**48.1**	**12.9**	**0.047 J**	**0.039 J**	**0.019**	**0.062**	**0.029 J**	**0.7**	**0.023**	**0.0094 J**	**0.008 J**	**1.1**	**0.014**	**0.0018 J**	**0.038**	**0.11**
Acetophenone	mg/kg	120,000	0.073 U	**12.7**	N/A	0.078 U	0.074 U	0.07 U	**0.13 J**	0.071 U	**0.08 J**	0.08 U	0.071 U	0.079 U	**0.29 J**	0.073 U	0.087 U	0.083 U	**0.047 J**
Anthracene	mg/kg	230,000	**0.051**	**303**	**95.3**	**0.049 J**	**0.2**	**0.045**	**0.21**	**0.088 J**	**3.4**	**0.044**	**0.018 J**	**0.13**	**4.3**	**0.068**	**0.006 J**	**0.13**	**0.67**
Benz[a]anthracene	mg/kg	21	**0.14**	253	60.4	**0.23**	**0.61**	**1.1**	**0.89**	**0.71 J**	**11.6**	**0.23**	**0.022 J**	**1.2**	**5.7**	**0.39**	**0.02**	**7.3**	**1.3**
Benzaldehyde	mg/kg	120,000	0.073 U	0.88 U	N/A	0.078 UJ	0.074 UJ	0.07 U	0.074 U	0.071 U	**0.037 J**	0.08 UJ	0.071 UJ	0.079 UJ	0.085 UJ	0.073 UJ	0.087 UJ	0.083 U	0.079 U
Benzo[a]pyrene	mg/kg	2.1	**0.16**	163	40.9	**0.25**	**0.89**	5.3	**1.1**	**1.3**	10.4	**0.26**	**0.026 J**	3.1	4.5	**0.71**	**0.026**	12.3	**1.1**
Benzo[b]fluoranthene	mg/kg	21	**0.34**	227	58.4	**0.36**	**1.6**	**6.7**	**5.7**	**1.3**	30.3	**0.52**	**0.064 J**	**3.6**	**6.3**	**0.94**	**0.036**	**14.8**	**2.6**
Benzo[g,h,i]perylene	mg/kg		**0.076**	**65.9**	**15.9**	**0.11**	**0.48**	**0.71**	**0.37**	**0.51 J**	**2.5**	**0.1**	**0.016 J**	**1.2**	**2.2**	**0.41**	**0.016**	**1.4**	**0.31**
Benzo[k]fluoranthene	mg/kg	210	**0.12**	**108**	**23.5**	**0.16**	**1.4**	**1**	**5.3**	**0.69 J**	**5.3**	**0.46**	**0.054 J**	**0.98**	**2.5**	**0.37**	**0.016**	**7.2**	**2.4**
bis(2-chloroethoxy)methane	mg/kg	2,500	0.073 U	0.88 U	N/A	0.078 U	0.074 U	0.07 U	0.074 U	0.071 U	0.077 U	0.08 U	0.071 U	0.079 U	0.085 U	0.073 U	0.087 U	0.083 U	0.079 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.073 U	0.88 U	N/A	0.078 UJ	**0.044 J**	0.07 U	**0.9 J**	**0.69 J**	**0.083 J**	0.08 UJ	0.071 UJ	0.079 UJ	0.085 UJ	**0.079 J**	0.087 UJ	0.023 B	**0.36 J**
Caprolactam	mg/kg	400,000	0.18 U	2.2 U	N/A	0.2 U	0.19 U	0.18 U	0.19 U	0.18 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	0.18 U	0.22 U	0.21 U	0.2 U
Carbazole	mg/kg		0.073 U	**75**	N/A	0.078 U	**0.035 J**	**0.024 J**	**0.082 J**	**0.047 J**	**0.17 J**	0.08 U	**0.026 J**	**0.063 J**	**1.2 J**	**0.041 J**	0.087 U	**0.081 J**	**0.2 J**
Chrysene	mg/kg	2,100	**0.22**	**236**	**51.7**	**0.22**	**0.69**	**1.3**	**0.98**	**0.76 J**	**10.5**	**0.24**	**0.045 J**	**1.2**	**5.3**	**0.44**	**0.023**	**9.4**	**1.3**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.022**	24.4	5.9	**0.035 J**	**0.18**	**0.22**	**0.11**	**0.15 J**	**1.1**	**0.035**	0.071 U	**0.65**	**0.8**	**0.15**	**0.0053 J**	**0.57**	**0.12**
Diethylphthalate	mg/kg	660,000	0.073 U	0.88 U	N/A	**0.022 J**	**0.017 J**	0.07 U	0.074 U	0.021 B	0.077 U	0.08 U	0.071 U	0.079 U	0.085 U	**0.045 J**	**0.032 J**	0.083 U	0.079 U
Di-n-butylphthalate	mg/kg	82,000	0.073 U	0.88 U	N/A	0.078 UJ	0.074 UJ	0.07 U	0.074 UJ	0.071 U	0.077 UJ	0.08 UJ	**0.025 J**	0.079 UJ	0.085 UJ	0.073 UJ	0.087 UJ	0.083 UJ	**0.18 J**
Fluoranthene	mg/kg	30,000	**0.23**	**639**	**154**	**0.38**	**0.98**	**0.96**	**1.4**	**0.89 J**	**56.6**	**0.39**	**0.056 J**	**1.1**	**14.5**	**0.46**	**0.034**	**6.1**	**3.5**
Fluorene	mg/kg	30,000	**0.015**	**353**	**83.4**	**0.013 J**	**0.045 J**	**0.011**	**0.23**	**0.035 J**	**0.63**	**0.011**	**0.055 J**	**0.072**	**4**	**0.015**	**0.002 J**	**0.024**	**0.35**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.083**	79.8	**20**	**0.12**	**0.5**	**0.7**	**0.37**	**0.5 J**	**2.9**	**0.11**	0.071 U	**1.2**	**2.4**	**0.43**	**0.014**	**1.5**	**0.35**
Isophorone	mg/kg	2,400	0.073 U	0.88 U	N/A	0.078 U	0.074 U	0.07 U	0.074 U	0.071 U	0.077 U	0.08 U	0.071 U	0.079 U	0.085 U	0.073 U	0.087 U	0.083 U	0.079 U
Naphthalene	mg/kg	17	**0.047**	621	199	**0.041 J**	**0.13**	**0.093**	**12.7**	**0.21 J**	**0.92**	**0.093**	**0.89**	**0.15**	20	**0.1**	**0.014**	**0.068**	**0.59**
N-Nitrosodiphenylamine	mg/kg	470	0.073 U	0.88 U	N/A	0.078 U	0.074 U	0.07 U	0.074 UJ	0.071 U	0.077 UJ	0.08 U	0.071 U	0.079 U	0.085 U	0.073 U	0.087 U	0.083 UJ	0.079 UJ
Phenanthrene	mg/kg		**0.1**	**968**	**217**	**0.16**	**0.65**	**0.22**	**0.86**	**0.29 J**	**11.4**	**0.15**	0.057 B	**0.5**	**16.7**	**0.24**	**0.032**	**0.49**	**2.3**
Phenol	mg/kg	250,000	**0.02 J**	**8.2**	N/A	0.078 U	0.074 U	0.07 U	**0.15 J**	0.071 U	**0.028 J**	0.08 U	0.071 U	0.079 U	**0.043 J**	0.073 U	0.087 R	0.083 UJ	**0.29 J**
Pyrene	mg/kg	23,000	**0.2**	**615**	**136**	**0.31**	**0.77**	**1.1**	**1.3**	**0.89 J**	**42.9**	**0.36**	**0.096**	**1.1**	**10.7**	**0.43**	**0.029**	**7.2**	**2.9**
PCBs																			
Aroclor 1242	mg/kg	0.97	0.0559 U	N/A	N/A	0.0599 U	N/A	0.0549 U	N/A	0.0548 U	N/A	0.0652 U	N/A	0.0573 U	N/A	0.0519 U	N/A	0.0564 U	N/A
Aroclor 1248	mg/kg	0.94	0.0559 U	N/A	N/A	0.0599 U	N/A	0.0549 UJ	N/A	0.0548 UJ	N/A	0.0652 U	N/A	0.0573 U	N/A	0.0519 U	N/A	**0.0949 J**	N/A
Aroclor 1254	mg/kg	0.97	0.0559 U	N/A	N/A	0.0599 U	N/A	0.0549 U	N/A	**0.469**	N/A	0.0652 U	N/A	0.0573 U	N/A	0.0519 U	N/A	**0.205**	N/A
Aroclor 1260	mg/kg	0.99	0.0559 U	N/A	N/A	**0.0718**	N/A	0.0549 UJ	N/A	**0.196 J**	N/A	0.0652 U	N/A	0.0573 U	N/A	0.0519 U	N/A	0.0564 UJ	N/A
Aroclor 1262	mg/kg		0.0559 U	N/A	N/A	0.0599 U	N/A	0.0549 U	N/A	0.0548 U	N/A	0.0652 U	N/A	0.0573 U	N/A	0.0519 U	N/A	0.0564 U	N/A
Aroclor 1268	mg/kg		0.0559 U	N/A	N/A	0.0599 U	N/A	0.0549 U	N/A	0.0548 U	N/A	0.0652 U	N/A	0.0573 U	N/A	0.0519 U	N/A	**0.306**	N/A
PCBs (total)	mg/kg	0.97	0.0559 U	N/A	N/A	**0.0718**	N/A	0.0549 U	N/A	**0.665**	N/A	0.0652 U	N/A	0.0573 U	N/A	0.0519 U	N/A	**0.6059**	N/A
TPH/Oil and Grease																			
Diesel Range Organics	mg/kg	6,200	**13.3**	7,640	6,290	**82.1 J**	**100 J**	**137 J**	**338 J**	**322 J**	**148 J**	**58.2 J**	**2,390 J**	**60.2 J**	**802 J**	**59.2 J**	**19.5 J**	**195 J**	**464 J**
Gasoline Range Organics	mg/kg	6,200	18.5 U	**214**	N/A	10.4 U	10.6 U	8.9 U	6.8 U	12.7 U	12.6 U	12.5 U	**148**	11.4 U	10.8 U	12.4 U	15.4 U	11.3 U	10.1 U
Oil and Grease	mg/kg	6,200	**618**	21,300	N/A	**1,470**	**1,000**	**1,070**	**2,560**	**1,330**	**1,370**	**629**	8,330	**803**	**3,910**	**367**	**764**	**1,180**	**3,620**

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

* indicates non-validated data
^ PAH compounds were analyzed vis SIM

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte in the sample.

J: The positive result reported for this analyte is a quantitative estimate.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

Table 6
Summary of Organics Detected in Soil
Tradepoint Atlantic
Parcel A11
Sparrows Point, Maryland

Parameter	Units	PAL	A11-032-SB-1 8/10/2016	A11-032-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	A11-038-SB-1 8/15/2016	A11-038-SB-7 8/15/2016	A11-039-SB-1 8/12/2016	A11-039-SB-5 8/12/2016	A11-040-SB-1* 8/9/2016	A11-040-SB-4* 8/9/2016	A11-040-SB-10* 8/9/2016
Volatile Organic Compounds																				
1,1-Dichloroethane	mg/kg	16	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	0.007 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	0.007 U
1,2-Dichlorobenzene	mg/kg	9,300	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	0.007 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.013 U	0.011 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	0.012 U	0.0096 U	0.012 U	0.012 U	0.0079 U	0.011 U	0.014 U
1,3-Dichlorobenzene	mg/kg		0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	0.007 U
1,4-Dichlorobenzene	mg/kg	11	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	0.007 U
2-Butanone (MEK)	mg/kg	190,000	0.013 U	0.011 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	0.012 U	0.0096 U	0.012 U	0.012 U	0.0079 U	0.011 U	**0.021**
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.013 U	0.011 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	0.012 U	0.0096 U	0.012 U	0.012 U	0.0079 U	0.011 U	**0.011 J**
Acetone	mg/kg	670,000	0.013 UJ	0.0068 B	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**	0.012 UJ	**0.016 J**	0.012 UJ	0.012 UJ	0.0079 U	0.011 U	**0.078**
Benzene	mg/kg	5.1	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	N/A
Carbon disulfide	mg/kg	3,500	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	**0.045**
Chloroform	mg/kg	1.4	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	0.007 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	0.007 U
Cyclohexane	mg/kg	27,000	0.013 U	0.011 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	0.012 U	0.0096 U	0.012 U	0.012 U	0.0079 U	0.011 U	**0.013 J**
Ethylbenzene	mg/kg	25	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	**0.34**
Isopropylbenzene	mg/kg	9,900	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	**0.14**
Styrene	mg/kg	35,000	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	**0.08**
Tetrachloroethene	mg/kg	100	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	0.007 U
Toluene	mg/kg	47,000	0.0065 U	**0.0018 J**	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**	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	N/A
trans-1,2-Dichloroethene	mg/kg	23,000	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	0.007 U
Trichloroethene	mg/kg	6	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	0.007 U
Vinyl chloride	mg/kg	1.7	0.0065 U	0.0054 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	0.0059 U	0.0048 U	0.0058 U	0.0058 U	0.004 U	0.0054 U	0.007 U
Xylenes	mg/kg	2,800	0.019 U	**0.0042 J**	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	0.018 U	0.014 U	0.018 U	0.017 U	0.012 U	0.016 U	**46.3**
Semi-Volatile Organic Compounds^																				
1,1-Biphenyl	mg/kg	200	0.071 U	**0.021 J**	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	0.075 U	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	**155**
2,4-Dimethylphenol	mg/kg	16,000	0.071 U	0.078 U	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	0.075 U	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	**31.4**
2-Chloronaphthalene	mg/kg	60,000	0.071 U	0.078 U	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	0.075 U	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	4.3 U
2-Methylnaphthalene	mg/kg	3,000	**0.072 J**	**0.072 J**	**0.021**	**0.025**	**0.56**	**0.17**	**0.089**	0.075 U	**0.022**	**0.012**	**0.0086**	0.035 B	0.0088 U	**0.014**	**0.035**	**0.0088**	**0.033**	**159**
2-Methylphenol	mg/kg	41,000	0.071 U	0.078 U	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	0.075 U	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	**21**
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.14 U	0.16 U	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	0.15 U	0.17 U	0.18 U	0.19 U	0.15 U	0.17 U	**47.2**
4-Chloroaniline	mg/kg	11	0.071 U	0.078 U	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	0.075 U	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	4.3 U
Acenaphthene	mg/kg	45,000	**0.3**	**0.1**	**0.013**	**0.0071 J**	**0.077**	**0.21**	**0.03**	0.075 U	**0.0016 J**	**0.0064 J**	**0.0032 J**	**0.0062 J**	**0.0016 J**	**0.0075 J**	**0.0026 J**	**0.018**	**0.052**	**41.5**
Acenaphthylene	mg/kg	45,000	**0.013 J**	**0.014 J**	**0.053**	**0.0035 J**	**0.83**	**0.067**	**0.053**	0.075 U	**0.0006 J**	**0.0042 J**	**0.0095**	**0.044 J**	0.0088 U	**0.062**	**0.0052 J**	**0.0023 J**	**0.018**	**116**
Acetophenone	mg/kg	120,000	0.071 U	0.078 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	0.075 U	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	**51.9**
Anthracene	mg/kg	230,000	**0.21**	**0.19**	**0.038**	**0.015**	**0.73**	**0.52**	**0.079**	0.075 U	**0.006 J**	**0.02**	**0.0079 J**	**0.021 J**	0.0088 U	**0.031**	**0.016**	**0.022**	**0.084**	**288**
Benz[a]anthracene	mg/kg	21	**11.5**	**0.33**	**0.2**	**0.043**	**0.82**	**0.95**	**0.32**	**0.014 J**	**0.027**	**0.092**	**0.043**	**0.099**	0.0088 U	**0.2**	**0.0036 J**	**0.19**	**0.38**	222
Benzaldehyde	mg/kg	120,000	0.071 UJ	0.078 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	0.075 U	0.086 U	**0.021 J**	0.097 U	0.075 U	0.087 U	4.3 U
Benzo[a]pyrene	mg/kg	2.1	**30.6**	**0.37**	**0.27**	**0.06**	**0.64**	**0.67**	**0.26**	**0.01 J**	**0.036**	**0.11**	**0.052**	**0.17**	0.0088 U	**0.25**	0.0098 U	**0.42**	**0.53**	**153**
Benzo[b]fluoranthene	mg/kg	21	**42.2**	**0.53**	**0.51**	**0.099**	**0.93**	**1.3**	**0.63**	**0.013 J**	**0.076**	**0.19**	**0.11**	**0.23**	0.0088 U	**0.43**	**0.0024 J**	**0.76**	**0.84**	**189**
Benzo[g,h,i]perylene	mg/kg		**11.6**	**0.18**	**0.14**	**0.034**	**0.39**	**0.25**	**0.06**	0.075 U	**0.04**	**0.07**	**0.022**	**0.14**	0.0088 U	**0.085**	0.0098 U	**0.32**	**0.27**	**86.2**
Benzo[k]fluoranthene	mg/kg	210	**13.2**	**0.24**	**0.46**	**0.045**	**0.36**	**1.2**	**0.58**	0.075 U	**0.069**	**0.06**	**0.1**	**0.096**	0.0088 U	**0.18**	**0.0021 J**	**0.69**	**0.77**	**113**
bis(2-chloroethoxy)methane	mg/kg	2,500	0.071 U	0.078 U	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	0.075 U	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	4.3 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.071 UJ	**0.023 J**	**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	**0.11 J**	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	4.3 U
Caprolactam	mg/kg	400,000	0.18 U	0.2 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	0.19 U	0.22 U	0.22 U	0.24 U	0.19 U	0.22 U	10.8 U
Carbazole	mg/kg		**0.25 J**	**0.08 J**	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	0.075 UJ	0.086 U	0.088 U	0.097 U	0.075 U	**0.029 J**	**477**
Chrysene	mg/kg	2,100	**15.6**	**0.35**	**0.19**	**0.065**	**0.83**	**0.89**	**0.3**	**0.0074 J**	**0.036**	**0.13**	**0.05**	**0.13**	0.0088 U	**0.2**	**0.0024 J**	**0.2**	**0.38**	**196**
Dibenz[a,h]anthracene	mg/kg	2.1	**4.1**	**0.059 J**	**0.049**	**0.009**	**0.14**	**0.13**	**0.026**	0.075 U	**0.0099**	**0.024**	**0.0096**	**0.041 J**	0.0088 U	**0.032**	0.0098 U	**0.085**	**0.1**	**32**
Diethylphthalate	mg/kg	660,000	0.071 U	0.078 U	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	0.075 U	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	4.3 U
Di-n-butylphthalate	mg/kg	82,000	0.071 UJ	0.078 UJ	0.072 U	0.074 U	0.075 U	0.073 U	0.081 UJ	0.075 UJ	0.071 U	0.028 B	0.031 B	0.075 UJ	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	4.3 U
Fluoranthene	mg/kg	30,000	**7.9**	**0.63**	**0.26**	**0.073**	**2.3**	**2.5**	**0.65**	**0.011 J**	**0.039**	**0.13**	**0.075**	**0.15**	**0.00063 J**	**0.31**	**0.012**	**0.18**	**0.55**	**554**
Fluorene	mg/kg	30,000	**0.058 J**	**0.12**	**0.0053 J**	**0.0026 J**	**0.81**	**0.22**	**0.026**	0.075 U	**0.0013 J**	**0.0018 J**	**0.0027 J**	**0.0086 J**	**0.00077 J**	**0.0061 J**	**0.018**	**0.0036 J**	**0.028**	**244**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**11.8**	**0.17**	**0.15**	**0.032**	**0.39**	**0.27**	**0.067**	0.075 U	**0.029**	**0.062**	**0.023**	**0.13**	0.0088 U	**0.092**	0.0098 U	**0.3**	**0.24**	**105**
Isophorone	mg/kg	2,400	0.071 U	0.078 U	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	0.075 U	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	4.3 U
Naphthalene	mg/kg	17	**0.079**	**0.31**	**0.042**	**0.06**	**3.9**	**0.35**	**0.18**	0.075 U	**0.059**	**0.021**	**0.017**	0.056 B	0.0088 U	**0.039**	**0.63**	**0.066**	**0.34**	**3,400**
N-Nitrosodiphenylamine	mg/kg	470	0.071 U	0.078 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	0.075 UJ	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	4.3 U
Phenanthrene	mg/kg		**0.7**	**0.69**	**0.11**	**0.079**	**2.8**	**2.8**	**0.23**	0.016 B	**0.037**	**0.087**	**0.029**	**0.077**	0.0022 B	**0.083**	**0.04**	**0.056**	**0.24**	**753**
Phenol	mg/kg	250,000	**0.021 J**	0.078 U	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	0.075 U	0.086 U	0.088 U	0.097 U	0.075 U	0.087 U	**23.7**
Pyrene	mg/kg	23,000	**10.4**	**0.54**	**0.21**	**0.057**	**1.7**	**1.4**	**0.59**	**0.01 J**	**0.032**	**0.12**	**0.062**	**0.12**	0.0088 U	**0.26**	**0.0075 J**	**0.18**	**0.55**	**423**
PCBs																				
Aroclor 1242	mg/kg	0.97	0.0576 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	0.0567 U	N/A	0.0607 U	N/A	0.0619 U	N/A	N/A
Aroclor 1248	mg/kg	0.94	0.0576 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	0.0567 U	N/A	0.0607 U	N/A	0.0619 U	N/A	N/A
Aroclor 1254	mg/kg	0.97	0.0576 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	0.0567 U	N/A	0.0607 U	N/A	0.0619 U	N/A	N/A
Aroclor 1260	mg/kg	0.99	0.0576 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	0.0567 UJ	N/A	0.0607 U	N/A	0.0619 U	N/A	N/A
Aroclor 1262	mg/kg		0.0576 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	0.0567 U	N/A	0.0607 U	N/A	0.0619 U	N/A	N/A
Aroclor 1268	mg/kg		0.0576 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	0.0567 U	N/A	0.0607 U	N/A	0.0619 U	N/A	N/A
PCBs (total)	mg/kg	0.97	0.0576 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	0.0567 U	N/A	0.0607 U	N/A	0.0619 U	N/A	N/A
TPH/Oil and Grease																				
Diesel Range Organics	mg/kg	6,200	**168 J**	**77.1 J**	**27**	**49.6**	**79.1**	**138 J**	**240 J**	**39.2 J**	**19.5 J**	**24.9**	**25.5**	**254 J**	**4 J**	**9.3 J**	9.8 UJ	**19.5**	**51.4**	**19,400**
Gasoline Range Organics	mg/kg	6,200	24.6 U	9.9 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	10.9 U	10.4 U	12.1 U	11.3 U	10.2 U	12.6 U	**937**
Oil and Grease	mg/kg	6,200	**1,740**	**1,060**	**433**	**381**	**1,400**	**1,190**	**1,760**	**183**	**77.4 J**	181 B	**439**	**2,370**	**502**	**478**	**516**	**483**	**1,450**	**36,900**

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

* indicates non-validated data
^ PAH compounds were analyzed vis SIM

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte in the sample.

J: The positive result reported for this analyte is a quantitative estimate.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

Table 6
Summary of Organics Detected in Soil
Tradepoint Atlantic
Parcel A11
Sparrows Point, Maryland

Parameter	Units	PAL	A11-041-SB-15* 8/16/2016	A11-041-SB-19* 8/16/2016	A11-042-SB-1* 8/17/2016	A11-042-SB-5* 8/17/2016	A11-043-SB-1* 8/16/2016	A11-043-SB-5* 8/16/2016	A11-044-SB-1 8/12/2016	A11-044-SB-9 8/12/2016	A11-045-SB-1* 8/16/2016	A11-045-SB-6* 8/16/2016	A11-046-SB-1* 8/1/2016	A11-046-SB-6* 8/1/2016	A11-047-SB-1* 7/27/2016	A11-047-SB-5* 7/27/2016	A11-048-SB-1* 8/17/2016	A11-048-SB-5* 8/17/2016	A11-049-SB-1* 8/16/2016
Volatile Organic Compounds																			
1,1-Dichloroethane	mg/kg	16	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	**0.01**	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	0.0063 U	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
1,2-Dichlorobenzene	mg/kg	9,300	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	0.0063 U	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.0071 U	0.01 U	0.013 U	0.0061 U	0.0094 U	0.013 U	0.0097 U	0.0089 U	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U	0.0099 U	0.012 U	0.013 U	0.01 U
1,3-Dichlorobenzene	mg/kg		0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	0.0063 U	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
1,4-Dichlorobenzene	mg/kg	11	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	0.0063 U	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
2-Butanone (MEK)	mg/kg	190,000	0.0071 U	0.01 U	0.013 U	0.0061 U	**0.0024 J**	0.013 U	0.0097 U	0.0089 U	0.011 U	**0.004 J**	0.01 U	0.011 U	0.011 U	0.0099 U	0.012 U	**0.0064 J**	0.01 U
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.0071 U	0.01 U	0.013 U	0.0061 U	0.0094 U	**0.0029 J**	0.0097 U	0.0089 U	0.011 U	0.01 U	0.01 U	0.011 U	0.011 U	0.0099 U	0.012 U	0.013 U	0.01 U
Acetone	mg/kg	670,000	0.0063 B	0.0081 B	0.013 U	**0.0059 J**	0.014 B	**0.014**	0.0097 UJ	0.0089 UJ	**0.006 J**	0.023 B	0.01 U	0.011 U	0.011 U	0.0099 U	**0.014**	**0.042**	0.01 U
Benzene	mg/kg	5.1	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	**0.027**	0.0048 U	**0.0082**	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
Carbon disulfide	mg/kg	3,500	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	0.0063 U	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
Chloroform	mg/kg	1.4	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	0.0063 U	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	**0.0031 J**	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
Cyclohexane	mg/kg	27,000	0.0071 U	0.01 U	0.013 U	0.0061 U	0.0094 U	**0.0056 J**	0.0097 U	0.0089 U	0.011 U	**0.0036 J**	0.01 U	0.011 U	0.011 U	0.0099 U	0.012 U	0.013 U	0.01 U
Ethylbenzene	mg/kg	25	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	**0.018**	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
Isopropylbenzene	mg/kg	9,900	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	**0.0053 J**	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
Styrene	mg/kg	35,000	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	0.0063 U	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
Tetrachloroethene	mg/kg	100	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	0.0063 U	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
Toluene	mg/kg	47,000	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	**0.014**	0.0048 U	0.0045 U	0.0056 U	**0.0025 J**	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
trans-1,2-Dichloroethene	mg/kg	23,000	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	0.0063 U	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
Trichloroethene	mg/kg	6	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	0.0063 U	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
Vinyl chloride	mg/kg	1.7	0.0035 U	0.0052 U	0.0065 U	0.003 U	0.0047 U	0.0063 U	0.0048 U	0.0045 U	0.0056 U	0.005 U	0.0052 U	0.0057 U	0.0056 U	0.005 U	0.0059 U	0.0063 U	0.005 U
Xylenes	mg/kg	2,800	0.011 U	0.016 U	**0.0083 J**	0.0091 U	0.014 U	**0.073**	0.015 U	0.013 U	0.017 U	**0.0043 J**	0.015 U	0.017 U	0.017 U	0.015 U	0.018 U	0.019 U	0.015 U
Semi-Volatile Organic Compounds^																			
1,1-Biphenyl	mg/kg	200	0.077 U	**0.027 J**	0.081 U	0.076 U	0.079 U	**0.069 J**	**0.04 J**	**0.024 J**	0.076 U	0.074 U	**0.017 J**	**0.02 J**	0.073 U	0.083 U	0.077 U	**0.025 J**	0.075 U
2,4-Dimethylphenol	mg/kg	16,000	0.077 U	0.075 U	0.081 U	0.076 U	0.079 U	**0.099**	0.072 U	0.072 U	**0.022 J**	0.074 U	0.074 U	0.082 U	**0.016 J**	0.083 U	0.077 U	0.088 U	0.075 U
2-Chloronaphthalene	mg/kg	60,000	0.077 U	0.075 U	0.081 U	0.076 U	0.079 U	0.088 U	0.072 U	0.072 U	0.076 U	0.074 U	0.074 U	0.082 U	0.073 U	0.083 U	0.077 U	0.088 U	0.075 U
2-Methylnaphthalene	mg/kg	3,000	**0.0049 J**	**0.16**	0.08 U	**0.025**	0.078 U	**0.055**	**0.045 J**	**0.084**	0.076 U	0.073 U	**0.055**	**0.11**	**0.026 J**	**0.0041 J**	**0.015**	**0.014**	**0.021**
2-Methylphenol	mg/kg	41,000	0.077 U	0.075 U	0.081 U	0.076 U	0.079 U	0.088 U	0.072 U	0.072 U	0.076 U	0.074 U	0.074 U	0.082 U	0.073 U	0.083 U	0.077 U	0.088 U	0.075 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.15 U	0.15 U	0.16 U	0.15 U	0.16 U	0.17 U	0.14 U	0.14 U	0.15 U	0.15 U	0.15 U	**0.026 J**	0.15 U	0.17 U	0.15 U	0.18 U	0.15 U
4-Chloroaniline	mg/kg	11	0.077 U	0.075 U	0.081 U	0.076 U	0.079 U	0.088 U	0.072 U	0.072 U	0.076 U	0.074 U	0.074 U	0.082 U	0.073 U	0.083 U	0.077 U	0.088 U	0.075 U
Acenaphthene	mg/kg	45,000	**0.0021 J**	**0.23**	**0.0059 J**	**0.004 J**	0.078 U	**0.054**	**0.076**	**0.089**	0.076 U	0.15 U	**0.059**	**0.031**	**0.016 J**	**0.0031 J**	**0.038**	**0.0039 J**	**0.017**
Acenaphthylene	mg/kg	45,000	**0.0023 J**	**0.11**	0.08 U	**0.016**	0.078 U	**0.0028 J**	**0.013 J**	0.073 U	0.076 U	0.15 U	**0.064**	**0.045**	**0.039 J**	**0.0012 J**	**0.015**	**0.0074 J**	**0.014**
Acetophenone	mg/kg	120,000	0.077 U	0.075 U	0.081 U	0.076 U	0.079 U	0.088 U	0.072 U	0.072 U	0.076 U	0.074 U	0.074 U	0.082 U	0.073 U	0.083 U	0.077 U	0.088 U	0.075 U
Anthracene	mg/kg	230,000	**0.0062 J**	**1.3**	**0.012 J**	**0.022**	**0.0083 J**	**0.0077 J**	**0.11**	**0.073**	**0.0068 J**	**0.013 J**	**0.074**	**0.097**	**0.03 J**	**0.0029 J**	**0.073**	**0.025**	**0.086**
Benz[a]anthracene	mg/kg	21	**0.017**	**2.8**	**0.083**	**0.1**	**0.041 J**	**0.017**	**0.84 J**	**0.042 J**	0.076 U	**0.029 J**	**3**	**0.86**	**0.21**	**0.036**	**0.14**	**0.091**	**0.27**
Benzaldehyde	mg/kg	120,000	0.077 U	0.075 U	0.081 U	0.076 U	**0.02 J**	**0.095**	0.072 U	0.072 U	0.076 U	0.074 U	0.074 U	**0.021 J**	**0.028 J**	0.083 U	0.077 U	**0.027 J**	0.075 U
Benzo[a]pyrene	mg/kg	2.1	**0.015**	2.2	**0.1**	**0.095**	**0.032 J**	**0.016**	**1.2 J**	**0.03 J**	**0.046 J**	**0.062 J**	5.5	**1.5**	**0.23**	**0.064**	**0.16**	**0.089**	**0.21**
Benzo[b]fluoranthene	mg/kg	21	**0.033**	**4.3**	**0.21**	**0.19**	**0.07 J**	**0.041**	**2.7 J**	**0.077 J**	**0.11**	**0.18**	**9.3**	**2.4**	**0.63**	**0.14**	**0.3**	**0.13**	**0.56**
Benzo[g,h,i]perylene	mg/kg		**0.01**	**0.79**	**0.1**	**0.047**	**0.027 J**	**0.012**	**0.78 J**	0.073 UJ	**0.036 J**	**0.024 J**	**1.1**	**0.34**	**0.099**	**0.022**	**0.075**	**0.039**	**0.056**
Benzo[k]fluoranthene	mg/kg	210	**0.03**	**3.8**	**0.19**	**0.17**	**0.064 J**	**0.037**	**2.4 J**	**0.068 J**	**0.1**	**0.16**	**8.4**	2.2	**0.58**	**0.13**	**0.12**	**0.052**	**0.51**
bis(2-chloroethoxy)methane	mg/kg	2,500	0.077 U	0.075 U	0.081 U	0.076 U	0.079 U	0.088 U	0.072 U	0.072 U	0.076 U	0.074 U	0.074 U	0.082 U	0.073 U	0.083 U	0.077 U	0.088 U	0.075 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	**0.016 J**	**0.023 J**	0.081 U	0.076 U	**0.031 J**	**0.022 J**	0.027 B	0.072 UJ	**0.11**	**0.27**	**0.11**	**0.16**	**0.2**	0.083 U	0.077 U	**0.2**	0.075 U
Caprolactam	mg/kg	400,000	0.19 U	0.19 U	0.2 U	0.19 U	0.2 U	0.22 U	0.18 U	0.18 U	0.19 U	0.18 U	0.19 U	0.21 U	0.18 U	0.21 U	0.19 U	0.22 U	0.19 U
Carbazole	mg/kg		0.077 U	**0.28**	0.081 U	0.076 U	0.079 U	**0.11**	**0.058 J**	0.072 UJ	0.076 U	0.074 U	**0.052 J**	**0.063 J**	**0.018 J**	0.083 U	0.077 U	0.088 U	0.075 U
Chrysene	mg/kg	2,100	**0.017**	**2.7**	**0.079 J**	**0.1**	**0.031 J**	**0.023**	**1.2 J**	**0.033 J**	**0.14**	**0.1**	**3.7**	**1**	**0.28**	**0.041**	**0.17**	**0.089**	**0.26**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.0034 J**	**0.42**	**0.021 J**	**0.017**	0.078 U	**0.0036 J**	**0.22 J**	0.073 UJ	0.076 U	0.073 U	**0.44**	**0.15**	**0.033 J**	**0.0063 J**	**0.024**	**0.013**	**0.029**
Diethylphthalate	mg/kg	660,000	0.077 U	0.075 U	0.081 U	0.076 U	0.079 U	0.088 U	0.072 U	0.072 U	0.076 U	0.074 U	0.074 U	0.082 U	0.073 U	0.083 U	0.077 U	0.088 U	0.075 U
Di-n-butylphthalate	mg/kg	82,000	0.077 U	0.075 U	0.081 U	0.076 U	0.079 U	0.088 U	0.072 UJ	0.072 UJ	0.076 U	0.074 U	0.044 B	0.033 B	0.029 B	0.028 B	0.077 U	0.088 U	0.075 U
Fluoranthene	mg/kg	30,000	**0.035**	**5.6**	**0.082**	**0.24**	**0.047 J**	**0.042**	**0.87**	**0.059 J**	**0.019 J**	**0.057 J**	**2.7**	**0.88**	**0.38**	**0.038**	**0.28**	**0.15**	**0.43**
Fluorene	mg/kg	30,000	**0.0024 J**	**0.4**	0.08 U	**0.006 J**	0.078 U	**0.034**	**0.025 J**	**0.17**	0.076 U	0.15 U	**0.018**	**0.046**	**0.015 J**	**0.0017 J**	**0.035**	**0.0056 J**	**0.02**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.0092**	**0.94**	**0.061 J**	**0.047**	**0.018 J**	**0.01**	**0.71 J**	0.073 UJ	0.076 U	0.073 U	**1.1**	**0.37**	**0.094**	**0.021**	**0.074**	**0.04**	**0.063**
Isophorone	mg/kg	2,400	0.077 U	0.075 U	0.081 U	0.076 U	0.079 U	0.088 U	0.072 U	0.072 U	0.076 U	0.074 U	0.074 U	0.082 U	0.073 U	0.083 U	0.077 U	0.088 U	0.075 U
Naphthalene	mg/kg	17	**0.011**	**0.23**	0.08 U	**0.038**	0.078 U	**0.93**	**0.079**	**0.23**	0.076 U	**0.04 J**	**0.079**	**0.11**	**0.041 J**	**0.016**	**0.015**	**0.037**	**0.022**
N-Nitrosodiphenylamine	mg/kg	470	0.077 U	0.075 U	0.081 U	0.076 U	0.079 U	0.088 U	0.072 UJ	0.072 UJ	0.076 U	0.074 U	0.074 U	0.082 U	0.073 U	0.083 U	0.077 U	0.088 U	0.075 U
Phenanthrene	mg/kg		**0.022**	**4.1**	**0.049 J**	**0.093**	**0.029 J**	**0.043**	**0.53**	**0.47**	**0.021 J**	**0.056 J**	**0.33**	**0.47**	**0.14**	**0.012**	**0.24**	**0.064**	**0.27**
Phenol	mg/kg	250,000	0.077 U	0.075 U	0.081 U	0.076 U	0.079 U	**0.068 J**	0.072 U	0.072 U	0.076 U	0.074 U	0.074 U	0.082 U	0.073 U	0.083 U	0.077 U	0.088 U	0.075 U
Pyrene	mg/kg	23,000	**0.029**	**4.4**	**0.084**	**0.18**	**0.046 J**	**0.036**	**0.68**	**0.043 J**	**0.055 J**	**0.072 J**	**3.2**	**0.91**	**0.38**	**0.038**	**0.23**	**0.12**	**0.32**
PCBs																			
Aroclor 1242	mg/kg	0.97	0.0597 U	N/A	0.0621 U	N/A	0.0595 U	N/A	0.0534 U	N/A	0.0549 U	N/A	0.0548 U	N/A	0.0562 U	N/A	0.055 U	N/A	0.0643 U
Aroclor 1248	mg/kg	0.94	0.0597 U	N/A	0.0621 U	N/A	0.0595 U	N/A	0.0534 U	N/A	0.0549 U	N/A	**0.0844**	N/A	0.0562 U	N/A	0.055 U	N/A	0.0643 U
Aroclor 1254	mg/kg	0.97	0.0597 U	N/A	0.0621 U	N/A	0.0595 U	N/A	0.0534 U	N/A	**0.155**	N/A	**0.0638**	N/A	0.0562 U	N/A	0.055 U	N/A	0.0643 U
Aroclor 1260	mg/kg	0.99	0.0597 U	N/A	0.0621 U	N/A	0.0595 U	N/A	**0.0412 J**	N/A	0.0549 U	N/A	0.0548 U	N/A	0.0562 U	N/A	0.055 U	N/A	0.0643 U
Aroclor 1262	mg/kg		0.0597 U	N/A	0.0621 U	N/A	0.0595 U	N/A	0.0534 U	N/A	0.0549 U	N/A	**0.102**	N/A	0.0562 U	N/A	0.055 U	N/A	0.0643 U
Aroclor 1268	mg/kg		0.0597 U	N/A	0.0621 U	N/A	0.0595 U	N/A	0.0534 U	N/A	0.0549 U	N/A	0.0548 U	N/A	0.0562 U	N/A	0.055 U	N/A	0.0643 U
PCBs (total)	mg/kg	0.97	0.0597 U	N/A	0.0621 U	N/A	0.0595 U	N/A	**0.0412 J**	N/A	**0.155**	N/A	**0.2502**	N/A	0.0562 U	N/A	0.055 U	N/A	0.0643 U
TPH/Oil and Grease																			
Diesel Range Organics	mg/kg	6,200	**24.7**	**84.4**	**17.8**	**20.7**	**38.6**	**325**	**73.8 J**	**10.3 J**	**322**	**304**	**72.2**	**67.8**	**145**	**59.4**	**29.7**	**53.9**	**13.3**
Gasoline Range Organics	mg/kg	6,200	7.3 U	12 U	11.7 U	12.5 U	11.1 U	12.3 U	11.1 U	7.9 U	12.2 U	11.5 U	12.4 U	11 U	10.8 U	9.7 U	10.4 U	11.9 U	11.6 U
Oil and Grease	mg/kg	6,200	**467**	**966**	**1,550**	**1,010**	**796**	**2,550**	**822**	**1,010**	59,800	32,000	**698**	**910**	22,000	**566**	**1,350**	**839**	**406**

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

* indicates non-validated data
^ PAH compounds were analyzed vis SIM

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte in the sample.

J: The positive result reported for this analyte is a quantitative estimate.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

Table 6
Summary of Organics Detected in Soil
Tradepoint Atlantic
Parcel A11
Sparrows Point, Maryland

Parameter	Units	PAL	A11-049-SB-8* 8/16/2016	A11-050-SB-1* 8/1/2016	A11-050-SB-4* 8/1/2016	A11-051-SB-1 8/12/2016	A11-051-SB-5 8/12/2016	A11-052-SB-12 8/11/2016	A11-052-SB-19 8/11/2016	A11-052-SB-21 8/11/2016	A11-053-SB-1* 8/9/2016	A11-053-SB-9* 8/9/2016	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	A11-057-SB-1 8/10/2016
Volatile Organic Compounds																			
1,1-Dichloroethane	mg/kg	16	0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 UJ	0.0037 UJ	N/A	0.0046 U	0.0051 U	0.0048 U	**0.0032 J**	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U
1,2-Dichlorobenzene	mg/kg	9,300	0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U
1,2-Dichloroethene (Total)	mg/kg	2,300	0.013 U	0.0095 U	0.0097 U	0.0086 U	0.015 U	0.013 U	0.0074 U	N/A	0.0092 U	0.01 U	0.0097 U	0.013 U	0.0094 U	**14.1**	0.0091 U	0.0099 U	0.0091 U
1,3-Dichlorobenzene	mg/kg		0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U
1,4-Dichlorobenzene	mg/kg	11	0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U
2-Butanone (MEK)	mg/kg	190,000	0.013 U	0.0095 U	0.0097 U	0.0086 U	0.015 U	0.013 U	0.0074 U	N/A	0.0092 U	0.01 U	0.0097 U	0.013 U	0.0094 U	0.013 U	0.0091 U	0.0099 U	0.0091 U
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.013 U	0.0095 U	0.0097 U	0.0086 U	0.015 U	0.013 U	0.0074 U	N/A	0.0092 U	0.01 U	0.0097 U	0.013 U	0.0094 U	0.013 U	0.0091 U	0.0099 U	0.0091 U
Acetone	mg/kg	670,000	**0.021**	0.0095 U	**0.014**	0.0086 UJ	0.015 UJ	**0.043 J**	0.0088 B	N/A	0.0092 U	0.01 U	0.0097 U	0.013 U	**0.031**	**0.011 J**	0.0091 U	0.0099 U	0.0092 B
Benzene	mg/kg	5.1	**0.0049 J**	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	**0.013**	**0.0052 J**	**0.002 J**	**0.015**	**0.0021 J**	0.005 U	0.0046 U
Carbon disulfide	mg/kg	3,500	0.0066 U	0.0048 U	**0.004 J**	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	**0.012**	0.0048 U	0.0064 U	0.0047 U	**0.0044 J**	0.0045 U	**0.0036 J**	0.0046 U
Chloroform	mg/kg	1.4	0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U
cis-1,2-Dichloroethene	mg/kg	2,300	0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	**14.1**	0.0045 U	0.005 U	0.0046 U
Cyclohexane	mg/kg	27,000	0.013 U	0.0095 U	0.0097 U	0.0086 U	0.015 U	0.013 U	0.0074 U	N/A	0.0092 U	0.01 U	0.0097 U	0.013 U	0.0094 U	0.013 U	0.0091 U	0.0099 U	0.0091 U
Ethylbenzene	mg/kg	25	**0.0024 J**	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U
Isopropylbenzene	mg/kg	9,900	0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U
Styrene	mg/kg	35,000	0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U
Tetrachloroethene	mg/kg	100	0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	0.0066 U	0.0045 U	0.005 U	0.0046 U
Toluene	mg/kg	47,000	**0.0059 J**	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	**0.0027 J**	0.0064 U	0.0047 U	**0.0064 J**	0.0045 U	0.005 U	0.0046 U
trans-1,2-Dichloroethene	mg/kg	23,000	0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	**0.016**	0.0045 U	0.005 U	0.0046 U
Trichloroethene	mg/kg	6	0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	**0.11**	0.0045 U	0.005 U	0.0046 U
Vinyl chloride	mg/kg	1.7	0.0066 U	0.0048 U	0.0048 U	0.0043 U	0.0074 U	0.0063 U	0.0037 U	N/A	0.0046 U	0.0051 U	0.0048 U	0.0064 U	0.0047 U	**0.22**	0.0045 U	0.005 U	0.0046 U
Xylenes	mg/kg	2,800	0.02 U	0.014 U	0.015 U	0.013 U	0.022 U	0.019 U	0.011 U	N/A	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
Semi-Volatile Organic Compounds^																			
1,1-Biphenyl	mg/kg	200	0.078 U	0.074 U	**0.063 J**	**0.038 J**	**0.023 J**	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	**0.034 J**	0.072 U	**0.089**	**0.041 J**	0.079 U	**0.049 J**
2,4-Dimethylphenol	mg/kg	16,000	0.078 U	0.074 U	**0.18**	0.07 U	**0.031 J**	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	0.086 U	0.072 U	**0.18**	0.071 U	**0.15**	0.073 R
2-Chloronaphthalene	mg/kg	60,000	0.078 U	0.074 U	0.074 U	0.07 U	0.084 U	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	0.086 U	0.072 U	0.088 U	0.071 U	0.079 U	0.073 U
2-Methylnaphthalene	mg/kg	3,000	**0.0036 J**	**0.092**	**0.25**	**0.03 J**	**0.085**	**0.0034 J**	**0.048**	N/A	0.07 U	0.079 U	**0.037 J**	**0.035**	**0.023**	**0.012**	**0.023**	**0.037**	**0.021 J**
2-Methylphenol	mg/kg	41,000	0.078 U	0.074 U	**0.081**	0.07 U	**0.017 J**	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	0.086 U	0.072 U	**0.091**	0.071 U	0.079 U	0.073 R
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.16 U	0.15 U	**0.16**	0.14 U	**0.051 J**	0.14 U	0.16 U	N/A	0.14 U	0.15 U	0.14 U	0.17 U	0.14 U	**0.15 J**	0.14 U	**0.041 J**	0.14 R
4-Chloroaniline	mg/kg	11	0.078 U	0.074 U	0.074 U	0.07 U	0.084 U	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	0.086 U	0.072 U	0.088 U	0.071 U	0.079 U	0.073 U
Acenaphthene	mg/kg	45,000	**0.00067 J**	**0.0048 J**	**0.13**	**0.025 J**	**0.02 J**	**0.0031 J**	**0.034**	N/A	**0.044 J**	0.079 U	**0.041 J**	**0.015**	**0.0034 J**	**0.00059 J**	**0.018**	**0.019**	**0.022 J**
Acenaphthylene	mg/kg	45,000	0.0078 U	**0.013**	**0.052**	**0.0074 J**	**0.018 J**	**0.017**	**0.056**	N/A	**0.016 J**	0.079 U	**0.1**	**0.0084 J**	**0.0034 J**	0.0087 U	**0.012**	**0.0078 J**	**0.014 J**
Acetophenone	mg/kg	120,000	0.078 U	0.074 U	**0.028 J**	0.07 U	0.084 U	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	0.086 U	0.072 U	**0.22**	0.071 U	0.079 U	0.073 U
Anthracene	mg/kg	230,000	**0.0012 J**	**0.016**	**0.2**	**0.045 J**	**0.097**	**0.01**	**0.17**	N/A	**0.058 J**	0.079 U	**0.12**	**0.018**	**0.008**	**0.0027 J**	**0.038**	**0.012**	**0.045**
Benz[a]anthracene	mg/kg	21	**0.0028 J**	**0.044**	**0.48**	**1.2 J**	**0.12 J**	**0.11**	**0.52**	N/A	**1.1**	0.079 U	**0.25**	**0.089**	**0.024**	**0.0017 J**	**0.16**	**0.031**	**0.22**
Benzaldehyde	mg/kg	120,000	0.078 U	0.074 U	0.074 U	0.07 U	**0.025 J**	0.072 U	**0.027 J**	N/A	0.07 U	0.077 U	0.071 U	0.086 U	0.072 U	**0.035 J**	0.071 U	0.079 U	0.073 UJ
Benzo[a]pyrene	mg/kg	2.1	**0.0022 J**	**0.05**	**0.44**	**2.2 J**	**0.14 J**	**0.19**	**0.45**	**1.3**	**2.5**	0.079 U	**0.26**	**0.12**	**0.031**	**0.0012 J**	**0.24**	**0.035**	**0.3**
Benzo[b]fluoranthene	mg/kg	21	**0.0048 J**	**0.089**	**0.9**	**3.9 J**	**0.29 J**	**0.37**	**1**	N/A	**3.1**	**0.014 J**	**0.37**	**0.18**	**0.051**	**0.0043 J**	**0.56**	**0.08**	**0.45**
Benzo[g,h,i]perylene	mg/kg		**0.0017 J**	**0.044**	**0.19**	**1.3 J**	**0.1 J**	**0.053**	**0.11**	N/A	**1.9**	0.079 U	**0.23**	**0.072**	**0.02**	**0.0011 J**	**0.1**	**0.015**	**0.27 J**
Benzo[k]fluoranthene	mg/kg	210	**0.0044 J**	**0.031**	**0.82**	**3.4 J**	**0.26 J**	**0.33**	**0.93**	N/A	**1.2**	0.079 U	**0.17**	**0.067**	**0.021**	**0.0039 J**	**0.52**	**0.074**	**0.18**
bis(2-chloroethoxy)methane	mg/kg	2,500	0.078 U	0.074 U	0.074 U	0.07 U	0.084 U	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	0.086 U	0.072 U	0.088 U	0.071 U	0.079 U	0.073 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.078 U	**0.046 J**	**0.35**	0.024 B	0.084 UJ	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	0.086 U	0.072 U	0.088 U	0.071 U	0.079 U	0.073 UJ
Caprolactam	mg/kg	400,000	0.2 U	0.18 U	0.19 U	0.18 U	0.21 U	0.18 U	0.2 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
Carbazole	mg/kg		0.078 U	0.074 U	**0.38**	**0.019 J**	**0.023 J**	0.072 U	**0.08 J**	N/A	**0.038 J**	0.077 U	0.071 U	0.086 U	0.072 U	0.088 U	**0.023 J**	0.079 U	**0.02 J**
Chrysene	mg/kg	2,100	**0.0023 J**	**0.065**	**0.48**	**1.5 J**	**0.2 J**	**0.13**	**0.49**	N/A	**1.4**	**0.0076 J**	**0.31**	**0.12**	**0.037**	**0.0029 J**	**0.22**	**0.042**	**0.28 J**
Dibenz[a,h]anthracene	mg/kg	2.1	0.0078 U	**0.013**	**0.08**	**0.42 J**	**0.029 J**	**0.016**	**0.047**	N/A	**0.46**	0.079 U	**0.067 J**	**0.018**	**0.0048 J**	0.0087 U	**0.029**	**0.0054 J**	**0.08**
Diethylphthalate	mg/kg	660,000	0.078 U	0.074 U	0.074 U	0.07 U	0.084 U	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	0.086 U	0.072 U	0.088 U	0.071 U	0.079 U	0.073 U
Di-n-butylphthalate	mg/kg	82,000	0.078 U	0.029 B	0.028 B	0.07 UJ	0.084 UJ	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	0.086 U	0.072 U	0.088 U	0.071 U	0.079 U	0.073 UJ
Fluoranthene	mg/kg	30,000	**0.0042 J**	**0.08**	**0.99**	**0.58**	**0.16**	**0.11**	**1.2**	N/A	**0.71**	**0.01 J**	**0.4**	**0.13**	**0.043**	**0.0092**	**0.3**	**0.054**	**0.34 J**
Fluorene	mg/kg	30,000	0.0078 U	**0.0058 J**	**0.36**	**0.0063 J**	**0.029 J**	**0.0019 J**	**0.048**	N/A	**0.012 J**	0.079 U	**0.073**	**0.0051 J**	**0.0016 J**	**0.0013 J**	**0.0069 J**	**0.01**	**0.0092 J**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.0014 J**	**0.038**	**0.2**	**1.2 J**	**0.084 J**	**0.056**	**0.12**	N/A	**1.6**	0.079 U	**0.21**	**0.066**	**0.018**	0.0087 U	**0.1**	**0.015**	**0.26 J**
Isophorone	mg/kg	2,400	0.078 U	0.074 U	0.074 U	0.07 U	0.084 U	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	0.086 U	0.072 U	0.088 U	0.071 U	0.079 U	0.073 U
Naphthalene	mg/kg	17	**0.024**	**0.08**	**1.4**	0.038 B	0.069 B	**0.012**	**0.085**	N/A	**0.048 J**	0.079 U	**0.51**	**0.25**	**0.027**	**0.14**	**0.11**	**0.13**	**0.1 J**
N-Nitrosodiphenylamine	mg/kg	470	0.078 U	0.074 U	0.074 U	0.07 UJ	0.084 UJ	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	**0.022 J**	0.072 U	0.088 U	0.071 U	0.079 U	0.073 U
Phenanthrene	mg/kg		**0.0045 J**	**0.093**	**0.84**	**0.16**	**0.35**	**0.028**	**0.54**	N/A	**0.13**	**0.012 J**	**0.3**	**0.055**	**0.048**	**0.02**	**0.23**	**0.05**	**0.24**
Phenol	mg/kg	250,000	0.078 U	0.074 U	0.074 U	0.07 U	**0.024 J**	0.072 U	0.081 U	N/A	0.07 U	0.077 U	0.071 U	0.086 U	0.072 U	**0.024 J**	0.071 U	0.079 U	0.073 R
Pyrene	mg/kg	23,000	**0.0033 J**	**0.076**	**0.83**	**0.64**	**0.13**	**0.11**	**1**	N/A	**0.86**	**0.012 J**	**0.4**	**0.17**	**0.037**	**0.0055 J**	**0.23**	**0.052**	**0.34 J**
PCBs																			
Aroclor 1242	mg/kg	0.97	N/A	0.0563 U	N/A	0.0531 U	N/A	0.0539 U	N/A	N/A	0.0525 U	N/A	0.0613 U	N/A	0.0529 U	N/A	0.0556 U	N/A	0.0524 U
Aroclor 1248	mg/kg	0.94	N/A	0.0563 U	N/A	0.0531 U	N/A	0.0539 UJ	N/A	N/A	0.0525 U	N/A	0.0613 U	N/A	0.0529 U	N/A	0.0556 U	N/A	0.0524 U
Aroclor 1254	mg/kg	0.97	N/A	**0.0504 J**	N/A	0.0531 U	N/A	0.0539 U	N/A	N/A	0.0525 U	N/A	0.0613 U	N/A	0.0529 U	N/A	0.0556 U	N/A	0.0524 U
Aroclor 1260	mg/kg	0.99	N/A	0.0563 U	N/A	0.0531 U	N/A	0.0539 UJ	N/A	N/A	0.0525 U	N/A	0.0613 U	N/A	0.0529 U	N/A	0.0556 U	N/A	0.0524 U
Aroclor 1262	mg/kg		N/A	0.0563 U	N/A	0.0531 U	N/A	0.0539 U	N/A	N/A	0.0525 U	N/A	0.0613 U	N/A	0.0529 U	N/A	0.0556 U	N/A	0.0524 U
Aroclor 1268	mg/kg		N/A	0.0563 U	N/A	0.0531 U	N/A	0.0539 U	N/A	N/A	0.0525 U	N/A	0.0613 U	N/A	0.0529 U	N/A	0.0556 U	N/A	0.0524 U
PCBs (total)	mg/kg	0.97	N/A	**0.0504 J**	N/A	0.0531 U	N/A	0.0539 U	N/A	N/A	0.0525 U	N/A	0.0613 U	N/A	0.0529 U	N/A	0.0556 U	N/A	0.0524 U
TPH/Oil and Grease																			
Diesel Range Organics	mg/kg	6,200	**5 J**	**121**	**122**	**79.9 J**	**67.5 J**	**15.9 J**	**55.8 J**	N/A	**54.3**	**29.8**	**32.1**	**176**	**39.5**	**74.1**	**91.7**	**43.7**	**92.7 J**
Gasoline Range Organics	mg/kg	6,200	15.9 U	7.8 U	11.3 U	9.8 U	15.2 U	11.2 U	11.8 U	N/A	10.7 U	11.2 U	11.8 U	14.3 U	11.5 U	11.2 U	11.2 U	11.1 U	8.9 U
Oil and Grease	mg/kg	6,200	**2,090**	**988**	**1,240**	**797**	**1,510**	**597**	**788**	N/A	**714**	**809**	**861**	**997**	**199**	**1,510**	**423**	**1,060**	**493**

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

* indicates non-validated data
^ PAH compounds were analyzed vis SIM

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte in the sample.

J: The positive result reported for this analyte is a quantitative estimate.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

Table 6
Summary of Organics Detected in Soil
Tradepoint Atlantic
Parcel A11
Sparrows Point, Maryland

Parameter	Units	PAL	A11-057-SB-5 8/10/2016	A11-058-SB-1* 8/16/2016	A11-058-SB-6.5* 8/16/2016	A11-059-SB-1 8/12/2016	A11-059-SB-9 8/12/2016	A11-060-SB-1 8/12/2016	A11-060-SB-4 8/12/2016	A11-061-SB-1 8/12/2016	A11-061-SB-4 8/12/2016	A11-062-SB-1* 8/1/2016	A11-062-SB-4.5* 8/1/2016
Volatile Organic Compounds													
1,1-Dichloroethane	mg/kg	16	**0.0092**	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
1,2-Dibromo-3-chloropropane	mg/kg	0.064	0.0058 U	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
1,2-Dichlorobenzene	mg/kg	9,300	0.0058 U	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
1,2-Dichloroethene (Total)	mg/kg	2,300	**0.0083 J**	0.008 U	0.012 U	0.0098 U	0.0088 U	0.0091 U	0.01 U	0.0098 U	0.0064 U	0.011 U	0.01 U
1,3-Dichlorobenzene	mg/kg		0.0058 U	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
1,4-Dichlorobenzene	mg/kg	11	0.0058 U	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
2-Butanone (MEK)	mg/kg	190,000	**0.0075 J**	0.008 U	0.012 U	0.0098 U	0.0088 U	0.0091 U	0.01 U	0.0098 U	**0.014**	0.011 U	0.01 U
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.012 U	0.008 U	0.012 U	0.0098 U	0.0088 U	0.0091 U	0.01 U	0.0098 U	0.0064 U	0.011 U	0.01 U
Acetone	mg/kg	670,000	0.024 B	0.008 U	**0.0097 J**	0.0098 UJ	0.0088 UJ	0.0091 UJ	0.01 UJ	0.0098 UJ	**0.051 J**	**0.017**	0.01 U
Benzene	mg/kg	5.1	**6**	0.004 U	0.0059 U	0.0049 U	**0.0022 J**	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
Carbon disulfide	mg/kg	3,500	0.0058 U	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	**0.0034 J**	0.0049 U	**0.01**	0.0054 U	0.0051 U
Chloroform	mg/kg	1.4	0.0058 U	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
cis-1,2-Dichloroethene	mg/kg	2,300	**0.0083**	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
Cyclohexane	mg/kg	27,000	**0.012 J**	0.008 U	0.012 U	0.0098 U	0.0088 U	0.0091 U	0.01 U	0.0098 U	0.0064 U	0.011 U	0.01 U
Ethylbenzene	mg/kg	25	**0.13**	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
Isopropylbenzene	mg/kg	9,900	**0.13**	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
Styrene	mg/kg	35,000	**0.062**	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
Tetrachloroethene	mg/kg	100	**0.071**	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
Toluene	mg/kg	47,000	**29.2**	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0018 B	0.0054 U	0.0051 U
trans-1,2-Dichloroethene	mg/kg	23,000	0.0058 U	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
Trichloroethene	mg/kg	6	**0.025**	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
Vinyl chloride	mg/kg	1.7	0.0058 U	0.004 U	0.0059 U	0.0049 U	0.0044 U	0.0046 U	0.005 U	0.0049 U	0.0032 U	0.0054 U	0.0051 U
Xylenes	mg/kg	2,800	**19.3**	0.012 U	**0.0076 J**	0.015 U	0.013 U	0.014 U	0.015 U	0.015 U	0.0095 U	0.016 U	0.015 U
Semi-Volatile Organic Compounds^													
1,1-Biphenyl	mg/kg	200	**2**	0.071 U	**0.25**	**0.038 J**	**0.18 J**	0.074 U	**0.049 J**	0.07 U	**0.018 J**	0.069 U	0.069 U
2,4-Dimethylphenol	mg/kg	16,000	**0.99**	0.071 U	**0.46**	0.072 UJ	**0.098 J**	0.074 U	**0.018 J**	0.07 U	0.075 U	0.069 U	0.069 U
2-Chloronaphthalene	mg/kg	60,000	0.4 U	0.071 U	0.087 U	0.072 U	0.078 U	0.074 U	0.074 U	0.07 U	0.075 U	0.069 U	0.069 U
2-Methylnaphthalene	mg/kg	3,000	**17.4**	0.073 U	**2.4**	**0.058**	**0.74**	0.074 U	**0.035**	**0.0083**	**0.055**	**0.0044 J**	**0.015**
2-Methylphenol	mg/kg	41,000	**0.12 J**	0.071 U	0.087 U	0.072 UJ	**0.016 J**	0.074 U	0.074 R	0.07 U	0.075 U	0.069 U	0.069 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	**0.54 J**	0.14 U	**0.12 J**	0.14 UJ	**0.076 J**	0.15 U	**0.026 J**	0.14 U	**0.033 J**	0.14 U	0.14 U
4-Chloroaniline	mg/kg	11	0.4 U	0.071 U	0.087 U	0.072 U	0.078 U	0.074 U	0.074 U	0.07 U	**0.13 J**	0.069 U	0.069 U
Acenaphthene	mg/kg	45,000	**2.8**	**0.0049 J**	**2.8**	**0.043**	**0.84**	0.074 U	**0.016**	**0.014**	**0.056**	0.0069 U	**0.00076 J**
Acenaphthylene	mg/kg	45,000	**13.5**	**0.011 J**	**0.42**	**0.013**	**0.18**	**0.0065 J**	**0.011**	**0.014**	**0.016**	0.0069 U	**0.0011 J**
Acetophenone	mg/kg	120,000	**2.1**	0.071 U	**0.023 J**	0.072 U	0.078 U	0.074 U	0.074 U	0.07 U	0.075 U	0.069 U	0.069 U
Anthracene	mg/kg	230,000	**15.3**	**0.0099 J**	**9.8**	**0.043 J**	**1.5**	**0.013 J**	**0.28**	**0.05**	**0.18**	**0.0011 J**	**0.0019 J**
Benz[a]anthracene	mg/kg	21	**23.6**	**0.16**	**5**	**0.4**	**2.6 J**	**0.085 J**	**0.39**	**0.17**	**0.28 J**	**0.0034 J**	**0.0062 J**
Benzaldehyde	mg/kg	120,000	0.4 UJ	0.071 U	**0.05 J**	0.072 U	0.078 U	0.074 U	**0.023 J**	0.07 U	0.075 U	0.069 U	0.069 U
Benzo[a]pyrene	mg/kg	2.1	**24.4**	**0.24**	**2.5**	**0.65**	**2.5 J**	**0.094 J**	**0.65**	**0.19**	**0.19 J**	**0.0023 J**	**0.0065 J**
Benzo[b]fluoranthene	mg/kg	21	**50.5**	**0.48**	**4.8**	**1**	**4.6 J**	**0.18 J**	**1.4**	**0.34**	**0.5 J**	**0.0077**	**0.018**
Benzo[g,h,i]perylene	mg/kg		**6.4**	**0.17**	**0.68**	**0.19**	**1.1 J**	**0.065 J**	**0.24**	**0.14**	**0.13 J**	**0.0015 J**	**0.0037 J**
Benzo[k]fluoranthene	mg/kg	210	**46**	**0.43**	**4.3**	**1.4**	**4 J**	**0.16 J**	**1.3**	**0.3**	**0.44 J**	**0.007**	**0.016**
bis(2-chloroethoxy)methane	mg/kg	2,500	0.4 U	0.071 U	0.087 U	0.072 U	0.078 U	0.074 U	0.074 U	0.07 U	0.075 U	0.069 U	0.069 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.4 UJ	0.071 U	0.087 U	**0.18 J**	0.078 UJ	0.074 U	0.074 U	0.07 U	**1.4 J**	0.069 U	0.069 U
Caprolactam	mg/kg	400,000	1 U	0.18 U	0.22 U	0.18 U	0.2 U	0.18 U	0.19 U	0.18 U	0.19 U	0.17 U	0.17 U
Carbazole	mg/kg		**1.9**	0.071 U	**0.42**	**0.032 J**	**0.41 J**	0.074 U	**0.024 J**	**0.025 J**	**0.23 J**	0.069 U	0.069 U
Chrysene	mg/kg	2,100	**22.5**	**0.18**	**4.6**	**0.54**	**3.1 J**	**0.077 J**	**0.47**	**0.17**	**0.41 J**	**0.0058 J**	**0.0096**
Dibenz[a,h]anthracene	mg/kg	2.1	**3.4**	**0.043 J**	**0.3**	**0.075**	**0.35 J**	0.074 UJ	**0.063**	**0.05**	**0.043 J**	0.0069 U	**0.0014 J**
Diethylphthalate	mg/kg	660,000	0.4 U	0.071 U	0.087 U	0.072 U	**0.64 J**	0.074 U	0.074 U	0.07 U	0.075 U	0.069 U	0.069 U
Di-n-butylphthalate	mg/kg	82,000	0.4 UJ	0.071 U	0.087 U	0.072 UJ	0.078 UJ	0.074 U	0.074 U	0.07 U	**0.02 J**	0.069 U	0.069 U
Fluoranthene	mg/kg	30,000	**62.3**	**0.14**	**17.6**	**0.45**	**4.2**	**0.066 J**	**0.44**	**0.35**	**0.38**	**0.0072**	**0.0096**
Fluorene	mg/kg	30,000	**18.5**	0.073 U	**4.2**	**0.013**	**1.2**	0.074 U	**0.017**	**0.01**	**0.11**	**0.00067 J**	**0.00062 J**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**6.8**	**0.14**	**0.79**	**0.21**	**1.1 J**	**0.054 J**	**0.23**	**0.14**	**0.086 J**	**0.0014 J**	**0.0035 J**
Isophorone	mg/kg	2,400	0.4 U	0.071 U	0.087 U	0.072 U	0.078 U	0.074 U	0.074 U	0.07 U	0.075 U	0.069 U	0.069 U
Naphthalene	mg/kg	17	**101**	**0.038 J**	**3.5**	**0.077**	**1.1**	0.074 U	**0.16**	**0.017**	**0.1**	**0.011**	**0.015**
N-Nitrosodiphenylamine	mg/kg	470	0.4 U	0.071 U	0.087 U	0.072 UJ	0.078 UJ	0.074 U	0.074 U	0.07 U	0.075 U	0.069 U	0.069 U
Phenanthrene	mg/kg		**54.6**	**0.049 J**	**19.3**	**0.22**	**6.2**	**0.045 J**	**0.14**	**0.21**	**0.68**	**0.0097**	**0.012**
Phenol	mg/kg	250,000	**0.29 J**	0.071 U	**0.032 J**	0.072 UJ	**0.098 J**	0.074 U	0.074 R	0.07 U	0.075 U	0.069 U	0.069 U
Pyrene	mg/kg	23,000	**53.2**	**0.15**	**12**	**0.45**	**3.3**	**0.06 J**	**0.44**	**0.27**	**0.36**	**0.0051 J**	**0.0082**
PCBs													
Aroclor 1242	mg/kg	0.97	N/A	0.0537 U	N/A	0.0537 U	N/A	0.0546 U	N/A	0.0636 U	N/A	0.0515 U	N/A
Aroclor 1248	mg/kg	0.94	N/A	0.0537 U	N/A	**0.157**	N/A	0.0546 U	N/A	0.0636 U	N/A	0.0515 U	N/A
Aroclor 1254	mg/kg	0.97	N/A	0.0537 U	N/A	**0.373**	N/A	0.0546 U	N/A	0.0636 U	N/A	0.0515 U	N/A
Aroclor 1260	mg/kg	0.99	N/A	0.0537 U	N/A	**0.165**	N/A	0.0546 U	N/A	0.0636 U	N/A	0.0515 U	N/A
Aroclor 1262	mg/kg		N/A	0.0537 U	N/A	0.0537 U	N/A	0.0546 U	N/A	**0.0798**	N/A	0.0515 U	N/A
Aroclor 1268	mg/kg		N/A	0.0537 U	N/A	0.0537 U	N/A	0.0546 U	N/A	0.0636 U	N/A	0.0515 U	N/A
PCBs (total)	mg/kg	0.97	N/A	0.0537 U	N/A	**0.695**	N/A	0.0546 U	N/A	**0.0798**	N/A	0.0515 U	N/A
TPH/Oil and Grease													
Diesel Range Organics	mg/kg	6,200	**9,370 J**	**45.5**	**225**	**351 J**	**1,620 J**	**5.2 J**	**6.1 J**	**8.9 J**	**695 J**	**14.8**	**13.9**
Gasoline Range Organics	mg/kg	6,200	**119**	9.4 U	11.8 U	10.2 U	**26.4**	10 U	7.6 U	11.4 U	6.4 U	11.4 U	11.9 U
Oil and Grease	mg/kg	6,200	**50,600**	**757**	**1,550**	**2,000**	**8,120**	**405**	**895**	**520**	**24,100**	**331**	**293**

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

* indicates non-validated data
^ PAH compounds were analyzed vis SIM

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte in the sample.

J: The positive result reported for this analyte is a quantitative estimate.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

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	A11-004-SB-1 7/29/2016
Metals										
Aluminum	mg/kg	1,100,000	**14,300**	**14,400**	**39,300**	**16,500**	N/A	**34,100**	**12,700**	**26,400**
Antimony	mg/kg	470	2.5 U	2.5 U	2.9 U	2.8 U	N/A	2.5 U	**13.9**	3.1 UJ
Arsenic	mg/kg	3	**4.6**	**3.1**	**2.4**	**7.9**	**4.3**	**4.9**	**7.5**	**9.2**
Barium	mg/kg	220,000	**70.5**	**69.4**	**528**	**171**	N/A	**294**	**66.9**	**360 J**
Beryllium	mg/kg	2,300	**0.68 J**	**0.56 J**	**4.9**	**1.1**	N/A	**5**	**0.49 J**	**2.6**
Cadmium	mg/kg	980	0.38 B	0.18 B	0.61 B	1.1 B	N/A	0.58 B	**2.2**	**1.9**
Chromium	mg/kg	120,000	**77.3**	**22.6**	**19.6**	**202**	N/A	**57.3**	**37.3**	**184**
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	0.39 B
Cobalt	mg/kg	350	**9**	**7.9**	**2.2 J**	**8.6**	N/A	**3.1 J**	**8.6**	**9.7**
Copper	mg/kg	47,000	**26.2**	**11.8**	**14.5**	**34.6**	N/A	**16.5**	**2,890**	**72.4**
Iron	mg/kg	820,000	**24,600**	**18,000**	**13,200**	**56,700**	N/A	**50,100**	**58,900**	**35,100**
Lead	mg/kg	800	**46.8**	**23.9**	**11.8**	**90.2**	N/A	**13**	**1,020**	**173 J**
Manganese	mg/kg	26,000	**2,430**	**249**	**4,910**	**10,200**	N/A	**2,920**	**927**	**5,290**
Mercury	mg/kg	350	**0.084 J**	**0.065 J**	**0.0091 J**	**0.054 J**	N/A	**0.0039 J**	**0.037 J**	**0.13 J-**
Nickel	mg/kg	22,000	**16.4**	**12.2**	**6 J**	**18.8**	N/A	**11.9**	**25.4**	**42.6**
Selenium	mg/kg	5,800	3.3 U	3.4 U	**2.9 J**	3.8 U	N/A	**3.6**	3.5 U	**3.8 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**	3.1 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	**4.6 J**
Vanadium	mg/kg	5,800	**184**	**40**	**42.9**	**522**	N/A	**131**	**46.8**	**334 J**
Zinc	mg/kg	350,000	**136**	**68.9**	**45**	**391**	N/A	**62.4**	**1,490**	**460 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	**2.3 J-**

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

Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-004-SB-5 7/29/2016	A11-004-SB-10 7/29/2016	A11-005-SB-1 7/29/2016	A11-005-SB-5 7/29/2016	A11-005-SB-10 7/29/2016	A11-006-SB-1 7/29/2016	A11-006-SB-4 7/29/2016	A11-006-SB-10 7/29/2016
Metals										
Aluminum	mg/kg	1,100,000	**13,900**	N/A	**16,100**	**19,300**	N/A	**14,300**	**23,700**	N/A
Antimony	mg/kg	470	2.6 UJ	N/A	3.1 UJ	2.9 UJ	N/A	3 UJ	2.7 UJ	N/A
Arsenic	mg/kg	3	**3.6**	**4.1**	**6**	**6.9**	**5**	**8.4**	**10.5**	**7.4**
Barium	mg/kg	220,000	**87.2 J**	N/A	**170 J**	**175 J**	N/A	**124 J**	**262 J**	N/A
Beryllium	mg/kg	2,300	**0.73 J**	N/A	**1.1**	**1.3**	N/A	**0.95 J**	**2**	N/A
Cadmium	mg/kg	980	0.35 B	N/A	**15.7**	0.45 B	N/A	**4.9**	0.68 B	N/A
Chromium	mg/kg	120,000	**42.6**	N/A	**848**	**89.9**	N/A	**607**	**85.1**	N/A
Chromium VI	mg/kg	6.3	0.48 B	N/A	0.6 B	0.29 B	N/A	0.57 B	0.37 B	N/A
Cobalt	mg/kg	350	**8**	N/A	**5.3**	**6**	N/A	**7.8**	**6.1**	N/A
Copper	mg/kg	47,000	**29.7**	N/A	**225**	**31.6**	N/A	**70.2**	**76.2**	N/A
Iron	mg/kg	820,000	**18,100**	N/A	**111,000**	**26,900**	N/A	**196,000**	**32,500**	N/A
Lead	mg/kg	800	**48.7 J**	N/A	**257 J**	**46.6 J**	N/A	**265 J**	**121 J**	N/A
Manganese	mg/kg	26,000	**637**	N/A	**17,000**	**2,430**	N/A	**15,100**	**3,840**	N/A
Mercury	mg/kg	350	**0.045 J-**	N/A	**0.06 J-**	**0.048 J-**	N/A	**0.029 J-**	**0.01 J-**	N/A
Nickel	mg/kg	22,000	**14.7**	N/A	**26.9**	**14.9**	N/A	**49.2**	**22.5**	N/A
Selenium	mg/kg	5,800	3.4 U	N/A	4.2 U	3.9 U	N/A	4 U	3.6 U	N/A
Silver	mg/kg	5,800	2.6 U	N/A	3.1 U	2.9 U	N/A	3 U	2.7 U	N/A
Thallium	mg/kg	12	8.6 U	N/A	**22**	**4.9 J**	N/A	**23.1**	9 U	N/A
Vanadium	mg/kg	5,800	**66.6 J**	N/A	**1,750 J**	**361 J**	N/A	**1,850 J**	**202 J**	N/A
Zinc	mg/kg	350,000	**101 J**	N/A	**1,140 J**	**97 J**	N/A	**4,920 J**	**158 J**	N/A
Other										
Cyanide	mg/kg	150	**0.83 J-**	N/A	**1.4 J-**	**0.52 J-**	N/A	**0.84 J-**	**1.9 J-**	N/A

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Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-007-SB-1* 7/27/2016	A11-008-SB-1* 7/27/2016	A11-008-SB-4* 7/27/2016	A11-009-SB-1* 7/27/2016	A11-010-SB-1* 7/27/2016	A11-010-SB-5* 7/27/2016	A11-011-SB-1 7/28/2016	A11-011-SB-5 7/28/2016
Metals										
Aluminum	mg/kg	1,100,000	**24,200**	**4,800**	**17,800**	**12,800**	**28,400**	**19,700**	**14,600**	**14,900**
Antimony	mg/kg	470	2.7 U	2.7 U	2.7 U	2.6 U	2.4 U	2.7 U	2.6 UJ	2.8 UJ
Arsenic	mg/kg	3	**2.7**	**4.3**	**4.5**	**3.3**	**2.1**	**4.7**	2.1 U	**4.3**
Barium	mg/kg	220,000	**205**	**77.7**	**96.6**	**104**	**506**	**308**	**112 J**	**57.9 J**
Beryllium	mg/kg	2,300	**3.5**	0.89 U	**0.97**	**0.92**	**5.6**	**1.4**	**1.4**	**0.73 J**
Cadmium	mg/kg	980	**0.23 J**	**0.24 J**	**0.21 J**	**0.76 J**	**0.46 J**	**0.52 J**	1.3 U	1.4 U
Chromium	mg/kg	120,000	**6.7**	**358**	**46.2**	**215**	**141**	**67.3**	**14.1**	**28.6**
Chromium VI	mg/kg	6.3	0.36 B	1.2 B	0.33 B	0.31 B	0.31 B	0.34 B	0.31 B	0.35 B
Cobalt	mg/kg	350	**0.98 J**	**3.6 J**	**4.9**	**4.4**	**2.6 J**	**6.1**	**3.7 J**	**14.4**
Copper	mg/kg	47,000	4.6 U	**32.9**	**14.6**	**16.1**	**24**	**32.6**	**6.1**	**7.4**
Iron	mg/kg	820,000	**4,310**	**78,000**	**16,400**	**38,600**	**70,900**	**19,600**	**12,200**	**16,600**
Lead	mg/kg	800	**2.6**	**7.9**	**37.9**	**38.4**	**21.2**	**131**	**3.1**	**12.8**
Manganese	mg/kg	26,000	**1,030**	**8,680**	**901**	**5,620**	**6,010**	**1,600**	**700 J**	**168 J**
Mercury	mg/kg	350	0.12 U	**0.0051 J**	0.11 U	0.1 U	**0.0086 J**	**0.16**	0.11 U	**0.051 J**
Nickel	mg/kg	22,000	**1.7 J**	**20.7**	**11.1**	**12.1**	**14.3**	**15.6**	**7.9 J**	**13.8**
Selenium	mg/kg	5,800	3.7 U	3.6 U	3.6 U	3.5 U	3.2 U	3.6 U	3.4 U	3.7 U
Silver	mg/kg	5,800	2.7 U	2.7 U	2.7 U	2.6 U	2.4 U	2.7 U	2.6 U	2.8 U
Thallium	mg/kg	12	9.1 U	**9.8**	8.9 U	**5.7 J**	**4 J**	9 U	8.5 U	9.4 U
Vanadium	mg/kg	5,800	**14.8**	**808**	**65.2**	**426**	**280**	**181**	**22**	**32.6**
Zinc	mg/kg	350,000	**9.8**	**95.8**	**77.5**	**158**	**95**	**154**	**26.7 J**	**41.1 J**
Other										
Cyanide	mg/kg	150	**0.081 J**	**0.27 J**	**0.16 J**	**0.26 J**	**0.43 J**	**0.96**	**0.18 J-**	**0.074 J-**

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Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-012-SB-1 7/28/2016	A11-012-SB-4 7/28/2016	A11-013-SB-1 7/28/2016	A11-013-SB-7 7/28/2016	A11-014-SB-1* 3/7/2017	A11-014-SB-5* 3/7/2017	A11-014-SB-10* 3/7/2017	A11-015-SB-1* 3/8/2017
Metals										
Aluminum	mg/kg	1,100,000	**13,800**	**11,400**	**34,900**	**22,000**	**9,830**	**4,860**	N/A	**11,500**
Antimony	mg/kg	470	2.6 UJ	2.5 UJ	2.7 UJ	2.6 UJ	**1.4 J**	3.8 U	N/A	**1.7 J**
Arsenic	mg/kg	3	2.2 U	**2.4**	**3.6**	**2.9**	**6.2**	**9**	**23.1**	**10.7**
Barium	mg/kg	220,000	**204 J**	**30 J**	**534 J**	**113 J**	**91.1**	**363**	N/A	**92.9**
Beryllium	mg/kg	2,300	**0.41 J**	**0.39 J**	**4.5**	**0.73 J**	**1**	1.3 U	N/A	**0.9**
Cadmium	mg/kg	980	**2.3**	1.3 U	**0.39 J**	1.3 U	**1.4**	1.9 U	N/A	**0.48 J**
Chromium	mg/kg	120,000	**1,190**	**13.8**	**43.4**	**32.6**	**928**	**134**	N/A	**1,220**
Chromium VI	mg/kg	6.3	0.72 B	0.41 B	0.35 B	0.67 B	0.52 B	0.65 B	N/A	**1.6**
Cobalt	mg/kg	350	**2.8 J**	**3.5 J**	**2.3 J**	**3.1 J**	**2.3 J**	6.3 U	N/A	**2.1 J**
Copper	mg/kg	47,000	**54.1**	**7.2**	**9.9**	**8.9**	**86.7**	**30.3**	N/A	**55.8**
Iron	mg/kg	820,000	**101,000**	**11,600**	**11,800**	**7,610**	**159,000**	**9,470**	N/A	**160,000**
Lead	mg/kg	800	**90**	**10.5**	**17.7**	**19.7**	**241**	**291**	N/A	**48.3**
Manganese	mg/kg	26,000	**48,600 J**	**92.7 J**	**6,660 J**	**65.6 J**	**30,200**	**707**	N/A	**31,900**
Mercury	mg/kg	350	**0.22**	**0.039 J**	0.1 U	**0.036 J**	**0.04 J**	**0.24**	N/A	**0.035 J**
Nickel	mg/kg	22,000	**22.4**	**8.5**	**3.5 J**	**10.5**	**26.4**	**3.8 J**	N/A	**17**
Selenium	mg/kg	5,800	3.5 U	3.4 U	3.6 U	3.5 U	3 U	**3.5 J**	N/A	3.4 U
Silver	mg/kg	5,800	**2.2 J**	2.5 U	2.7 U	2.6 U	2.3 U	3.8 U	N/A	2.5 U
Thallium	mg/kg	12	**31.6**	8.4 U	9 U	8.8 U	7.6 U	12.5 U	N/A	8.4 U
Vanadium	mg/kg	5,800	**2,240**	**24.5**	**290**	**33.9**	**2,900**	**548**	N/A	**3,630**
Zinc	mg/kg	350,000	**310 J**	**27.4 J**	**38.1 J**	**24.4 J**	**274**	**88.3**	N/A	**193**
Other										
Cyanide	mg/kg	150	**0.35 J-**	**0.17 J-**	**0.72 J-**	**0.063 J-**	**1.6**	**2**	N/A	**0.19 J**

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Table 7
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Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-015-SB-4* 3/8/2017	A11-016-SB-1* 3/8/2017	A11-016-SB-4* 3/8/2017	A11-016-SB-10* 3/8/2017	A11-017-SB-1 7/29/2016	A11-017-SB-5 7/29/2016	A11-017-SB-10 7/29/2016	A11-018-SB-1 7/29/2016
Metals										
Aluminum	mg/kg	1,100,000	**16,100**	**11,900**	**47,200**	N/A	**9,590**	**10,100**	N/A	**14,200**
Antimony	mg/kg	470	**11.8**	**1.8 J**	3.1 U	N/A	2.7 UJ	3.3 UJ	N/A	2.6 UJ
Arsenic	mg/kg	3	**16**	**5.3**	**8.8**	**13.2**	**4.1**	**8.4**	**3.6**	**5.7**
Barium	mg/kg	220,000	**187**	**152**	**541**	N/A	**106 J**	**124 J**	N/A	**275 J**
Beryllium	mg/kg	2,300	**2.2**	**1.1**	**3.1**	N/A	**0.5 J**	**0.46 J**	N/A	**1.5**
Cadmium	mg/kg	980	**6**	**0.69 J**	**1 J**	N/A	0.7 B	1 B	N/A	**9.9**
Chromium	mg/kg	120,000	**201**	**824**	**337**	N/A	**873**	**40.8**	N/A	**802**
Chromium VI	mg/kg	6.3	0.81 B	0.66 B	0.98 B	N/A	0.5 B	1.3 UJ	N/A	0.33 B
Cobalt	mg/kg	350	**24.6**	**2.8 J**	**5.8**	N/A	**7**	**11.1**	N/A	**8.3**
Copper	mg/kg	47,000	**306**	**44.5**	**108**	N/A	**72.1**	**54.3**	N/A	**137**
Iron	mg/kg	820,000	**269,000**	**138,000**	**45,400**	N/A	**218,000**	**18,700**	N/A	**178,000**
Lead	mg/kg	800	**718**	**205**	**106**	N/A	**225 J**	**124 J**	N/A	**129 J**
Manganese	mg/kg	26,000	**4,820**	**22,200**	**7,700**	N/A	**18,800**	**566**	N/A	**11,900**
Mercury	mg/kg	350	**0.43**	**0.097**	**2.7**	N/A	**0.026 J-**	**0.094 J-**	N/A	**0.0082 J-**
Nickel	mg/kg	22,000	**60**	**15.8**	**26.4**	N/A	**54.3**	**15.1**	N/A	**37.8**
Selenium	mg/kg	5,800	3.6 U	3.2 U	**2.8 J**	N/A	3.6 U	4.4 U	N/A	**3.4 J**
Silver	mg/kg	5,800	**4.3**	2.4 U	3.1 U	N/A	2.7 U	3.3 U	N/A	**0.98 J**
Thallium	mg/kg	12	8.9 U	8.1 U	10.3 U	N/A	**26.9**	11 U	N/A	**20**
Vanadium	mg/kg	5,800	**486**	**2,300**	**884**	N/A	**2,150 J**	**79.8 J**	N/A	**1,580 J**
Zinc	mg/kg	350,000	**2,230**	**369**	**237**	N/A	**171 J**	**230 J**	N/A	**262 J**
Other										
Cyanide	mg/kg	150	**1.3**	**0.77 J**	**5.9**	N/A	**0.28 J**	**0.19 J**	N/A	**0.26 J**

Detection in bold
Values in red indicate an exceedance of the Project Action Limit (PAL)
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J: The positive result reported for this analyte is a quantitative estimate.
J+: The positive result reported for this analyte is a quantitative estimate but may be biased high.
J-: The positive result reported for this analyte is a quantitative esimtate but may be biased low.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-018-SB-8 7/29/2016	A11-018-SB-10 7/29/2016	A11-019-SB-1 7/29/2016	A11-019-SB-4 7/29/2016	A11-020-SB-1 7/29/2016	A11-020-SB-7 7/29/2016	A11-020-SB-10 7/29/2016	A11-021-SB-17 8/15/2016
Metals										
Aluminum	mg/kg	1,100,000	**15,900**	**16,300**	**7,840**	**36,900**	**14,100**	**19,100**	N/A	**15,900**
Antimony	mg/kg	470	**2.2 J**	**7.6 J**	2.7 UJ	2.8 UJ	3 UJ	3 UJ	N/A	3.3 UJ
Arsenic	mg/kg	3	**26.5**	**23.3**	**2.3**	**2.7**	**2.8**	**6.9**	**10.8**	**4.9**
Barium	mg/kg	220,000	**230 J**	**266 J**	**188 J**	**389 J**	**181 J**	**59.4 J**	N/A	**87.7 J**
Beryllium	mg/kg	2,300	**2**	**2.3**	0.88 U	**4.6**	**1.5**	**0.89 J**	N/A	**0.86 J**
Cadmium	mg/kg	980	**283**	**263**	0.74 B	0.41 B	0.95 B	1.5 U	N/A	0.99 B
Chromium	mg/kg	120,000	**93.6**	**103**	**1,530**	**20.4**	**354**	**31.8**	N/A	**56.2**
Chromium VI	mg/kg	6.3	0.3 B	1.3 UJ	0.47 B	0.33 B	0.42 B	0.35 B	N/A	**2.9 J-**
Cobalt	mg/kg	350	**21**	**20.4**	**3.2 J**	**2.4 J**	**5.8**	**7.8**	N/A	**6.3**
Copper	mg/kg	47,000	**362**	**375**	**60.8**	**10.3**	**31**	**12.8**	N/A	**49.1 J**
Iron	mg/kg	820,000	**214,000**	**190,000**	**229,000**	**14,100**	**67,000**	**19,100**	N/A	**37,000 J**
Lead	mg/kg	800	**316 J**	**414 J**	**20.5 J**	**19.4 J**	**49.4 J**	**14.7 J**	N/A	**45**
Manganese	mg/kg	26,000	**4,700**	**4,770**	**24,000**	**4,130**	**8,140**	**55.2**	N/A	**590**
Mercury	mg/kg	350	**0.071 J-**	**0.062 J-**	**0.0042 J-**	**0.0083 J-**	**0.013 J-**	**0.027 J-**	N/A	**0.054 J+**
Nickel	mg/kg	22,000	**78.5**	**67.9**	**38.2**	**3.2 J**	**15.4**	**15.3**	N/A	**19.1**
Selenium	mg/kg	5,800	**7**	**3.4 J**	3.5 U	**2.9 J**	4 U	4 U	N/A	**3.5 J**
Silver	mg/kg	5,800	**6.6**	**6.5**	**1.1 J**	2.8 U	3 U	3 U	N/A	3.3 U
Thallium	mg/kg	12	11.6 U	10.8 U	**38.3**	9.3 U	**8.5 J**	10.1 U	N/A	11 UJ
Vanadium	mg/kg	5,800	**87.5 J**	**96.6 J**	**3,050 J**	**66.5 J**	**571 J**	**46.7 J**	N/A	**94.6**
Zinc	mg/kg	350,000	**11,400 J**	**11,600 J**	**133 J**	**30.8 J**	**116 J**	**49.3 J**	N/A	**185**
Other										
Cyanide	mg/kg	150	**1.2 J-**	**0.49 J**	**0.3 J-**	**0.35 J-**	**0.27 J**	0.75 UJ	N/A	**2.6 J-**

Detection in bold
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B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-022-SB-1 8/15/2016	A11-022-SB-4 8/15/2016	A11-022-SB-10* 8/15/2016	A11-023-SB-1 8/15/2016	A11-023-SB-4 8/15/2016	A11-023-SB-10* 8/15/2016	A11-024-SB-1* 8/9/2016	A11-024-SB-9* 8/9/2016
Metals										
Aluminum	mg/kg	1,100,000	**18,500**	**13,500**	N/A	**5,670**	**12,900**	N/A	**40,400**	**7,370**
Antimony	mg/kg	470	2.3 UJ	2.4 UJ	N/A	2.5 UJ	3.1 UJ	N/A	2.4 U	3.3 U
Arsenic	mg/kg	3	**4.9**	2 U	N/A	**6.5**	**8.8**	**2.8 J**	**3.4**	**5.4**
Barium	mg/kg	220,000	**142 J**	**173 J**	N/A	**103 J**	**238 J**	N/A	**278**	**321**
Beryllium	mg/kg	2,300	**1.9**	**0.27 J**	N/A	0.82 U	**1.3**	N/A	**4.6**	**0.23 J**
Cadmium	mg/kg	980	0.72 B	0.42 B	N/A	0.9 B	**3.8**	N/A	0.55 B	0.9 B
Chromium	mg/kg	120,000	**217**	**2,420**	N/A	**602**	**297**	N/A	**27.5**	**432**
Chromium VI	mg/kg	6.3	0.49 B	0.54 B	N/A	0.4 B	0.38 B	N/A	0.49 B	0.48 B
Cobalt	mg/kg	350	**7.1**	**2.8 J**	N/A	**7.6**	**10**	N/A	**1.8 J**	**2.6 J**
Copper	mg/kg	47,000	**278 J**	**39.8 J**	N/A	**63 J**	**108 J**	N/A	**16.8**	**63.7**
Iron	mg/kg	820,000	**69,700 J**	**75,800 J**	N/A	**215,000 J**	**60,300 J**	N/A	**15,100**	**55,400**
Lead	mg/kg	800	**50.5**	**100**	N/A	**39.8**	**294**	N/A	**60.9**	**95.2**
Manganese	mg/kg	26,000	**5,960**	**34,100**	**88.6**	**19,500**	**5,970**	N/A	**2,720**	**20,300**
Mercury	mg/kg	350	**0.054 J+**	0.11 U	N/A	**0.016 J+**	**0.044 J+**	N/A	0.11 U	**0.33**
Nickel	mg/kg	22,000	**34.7**	**11.6**	N/A	**60.7**	**32.3**	N/A	**5.1 J**	**10.1 J**
Selenium	mg/kg	5,800	**1.8 J**	3.2 U	N/A	3.3 U	**3.4 J**	N/A	**3 J**	4.3 U
Silver	mg/kg	5,800	2.3 U	**0.81 J**	N/A	2.5 U	3.1 U	N/A	2.4 U	3.3 U
Thallium	mg/kg	12	7.8 UJ	8 UJ	N/A	8.2 UJ	10.4 UJ	N/A	7.9 U	**17.5**
Vanadium	mg/kg	5,800	**458**	**9,670**	**41.4**	**1,270**	**823**	N/A	**50.2**	**1,610**
Zinc	mg/kg	350,000	**126**	**102**	N/A	**185**	**1,650**	N/A	**165**	**165**
Other										
Cyanide	mg/kg	150	**0.28 J-**	**0.28 J-**	N/A	**0.53 J-**	**1 J-**	N/A	**0.71**	**2.6**

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Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-024-SB-10* 8/9/2016	A11-025-SB-1 8/10/2016	A11-025-SB-4 8/10/2016	A11-026-SB-8.5 8/11/2016	A11-026-SB-12.5 8/11/2016	A11-027-SB-11 8/11/2016	A11-027-SB-15 8/11/2016	A11-028-SB-6 8/10/2016
Metals										
Aluminum	mg/kg	1,100,000	N/A	**11,600**	**14,200**	**10,100**	**6,500**	**9,810**	**9,410**	**16,700**
Antimony	mg/kg	470	N/A	3.3 UJ	2.5 UJ	2.3 UJ	**2.1 J**	2.2 UJ	2.6 UJ	2.9 UJ
Arsenic	mg/kg	3	**5.3**	**8.4**	**7.5**	**4.7**	**6.1**	**5.9**	**15.9**	**6.5**
Barium	mg/kg	220,000	N/A	**88.3 J**	**206 J**	**168**	**112**	**200**	**154**	**80 J**
Beryllium	mg/kg	2,300	N/A	**1.1 J**	**1**	**0.36 J**	**0.65 J**	**0.58 J**	**0.85 J**	**0.72 J**
Cadmium	mg/kg	980	N/A	**1.8**	**1.6**	0.53 B	**4.7**	**1.3**	**1.8**	**0.16 J**
Chromium	mg/kg	120,000	N/A	**128**	**434**	**787**	**181**	**484**	**79.1**	**198**
Chromium VI	mg/kg	6.3	N/A	0.37 B	0.4 B	0.45 B	0.48 B	0.55 B	0.37 B	0.33 B
Cobalt	mg/kg	350	N/A	**10.3 J**	**18.2 J**	**4.4**	**16.7**	**7.1**	**6.2**	**4.8 J**
Copper	mg/kg	47,000	N/A	**49.5 J**	**209 J**	**77.1**	**242**	**59.3**	**42.2**	**15.6 J**
Iron	mg/kg	820,000	N/A	**55,800**	**107,000**	**197,000**	**400,000**	**128,000**	**54,800**	**37,300**
Lead	mg/kg	800	N/A	**153**	**249**	**34 J**	**159 J**	**78.3 J**	**96.2 J**	**28**
Manganese	mg/kg	26,000	N/A	**3,520**	**3,040**	**24,500**	**2,800**	**9,130**	**2,520**	**2,270**
Mercury	mg/kg	350	N/A	**0.14 J-**	**0.071 J-**	**0.018 J+**	**0.055 J+**	**0.004 J+**	**0.086 J+**	**0.033 J-**
Nickel	mg/kg	22,000	N/A	**39.9 J**	**70.5 J**	**34.5**	**72.7**	**64.1**	**25.7**	**14.8 J**
Selenium	mg/kg	5,800	N/A	4.4 U	3.3 U	3.1 U	3.3 U	3 U	3.4 U	3.9 U
Silver	mg/kg	5,800	N/A	3.3 U	**1.1 J**	**1.4 J**	**6**	**0.85 J**	2.6 U	2.9 U
Thallium	mg/kg	12	10.6 U	11.1 U	8.4 U	**14.8 J**	8.2 UJ	**12 J**	8.6 UJ	9.7 U
Vanadium	mg/kg	5,800	N/A	**106**	**229**	**1,120**	**85.7**	**999**	**157**	**115**
Zinc	mg/kg	350,000	N/A	**994**	**611**	**122 J**	**761 J**	**254 J**	**378 J**	**112**
Other										
Cyanide	mg/kg	150	N/A	**1.6 J-**	**3.3 J-**	**1.5 J-**	**0.5 J-**	**0.8 J-**	**2.1 J-**	**0.36 J-**

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Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-028-SB-10 8/10/2016	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	A11-031-SB-6 8/11/2016	A11-031-SB-10 8/11/2016	A11-032-SB-1 8/10/2016
Metals										
Aluminum	mg/kg	1,100,000	**32,100**	**10,200**	**12,600**	**7,520**	**3,410**	**3,190**	**11,100**	**24,000**
Antimony	mg/kg	470	2.7 UJ	2.5 UJ	3.9 UJ	2.6 UJ	3.3 UJ	2.8 UJ	2.8 UJ	2.7 UJ
Arsenic	mg/kg	3	**4.4**	**3.9**	**11.7**	**5.9**	2.7 U	**2.7**	**4.6**	2.2 U
Barium	mg/kg	220,000	**281 J**	**171 J**	**194 J**	**110 J**	**88.6 J**	**77.5**	**153**	**165 J**
Beryllium	mg/kg	2,300	**5**	**0.34 J**	**0.91 J**	**0.21 J**	1.1 U	0.92 U	**1.2**	**2.6**
Cadmium	mg/kg	980	**1.1 J**	**0.37 J**	**11**	**0.89 J**	**0.5 J**	0.38 B	0.9 B	**0.18 J**
Chromium	mg/kg	120,000	**21.9**	**365**	**173**	**898**	**1,090**	**241**	**40.3**	**27.4**
Chromium VI	mg/kg	6.3	0.93 B	0.52 B	0.4 B	0.48 B	**1.9**	0.45 B	0.38 B	0.29 B
Cobalt	mg/kg	350	**2.5 J**	**6.3 J**	**14.2 J**	**6.3 J**	5.4 U	**2.8 J**	**8.6**	**1.7 J**
Copper	mg/kg	47,000	**20.3 J**	**43.2 J**	**173 J**	**73.7 J**	**13.3 J**	**20.6**	**82.3**	**9.4 J**
Iron	mg/kg	820,000	**25,900**	**83,600**	**70,500**	**250,000**	**124,000**	**43,200**	**30,500**	**48,100**
Lead	mg/kg	800	**33.9**	**55.8**	**3,560**	**39.3**	**15.5**	**17.4 J**	**91.1 J**	**5.2**
Manganese	mg/kg	26,000	**2,270**	**9,620**	**4,030**	**23,900**	**23,500**	**6,190**	**1,330**	**1,330**
Mercury	mg/kg	350	0.11 UJ	**0.0089 J-**	**0.32 J-**	**0.019 J-**	0.13 UJ	**0.015 J+**	**0.067 J+**	**0.016 J-**
Nickel	mg/kg	22,000	6.1 B	**61.5 J**	**59.6 J**	**39 J**	6.9 B	**48.9**	**19.3**	4.6 B
Selenium	mg/kg	5,800	**2.2 J**	3.4 U	5.2 U	3.5 U	4.3 U	3.7 U	3.7 U	3.6 U
Silver	mg/kg	5,800	2.7 U	2.5 U	**1.5 J**	**1.8 J**	3.3 U	2.8 U	2.8 U	2.7 U
Thallium	mg/kg	12	8.8 U	8.4 U	13 U	**8.8 J**	10.9 U	**6.2 J**	9.3 UJ	8.9 U
Vanadium	mg/kg	5,800	**51.2**	**575**	**391**	**2,500**	**1,130**	**442**	**78.6**	**38.2**
Zinc	mg/kg	350,000	**228**	**129**	**1,380**	**152**	**30.8**	**56.9 J**	**199 J**	**15**
Other										
Cyanide	mg/kg	150	**0.51 J-**	**0.46 J-**	**1.5 J-**	**1.6 J-**	**0.86 J-**	**0.62 J-**	**0.95 J-**	**0.61 J-**

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Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-032-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	A11-035-SB-10 8/12/2016	A11-036-SB-1 8/15/2016
Metals										
Aluminum	mg/kg	1,100,000	**24,000**	**37,100**	**7,710**	**3,390**	**20,800**	**10,800**	N/A	**4,570**
Antimony	mg/kg	470	3 UJ	2.2 U	2.6 U	2.3 U	2.4 UJ	3 UJ	N/A	2.6 UJ
Arsenic	mg/kg	3	**3**	**4.3**	2.2 U	**4.5**	2 U	**3.9 J**	**2.4 J**	2.2 U
Barium	mg/kg	220,000	**341 J**	**290**	**139**	**25.2**	**183 J**	**116 J**	N/A	**55.5 J**
Beryllium	mg/kg	2,300	**1.4**	**5**	0.88 U	0.76 U	**3.1**	**1.1**	N/A	**0.47 J**
Cadmium	mg/kg	980	**0.48 J**	1.6 B	0.8 B	0.45 B	**2.5**	1.1 B	N/A	0.39 B
Chromium	mg/kg	120,000	**33.1**	**130**	**2,850**	**86.9**	**722**	**654**	N/A	**303**
Chromium VI	mg/kg	6.3	0.52 B	0.35 B	**4.1**	0.41 B	0.34 B	0.35 B	N/A	0.54 B
Cobalt	mg/kg	350	**6.2 J**	**2.8 J**	**5.1**	**4**	**1.4 J**	**6.5**	N/A	4.3 U
Copper	mg/kg	47,000	**15 J**	**30.2**	**37.1**	**46.9**	**40.8**	**68.5**	N/A	**3.7 J**
Iron	mg/kg	820,000	**26,300**	**46,400**	**179,000**	**43,800**	**129,000 J**	**138,000 J**	N/A	**90,800 J**
Lead	mg/kg	800	**18.5**	**33.7**	**56.1**	**32.5**	**96.5**	**106**	N/A	**5.4**
Manganese	mg/kg	26,000	**2,630**	**4,870**	**23,500**	**3,790**	**17,200**	**21,500**	N/A	**7,820**
Mercury	mg/kg	350	**0.014 J-**	0.1 U	**0.014 J**	**0.41**	**0.055 J-**	**0.026 J-**	N/A	0.11 U
Nickel	mg/kg	22,000	**12.2 J**	**14.6**	**29.5**	**13.4**	**23.2**	**37.8**	N/A	**3.9 J**
Selenium	mg/kg	5,800	4 U	3 U	3.5 U	3 U	3.2 U	3.9 U	N/A	3.5 U
Silver	mg/kg	5,800	3 U	2.2 U	2.6 U	2.3 U	**1.3 J**	3 U	N/A	2.6 U
Thallium	mg/kg	12	10 U	7.5 U	**34.6**	7.6 U	**8 J**	**19.5 J**	10.5 U	8.6 UJ
Vanadium	mg/kg	5,800	**91.1**	**257**	**3,050**	**101**	**610 J**	**1,560 J**	N/A	**1,280**
Zinc	mg/kg	350,000	**61.9**	**226**	**141**	**151**	**1,250**	**300**	N/A	**27**
Other										
Cyanide	mg/kg	150	**0.51 J-**	**0.53**	**0.52 J**	0.33 B	**2.1 J-**	**2.9 J-**	N/A	0.6 UJ

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

Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	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	A11-038-SB-1 8/15/2016	A11-038-SB-7 8/15/2016	A11-038-SB-10* 8/15/2016	A11-039-SB-1 8/12/2016
Metals										
Aluminum	mg/kg	1,100,000	**3,310**	**6,460**	**13,100**	N/A	**19,900**	**16,500**	N/A	**12,300**
Antimony	mg/kg	470	2.5 UJ	2.7 U	3 U	N/A	2.5 UJ	3.2 UJ	N/A	3.4 UJ
Arsenic	mg/kg	3	2.1 U	2.3 U	**4**	**4.7**	**7.1**	**5.8**	2.3 U	2.8 U
Barium	mg/kg	220,000	**94.1 J**	**109**	**82.6**	N/A	**151 J**	**64.9 J**	N/A	**73.7 J**
Beryllium	mg/kg	2,300	0.85 U	0.91 U	**0.84 J**	N/A	**1.7**	**0.68 J**	N/A	**0.81 J**
Cadmium	mg/kg	980	0.61 B	1.2 B	0.45 B	N/A	**1.3**	0.18 B	N/A	1.1 B
Chromium	mg/kg	120,000	**848**	**1,620**	**42.8**	N/A	**68.5**	**21.4**	N/A	**88.2**
Chromium VI	mg/kg	6.3	**1.4 J-**	1 B	0.39 B	N/A	0.32 B	0.36 B	N/A	0.47 B
Cobalt	mg/kg	350	4.2 U	**0.65 J**	**9.3**	N/A	**6.1**	**5.1 J**	N/A	**5.5 J**
Copper	mg/kg	47,000	**26 J**	**31.9**	**20.9**	N/A	**49 J**	**10.3 J**	N/A	**30.1**
Iron	mg/kg	820,000	**208,000 J**	**185,000**	**19,300**	N/A	**40,600 J**	**17,400 J**	N/A	**29,300 J**
Lead	mg/kg	800	**7.5**	**50.3**	**73.6**	N/A	**148**	**9.6**	N/A	**52.2**
Manganese	mg/kg	26,000	**20,200**	**27,300**	**743**	N/A	**3,350**	**87.3**	N/A	**1,860**
Mercury	mg/kg	350	0.11 U	**0.0064 J**	**0.14**	N/A	**0.05 J+**	**0.014 J+**	N/A	**0.1 J-**
Nickel	mg/kg	22,000	**27.6**	**15.2**	**19.5**	N/A	**13.1**	**15.5**	N/A	**22.1**
Selenium	mg/kg	5,800	3.4 U	3.6 U	4 U	N/A	3.3 U	**4.7**	N/A	4.6 U
Silver	mg/kg	5,800	2.5 U	2.7 U	3 U	N/A	2.5 U	3.2 U	N/A	3.4 U
Thallium	mg/kg	12	8.5 UJ	**38.7**	10.1 U	N/A	8.2 UJ	10.7 UJ	N/A	11.4 UJ
Vanadium	mg/kg	5,800	**3,330**	**3,420**	**76.1**	N/A	**104**	**32.2**	N/A	**142 J**
Zinc	mg/kg	350,000	**28.6**	**279**	**131**	N/A	**321**	**36.9**	N/A	**378**
Other										
Cyanide	mg/kg	150	**0.14 J-**	0.36 B	0.43 B	N/A	**0.24 J-**	**0.08 J-**	N/A	**0.53 J-**

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Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-039-SB-5 8/12/2016	A11-040-SB-1* 8/9/2016	A11-040-SB-4* 8/9/2016	A11-040-SB-10* 8/9/2016	A11-041-SB-15* 8/16/2016	A11-041-SB-19* 8/16/2016	A11-042-SB-1* 8/17/2016
Metals									
Aluminum	mg/kg	1,100,000	**16,900**	**5,190**	**25,900**	**7,770**	**1,770**	**18,500**	**9,480**
Antimony	mg/kg	470	4 UJ	2.8 U	3.3 U	2.8 U	2.4 U	2.7 U	2.5 U
Arsenic	mg/kg	3	3.4 U	**5**	**10**	**16.5**	**54.5**	**5.6**	**4.6**
Barium	mg/kg	220,000	**41.6 J**	**111**	**240**	**112**	**20.1**	**217**	**154**
Beryllium	mg/kg	2,300	**0.58 J**	**0.27 J**	**2.2**	**0.48 J**	**0.18 J**	**2.7**	0.83 U
Cadmium	mg/kg	980	2 U	1.3 B	2 B	**3.4**	**14**	2.1 B	0.6 B
Chromium	mg/kg	120,000	**39.2**	**805**	**521**	**321**	**417**	**53.5**	**1,240**
Chromium VI	mg/kg	6.3	1 B	1.5 B	0.47 B	0.74 B	0.42 B	0.31 B	0.56 B
Cobalt	mg/kg	350	**3.5 J**	**5.8**	**52**	**6.8**	**21.8**	**6.3**	**1 J**
Copper	mg/kg	47,000	**11.2**	**84.9**	**105**	**428**	**226**	**66.5**	**25.5**
Iron	mg/kg	820,000	**14,900 J**	**225,000**	**120,000**	**62,500**	**280,000**	**114,000**	**131,000**
Lead	mg/kg	800	**15**	**57.7**	**234**	**375**	**712**	**66.1**	**17**
Manganese	mg/kg	26,000	**467**	**19,500**	**2,810**	**6,980**	**1,820**	**2,180**	**30,200**
Mercury	mg/kg	350	**0.012 J-**	**0.024 J**	**0.041 J**	**0.18**	0.11 U	0.11 U	0.12 U
Nickel	mg/kg	22,000	**9.2 J**	**44.2**	**345**	**31.7**	**76.8**	**24.9**	**11.2**
Selenium	mg/kg	5,800	5.4 U	3.7 U	4.4 U	3.7 U	3.2 U	3.6 U	3.3 U
Silver	mg/kg	5,800	4 U	**1.9 J**	**0.99 J**	**0.78 J**	**6.9**	2.7 U	2.5 U
Thallium	mg/kg	12	13.5 UJ	**32.8**	11 U	**9.9**	8 U	9.1 U	**27.5**
Vanadium	mg/kg	5,800	**50.7 J**	**2,880**	**177**	**803**	**84**	**100**	**1,930**
Zinc	mg/kg	350,000	**30.9**	**235**	**1,460**	**1,640**	**6,010**	**414**	**96.3**
Other									
Cyanide	mg/kg	150	0.89 UJ	**0.8**	**1.4**	**17.9**	**0.72**	**0.75**	**0.78**

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Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-042-SB-5* 8/17/2016	A11-042-SB-10 8/17/2016	A11-043-SB-1* 8/16/2016	A11-043-SB-5* 8/16/2016	A11-043-SB-10* 8/16/2016	A11-044-SB-1 8/12/2016	A11-044-SB-9 8/12/2016	A11-044-SB-10 8/12/2016
Metals										
Aluminum	mg/kg	1,100,000	**17,900**	N/A	**9,170**	**7,980**	N/A	**11,300**	**8,830**	N/A
Antimony	mg/kg	470	2.8 U	N/A	3.2 U	3 U	N/A	2.5 UJ	2.5 UJ	N/A
Arsenic	mg/kg	3	**6.5**	**63.9**	**4.7**	**4.8**	**2.5**	**4.3 J**	**4.2 J**	**4.3**
Barium	mg/kg	220,000	**150**	N/A	**62.1**	**96**	N/A	**149 J**	**66.9 J**	N/A
Beryllium	mg/kg	2,300	**1.5**	N/A	**0.52 J**	**0.4 J**	N/A	**1.1**	**0.36 J**	N/A
Cadmium	mg/kg	980	0.81 B	N/A	**2.8**	**3.9**	N/A	**2**	0.6 B	N/A
Chromium	mg/kg	120,000	**69.4**	N/A	**427**	**527**	N/A	**617**	**43.2**	N/A
Chromium VI	mg/kg	6.3	0.36 B	N/A	0.57 B	1.2 B	N/A	0.35 B	0.3 B	N/A
Cobalt	mg/kg	350	**9.9**	N/A	**4.7 J**	**3.3 J**	N/A	**13.3**	**6**	N/A
Copper	mg/kg	47,000	**41.9**	N/A	**30.9**	**71.5**	N/A	**76.3**	**47.3**	N/A
Iron	mg/kg	820,000	**34,600**	N/A	**110,000**	**131,000**	N/A	**194,000 J**	**88,000 J**	N/A
Lead	mg/kg	800	**101**	N/A	**106**	**306**	N/A	**95.3**	**108**	N/A
Manganese	mg/kg	26,000	**1,510**	N/A	**8,930**	**9,460**	N/A	**6,770**	**999**	N/A
Mercury	mg/kg	350	**0.023 J**	N/A	**0.039 J**	**0.22**	N/A	**0.026 J-**	**0.036 J-**	N/A
Nickel	mg/kg	22,000	**22.8**	N/A	**26.1**	**35.1**	N/A	**76.7**	**39.6**	N/A
Selenium	mg/kg	5,800	3.7 U	N/A	4.3 U	**2.7 J**	N/A	3.3 U	3.4 U	N/A
Silver	mg/kg	5,800	2.8 U	N/A	**1.5 J**	**2 J**	N/A	**2 J**	**1.4 J**	N/A
Thallium	mg/kg	12	9.2 U	N/A	10.7 U	10 U	N/A	**6.6 J**	**3.6 J**	N/A
Vanadium	mg/kg	5,800	**124**	N/A	**273**	**337**	N/A	**563 J**	**251 J**	N/A
Zinc	mg/kg	350,000	**252**	N/A	**2,000**	**2,780**	N/A	**407**	**1,430**	N/A
Other										
Cyanide	mg/kg	150	**0.25 J**	N/A	**0.87**	**2.4**	N/A	**1.2 J-**	**1.6 J-**	N/A

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Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-045-SB-1* 8/16/2016	A11-045-SB-6* 8/16/2016	A11-046-SB-1* 8/1/2016	A11-046-SB-6* 8/1/2016	A11-047-SB-1* 7/27/2016	A11-047-SB-5* 7/27/2016	A11-048-SB-1* 8/17/2016	A11-048-SB-5* 8/17/2016
Metals										
Aluminum	mg/kg	1,100,000	**25,700**	**17,200**	**14,100**	**8,310**	**8,820**	**9,560**	**4,570**	**14,000**
Antimony	mg/kg	470	2.2 U	2.4 U	2.7 U	2.7 U	2.3 U	2.6 U	2.4 U	2.9 U
Arsenic	mg/kg	3	**1.9 J**	**2.6**	**13.6**	**5.3**	**2.7**	**7.6**	**6.1**	**210**
Barium	mg/kg	220,000	**209**	**171**	**235**	**74.2**	**71.8**	**76.8**	**53**	**113**
Beryllium	mg/kg	2,300	**4**	**2.3**	**1.1**	**0.8 J**	**0.89**	**3.4**	0.81 U	0.96 U
Cadmium	mg/kg	980	0.29 B	0.46 B	1.7 B	1 B	**1.8**	**0.53 J**	0.72 B	**2.3**
Chromium	mg/kg	120,000	**9.5**	**275**	**306**	**160**	**531**	**97.7**	**88.9**	**219**
Chromium VI	mg/kg	6.3	0.41 B	0.48 B	0.4 B	0.35 B	0.35 B	0.44 B	0.42 B	0.59 B
Cobalt	mg/kg	350	**4.1**	**2.7 J**	**21.2**	**10.1**	**2.6 J**	**16**	**4.5**	**582**
Copper	mg/kg	47,000	**5.4**	**23.3**	**215**	**48.7**	**21.8**	**26.2**	**120**	**6,250**
Iron	mg/kg	820,000	**6,670**	**63,200**	**153,000**	**67,700**	**107,000**	**62,100**	**234,000**	**230,000**
Lead	mg/kg	800	**5.2**	**13.6**	**238**	**82.7**	**63.8**	**32.1**	**73.8**	**3,570**
Manganese	mg/kg	26,000	**1,120**	**7,840**	**12,500**	**4,230**	**6,270**	**1,430**	**3,620**	**2,780**
Mercury	mg/kg	350	**0.0062 J**	**0.0035 J**	**0.55**	**0.32**	**0.044 J**	**0.026 J**	**0.044 J**	**0.23**
Nickel	mg/kg	22,000	**7.4 J**	**16.1**	**70.9**	**39.3**	**24.9**	**51.9**	**26.4**	**242**
Selenium	mg/kg	5,800	3 U	3.2 U	3.6 U	3.6 U	3.1 U	3.5 U	3.2 U	**12.5**
Silver	mg/kg	5,800	2.2 U	2.4 U	**0.75 J**	2.7 U	**1.5 J**	2.6 U	**3**	**24.9**
Thallium	mg/kg	12	7.5 U	**6.2 J**	**6 J**	9.1 U	7.8 U	8.7 U	**4.1 J**	**5.7 J**
Vanadium	mg/kg	5,800	**52.6**	**504**	**392**	**171**	**187**	**119**	**419**	**360**
Zinc	mg/kg	350,000	**21.2**	**88.8**	**308**	**409**	**1,460**	**168**	**524**	**554**
Other										
Cyanide	mg/kg	150	**1.8**	**0.74**	**3.8**	**3**	**0.95**	**0.045 J**	**2.9**	**0.82**

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Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-049-SB-1* 8/16/2016	A11-049-SB-8* 8/16/2016	A11-049-SB-10* 8/16/2016	A11-050-SB-1* 8/1/2016	A11-050-SB-4* 8/1/2016	A11-051-SB-1 8/12/2016	A11-051-SB-5 8/12/2016	A11-052-SB-12 8/11/2016
Metals										
Aluminum	mg/kg	1,100,000	**25,500**	**5,710**	N/A	**23,500**	**16,700**	**8,140**	**11,800**	**40,800**
Antimony	mg/kg	470	3.3 U	2.9 U	N/A	2.5 U	2.3 U	2.4 UJ	2.6 UJ	2.3 UJ
Arsenic	mg/kg	3	**9.1**	**39.2**	**63**	**4.9**	**8.9**	**2.6 J**	**7.4 J**	**1.8 J**
Barium	mg/kg	220,000	**149**	**52.5**	N/A	**192**	**197**	**122 J**	**100 J**	**312**
Beryllium	mg/kg	2,300	**0.98 J**	**0.6 J**	N/A	**3.4**	**1.1**	**0.34 J**	**0.72 J**	**5**
Cadmium	mg/kg	980	0.66 B	**25.7**	N/A	**2.2**	**5.9**	0.94 B	1.1 B	0.44 B
Chromium	mg/kg	120,000	**260**	**391**	N/A	**390**	**362**	**876**	**318**	**134**
Chromium VI	mg/kg	6.3	0.36 B	0.42 B	N/A	0.39 B	0.41 B	0.73 B	0.46 B	0.3 B
Cobalt	mg/kg	350	**6.5**	**21.5**	N/A	**6.1**	**8.7**	**3 J**	**17.1**	**1 J**
Copper	mg/kg	47,000	**26.6**	**216**	N/A	**54.1**	**81.7**	**43.4**	**97**	**9**
Iron	mg/kg	820,000	**29,700**	**342,000**	N/A	**81,800**	**96,500**	**195,000 J**	**63,800 J**	**48,100**
Lead	mg/kg	800	**54.7**	**1,180**	**6,170**	**84**	**217**	**22**	**86.8**	**14.1 J**
Manganese	mg/kg	26,000	**5,060**	**2,090**	N/A	**8,330**	**8,530**	**27,900**	**11,000**	**8,800**
Mercury	mg/kg	350	**0.0053 J**	**0.0049 J**	N/A	**0.057 J**	**0.068 J**	**0.012 J-**	**0.13 J-**	0.11 U
Nickel	mg/kg	22,000	**19.3**	**86.8**	N/A	**43.4**	**42.1**	**31.7**	**121**	**6.6 J**
Selenium	mg/kg	5,800	4.5 U	3.9 U	N/A	3.3 U	**1.9 J**	3.3 U	3.4 U	**3.2**
Silver	mg/kg	5,800	3.3 U	**8**	N/A	2.5 U	2.3 U	**2 J**	2.6 U	2.3 U
Thallium	mg/kg	12	11.2 U	9.8 U	N/A	**6.7 J**	**4.6 J**	**11.6 J**	**4.4 J**	7.7 UJ
Vanadium	mg/kg	5,800	**99.1**	**115**	N/A	**525**	**368**	**982 J**	**374 J**	**181**
Zinc	mg/kg	350,000	**124**	**12,000**	N/A	**486**	**764**	**118**	**238**	**95.5 J**
Other										
Cyanide	mg/kg	150	**1.1**	**0.47 J**	N/A	**3.5**	**0.64**	**1.1 J-**	**0.84 J-**	**0.7 J-**

Detection in bold
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U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
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B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte in the sample.

Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-052-SB-19 8/11/2016	A11-052-SB-21 8/11/2016	A11-053-SB-1* 8/9/2016	A11-053-SB-9* 8/9/2016	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
Metals										
Aluminum	mg/kg	1,100,000	**7,500**	N/A	**16,200**	**44,900**	**14,900**	**4,250**	**6,140**	**8,190**
Antimony	mg/kg	470	**7.1 J**	N/A	2.2 U	2.5 U	2.5 U	3 U	2.6 U	**2 J**
Arsenic	mg/kg	3	**16.1**	**15.7**	**5.5**	**3.3**	**3.7**	**18.2**	2.2 U	**35**
Barium	mg/kg	220,000	**120**	N/A	**229**	**495**	**131**	**96.7**	**91.4**	**793**
Beryllium	mg/kg	2,300	**0.84 J**	N/A	**1.6**	**5.9**	**1.4**	0.99 U	0.87 U	**0.94 J**
Cadmium	mg/kg	980	**2.7**	N/A	0.99 B	0.45 B	2.2 B	0.62 B	1.1 B	**13.2**
Chromium	mg/kg	120,000	**521**	N/A	**227**	**22.2**	**446**	**1,010**	**1,220**	**384**
Chromium VI	mg/kg	6.3	0.51 B	N/A	0.47 B	0.43 B	0.48 B	0.83 B	**4**	0.37 B
Cobalt	mg/kg	350	**21.3**	N/A	**8.4**	**2.9 J**	**7.6**	**23.6**	4.3 U	**23.2**
Copper	mg/kg	47,000	**193**	N/A	**86.2**	**12.3**	**63.5**	**245**	**34.2**	**1,270**
Iron	mg/kg	820,000	**199,000**	N/A	**124,000**	**38,000**	**107,000**	**428,000**	**191,000**	**108,000**
Lead	mg/kg	800	**444 J**	N/A	**79.8**	**16.6**	**176**	**35.8**	**32.8**	**1,420**
Manganese	mg/kg	26,000	**5,510**	N/A	**5,160**	**4,200**	**11,500**	**23,000**	**30,300**	**4,090**
Mercury	mg/kg	350	**0.2 J+**	N/A	**0.0025 J**	0.12 U	**0.029 J**	**0.028 J**	**0.017 J**	**0.14**
Nickel	mg/kg	22,000	**109**	N/A	**40.4**	**5.4 J**	**26.3**	**104**	**11.5**	**227**
Selenium	mg/kg	5,800	4.9 U	N/A	3 U	**4.4**	3.3 U	4 U	3.5 U	4.9 U
Silver	mg/kg	5,800	**2.6 J**	N/A	**0.59 J**	2.5 U	**0.63 J**	**4.9**	2.6 U	**7.9**
Thallium	mg/kg	12	**7.4 J**	N/A	7.5 U	8.3 U	**12.5**	**29.1**	**19.1**	12.1 U
Vanadium	mg/kg	5,800	**446**	N/A	**292**	**91.1**	**1,050**	**2,530**	**1,620**	**92.3**
Zinc	mg/kg	350,000	**1,890 J**	N/A	**322**	**44.8**	**608**	**136**	**189**	**4,390**
Other										
Cyanide	mg/kg	150	**1.3 J-**	N/A	**1.5**	**1.3**	**0.49 J**	**0.87**	**0.52 J**	**0.66 J**

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

Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	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	A11-058-SB-1* 8/16/2016	A11-058-SB-6.5* 8/16/2016	A11-059-SB-1 8/12/2016
Metals										
Aluminum	mg/kg	1,100,000	**4,970**	**13,800**	N/A	**6,550**	**18,300**	**7,390**	**9,460**	**14,900**
Antimony	mg/kg	470	2.3 U	2.5 U	N/A	2.3 UJ	2.9 UJ	2.1 U	**2.8 J**	2.7 UJ
Arsenic	mg/kg	3	**7.3**	**5**	**7.3**	**5**	**9.5**	**6.7**	**5**	**30.7 J**
Barium	mg/kg	220,000	**155**	**103**	N/A	**71.2 J**	**474 J**	**105**	**94.5**	**218 J**
Beryllium	mg/kg	2,300	0.77 U	**0.86**	N/A	0.78 U	**1.1**	**0.54 J**	**0.43 J**	**1.7**
Cadmium	mg/kg	980	0.81 B	0.62 B	N/A	**0.75 J**	**11.4**	0.86 B	0.72 B	**2.4**
Chromium	mg/kg	120,000	**792**	**55.9**	N/A	**1,200**	**353**	**1,110**	**37.6**	**411**
Chromium VI	mg/kg	6.3	2.4 B	0.39 B	N/A	0.94 B	0.33 B	0.39 B	0.61 B	0.34 B
Cobalt	mg/kg	350	**7.1**	**16.4**	N/A	**2.6 J**	**9.4 J**	**3.7**	**13.7**	**17.3**
Copper	mg/kg	47,000	**101**	**18.2**	N/A	**47.5 J**	**98.4 J**	**54.1**	**76**	**172**
Iron	mg/kg	820,000	**281,000**	**28,800**	N/A	**232,000**	**116,000**	**184,000**	**54,600**	**217,000 J**
Lead	mg/kg	800	**61.5**	**54.1**	N/A	**35.9**	**288**	**33.7**	**89.5**	**156**
Manganese	mg/kg	26,000	**20,900**	**1,210**	N/A	**22,900**	**9,710**	**28,000**	**1,240**	**21,200**
Mercury	mg/kg	350	**0.016 J**	**0.091 J**	N/A	**0.038 J-**	**0.12 J-**	**0.021 J**	**0.11 J**	**0.12 J-**
Nickel	mg/kg	22,000	**49.8**	**42**	N/A	**29.6 J**	**135 J**	**77.4**	**15.9**	**60.1**
Selenium	mg/kg	5,800	3.1 U	3.4 U	N/A	3.1 U	3.9 U	2.8 U	3.8 U	3.6 U
Silver	mg/kg	5,800	**2.5**	2.5 U	N/A	**1.4 J**	**0.82 J**	**2.2**	2.9 U	**2.4 J**
Thallium	mg/kg	12	**29.3**	8.4 U	N/A	7.8 U	9.8 U	**15.7**	9.6 U	**8.9 J**
Vanadium	mg/kg	5,800	**2,640**	**61.8**	N/A	**1,650**	**834**	**1,300**	**73.3**	**630 J**
Zinc	mg/kg	350,000	**116**	**191**	N/A	**123**	**1,720**	**181**	**265**	**623**
Other										
Cyanide	mg/kg	150	**0.89**	**0.73**	N/A	**0.67 J-**	**0.78 J-**	**0.34 J**	**0.61 J**	**1.5 J-**

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Table 7
Summary of Inorganics Detected in Soil
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-059-SB-9 8/12/2016	A11-060-SB-1 8/12/2016	A11-060-SB-4 8/12/2016	A11-061-SB-1 8/12/2016	A11-061-SB-4 8/12/2016	A11-062-SB-1* 8/1/2016	A11-062-SB-4.5* 8/1/2016	A11-062-SB-10* 8/1/2016
Metals										
Aluminum	mg/kg	1,100,000	**15,600**	**39,400**	**8,660**	**41,200**	**7,180**	**8,430**	**6,880**	N/A
Antimony	mg/kg	470	2.5 UJ	3 UJ	2.2 UJ	2.5 UJ	**2.1 J**	2.5 U	2.4 U	N/A
Arsenic	mg/kg	3	**11 J**	2.5 U	**3.6 J**	**4.3 J**	**39.4 J**	2.1 U	2 U	N/A
Barium	mg/kg	220,000	**219 J**	**397 J**	**167 J**	**296 J**	**68.7 J**	**107**	**99.3**	N/A
Beryllium	mg/kg	2,300	**0.35 J**	**5.2**	0.74 U	**4.9**	**0.88**	0.85 U	0.8 U	N/A
Cadmium	mg/kg	980	**2.5**	0.46 B	0.71 B	0.47 B	0.7 B	0.78 B	0.85 B	N/A
Chromium	mg/kg	120,000	**1,190**	**11.1**	**997**	**61.7**	**132**	**2,440**	**1,390**	N/A
Chromium VI	mg/kg	6.3	0.41 B	0.22 B	0.53 B	0.29 B	0.41 B	1.2 B	0.46 B	N/A
Cobalt	mg/kg	350	**16.5**	**1.7 J**	**3.9**	**2.4 J**	**19.7**	4.2 U	4 U	N/A
Copper	mg/kg	47,000	**316**	**5.3**	**47.8**	**21**	**326**	**32.7**	**18.8**	N/A
Iron	mg/kg	820,000	**155,000 J**	**7,370 J**	**206,000 J**	**57,500 J**	**517,000 J**	**272,000**	**223,000**	N/A
Lead	mg/kg	800	**284**	**8**	**39.5**	**18.3**	**48**	**12.9**	**8.5**	N/A
Manganese	mg/kg	26,000	**19,900**	**1,520**	**34,400**	**3,070**	**2,630**	**29,100**	**33,400**	**269**
Mercury	mg/kg	350	**0.1 J-**	0.1 UJ	**0.02 J-**	0.1 UJ	**0.11 J-**	0.1 U	0.099 U	N/A
Nickel	mg/kg	22,000	**377**	3.6 B	**44.8**	**11.2**	**165**	**16.4**	**12.8**	N/A
Selenium	mg/kg	5,800	3.3 U	4 U	3 U	3.3 U	3.4 U	3.4 U	3.2 U	N/A
Silver	mg/kg	5,800	**1.6 J**	3 U	2.2 U	2.5 U	**7.2**	**0.73 J**	2.4 U	N/A
Thallium	mg/kg	12	**36.5 J**	9.9 UJ	**36.9 J**	8.3 UJ	8.6 UJ	**29.8**	**24.5**	8.4 U
Vanadium	mg/kg	5,800	**2,890 J**	**14.8 J**	**3,230 J**	**92.2 J**	**21.3 J**	**2,530**	**2,130**	N/A
Zinc	mg/kg	350,000	**718**	**55.2**	**122**	**78.3**	**106**	**85.7**	**69.6**	N/A
Other										
Cyanide	mg/kg	150	**2 J-**	**0.23 J-**	**0.73 J-**	**0.91 J-**	**0.57 R**	0.12 B	0.22 B	N/A

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Table 10
Summary of Organics Detected in Groundwater
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-017-PZ* 8/18/2016	A11-037-PZ* 8/18/2016	A11-042-PZ 8/19/2016	A11-043-PZ* 8/22/2016	A11-046-PZ* 8/18/2016	GL-02 (-5)* 11/10/2016	GL-03 (-3)* 11/9/2016	GL-08 (-3)* 11/8/2016	GL-09 (-2)* 11/8/2016	GL-11 (-1)* 11/8/2016	GL-17 (-1)* 11/9/2016	GL-18 (-3)* 11/8/2016	GL-19* 11/9/2016	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	TS-01 (-7)* 11/9/2016
Volatile Organic Compounds																						
1,1-Dichloroethane	µg/L	2.7	1 U	1 U	1 U	1 U	1 U	**24.8**	1 U	**1.2**	1 U	1 U	**6.4**	**20.5**	**0.57 J**	1 U	**0.45 J**	1 U	1 U	1 U	**1.3**	**3.2**
1,2,4-Trimethylbenzene	µg/L		N/A	N/A	N/A	N/A	N/A	1 U	1 U	**21.6**	**3.9**	1 U	**1.9**	**44.4**	1 U	N/A	N/A	N/A	N/A	N/A	N/A	1 U
1,2-Dichloroethane	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	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	2 U	2 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2 U	2 U	2 U	**0.52 J**	2 U	**4**	N/A
1,3,5-Trimethylbenzene	µg/L		N/A	N/A	N/A	N/A	N/A	1 U	1 U	**9.4**	**1.7**	1 U	**0.81 J**	**14.7**	1 U	N/A	N/A	N/A	N/A	N/A	N/A	1 U
2-Butanone (MEK)	µg/L	5,600	10 U	10 U	10 U	10 U	10 U	5 U	5 U	5 U	**70.5**	5 U	5 U	5 U	5 U	10 U	**5.1 J**	10 U	10 U	10 U	10 U	5 U
4-Methyl-2-pentanone (MIBK)	µg/L	1,200	10 U	10 U	10 U	10 U	10 U	5 U	5 U	5 U	**7.3 J**	5 U	**44.3**	**7.5 J**	5 U	10 U	**5.6 J**	10 U	10 U	10 U	10 U	5 U
Acetone	µg/L	14,000	10 U	**25.3**	10 U	10 U	10 U	**10 J**	5 U	5 U	**556**	5 U	5 U	**19.3**	5 U	10 U	**32.7**	**5.7 J**	10 U	10 U	**21.2**	5 U
Benzene	µg/L	5	1 U	1 U	**31.1**	1 U	1 U	**1.1**	**6.7**	**115**	**1.2**	1 U	**6,570**	**669**	**60.6**	**55.4**	**0.87 J**	**10.5**	**6.1**	1 U	**162**	**11.5**
Bromomethane	µg/L	7.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.74 J**	1 U	**1.1**	**0.74 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	µg/L	810	1 U	**1.7**	**1.4**	1 U	1 U	1 U	1 U	**1.6**	1 U	1 U	1 U	**1.8**	1 U	**1.4**	**7.6**	1 U	1 U	1 U	**1.8**	1 U
Chloromethane	µg/L	190	1 U	**3.9**	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	1 UJ	1 U	1 UJ	1 UJ	1 U
cis-1,2-Dichloroethene	µg/L	70	1 U	1 U	1 U	1 U	1 U	**13.5**	1 U	1 U	1 U	1 U	**1.3**	**3.8**	**0.67 J**	1 U	1 U	1 U	**0.52 J**	1 U	**3.7**	**0.6 J**
Cyclohexane	µg/L	13,000	10 U	10 U	10 UJ	10 U	10 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10 UJ	**0.19 J**	10 UJ	10 U	10 UJ	10 UJ	N/A
Ethylbenzene	µg/L	700	1 U	1 U	1 U	1 U	1 U	1 U	**0.47 J**	**4.6**	**0.69 J**	1 U	**2.7**	**8.7**	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U
Isopropylbenzene	µg/L	450	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.96 J**	1 U	1 U	1 U	**1.6**	1 U	1 U	1 U	1 U	1 U	1 U	**0.29 J**	1 U
Methyl tert-butyl ether (MTBE)	µg/L	14	**1.2**	1 U	1 U	1 U	1 U	**0.54 J**	1 U	1 U	1 U	1 U	**0.39 J**	**0.26 J**	1 U	1 U	1 U	1 U	**0.84 J**	1 U	1 U	1 U
Styrene	µg/L	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	1 U	1 U	**8.3**	1 U	1 U	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	1 U	1 U	1 U	1 U	1 U	1 U	**4.5**	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	µg/L	1,000	1 U	1 U	**1.3**	1 U	1 U	1 U	**0.49 J**	**250**	**3.2**	1 U	**6.5**	**309**	1 U	**0.47 J**	**0.58 J**	1 U	1 U	1 U	**31.1**	1 U
trans-1,2-Dichloroethene	µg/L	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.69 J**	1 U	1 U	1 U	1 U	1 U	1 U	**0.31 J**	1 U
Trichloroethene	µg/L	5	1 U	1 U	1 U	1 U	1 U	**0.38 J**	1 U	1 U	1 U	1 U	1 U	**0.41 J**	**0.38 J**	1 U	1 U	1 U	**0.33 J**	1 U	1 U	1 U
Vinyl chloride	µg/L	2	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	1 U	1 U	1 U	**0.7 J**	**4.9**	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U
Xylenes	µg/L	10,000	3 U	**0.74 J**	**0.84 J**	3 U	3 U	1 U	**2.2 J**	**71.6**	**2.1 J**	1 U	**7.7**	**134**	1 U	**0.82 J**	**2.9 J**	3 U	3 U	3 U	**27.2**	1 U
Semi-Volatile Organic Compounds^																						
1,1-Biphenyl	µg/L	0.83	1 U	1 U	1 U	1 U	1 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1 U	1 U	**0.4 J**	1 U	1 U	1 U	N/A
1,4-Dioxane	µg/L	0.46	**0.072 J**	**0.23**	**1.2**	**0.87**	0.1 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**0.069 J**	**8.6**	**0.14**	**0.18**	0.1 U	**0.29**	N/A
2,4-Dichlorophenol	µg/L	46	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.44 J**	1 U	**0.59 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2,4-Dimethylphenol	µg/L	360	1 U	1 U	**19.9**	1 U	1 U	**1.5**	**26.3**	**60.2**	**49.9**	1 U	**268**	1 U	**3**	**0.59 J**	**31.6**	1 U	**0.95 J**	1 U	**30.4**	**3**
2,6-Dinitrotoluene	µg/L	0.048	1 U	1 U	1 U	1 U	1 U	**0.31 J**	1 U	1 U	1 U	1 U	**0.53 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Chlorophenol	µg/L	91	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.56 J**	1 U	**3.1**	1 U	1 U	1 U	**0.62 J**	1 U	1 U	1 U	1 U	1 U
2-Methylnaphthalene	µg/L	36	0.1 U	0.1 U	**0.08 J**	0.1 U	0.1 U	1 U	**1.1**	**28.9**	**1.8**	1 U	**2.8**	**9.2**	1 U	**0.058 J**	**1.7**	**1.3**	0.1 U	0.1 U	**1.1**	1 U
2-Methylphenol	µg/L	930	1 U	1 U	**1.1**	1 U	1 U	1 U	**0.74 J**	**26.4**	**27.3**	1 U	**13.6**	10.2 U	1 U	**0.47 J**	**11.1**	1 U	1 U	1 U	**4.4**	1 U
3&4-Methylphenol(m&p Cresol)	µg/L	930	2 U	2 U	**1.6 J**	2.1 U	2.1 U	2 U	**6**	**56.9**	**330**	2.1 U	**160**	**806**	**0.52 J**	2.1 U	**41.8**	2 U	**0.61 J**	2 U	**7.5**	**1.1 J**
4-Nitrophenol	µg/L		N/A	N/A	N/A	N/A	N/A	1 U	1 U	1 U	**2.1**	1 U	1 U	1 U	1 U	N/A	N/A	N/A	N/A	N/A	N/A	1 U
Acenaphthene	µg/L	530	0.1 U	0.1 U	**0.094 J**	0.1 U	0.1 U	1 U	**1.8**	**5.3**	**1.6**	1 U	**2.8**	**9.9**	1 U	**0.42**	**0.3**	0.1 U	**0.054 J**	0.1 U	**0.76**	1 U
Acenaphthylene	µg/L	530	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	**7.3**	1 U	1 U	1 U	**11.3**	1 U	**0.44**	**0.061 J**	**0.021 J**	**0.023 J**	0.1 U	**0.14**	1 U
Acetophenone	µg/L	1,900	1 U	1 U	1 U	1 U	1 U	**0.46 J**	**0.58 J**	**20.3**	1 U	**0.31 J**	1 U	1 U	**0.63 J**	**0.41 J**	**1 J**	1 U	**0.48 J**	1 U	**2.9**	**0.34 J**
Anthracene	µg/L	1,800	**0.031 J**	**0.044 J**	**0.04 J**	0.1 U	0.1 U	1 U	**0.38 J**	**3.8**	**0.54 J**	1 U	**0.54 J**	**3.9**	1 U	**0.5**	**3**	0.1 U	**0.16**	0.1 U	**0.19**	1 U
Benz[a]anthracene	µg/L	0.03	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.05 J**	0.1 U	0.1 U	1 U	0.1 U	**0.08 J**	1 U
Benzo[a]pyrene	µg/L	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.023 J**	0.1 U	0.1 U	1 U	0.1 U	**0.032 J**	1 U
Benzo[b]fluoranthene	µg/L	0.25	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	**0.26 J**	1 U	1 U	1 U	1 U	1 U	**0.041 J**	0.1 U	0.1 U	1 U	0.1 U	**0.055 J**	1 U
Benzo[g,h,i]perylene	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	0.1 U	**0.02 J**	1 U
Benzo[k]fluoranthene	µg/L	2.5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	**0.26 J**	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	0.1 U	**0.022 J**	1 U
bis(2-chloroethoxy)methane	µg/L	59	1 U	1 U	1 U	1 U	1 U	1 U	**0.44 J**	1 U	1 U	1 U	**8.6**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
bis(2-Chloroethyl)ether	µg/L	0.014	1 U	1 U	1 U	1 U	1 U	1 U	**0.47 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
bis(2-Ethylhexyl)phthalate	µg/L	6	**0.25 J**	1 U	1 U	**0.26 J**	1 U	**0.27 J**	1 U	1 U	**2.9**	1 U	**0.38 J**	1 U	**0.3 J**	**0.21 J**	**0.43 J**	1 U	1 U	1 U	1 U	1 U
Caprolactam	µg/L	9,900	**0.67 J**	2.5 U	2.6 UJ	**0.22 J**	2.6 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6 UJ	2.6 UJ	2.6 UJ	2.5 U	2.6 UJ	2.6 UJ	N/A
Carbazole	µg/L		1 U	1 U	**0.22 J**	1 U	1 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**4**	**2.2**	1 U	1 U	1 U	**3.2**	N/A
Chrysene	µg/L	25	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.019 J**	0.1 U	0.1 U	1 U	0.1 U	**0.048 J**	1 U
Diethylphthalate	µg/L	15,000	**0.36 J**	**0.36 J**	1 U	**0.7 J**	1 U	**0.34 J**	1 U	1 U	**0.79 J**	1 U	**0.85 J**	1 U	1 U	**1.3**	1 U	**1.6**	**2**	**0.42 J**	1 U	1 U
Fluoranthene	µg/L	800	**0.02 J**	0.1 U	**0.057 J**	0.1 U	0.1 U	1 U	**1.2**	**2.5**	**0.3 J**	1 U	**0.48 J**	1 U	1 U	**0.21**	**0.15**	0.1 U	**0.13**	0.1 U	**0.51**	1 U
Fluorene	µg/L	290	0.1 U	0.1 U	**0.076 J**	0.1 U	0.1 U	1 U	**1.5**	**9.7**	**1.3**	1 U	**1.6**	**4.1**	1 U	**0.34**	**0.18**	**0.11**	**0.19**	0.1 U	**0.73**	1 U
Naphthalene	µg/L	0.17	0.04 B	0.031 B	**0.57**	0.027 B	0.055 B	2 U	**13.2**	**15,200**	**39**	2 U	**64.1**	**19,400**	**1.8 J**	**0.033 J**	**18.1**	**2.3**	0.075 B	**0.021 J**	**56.7**	**0.67 J**
Nitrobenzene	µg/L	0.14	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.47 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U
N-Nitroso-di-n-propylamine	µg/L	0.011	1 U	1 U	1 U	1 U	1 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1 U	**1.1**	1 U	1 U	1 U	1 U	N/A
Pentachlorophenol	µg/L	1	2.5 U	2.5 U	2.6 U	2.6 U	2.6 U	**0.75 J**	**0.83 J**	**1.5 J**	2.6 U	2.6 U	**1.4 J**	2.6 U	**0.7 J**	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.6 U	2.6 U
Phenanthrene	µg/L		**0.025 J**	0.1 U	**0.15**	0.1 U	0.1 U	1 U	**2.6**	**18.7**	**2**	1 U	**2.2**	**3.9**	1 U	**0.053 J**	**0.62**	**0.02 J**	**0.14**	0.1 U	**1.1**	1 U
Phenol	µg/L	5,800	1 U	1 U	1 U	1 U	1 U	1 U	**0.36 J**	**1.9**	**232**	1 U	**12.1**	**368**	**0.3 J**	**0.48 J**	**178**	1 U	1 U	1 U	**0.43 J**	1 U
Pyrene	µg/L	120	**0.016 J**	0.1 U	**0.043 J**	0.1 U	0.1 U	1 U	**0.78 J**	**1.8**	1 U	1 U	**0.37 J**	1 U	1 U	**0.15**	**0.14**	0.1 U	**0.045 J**	0.1 U	**0.36**	1 U
Pyridine	µg/L		N/A	N/A	N/A	N/A	N/A	1 U	1 U	**11.7**	**0.84 J**	1 U	**1.4**	**41**	1 U	N/A	N/A	N/A	N/A	N/A	N/A	1 U
TPH/Oil & Grease																						
Diesel Range Organics	µg/L	47	**304**	**938**	**734 J**	104 U	**128**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**761 J**	**7,510 J**	**585 J**	**652**	**96.6 J**	**897 J**	N/A
Gasoline Range Organics	µg/L	47	200 U	200 U	**147 J**	200 U	200 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**144 J**	200 U	200 U	200 U	200 U	**502**	N/A
Oil & Grease	µg/L	47	3,100 B	1,300 B	4,800 U	**1,300 J**	2,300 B	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,800 U	4,820 U	4,800 U	4,770 U	4,800 U	4,800 U	N/A

Detections in bold **Values in red indicate an exceedance of the Project Action Limit (PAL)**
* indicates non-validated data
^ PAH compounds were analyzed via SIM

N/A indicates that the parameter was not analyzed for this sample
U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
UJ: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

J: The positive result reported for this analyte is a quantitative estimate.
B: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

Table 11
Summary of Inorganics Detected in Groundwater
Parcel A11
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	A11-017-PZ* 8/18/2016	A11-037-PZ* 8/18/2016	A11-042-PZ 8/19/2016	A11-043-PZ* 8/22/2016	A11-046-PZ* 8/18/2016	GL-02 (-5)* 11/10/2016	GL-03 (-3)* 11/9/2016	GL-08 (-3)* 11/8/2016	GL-09 (-2)* 11/8/2016	GL-11 (-1)* 11/8/2016	GL-17 (-1)* 11/9/2016	GL-18 (-3)* 11/8/2016	GL-19* 11/9/2016	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	TS-01 (-7)* 11/9/2016
Metals, Total																						
Aluminum	µg/L	20,000	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	**63.9**	**463**	**558**	**159**	**2,640**	**303**	N/A
Antimony	µg/L	6	N/A	N/A	N/A	N/A	N/A	**1.1**	**0.38 J**	**0.4 J**	**0.57**	**0.081 J**	**0.64**	**0.32 J**	**0.33 J**	6 U	6 U	6 U	6 U	6 U	6 U	**0.33 J**
Arsenic	µg/L	10	N/A	N/A	N/A	N/A	N/A	**5**	**2**	**11.4**	**24.9**	**1.7**	**14.8**	**9.8**	**3.3**	**11**	**19**	**26.5**	**8.4**	5 U	**6.9**	**3.1**
Barium	µg/L	2,000	N/A	N/A	N/A	N/A	N/A	**35**	**101**	**45.6**	**42.5**	**22.5**	**13.6**	**36.7**	**16.9**	**21.8**	**60.7**	**9.7 J**	**11.2**	**25.9**	**35.4**	**24.6**
Beryllium	µg/L	4	N/A	N/A	N/A	N/A	N/A	**0.039 J**	0.2 U	0.2 U	**0.065 J**	**2.2**	0.2 U	0.2 U	0.2 U	1 U	1 U	**2.7**	1 U	**2.4**	1 U	1 U
Cadmium	µg/L	5	N/A	N/A	N/A	N/A	N/A	**1.6**	0.08 U	0.08 U	**0.067 J**	**1.3**	**0.022 J**	0.08 U	0.08 U	3 U	3 U	**48.4**	**1.4 J**	**1.1 J**	3 U	0.4 U
Chromium	µg/L	100	N/A	N/A	N/A	N/A	N/A	**2.1**	**0.36 J**	**0.41 J**	**5.5**	**0.7**	**2.3**	**0.27 J**	**1.3**	5 U	**4.1 J**	**1.2 J**	5 U	**1.1 J**	**2.2 J**	0.5 U
Cobalt	µg/L	6	N/A	N/A	N/A	N/A	N/A	**0.92**	**0.043 J**	**1.5**	**1.8**	**96.6**	**0.76**	**0.86**	**0.091 J**	5 U	**3.2 J**	**91.9**	**19.8**	**90.6**	5 U	**0.13 J**
Copper	µg/L	1,300	N/A	N/A	N/A	N/A	N/A	**5.8**	**0.6 J**	**0.78 J**	**7.5**	**1.4**	**3.7**	1 U	**0.48 J**	**2.7 J**	5 U	**17.8**	5 U	**16.3**	5 U	1 U
Iron	µg/L	14,000	N/A	N/A	N/A	N/A	N/A	**789**	50 U	**197**	**2,590**	**6,780**	**1,050**	**262**	**19 J**	**124**	**625**	**14,900**	**67,600**	**6,950**	**199**	**29.6 J**
Lead	µg/L	15	N/A	N/A	N/A	N/A	N/A	**5.5**	**2.4**	**0.26**	**4.4**	**0.84**	**6.4**	**0.061 J**	0.18 B	5 U	25 U	5 U	5 U	**9.2**	5 U	0.1 B
Magnesium	µg/L		N/A	N/A	N/A	N/A	N/A	**21,700**	7.9 B	**49.4**	**324**	**33,800**	**704**	**15.3**	**65.8**	N/A	N/A	N/A	N/A	N/A	N/A	**49.2**
Manganese	µg/L	430	N/A	N/A	N/A	N/A	N/A	**199**	**0.38 J**	**2.7**	**82.9**	**342**	**19.1**	**0.96**	**0.7**	**120**	**16.5**	**368**	**9,440**	**1,040**	**9.4**	**0.76**
Nickel	µg/L	390	N/A	N/A	N/A	N/A	N/A	**18.8**	**1.3**	**9.8**	**11**	**172**	**31.2**	**22.6**	**2.3**	1.8 B	**14.2**	**137**	**33.5**	**110**	1.2 B	**1.7**
Silver	µg/L	94	N/A	N/A	N/A	N/A	N/A	0.5 U	0.5 U	0.5 U	**0.017 J**	0.5 U	0.5 U	0.5 U	0.5 U	6 U	6 U	6 U	6 U	6 U	6 U	0.5 U
Thallium	µg/L	2	N/A	N/A	N/A	N/A	N/A	0.1 U	0.1 U	0.1 U	0.1 U	0.016 B	**0.35**	0.1 U	0.1 U	10 U	50 U	10 U	10 U	10 U	10 U	0.1 U
Vanadium	µg/L	86	N/A	N/A	N/A	N/A	N/A	**17**	**13.8**	**23.4**	**18.4**	**0.82 J**	**71**	**21.3**	**40.5**	**66.1**	**43.2**	**0.55 J**	5 U	**3.5 J**	**96.1**	**31.7**
Zinc	µg/L	6,000	N/A	N/A	N/A	N/A	N/A	**62.8**	**1.6 J**	3.1 B	**24.8**	**266**	**29.5**	2 B	**1.6 J**	**3.6 J**	**5.1 J**	**246**	**44.8**	**161**	**11.2**	**2.3 J**
Metals, Dissolved																						
Aluminum, Dissolved	µg/L	20,000	**328**	**72.6**	**262**	50 U	**458**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**52**	**302**	**374**	**86.4**	**297**	**263**	N/A
Arsenic, Dissolved	µg/L	10	**25.5**	**95.6**	**3.3 J**	5 U	**6.2**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**7.9**	**17.3**	**29.4**	**9.6**	5 U	**5.6**	N/A
Barium, Dissolved	µg/L	2,000	**27**	**88.9**	**20**	**73.9**	**37.4**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**22.3**	**57.2**	**9.5 J**	**9 J**	**12.5**	**33.8**	N/A
Beryllium, Dissolved	µg/L	4	**0.66 J**	1 U	1 U	1 U	1 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1 U	1 U	**2.7**	**0.37 J**	**1.5**	1 U	N/A
Cadmium, Dissolved	µg/L	5	3 U	3 U	3 U	3 U	3 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3 U	3 U	**33.5**	**1.3 J**	**0.95 J**	3 U	N/A
Chromium, Dissolved	µg/L	100	**0.92 J**	5 U	5 U	5 U	**5.8**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5 U	**0.95 J**	**0.89 J**	5 U	5 U	5 U	N/A
Cobalt, Dissolved	µg/L	6	**56.8**	**2.1 J**	5 U	5 U	5 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5 U	25 U	**85.1**	**15.6**	**85.8**	5 U	N/A
Copper, Dissolved	µg/L	1,300	5 U	5 U	5 U	5 U	5 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**1.6 J**	5 U	**12.1**	5 U	**3.9 J**	5 U	N/A
Iron, Dissolved	µg/L	14,000	**33,600**	**125,000**	**12.9 J**	**40,700**	**69 J**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**30.2 J**	**396**	**16,200**	**74,600**	**6,900**	**27 J**	N/A
Lead, Dissolved	µg/L	15	5 U	5 U	5 U	5 U	**2.7 J**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5 U	25 U	5 U	5 U	5 U	5 U	N/A
Manganese, Dissolved	µg/L	430	**1,390**	**1,150**	5 U	**2,240**	**1 J**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**103**	5 U	**351**	**9,690**	**1,040**	5 U	N/A
Nickel, Dissolved	µg/L	390	**55.7**	**3.7 J**	**0.93 J**	**0.64 J**	10 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**0.97 J**	**11.2**	**127**	**27.1**	**106**	**0.76 J**	N/A
Selenium, Dissolved	µg/L	50	8 U	8 U	8 U	8 U	**19.6**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8 U	**7.2 J**	8 U	8 U	8 U	8 U	N/A
Silver, Dissolved	µg/L	94	6 U	6 U	6 U	**1.1 J**	6 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6 U	6 U	6 U	**2.3 J**	6 U	6 U	N/A
Thallium, Dissolved	µg/L	2	10 U	10 U	10 U	10 U	10 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10 U	50 U	10 U	**3.5 J**	10 U	10 U	N/A
Vanadium, Dissolved	µg/L	86	**1.4 J**	**3.1 J**	**2.1 J**	**1.1 J**	**194**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**76.8**	**35.6**	5 U	5 U	5 U	**77.9**	N/A
Zinc, Dissolved	µg/L	6,000	**108**	10 U	1.2 B	1.9 B	4.1 B	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.5 B	1.3 B	**238**	**34.5**	**150**	1.7 B	N/A
Other																						
Cyanide	µg/L	200	10 U	**2.7 J**	**4.4 J**	10 U	**2.6 J**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**44.6**	**148**	10 U	**16.1**	**5.2 J**	**16**	N/A

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

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

APPENDIX K

Parcel A11 Well Depth Comparison Table			
Well Name	**Measured Depth Pre-Development^ (ft TOC)**	**Measured Depth Post-Development* (ft TOC)**	**Difference (ft)**
LF-01S	18.29	18.26	0.03
LF-02	23.11	23.11	0.00
LF-03S	18.33	19.28	0.95
LF-04S	23.13	23.94	0.81
LF-05	20.01	20.32	0.31
SG01-PDP000	18.59	18.65	0.06

TOC = top of casing

^Recorded during initial well inspection in December 2015 or May 2016.

*Recorded on purge logs during groundwater sample collection in August 2016.

ARM Group Inc.

Earth Resource Engineers and Consultants

Sparrows Point

Monitoring Well Development Form – Surge and Pump Method

Well ID: LF-01S **Well Permit No.:** _____

ARM Project No.: 150298M-16	Date/Time Started: 8/18/16 / 1352	Developed by: NK
Client: **EnviroAnalytics Group**	Date/Time Completed: 8/18/16 / 1416	Company: ARM
Well Location: Area A, Parcel A11	Weather/Site Conditions: sunny, 80s	Checked by: _____

A. Well Construction Details

Well Cover Type: (*Stick-up*) or *Flush-Mount*	PVC Screen Interval: 5 to 15
Well riser/screen material: *PVC*	Sandpack Interval: 3 to 15
Difference between Ground Surface and TOC: (+ / -)	Measured Total Depth of Well When Installed (TOC) (F): (See Original Well Construction Diagram)

B. Wetted Bore Volume Determination

Well (PVC) Diameter: 2.0 in.	Well Total Depth (TOC): 18.30 ft. (B)
Well (PVC) Volume: 0.163 gal./ft. (A)	Depth to Static Water Level (TOC): 12.89 ft. (C)
Petroleum/Product Present? *Y* or *N*. Thickness (ft.): N/A	Height of Water Column: (B - C) 5.41 ft. (D)
Initial Thickness of Sediment in Bottom of Well (F - B): — ft.	Wetted Bore Volume: (A x D) 0.88 gal. (E)

C. Surge and Pump Event Summary Data

Description of Surge Equipment: Cyclone pump

Event No.	Screen Interval (ft.)	No. of Surge Strokes	Volume of Water Removed (gal.)	Bore Volumes of Water Removed	Qualitative Description of Color/Turbidity/Odors/Other
1	9 - 12	12	4	3.52	black, clearing up, pungent odor
2	12 - 15	12	6	5.28	black to clear, pungent odor
		Cumulative Totals: (Minimum of 3 Well Volumes)	10	8.8	

Final Depth to Water (from TOC): 18.34

Thickness of Any Sediment Remaining in Well: None

All depths reported are from reference notch in top of TOC.

Well ID: LF-015
Date: 8/18/16

ID Numbers of IDW Drums Generated:
1. 701 - GW - 8/18/16 - All
2. _____
3. _____

D. Checklists

Equipment Check List:

- ☐ Original Well Construction Diagram
- ☐ Well Development Form
- ☐ Clean Weighted Tape for Determining Total Well Depth and Depth to Any Sediment or Possible Blockages Within the Well
- ☐ Water Level Meter and/or Oil-Water Interface Probe
- ☐ Surge Block and 2-inch ID PVC Casing Extensions
- ☐ Appropriate Pump
- ☐ Disposable Pump Tubing
- ☐ Clean Paper Towels
- ☐ Alconox Detergent
- ☐ Clean Brushes for Decontamination Work
- ☐ Distilled Water for Rinsing Equipment
- ☐ 2 New, Clean Spray Bottles for Spray Distilled Water
- ☐ 2 to 3 Clean Five-gallon Buckets
- ☐ 55-gallon Drum(s) for Development Water; Drum Non-hazardous Waste Labeling Supplies
- ☐ Personal Protective Equipment Per Health and Safety Plan

Quality Control Procedures Include:

- ☐ Decon All Equipment that Goes Down-hole per Appropriate Standard Operating Procedure (SOP)
- ☐ Staging Down-hole Equipment, Tubing, etc. on Clean Plastic Sheeting
- ☐ _____

E. Notes/Comments

F. Signatures

	Print Name	Signature	Date
Field Representative(s):	Nick Kurtz		8/18/16

All depths reported are from reference notch in top of TOC.
All measurements made in 10ths of feet

TOC = from Top of PVC Casing
Grd = Ground Surface
TD = Total Depth

ARM Group Inc.

Earth Resource Engineers and Consultants

Sparrows Point

Monitoring Well Development Form – Surge and Pump Method

Well ID: LF-02 **Well Permit No.:** _____

ARM Project No.: 150298M-16	Date/Time Started: 8/18/16/ 1130	Developed by: NK
Client: **EnviroAnalytics Group**	Date/Time Completed: 8/18/16/ _____	Company: ARM
Well Location: Area A, Parcel A11	Weather/Site Conditions: Sunny, 80s	Checked by: _____

A. Well Construction Details

Well Cover Type: *Stick-up* or *Flush-Mount*	PVC Screen Interval: 10 to 20
Well riser/screen material: *PVC*	Sandpack Interval: 8 to 20
Difference between Ground Surface and TOC: (+ / -)	Measured Total Depth of Well When Installed (TOC) (F): (See Original Well Construction Diagram)

B. Wetted Bore Volume Determination

Well (PVC) Diameter: 2.0 in.	Well Total Depth (TOC): 23.11 ft. (B)
Well (PVC) Volume: 0.163 gal./ft. (A)	Depth to Static Water Level (TOC): 2.67 ft. (C)
Petroleum/Product Present? *Y* or *N*. Thickness (ft.): N/A	Height of Water Column: (B - C) 20.44 ft. (D)
Initial Thickness of Sediment in Bottom of Well (F - B): — ft.	Wetted Bore Volume: (A x D) 3.33 gal. (E)

C. Surge and Pump Event Summary Data

Description of Surge Equipment: Cyclone pump

Event No.	Screen Interval (ft.)	No. of Surge Strokes	Volume of Water Removed (gal.)	Bore Volumes of Water Removed	Qualitative Description of Color/Turbidity/Odors/Other
1	~~0-3~~ 10-13	10	8	2.40	grey, slight turbid, sweet odor
2	~~3-6~~ 13-16	10	5 (muddy)	1.50	11
3	~~6-10~~ 16-20	10	4	1.20	11
	Cumulative Totals: (Minimum of 3 Well Volumes)		17	5.1	

Final Depth to Water (from TOC): 23.13

Thickness of Any Sediment Remaining in Well: None

All depths reported are from reference notch in top of TOC.

Well ID: LF-02
Date: 8/18/16

ID Numbers of IDW Drums Generated:
1. 599 - GW - 8/18/16 - All
2. _____
3. _____

D. Checklists

Equipment Check List:

- ☐ Original Well Construction Diagram
- ☐ Well Development Form
- ☐ Clean Weighted Tape for Determining Total Well Depth and Depth to Any Sediment or Possible Blockages Within the Well
- ☐ Water Level Meter and/or Oil-Water Interface Probe
- ☐ Surge Block and 2-inch ID PVC Casing Extensions
- ☐ Appropriate Pump
- ☐ Disposable Pump Tubing
- ☐ Clean Paper Towels
- ☐ Alconox Detergent
- ☐ Clean Brushes for Decontamination Work
- ☐ Distilled Water for Rinsing Equipment
- ☐ 2 New, Clean Spray Bottles for Spray Distilled Water
- ☐ 2 to 3 Clean Five-gallon Buckets
- ☐ 55-gallon Drum(s) for Development Water; Drum Non-hazardous Waste Labeling Supplies
- ☐ Personal Protective Equipment Per Health and Safety Plan

Quality Control Procedures Include:

- ☐ Decon All Equipment that Goes Down-hole per Appropriate Standard Operating Procedure (SOP)
- ☐ Staging Down-hole Equipment, Tubing, etc. on Clean Plastic Sheeting
- ☐ _____

E. Notes/Comments

pungent, sweet odor & foaming

F. Signatures

	Print Name	Signature	Date
Field Representative(s):	Nick Kurtz		8/18/16

All depths reported are from reference notch in top of TOC.
All measurements made in 10^{ths} of feet

TOC = from Top of PVC Casing
Grd = Ground Surface
TD = Total Depth

ARM Group Inc.

Earth Resource Engineers and Consultants

Sparrows Point

Monitoring Well Development Form – Surge and Pump Method

Well ID: LF-035 **Well Permit No.:** _____ Page 1 of 2

ARM Project No.: 150 298-16	Date/Time Started: ~~8/8/16 1036~~ 8/18/16 / 1036	Developed by: NK
Client: **EnviroAnalytics Group**	Date/Time Completed: 8/18/16 / 1123	Company: ARM
Well Location: Area 4, Parcel All	Weather/Site Conditions: Sunny, 80s	Checked by: _____

A. Well Construction Details

Well Cover Type: (*Stick-up*) or *Flush-Mount*	PVC Screen Interval: 5.5 to 15.5
Well riser/screen material: *PVC*	Sandpack Interval: 3.5 to 15.5
Difference between Ground Surface and TOC: (+ / -)	Measured Total Depth of Well When Installed (TOC) (F): (See Original Well Construction Diagram)

B. Wetted Bore Volume Determination

Well (PVC) Diameter: 2.0 in.	Well Total Depth (TOC): 18.24 ft. (B)
Well (PVC) Volume: 0.163 gal./ft. (A)	Depth to Static Water Level (TOC): 7.13 ft. (C)
Petroleum/Product Present? *Y* or *N*. Thickness (ft.): N/A	Height of Water Column: (B - C) 11.11 ft. (D)
Initial Thickness of Sediment in Bottom of Well (F - B): — ft.	Wetted Bore Volume: (A x D) 1.81 gal. (E)

C. Surge and Pump Event Summary Data

Description of Surge Equipment: Cyclone pump

Event No.	Screen Interval (ft.)	No. of Surge Strokes	Volume of Water Removed (gal.)	Bore Volumes of Water Removed	Qualitative Description of Color/Turbidity/Odors/Other
1	~~0-3~~ 5.5-8.5	10	6	3.31	tan turbidity
2	~~3-6~~ 8.5-5.5	10	3	1.66	"
3	~~6-10~~ 11.4-15.5	10	13	7.18	started running clear → dried out
	Cumulative Totals: (Minimum of 3 Well Volumes)		24	12.15	

Final Depth to Water (from TOC): 18.30

Thickness of Any Sediment Remaining in Well: None

All depths reported are from reference notch in top of TOC.

Well ID: LF-035
Date: 8/18/16

ID Numbers of IDW Drums Generated:
1. 599-GW-8/18/16-A11
2. _____
3. _____

D. Checklists

Equipment Check List:

- ☐ Original Well Construction Diagram
- ☐ Well Development Form
- ☐ Clean Weighted Tape for Determining Total Well Depth and Depth to Any Sediment or Possible Blockages Within the Well
- ☐ Water Level Meter and/or Oil-Water Interface Probe
- ☐ Surge Block and 2-inch ID PVC Casing Extensions
- ☐ Appropriate Pump
- ☐ Disposable Pump Tubing
- ☐ Clean Paper Towels
- ☐ Alconox Detergent
- ☐ Clean Brushes for Decontamination Work
- ☐ Distilled Water for Rinsing Equipment
- ☐ 2 New, Clean Spray Bottles for Spray Distilled Water
- ☐ 2 to 3 Clean Five-gallon Buckets
- ☐ 55-gallon Drum(s) for Development Water; Drum Non-hazardous Waste Labeling Supplies
- ☐ Personal Protective Equipment Per Health and Safety Plan

Quality Control Procedures Include:

- ☐ Decon All Equipment that Goes Down-hole per Appropriate Standard Operating Procedure (SOP)
- ☐ Staging Down-hole Equipment, Tubing, etc. on Clean Plastic Sheeting
- ☐ _____

E. Notes/Comments

F. Signatures

	Print Name	Signature	Date
Field Representative(s):	Nick Kurtz		8/18/16

All depths reported are from reference notch in top of TOC.
All measurements made in 10^{ths} of feet

TOC = from Top of PVC Casing
Grd = Ground Surface
TD = Total Depth

ARM Group Inc.

Earth Resource Engineers and Consultants

Sparrows Point

Monitoring Well Development Form – Surge and Pump Method

Well ID: LF-045 **Well Permit No.:** _____

ARM Project No.: 150 298M-16	Date/Time Started: 8/18/16 955	Developed by: NK
Client: **EnviroAnalytics Group**	Date/Time Completed: 8/18/16 1025	Company: ARM
Well Location: Area A, Parcel A11	Weather/Site Conditions: sunny, 80s	Checked by: _____

A. Well Construction Details

Well Cover Type: (*Stick-up*) or *Flush-Mount*	PVC Screen Interval: 10 to 20
Well riser/screen material: *PVC*	Sandpack Interval: 8 to 20
Difference between Ground Surface and TOC: (+ / -)	Measured Total Depth of Well When Installed (TOC) (F): (See Original Well Construction Diagram)

B. Wetted Bore Volume Determination

Well (PVC) Diameter: 2.0 in.	Well Total Depth (TOC): 11.02 ft. (B)
Well (PVC) Volume: 0.163 gal./ft. (A)	Depth to Static Water Level (TOC): 23.10 ft. (C)
Petroleum/Product Present? *Y* or (N) Thickness (ft.): N/A	Height of Water Column: (B - C) 12.08 ft. (D)
Initial Thickness of Sediment in Bottom of Well (F - B): ____ ft.	Wetted Bore Volume: (A x D) 1.97 gal. (E)

C. Surge and Pump Event Summary Data

Description of Surge Equipment: cyclone pump

Event No.	Screen Interval (ft.)	No. of Surge Strokes	Volume of Water Removed (gal.)	Bore Volumes of Water Removed	Qualitative Description of Color/Turbidity/Odors/Other
1	~~0~~ 3-10-13	10	8	4.06	Light tan turbidity
2	~~3~~ 6-13-16	10	8	4.06	11
3	~~6~~ 12-16-20	10	14	7.11	lighter color but still turbid
	Cumulative Totals: (Minimum of 3 Well Volumes)		30	15.23	

Final Depth to Water (from TOC): 23.30

Thickness of Any Sediment Remaining in Well: None

All depths reported are from reference notch in top of TOC.

Well ID: LF-04S
Date: 8/18/16

ID Numbers of IDW Drums Generated:
1. S98 - GW - 8/18/16 - A11
2. S99 - GW - 8/18/16 - A11
3. _____

D. Checklists

Equipment Check List:

- ☐ Original Well Construction Diagram
- ☐ Well Development Form
- ☐ Clean Weighted Tape for Determining Total Well Depth and Depth to Any Sediment or Possible Blockages Within the Well
- ☐ Water Level Meter and/or Oil-Water Interface Probe
- ☐ Surge Block and 2-inch ID PVC Casing Extensions
- ☐ Appropriate Pump
- ☐ Disposable Pump Tubing
- ☐ Clean Paper Towels
- ☐ Alconox Detergent
- ☐ Clean Brushes for Decontamination Work
- ☐ Distilled Water for Rinsing Equipment
- ☐ 2 New, Clean Spray Bottles for Spray Distilled Water
- ☐ 2 to 3 Clean Five-gallon Buckets
- ☐ 55-gallon Drum(s) for Development Water; Drum Non-hazardous Waste Labeling Supplies
- ☐ Personal Protective Equipment Per Health and Safety Plan

Quality Control Procedures Include:

- ☐ Decon All Equipment that Goes Down-hole per Appropriate Standard Operating Procedure (SOP)
- ☐ Staging Down-hole Equipment, Tubing, etc. on Clean Plastic Sheeting
- ☐ _____

E. Notes/Comments

F. Signatures

	Print Name	Signature	Date
Field Representative(s):	Nick Kurtz		8/18/16

All depths reported are from reference notch in top of TOC.
All measurements made in 10^{ths} of feet

TOC = from Top of PVC Casing
Grd = Ground Surface
TD = Total Depth

ARM Group Inc.

Earth Resource Engineers and Consultants

Sparrows Point

Monitoring Well Development Form – Surge and Pump Method

Well ID: LF-05 **Well Permit No.:** _____

ARM Project No.: 150298M-16	Date/Time Started: 8/18/16 902	Developed by: NK
Client: **EnviroAnalytics Group**	Date/Time Completed: 8/18/16 945	Company: ARM
Well Location: Area A, Parcel A11	Weather/Site Conditions: Sunny, 80s	Checked by: _____

A. Well Construction Details

Well Cover Type: (*Stick-up*) or *Flush-Mount*	PVC Screen Interval: 7 to 17
Well riser/screen material: *PVC*	Sandpack Interval: 5 to 17
Difference between Ground Surface and TOC: (+ / -)	Measured Total Depth of Well When Installed (TOC) (F): (See Original Well Construction Diagram)

B. Wetted Bore Volume Determination

Well (PVC) Diameter: 2.0 in.	Well Total Depth (TOC): 19.65 ft. (B)
Well (PVC) Volume: 0.163 gal./ft. (A)	Depth to Static Water Level (TOC): 6.48 ft. (C)
Petroleum/Product Present? *Y* or *N*. Thickness (ft.): N/A	Height of Water Column: (B - C) 13.17 ft. (D)
Initial Thickness of Sediment in Bottom of Well (F - B): ____ ft.	Wetted Bore Volume: (A x D) 2.15 gal. (E)

C. Surge and Pump Event Summary Data

Description of Surge Equipment: Cyclone pump

Event No.	Screen Interval (ft.)	No. of Surge Strokes	Volume of Water Removed (gal.)	Bore Volumes of Water Removed	Qualitative Description of Color/Turbidity/Odors/Other
1	~~0-3~~ 7-10	10	9	4.19	Tan ~~turbit~~ turbidity
2	~~3-6~~ 10-13	10	8	3.72	11
3	~~6-10~~ 13-17	10	12	5.58	11
	Cumulative Totals: (Minimum of 3 Well Volumes)		29	13.49	

Final Depth to Water (from TOC): 20.32

Thickness of Any Sediment Remaining in Well: None

All depths reported are from reference notch in top of TOC.

Well ID: LF-05
Date: 8/17/16

ID Numbers of IDW Drums Generated:
1. 598 - GW - 8/18/16 - A11
2. _____
3. _____

D. Checklists

Equipment Check List:

- ☐ Original Well Construction Diagram
- ☐ Well Development Form
- ☐ Clean Weighted Tape for Determining Total Well Depth and Depth to Any Sediment or Possible Blockages Within the Well
- ☐ Water Level Meter and/or Oil-Water Interface Probe
- ☐ Surge Block and 2-inch ID PVC Casing Extensions
- ☐ Appropriate Pump
- ☐ Disposable Pump Tubing
- ☐ Clean Paper Towels
- ☐ Alconox Detergent
- ☐ Clean Brushes for Decontamination Work
- ☐ Distilled Water for Rinsing Equipment
- ☐ 2 New, Clean Spray Bottles for Spray Distilled Water
- ☐ 2 to 3 Clean Five-gallon Buckets
- ☐ 55-gallon Drum(s) for Development Water; Drum Non-hazardous Waste Labeling Supplies
- ☐ Personal Protective Equipment Per Health and Safety Plan

Quality Control Procedures Include:

- ☐ Decon All Equipment that Goes Down-hole per Appropriate Standard Operating Procedure (SOP)
- ☐ Staging Down-hole Equipment, Tubing, etc. on Clean Plastic Sheeting
- ☐ _____

E. Notes/Comments

pumped dry 3 times during event #3

F. Signatures

	Print Name	Signature	Date
Field Representative(s):	Nick Kurtz		8/18/16

All depths reported are from reference notch in top of TOC.
All measurements made in 10^{ths} of feet

TOC = from Top of PVC Casing
Grd = Ground Surface
TD = Total Depth

ARM Group Inc.

Earth Resource Engineers and Consultants

Sparrows Point

Monitoring Well Development Form – Surge and Pump Method

Well ID: SG01-PDP000 **Well Permit No.:** _____ Page 1 of 2

ARM Project No.: 150298M-16	Date/Time Started: 8/18/16 / 1315	Developed by: NK
Client: **EnviroAnalytics Group**	Date/Time Completed: 8/18/16 / 1336	Company: ARM
Well Location: Area A, Parcel A1C	Weather/Site Conditions: Sunny, 80s	Checked by: _____

A. Well Construction Details

Well Cover Type: (*Stick-up*) or *Flush-Mount*	PVC Screen Interval: 6 to 16
Well riser/screen material: *PVC*	Sandpack Interval: 4 to 16
Difference between Ground Surface and TOC: (+ / -)	Measured Total Depth of Well When Installed (TOC) (F): (See Original Well Construction Diagram)

B. Wetted Bore Volume Determination

Well (PVC) Diameter: 2.0 in.	Well Total Depth (TOC): 18.45 ft. (B)
Well (PVC) Volume: 0.163 gal./ft. (A)	Depth to Static Water Level (TOC): 11.27 ft. (C)
Petroleum/Product Present? *Y* or *N*. Thickness (ft.): N/A	Height of Water Column: (B - C) 7.18 ft. (D)
Initial Thickness of Sediment in Bottom of Well (F - B): ____ ft.	Wetted Bore Volume: (A x D) 1.17 gal. (E)

C. Surge and Pump Event Summary Data

Description of Surge Equipment: Cyclone pump

Event No.	Screen Interval (ft.)	No. of Surge Strokes	Volume of Water Removed (gal.)	Bore Volumes of Water Removed	Qualitative Description of Color/Turbidity/Odors/Other
1	~~3-6~~ 9-12	12	2	1.71	Pitch black, pungent odor
2	~~6-10~~ 12-16	12	4	3.42	cleared up last 2 gallons
	Cumulative Totals: (Minimum of 3 Well Volumes)		6	5.13	

Final Depth to Water (from TOC): 18.64

Thickness of Any Sediment Remaining in Well: None

All depths reported are from reference notch in top of TOC.

ID Numbers of IDW Drums Generated:
1. 700-GW-8/18/16-A11
2. _____
3. _____

D. Checklists

Equipment Check List:

- ☐ Original Well Construction Diagram
- ☐ Well Development Form
- ☐ Clean Weighted Tape for Determining Total Well Depth and Depth to Any Sediment or Possible Blockages Within the Well
- ☐ Water Level Meter and/or Oil-Water Interface Probe
- ☐ Surge Block and 2-inch ID PVC Casing Extensions
- ☐ Appropriate Pump
- ☐ Disposable Pump Tubing
- ☐ Clean Paper Towels
- ☐ Alconox Detergent
- ☐ Clean Brushes for Decontamination Work
- ☐ Distilled Water for Rinsing Equipment
- ☐ 2 New, Clean Spray Bottles for Spray Distilled Water
- ☐ 2 to 3 Clean Five-gallon Buckets
- ☐ 55-gallon Drum(s) for Development Water; Drum Non-hazardous Waste Labeling Supplies
- ☐ Personal Protective Equipment Per Health and Safety Plan

Quality Control Procedures Include:

- ☐ Decon All Equipment that Goes Down-hole per Appropriate Standard Operating Procedure (SOP)
- ☐ Staging Down-hole Equipment, Tubing, etc. on Clean Plastic Sheeting
- ☐ _____

E. Notes/Comments

well run dry multiple times during each event,

F. Signatures

	Print Name	Signature	Date
Field Representative(s):	Nick Kurtz		8/18/16

All depths reported are from reference notch in top of TOC.
All measurements made in 10^{ths} of feet

TOC = from Top of PVC Casing
Grd = Ground Surface
TD = Total Depth