PHASE II
INVESTIGATION REPORT

AREA B: PARCEL B14
TRADEPOINT ATLANTIC
SPARROWS POINT, MARYLAND

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TABLE OF CONTENTS

TABLE OF CONTENTS
(CONT.)

FIGURES

TABLES

TABLE OF CONTENTS
(CONT.)

APPENDICES

ELECTRONIC ATTACHMENTS

1.0 INTRODUCTION

ARM Group Inc. (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 B: Parcel B14 (the Site). Parcel B14 is comprised of 60.3 acres of the approximately 3,100-acre former steel making facility (**Figure 1**). The Site is bounded to the west by Humphrey Creek Waste Water Treatment Plant (HCWWTP) and Emergency Detention Basin (within Parcel B24), to the north by the Billet Building (within Parcel B8) and the New Cold Mill Complex (NCMC; within Parcel A4), and to the east and south by the Tin Mill Canal (TMC; within Parcel B16).

The Phase II Investigation was performed in accordance with procedures outlined in the approved Phase II Investigation Work Plan – Area B: Parcel B14. This Work Plan (Revision 0 dated August 3, 2017) and an associated comment response letter (dated August 10, 2017) were collectively approved by the Maryland Department of the Environment (MDE) and the United States Environmental Protection Agency (USEPA) on August 16, 2017 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.

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. Parcel B14 is also part of the acreage that remains subject to the requirements of 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.

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.

The majority of Parcel B14 is occupied by the Humphrey Impoundment, approximately 43+ acres in size. As stated in the Description of Current Conditions (DCC) Report prepared by Rust Environment and Infrastructure, dated January 1998, the USEPA identified the Humphrey Impoundment as a potential concern due to the wastes which were historically managed within the impoundment, and potential environmental releases which could have occurred due to its construction (slag base and sides). The DCC Report also provided the following information regarding the historical use of the impoundment:

Between 1950 and 1970, Humphrey Creek existed as open water (the impoundment did not yet exist) and received wastewater from various steel processing areas including the Hot Strip Mill, Cold Sheet Mill, Tin Mill, and Rod & Wire Mill. Once the TMC was completed (ca. 1969), wastewater was directed through the HCWWTP. After the construction of the TMC, from 1970 to 1985 the Humphrey Impoundment was used as a dewatering area for on-site sludges and slurry materials generated from the Basic Oxygen Furnace (BOF) and various on-site water treatment plants. Materials that were dewatered within the impoundment included: BOF slurry, Blast Furnace G, H, J, K, and L thickener sludges, HCWWTP sludge, Sinter Plant slurry, Open Hearth (No.4) slurry, waste oil pit sludge and non-recoverable waste oil residue, and pre-limer clarifier sludge. Since 1985, the impoundment was used for sludge/slurry dewatering in emergency scenarios only (i.e., when upsets had occurred in the on-site water treatment systems). The MDE was notified prior to these emergency uses. According to the DCC Report, all of the wastes that were placed inside the impoundment were determined to be non-hazardous.

Currently, there is surface water in the Humphrey Impoundment, primarily in the eastern half of the Site (which is at lower elevations than the western half). The impoundment is covered primarily with scrub vegetation and *Phragmites* reeds. Humphrey Impoundment is included as a Special Study Area (SSA) under the Consent Decree.

1.2. OBJECTIVES

The objective of this Phase II Investigation was to fully characterize the nature and extent of contamination at the Site. 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. A summary table of the site investigation locations, including the boring identification numbers and the analyses performed, is provided as **Appendix A**. A human health Screening Level Risk Assessment (SLRA) was prepared to identify constituents and pathways of potential concern and to evaluate the significance of any observed impacts or elevated concentrations with respect to the potential future use of the Site.

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 majority of the surface elevations within the Humphrey Impoundment range between approximately 4 and 10 feet above mean sea level (amsl). The Humphrey Impoundment has a sharply sloping berm that surrounds its perimeter, such that elevations at the Site range from 4 feet amsl within the impoundment up to approximately 32 feet amsl at the highest point of the berm. In most sections, the top of the berm surrounding the impoundment ranges between 12 and 14 feet amsl. Stormwater that falls in the impoundment is collected and accumulates in low-lying areas. The portions of the Site with lower average elevations are primarily located in the eastern half of the parcel.

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 approximately 3% natural soils and 97% 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).

In general, the encountered subsurface geology included interbedded fill materials, which included fine-grained sediments (clays and silts) and coarse grained sediments (sands and gravel). Non-native fill materials (slag and brick) were encountered at depths of up to 28 feet below the ground surface (bgs), but may also exist at lower depths. The shallow groundwater was observed in soil borings at depths ranging from 6 to 19.5 feet bgs across the Site; however, groundwater was not encountered at every boring location. Soil boring 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.

Eight existing groundwater wells in the shallow hydrogeologic zone (HI02-PZM006, HI04-PZM006, HI07-PZM005, TM02-PZM009, TM04-PZM006, TM06-PZM008, TM08-PZM007, and Well 2) were selected to investigate shallow groundwater conditions at the Site. Two of the groundwater locations (HI02-PZM006 and HI07-PZM005) were already sampled as part of the separate Parcel B8 investigation, and provided relevant information for overall characterization of Parcel B14. The locations of the groundwater sampling points are indicated on **Figure 3**. Each of the permanent wells was surveyed by a Maryland-licensed surveyor. Supporting documentation from the surveys is included as **Appendix C**. A synoptic round of groundwater level measurements was collected on December 21, 2017 from each of the groundwater points included in the sampling plan (including the two wells in Parcel B8). 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 the field measurements. The localized potentiometric map for shallow groundwater has been included on **Figure 3**. The groundwater elevation contours indicate that groundwater flows to the southeast across the Site toward the TMC.

According to the Site Wide Investigation Groundwater Study Report prepared by the Bethlehem Steel Corporation Sparrows Point Division dated December 20, 2001, a particle tracking model was used in conjunction with a groundwater flow model to examine the likely groundwater flow paths within the SSAs at the property, one of which is the Humphrey Impoundment. According to the model, the simulated particles released in the Humphrey Impoundment were observed to track toward the TMC and were limited vertically to the slag unit defined in the model (the upper unconfined unit). Additionally, particles placed in the extreme western portion of the Humphrey Impoundment were observed to track toward Bear Creek. Consistent findings were stated in the

Report on Groundwater Investigation Study Program at Humphrey Impoundment and Greys Landfill, which was completed by Baker/TSA, Inc. in July 1987.

The groundwater elevation contours developed from the recent gauging measurements obtained during this Phase II Investigation do not indicate that groundwater flows toward Bear Creek to the west, but it should be acknowledged that additional elevation measurements were not obtained further to the west. These findings are generally consistent with those presented in the historical reports listed above.

3.0 SITE INVESTIGATION

A total of 69 soil samples (from 31 boring locations) and six groundwater samples were collected for analysis between September 6, 2017 and October 16, 2017 as part of the Parcel B14 Phase II Investigation. Two additional groundwater wells (HI02-PZM006 and HI07-PZM005) were previously sampled on November 16, 2015 as part of the separate Parcel B8 investigation, and also provided relevant data for overall characterization of Parcel B14. This Phase II Investigation utilized methods and protocols that followed the procedures included in the Quality Assurance Project Plan (QAPP) dated April 5, 2016 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 B14 Work Plan dated August 3, 2017 (and associated comment response letter dated August 10, 2017), and the QAPP.

All site characterization activities were conducted under the property-wide Health and Safety Plan (HASP) provided as Appendix F 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 10.3.1).

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 following REC was identified in the Parcel B14 Work Plan: Humphrey Impoundment (REC 2A, Finding 61, SWMU 190). Additional information regarding the Humphrey Impoundment is presented in Section 1.1. There were no additional SWMUs or AOCs identified at the Site based on the DCC Report.

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 B14. 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, there were no additional industrial activities or target features identified beyond the Humphrey Impoundment at the Site. Soil borings were distributed to provide sampling coverage throughout the Humphrey Impoundment, although access was somewhat restricted by standing water in the eastern portion of the Site. The final sampling plan table, with the applicable boring identification numbers and the analyses performed, has been provided as **Appendix A**. 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 (i.e., standing water). **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 the QAPP Worksheet 17 – Sampling Design and Rationale. Parcel B14 contains a total of 60.3 acres without engineered barriers. There are no engineered barriers currently installed on the parcel. In accordance with the relevant sampling density requirements, a minimum of 31 soil borings were required to meet the density specifications without engineered barriers; 31 soil borings were completed during this Phase II Investigation.

3.2. SOIL INVESTIGATION

Continuous core soil borings were advanced at 31 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 continuous core soil borings were advanced to depths between 8 and 35 feet bgs using the Geoprobe® MC-7 Macrocore soil sampler (surface to 10 feet bgs), the Geoprobe® D-22 Dual-Tube Sampler (depths >10 feet bgs), and in some cases to shallower depths (up to 5 feet bgs) using a hand auger due to access restrictions. The Work Plan specified that a hand auger could be used to complete the soil borings in cases where the locations were unable to be accessed via Geoprobe® due to soft ground. At each boring 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. The 10-foot bgs samples may have been held by the laboratory prior to analysis in accordance with the requirements given in the Parcel B14 Work Plan. These project-specific requirements for the analysis of 10-foot bgs samples are further described below. If the Geoprobe® was unable to access any of the proposed sample locations within the impoundment due to standing water, soft ground, or other encountered Site conditions, a hand auger was used to complete the boring to a depth of 5 feet bgs or refusal, and no sample was collected from the deep sample interval (9 to 10 feet bgs). 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 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.

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.

Each soil sample collected during this investigation was submitted to Pace Analytical Services, Inc. (PACE) for analysis. As stated above, the 10-foot bgs samples may have been held prior to analysis in accordance with the Parcel B14 Work Plan. Excluding these deep samples, the remaining soil samples were analyzed for Target Compound List (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. Samples from any depth interval with a sustained PID reading of greater than 10 ppm were also analyzed for TCL volatile organic compounds (VOCs) via USEPA Method 8260B. 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.

If the PID reading from the 9 to 10 foot bgs interval was less than 10 ppm, all parameters were held by the laboratory pending the analysis of the 0 to 1 and 4 to 5 foot bgs (or field adjusted interval) samples. If the 9 to 10 foot bgs interval exhibited a sustained PID reading of 10 ppm, this sample was released to be analyzed for VOCs, SVOCs, TPH-DRO, TPH-GRO, and Oil &

Grease. However, the samples for metals and cyanide were held by the laboratory pending the analysis of the 0 to 1 and 4 to 5 foot bgs interval samples. If the preliminary laboratory results from the 4 to 5 foot bgs interval indicated exceedances of the Project Action Limits (PALs) for any constituents, the held sample from the 9 to 10 foot bgs interval was then released to be analyzed for those constituents that exhibited PAL exceedances in the overlying sample.

3.3. GROUNDWATER INVESTIGATION

Eight historical shallow groundwater monitoring wells were sampled to facilitate the collection of groundwater samples and to support the definition of the groundwater potentiometric surface. The locations where shallow groundwater samples were collected are provided on **Figure 3**. Groundwater wells HI02-PZM006 and HI07-PZM005 were sampled in November 2015 as part of the separate Parcel B8 Phase II Investigation. These shallow monitoring well locations were not resampled for the Parcel B14 investigation, but provided relevant data from the previous sampling event to characterize conditions below Parcel B14.

In an email dated August 8, 2017, the MDE requested that a second attempt be made to locate the groundwater monitoring well HI05-PZM012 in order to obtain a groundwater sample from the northeast portion of the Site within the Humphrey Impoundment (instead of along the perimeter). Due to standing water and dense growth of *Phragmites* reeds, the shallow permanent well HI05-PZM012 could not be located. A temporary groundwater sample collection point was installed at boring location B14-012-SB in order to collect an additional groundwater sample in lieu of HI05-PZM012. Although non-aqueous phase liquid (NAPL) was not detected at B14-012-PZ following 0-hour and 48-hour gauging measurements, NAPL was identified at this location prior to the planned groundwater sample collection event on October 10, 2017; therefore, a groundwater sample was not collected at this location. The presence of NAPL at this location is discussed in greater detail below.

Groundwater samples were collected from each of the permanent wells (including the two locations in Parcel B8) 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 that were submitted for analysis of TAL-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 E**. 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 E**.

Groundwater samples collected in Parcel B14 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-Total and TAL-Dissolved Metals via USEPA Methods 6010C and 7470A, total and dissolved hexavalent chromium via USEPA Method 7196A, total cyanide via USEPA Method 9012A, and available cyanide via USEPA Method OIA1677. The Work Plan requirements for analysis of TPH-DRO/GRO and/or Oil & Grease have evolved throughout the investigation process and changed several times since late-2015 under agency guidance. During the implementation of the Parcel B8 Work Plan, only Oil & Grease analysis was required for the groundwater samples. Therefore, groundwater samples collected from HI02-PZM006 and HI07-PZM005 were not analyzed for DRO/GRO. In addition, HI02-PZM006 and HI07-PZM005 were sampled for total metals only (not dissolved metals), including hexavalent chromium, based on the Parcel B8 Work Plan sampling requirements. Similarly, HI02-PZM006 and HI07-PZM005 were not sampled for available cyanide. Sample containers, preservatives, and holding times for the sample analyses are listed in the QAPP Worksheet 19 & 30 – Sample Containers, Preservation, and Holding Times.

3.4. 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 temporary groundwater points;
- purged groundwater;
- decontamination fluids; and
- used personal protective equipment

Following the completion of field activities, a composite sample was gathered with aliquots from each of the Parcel B14 Phase II IDW soil drums for waste characterization. Following this analysis, 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 B14 Phase II Investigation) were characterized by preparing a composite sample from randomly selected drums. The 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 this analysis, 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 F**. 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. There were no VOCs detected above their respective PALs.

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. One SVOC (benzo[a]pyrene) was detected above its adjusted PAL in five samples. These exceedances were distributed between four boring locations throughout the parcel; location B14-018-SB exhibited exceedances at two sampling intervals (0 to 1 foot and 4 to 5 feet bgs). The SVOC PAL exceedance locations and results have been provided on **Figure S-1**.

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. Aroclor 1254 and Aroclor 1260 were detected above their respective PALs in two samples (B14-002-SB-1 and B14-006-SB-1) and three samples (B14-011-SB-1, B14-021-SB-1, and B14-034-SB-1), respectively. None of these PAL exceedances of the individual aroclor mixtures were co-located. As a result, there were five samples that exceeded the PAL for total PCBs. The PCB PAL exceedance locations and results have been provided on **Figure S-2**.

Table 6 provides a summary of the Oil & Grease and TPH-DRO/GRO detections above the laboratory's MDLs in the soil samples collected in the parcel. Exceedances of the TPH/Oil & Grease PAL (6,200 mg/kg) were noted in a significant number of samples at the Site. The maximum detections of DRO (36,100 mg/kg) and Oil & Grease (172,000 mg/kg) were identified in boring B14-013-SB at a depth of 9 feet bgs. GRO did not exceed its PAL in any soil samples. The TPH/Oil & Grease exceedances and results have been provided on **Figure S-3**. In addition to the analytical exceedances, several Phase II Investigation borings had evidence of physical product (i.e., NAPL) in the soil cores. These borings are highlighted on **Figure S-3**. At each location with identified NAPL contamination, a temporary screening piezometer was installed to assess the potential mobility of NAPL from the soil to groundwater. A comprehensive NAPL investigation has been completed and is further discussed in Section 4.3.

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. Four inorganic compounds (arsenic, hexavalent chromium, lead, and manganese) were detected above their respective PALs. Arsenic was detected above the PAL in most of the soil samples (58 total) collected from the Site. The inorganic PAL exceedance locations and results have 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 and inorganic compounds 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. There were no detections of VOCs above the applicable PALs. Exceedances of the PALs in soil within Parcel B14 consisted of four inorganics (arsenic, hexavalent chromium, lead, and manganese), one SVOC (benzo[a]pyrene), three PCB mixtures (Aroclor 1254, Aroclor 1260, and total PCBs), DRO, and Oil & Grease. Petroleum impacts, including a discussion of the analytical exceedance of the TPH/Oil & Grease PAL as well as borings with physical evidence of NAPL in the soil cores, are further discussed in Section 4.3. The soil analytical results are further evaluated in the SLRA provided in Section 6.0.

4.2. GROUNDWATER CONDITIONS

The analytical results for the detected parameters in groundwater are summarized and compared to the PALs in **Table 9** (Organics) and **Table 10** (Inorganics). This discussion includes the data obtained from permanent wells HI02-PZM006 and HI07-PZM005, which were previously sampled as part of the separate Parcel B8 Phase II Investigation. The laboratory Certificates of Analysis (including Chains of Custody) and DVRs have been included as electronic attachments.

The DVRs contain a glossary of qualifiers for the final flags assigned to individual results in the attached summary tables.

4.2.1. Groundwater Conditions: Organic Compounds

As provided on **Table 9**, several VOCs were identified above the laboratory's MDLs in groundwater samples collected from across the Site. Benzene was the only VOC detected above its applicable aqueous PAL, with a maximum detection of 653 ug/L reported in the sample collected from TM04-PZM006 adjacent to the TMC. The VOC PAL exceedance locations and results have been provided on **Figure GW-1**.

Table 9 provides a summary of SVOCs identified in the 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. Five SVOCs (1,1-biphenyl, 1,4-dioxane, benz[a]anthracene, naphthalene, and pentachlorophenol) were detected above their respective PALs. Two of these analytes were detected above their PALs in more than one aqueous sample (benz[a]anthracene and naphthalene). Naphthalene had the greatest number of exceedances in groundwater on the parcel, with six total (all locations except HI04-PZM006 and TM08-PZM007). The maximum observed concentration of naphthalene (405 ug/L) was detected in TM04-PZM006, along with the maximum detection of benzene listed above. The remaining three SVOCs with single PAL exceedances (1,1-biphenyl, 1,4-dioxane, and pentachlorophenol) were distributed throughout the parcel and were not co-located at individual sample locations. The SVOC PAL exceedance locations and results have been provided on **Figure GW-2**.

Table 9 provides a summary of the Oil & Grease and TPH-DRO/GRO detections in groundwater. DRO was detected above its PAL in six groundwater samples (all of the locations for which it was analyzed). Oil & Grease and GRO were each responsible for two PAL exceedances. The maximum detections of DRO, GRO, and Oil & Grease (2,770 ug/L, 1,450 ug/L, and 1,200 ug/L, respectively) were all identified at sample location TM04-PZM006. As documented above, this location was also observed to have the most significant benzene and naphthalene impacts among all aqueous sample locations. 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 permanent groundwater monitoring wells. However, several temporary screening piezometers positioned throughout the interior of the Site have accumulated NAPL, indicating widespread impacts. The NAPL observations in the screening piezometers are discussed in detail in Section 4.3 below.

4.2.2. Groundwater Conditions: Inorganic Constituents

Table 10 provides a summary of inorganic constituents detected above the MDLs in the groundwater samples collected from across the Site. A total of six total/dissolved metals (chromium, hexavalent chromium, iron, lead, manganese, and vanadium) were detected above their respective PALs. These metal exceedances were relatively limited at the Site, and were documented at only four groundwater sample locations. HI04-PZM006, TM04-PZM006, and Well 2 had only one metal exceedance each (manganese, hexavalent chromium, and vanadium, respectively). TM08-PZM007 exhibited exceedances of four metals (chromium, iron, lead, and manganese). Manganese was the only metal with exceedances noted at multiple groundwater sample 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.

4.2.3. 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. Please note, the VI sample screening was completed using the data obtained for available cyanide rather than total cyanide whenever possible. Since samples HI02-PZM006 and HI07-PZM005 were not sampled for available cyanide during the Parcel B8 investigation completed in November 2015, the screening evaluation for these two permanent wells was necessarily completed using the total cyanide data (which had non-detect results for both samples). The results of the individual sample screening against the VI criteria are summarized in **Table 11**.

Two parameters exceeded the individual VI TCR screening levels as specified by the VISL Calculator. These two parameters (benzene at 653 ug/L and naphthalene at 405 ug/L) exceeded the individual VI screening levels at a single location (TM04-PZM006). Sample location TM04-PZM006 was also observed to have elevated TPH/Oil & Grease detections above the aqueous PALs. There were no exceedances of the individual VI THQ criteria. 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. Sample location TM04-PZM006 was the only location where the cumulative VI cancer risk was greater

than 1E-5, with a computed value of 1E-4. There were no compounds that were identified above the 10% THQ level to be included in the cumulative VI evaluation for non-cancer hazard. The results of the cumulative VI comparisons are provided in **Table 12**, with the exceedance at location TM04-PZM006 highlighted. The benzene and naphthalene detections at this location which contributed to the VI exceedance 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). VI risks were evaluated and identified one location which is impacted by elevated benzene and naphthalene.

4.3. SUMMARY OF NAPL OBSERVATIONS

During the completion of the Phase II soil borings in Parcel B14, soil cores were screened for evidence of possible NAPL contamination. During the field screening completed by ARM representatives, 10 boring locations exhibited physical evidence of possible NAPL. Soil borings B14-006-SB, B14-010-SB, B14-011-SB, B14-012-SB, B14-013-SB, B14-015-SB, B14-017-SB, B14-021-SB, B14-022-SB, and B14-028-SB (highlighted on **Figure S-3**) had observations of sheen or NAPL in the soil cores, which were noted on the boring logs (**Appendix B**).

Elevated detections of TPH/Oil & Grease above the PAL of 6,200 mg/kg were observed to be widespread in samples 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 (see **Figure S-3**), three additional boring locations (B14-007-SB, B14-008-SB, and B14-034-SB) exceeded the DRO and/or Oil & Grease PAL of 6,200 mg/L in their respective intermediate and/or deep soil samples. In addition, soil boring B14-002-SB was completed to 10 feet bgs; however, there was no soil recovery from 1 to 10 feet bgs. As a result of the poor recovery, the soils could not be adequately screened or sampled. Based on widespread observations of NAPL elsewhere across the parcel, the potential presence of NAPL at this boring location could not be ruled out.

Based on these considerations, temporary screening piezometers were installed at each of these 14 locations over the duration of the Phase II Investigation to delineate and assess the potential mobility of free-phase product (NAPL) to groundwater. To supplement these NAPL screening locations, nine additional piezometers were installed at strategic locations throughout the Humphrey Impoundment. Soil boring logs were completed during the installation of each additional screening piezometer, and are provided in **Appendix G**. Physical evidence of NAPL was noted in several additional soil cores during the installation of the screening piezometers. **Figure 5** displays all of the soil borings with documented evidence of NAPL in the soil cores, including the original 31 soil borings completed for the Phase II Investigation (displayed on **Figure S-3**) as well as the nine additional soil borings completed to facilitate the installation of

the NAPL screening piezometers. **Appendix G** also includes a typical piezometer construction log, which includes the general construction details that are applicable for each piezometer.

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. NAPL has been observed to accumulate at several piezometer locations. The observations of NAPL within the temporary screening piezometers based on the gauging events completed through February 1, 2018 are displayed on **Figure 6**. The exact dates of gauging activities completed through February 1, 2018, as well as NAPL thickness measurements and water level measurements for that time period, have been included in **Appendix H**. This attachment also includes the specific installation date of each of the 23 piezometers, as well as relevant construction details (screen intervals, etc.). In order to avoid the need for continued updates to this Phase II Investigation Report, NAPL gauging activities completed after February 1, 2018 (representing the last 30-day measurement for the most recently installed piezometer) will be addressed in separate documents for the NAPL investigation in Parcel B14. Based on the documentation of existing NAPL impacts, continued monitoring and/or appropriate response actions will be coordinated as needed with the MDE.

A total of 23 historical monitoring wells (including wells in the shallow, intermediate, and lower hydrogeologic zones) are located along the berm which surrounds the Humphrey Impoundment. The locations of these 23 perimeter wells are displayed on **Figure 7**. Each perimeter well was inspected during the development of the Parcel B14 Work Plan. The results of the inspections were used to guide the groundwater sampling plan, and eight shallow monitoring wells were sampled for the Parcel B14 (or Parcel B8) Phase II Investigation. During well inspection and groundwater sampling events, each monitoring well was gauged (if possible, as indicated in **Figure 7**) and NAPL was not detected at any location. The well inspection forms for the 23 perimeter wells are provided in **Appendix I**.

In a few cases, the measured depth to bottom of the perimeter well was shallower than the reported historical depth, which is also displayed on the inspection form. This could potentially indicate that a blockage or other structural problem exists in the historical well casing. However, water was detected in 22 of the 23 perimeter wells; thus the potential presence of light NAPL was able to be assessed at each of these locations. Only one location (Well 3 located in the immediate vicinity of Well 1 and Well 2 along the southern edge of Parcel B14) could not be gauged due to damage at the ground surface. The absence of a water level measurement from this perimeter well is not considered to be a significant data gap due to its proximity to other nearby locations. Based on the documented presence of NAPL in numerous piezometers located inside of the berm area and the absence of NAPL in groundwater monitoring wells located outside of the berm area, this suggests that the NAPL is contained within the waste materials disposed of inside the impoundment area with potential migration laterally restricted by the presence of the constructed berm.

Other Notable Observations:

During the field investigation, an area of oil stained ground was observed approximately 100 feet southeast of soil boring B14-016-SB, near an oil baffle installed in the TMC. The approximate location of the stained area is highlighted on **Figure 5** and **Figure 6**. A photographic log of the area surrounding the oil stained ground is provided as **Appendix J**. The oil stained ground was not sampled during this investigation; however, soil analytical results for B14-016-SB are available. GRO was not detected in either soil sample collected at this location. DRO and Oil & Grease were detected at low levels, with a maximum detection of Oil & Grease of 228 mg/kg in sample B14-016-SB-1. A groundwater monitoring well, TM06-PZM008, is located immediately adjacent to the stained area. DRO was detected above its PAL at 1,500 ug/L (flagged with the "J" qualifier) but NAPL was not observed in this monitoring well when it was gauged prior to sampling. Appropriate response actions for this visibly stained area will be coordinated as needed with the MDE.

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 control (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 K**. The following 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 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 and/or checked once per day. The logs have been provided in **Appendix D** (PID calibration log) and **Appendix E** (multiparameter meter calibration log).

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 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), and applied the same validation corrections to any relevant "B" or "JB" qualified results. 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. ARM has also revised 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. Lists of the results that were rejected during data validation are provided as **Table 13** (soil) and **Table 14** (groundwater). 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, 007, 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 dataset.

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 L**. This evaluation of completeness includes only the representative 50% of sample results which were randomly selected for validation.

Three soil compounds (2,4-dinitrophenol, benzaldehyde, and 1,4-dioxane) had overall completeness ratios below 90%. There was only one low-level detection of 2,4-dinitrophenol among the 29 soil sample results that were not rejected (72.5% completeness), and no detections in the groundwater dataset (100% completeness). Although a substantial portion of the validated

benzaldehyde soil dataset was rejected, there were no detections of this compound in groundwater at the Site, and all of the detections of this compound in the soil were insignificant in comparison to the PAL of 120,000 mg/kg. The entire 1,4-dioxane soil dataset which underwent validation was rejected. The lack of 1,4-dioxane data in soil is not considered to be significant data gap since the one location that exhibited a PAL exceedance of 1,4-dioxane in groundwater (TM04-PZM006) also exhibited elevated detections of benzene and naphthalene, both volatile compounds. Therefore, any potentially significant concentrations of 1,4-dioxane in the soil would be expected to be accompanied by a significant presence of these and other volatile compounds in the groundwater, which has not been the case on this parcel.

In the groundwater samples, only 3,3'-dichlorobenzidine and methyl acetate were below the goal of 90% completeness. Two out of five results which went through the validation process were rejected for each of these compounds. The lack of groundwater data for these compounds is not considered to be a significant data gap as these compounds were not detected in either media and are not expected to be site-related contaminants. Overall, the soil and groundwater data can be used as intended.

6.0 HUMAN HEALTH SCREENING LEVEL RISK ASSESSMENT (SLRA)

6.1. ANALYSIS PROCESS

A human health Screening Level Risk Assessment (SLRA) has been conducted for soils to further evaluate the Site conditions in support of the design of necessary response measures. The SLRA included the following evaluation process:

Identification of Exposure Units (EUs): Parcel B14 (60.3 ac) consisted of one single EU including the entire Site.

Identification of Constituents of Potential Concern (COPCs): Compounds that are present at concentrations at or above the USEPA RSLs set at a target cancer risk of 1E-6 or target non-cancer Hazard Quotient (HQ) of 0.1 were identified as COPCs to be included in the SLRA. A COPC screening analysis is provided in **Table 15** to identify compounds above the relevant screening levels in Parcel B14.

Exposure Point Concentrations (EPCs): The COPC soil datasets for the site-wide EU were divided into surface (0 to 1 foot) and subsurface (>1 foot) depths for estimation of potential EPCs. An evaluation of pooled surface and subsurface soil data was also performed. Thus, for Parcel B14 there are three soil datasets. A statistical analysis was performed for each COPC dataset using the ProUCL software (version 5.0) developed by the USEPA to determine representative reasonable maximum exposure (RME) values for the EPC for each constituent. The RME value is typically the 95% Upper Confidence Limit (UCL) of the mean. For lead, the arithmetic mean for each depth was calculated for comparison to the Adult Lead Model-based values, and any individual results exceeding 10,000 mg/kg would be delineated for possible excavation and removal (if applicable). For PCBs, all results equaling or exceeding 50 mg/kg would be delineated for excavation and removal (if applicable).

Risk Ratios: The surface soil EPCs, subsurface soil EPCs, and pooled soil EPCs were compared to the USEPA RSLs for the Composite Industrial Worker. Risk ratios were calculated with a cancer risk of 1E-6 and a non-cancer HQ of 1. The risk ratios for the carcinogens were summed to develop a screening level estimate of the baseline cumulative cancer risk. The risk ratios for the non-carcinogens were segregated and summed by target organ to develop a screening level estimate of the baseline cumulative non-cancer hazard. There is no potential for human exposure to groundwater for a Composite Worker since groundwater is not used on the Tradepoint Atlantic property (and is not proposed to be utilized).

Assessment of Lead: For lead, the arithmetic mean concentrations for surface soils, subsurface soils, and pooled soils for the site-wide EU were compared to the applicable RSL (800 mg/kg) as an initial screening. If the mean concentrations for the EU were below the applicable RSL, the EU was identified as requiring no further action for lead. If a mean concentration exceeded the RSL, the mean values were compared to calculated Adult Lead Model values (ALM Version dated 6/21/2009 updated with the 5/17/2017 OLEM Directive) with inputs of 1.8 for the geometric standard deviation and a blood baseline lead level of 0.6 ug/dL. The ALM calculation generates a soil lead concentration of 2,518 mg/kg, which is the most conservative (i.e., lowest) concentration which would yield a probability of 5% of a blood lead concentration of 10 ug/dL. If the arithmetic mean concentrations for the EU were below 2,518 mg/kg, the EU was identified as requiring no further action for lead. The lead averages and screening levels are presented for surface, subsurface, and pooled soils in **Table 16**. For lead, any results equaling or exceeding 10,000 mg/kg would be identified to be delineated for possible excavation and removal (if applicable).

Assessment of TPH-DRO/GRO and Oil & Grease: EPCs were not calculated for TPH-DRO/GRO or Oil & Grease. Instead, the individual results were compared to the PAL set to a HQ of 1 (6,200 mg/kg). TPH/Oil & Grease PAL exceedances and physical evidence of NAPL in the soil cores were noted throughout the Site. The specific locations are identified in Section 4.3 of this report. A comprehensive NAPL investigation has been completed to evaluate the potential for product mobility based on these elevated detections and observations. To avoid the need for continued updates to this Phase II Investigation Report, NAPL gauging activities completed after February 1, 2018 will be addressed in separate documents for the NAPL investigation in Parcel B14. Based on the documentation of existing NAPL impacts, continued monitoring and/or appropriate response actions will be coordinated as needed with the MDE. Additional discussion is presented following the SLRA in Section 7.3.

Risk Characterization Approach: For the site-wide EU, if the baseline risk ratio for each non-carcinogenic COPC or cumulative target organ does not exceed 1 (with the exception of lead), and the sum of the risk ratios for the carcinogenic COPCs does not exceed a cumulative cancer risk of 1E-5, then a no further action determination will be recommended. The primary EPC comparison to determine the need for possible remedial action will be the Composite Worker comparison to the surface soil EPCs. However, no further action will only be approvable if subsurface soil EPCs are also compared to the Composite Worker RSLs and the cancer and non-cancer risk estimates are equal to or less than 1E-5 and 1, respectively. Pooled soil data have also been evaluated and included for discussion.

If the baseline estimate of cumulative cancer risk exceeds 1E-5, but is less than or equal to 1E-4, then capping of the EU will be considered to be an acceptable remedy for the Composite Worker. The efficacy of capping for elevated non-cancer hazard will be evaluated in terms of the magnitude of the exceedance and other factors such as bioavailability of the COPC. Similarly, for lead, if the ALM results indicate that the mean concentrations would present a 5% to 10% probability of a blood concentration of 10 ug/dL for the EU, then capping of the EU would be an acceptable presumptive remedy. The mean soil lead concentrations corresponding to ALM probabilities of 5% and 10% are 2,518 mg/kg, and 3,216 mg/kg, respectively. If capping of the identified area is not proposed, additional more detailed quantitative evaluation of risk will be required for the EU. This supplemental risk evaluation may include a selective removal (excavation) remedy to reduce site-wide risks/hazards to acceptable levels.

The USEPA's acceptable risk range is between 1E-6 and 1E-4. If the sum of the risk ratios for carcinogens exceeds a cumulative cancer risk of 1E-4, further analysis of site conditions will be required including the consideration of toxicity reduction in any proposal for a remedy. The magnitude of non-carcinogen hazard exceedances and bioavailability of the COPC will also dictate further analysis of site conditions including consideration of toxicity reduction in any proposal for a remedy. In addition, if the ALM indicates that the mean concentrations would present a >10% probability of a blood concentration of 10 ug/dL for the EU, further analysis of site conditions including toxicity reduction will be completed such that the probability would be reduced to less than 10% after toxicity reduction, but before capping.

6.2. PARCEL B14 SLRA RESULTS AND RISK CHARACTERIZATION

The soil data were divided into three datasets (surface, subsurface, and pooled) for the site-wide Parcel B14 EU to evaluate potential current and future exposure scenarios. The current Composite Worker will be exposed only to surface soils. However, if construction activities were to result in the placement of subsurface material over existing surface soils, a future Composite Worker could be exposed to a mixture of surface and subsurface soils.

The results for thallium and hexavalent chromium were eliminated from the list of soil COPCs for risk assessment because these compounds were very infrequently detected in Parcel B14 (evaluated based on frequency of detection for the entire Parcel B14 soil dataset). Thallium and hexavalent chromium were only detected in 2% and 4% of the samples analyzed for these compounds, respectively. If the detection frequency of an analyte is less than 5% in a dataset with a minimum of 20 samples, the COPC can be eliminated from the risk assessment assuming the detections are not extremely high (based on agency discretion). A single detection that is extremely high could require delineation rather than elimination. In this case it is reasonable to remove thallium and hexavalent chromium from the risk assessment based on the relatively low

magnitude of the detections. Total PCBs have been included in the risk ratio analysis, but Aroclor 1254 and Aroclor 1260 were omitted from the carcinogenic risk assessment to avoid double-counting the carcinogenic risk associated with PCBs. The total PCB values include the sum of both mixtures, and the carcinogenic screening level for total PCBs is as conservative as either of the PCB mixtures. Aroclor 1254 was included for the purpose of evaluating non-cancer hazard only. All remaining COPCs listed in **Table 15** have been retained for the risk assessment.

EPCs were calculated for each soil dataset (i.e., surface, subsurface, and pooled surface/subsurface) in the site-wide EU. ProUCL output tables (with computed UCLs) derived from the data for each COPC in soils are provided as electronic attachments, with computations presented and EPCs calculated for COPCs within each of the three datasets. The ProUCL input tables are also included as electronic attachments. The results were evaluated to identify any samples that may require additional assessment or special management based on the risk characterization approach. The calculated site-wide EPCs for the surface and subsurface exposure scenarios are provided in **Table 17**. The supplemental EPCs generated from the pooled surface and subsurface soils are also included in the EPC table.

As indicated above, the EPCs for lead are the average (i.e., arithmetic mean) values for each dataset. A lead evaluation spreadsheet, providing the computations used to determine lead averages for each dataset in the site-wide EU, is also included as an electronic attachment. The average lead concentrations are presented for each dataset in **Table 16**, which indicates that neither surface, subsurface, nor pooled soils exceeded an average lead value of 800 mg/kg. The screening criterion for lead was set at an EU arithmetic mean of 800 mg/kg based on the RSL, with a secondary limit of 2,518 mg/kg based on the May 2017 updated ALM developed by the USEPA (corresponding to a 5% probability of a blood lead level of 10 ug/dL). There were no locations where detections of lead exceeded 10,000 mg/kg, the designated threshold at which delineation would be required.

None of the detections of PCBs exceeded the mandatory excavation criterion of 50 mg/kg.

Composite Worker Assessment:

Risk ratios for the estimates of potential EPCs for the Composite Worker scenario are shown in **Table 18** (surface), **Table 19** (subsurface), and **Table 20** (pooled surface and subsurface soils). The results are summarized as follows:

Worker Scenario	Medium	Hazard Index (>1)	Total Cancer Risk
Composite Worker	Surface Soil	none	1E-5
	Subsurface Soil	none	1E-5
	Surface & Subsurface Soil	none	1E-5

The current Composite Worker will be exposed only to surface soils. The risk ratios indicated that the cumulative cancer risk for a potential Composite Worker exposure to surface soils was equal to the acceptable limit for no further action (1E-5). When the non-cancer risks were segregated and summed by target organ for cumulative Hazard Index (HI), no target organ exceeded a cumulative HI of 1 in surface soils.

Future construction activities were assumed to result in the placement of subsurface material over existing surface soils exposing a future Composite Worker to a mixture of surface and subsurface soils. This exposure scenario is dependent on any future development proposed for the parcel. The risk ratios indicated that the cumulative cancer risks for the Composite Worker scenario were equal to 1E-5 for both subsurface soils and pooled soils. When the non-cancer risks were segregated and summed by target organ for cumulative hazard, no target organs exceeded a cumulative HI of 1 in subsurface or pooled soils.

The calculated total cancer risks and cumulative non-cancer hazards for a Composite Worker exposed to surface, subsurface, and pooled soils did not exceed the regulatory standards identified in the SLRA Risk Characterization Approach. Based on this assessment, the potential current and future risks to a Composite Worker are acceptable with no further action. The Site is suitable for occupancy and use by a Composite Worker without special land-use considerations or corrective remedies to be implemented in a Response and Development Work Plan.

7.0 FINDINGS AND RECOMMENDATIONS

The objective of this Phase II Investigation was to fully characterize the nature and extent of contamination at the Site. During the Phase II Investigation, a total of eight groundwater samples (including those included in the Parcel B8 investigation) and 69 soil samples (all locations/depths) were collected and analyzed to define the nature and extent of contamination in Parcel B14. 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, Oil & Grease, TPH-DRO/GRO, TAL-Metals, hexavalent chromium, and cyanide. Shallow soil samples (0 to 1 foot bgs) were additionally analyzed for PCBs. Groundwater samples were analyzed for TCL-VOCs, TCL-SVOCs, Oil & Grease, TPH-DRO/GRO, TAL-Metals, hexavalent chromium, and total/available cyanide. As described above, the parameter lists differed slightly between the wells sampled under the Parcel B14 and Parcel B8 Phase II Investigation Work Plans.

7.1. 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. The average lead concentrations in the surface, subsurface, and pooled (surface and subsurface) soils are below the 800 mg/kg RSL, indicating that no further action is needed with respect to lead. In addition, 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 in Parcel B14 above the mandatory delineation criterion of 50 mg/kg, indicating that no further action is needed.

There were no soil PAL exceedances for VOCs, indicating that VOCs are not significant contaminants in soil at the Site. Exceedances of the PALs in soil within Parcel B14 consisted of four inorganics (arsenic, hexavalent chromium, lead, and manganese), one SVOC (benzo[a]pyrene), three PCB mixtures (Aroclor 1254, Aroclor 1260, and total PCBs), DRO, and Oil & Grease. Arsenic exceeded its PAL in the largest proportion of the samples analyzed site-wide. Arsenic was detected in 97% of the soil samples analyzed for this compound, with a maximum detection of 136 mg/kg in sample B14-008-SB-10. In comparison, lead, manganese, and hexavalent chromium exceeded their PALs in 18 samples (detected in 100% of samples), three samples (detected in 100% of samples), and one sample (detected in 7% of samples), respectively. Benzo[a]pyrene was the only SVOC detected above its PAL, with five PAL exceedances distributed between four boring locations. The maximum detection of benzo[a]pyrene in soil was 7.9 mg/kg at B14-020-SB-1. Five surface soil samples had PAL exceedances of PCBs with maximum detections of 3.4 mg/kg at B14-006-SB-1 (Aroclor 1254)

and B14-011-SB-1 (Aroclor 1260). Petroleum impacts, including a discussion of the analytical exceedance of the TPH/Oil & Grease PAL as well as borings with physical evidence of NAPL in the soil cores, are further discussed in Section 7.3. These NAPL impacts are documented to be widespread in Parcel B14, and continued monitoring and/or appropriate response actions will be coordinated as needed with the MDE.

7.2. 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 B14 consisted of six total/dissolved metals (chromium, hexavalent chromium, iron, lead, manganese, and vanadium), one VOC (benzene), five SVOCs (1,1-biphenyl, 1,4-dioxane, benz[a]anthracene, naphthalene, and pentachlorophenol), DRO, GRO, and Oil & Grease. The aqueous metal exceedances were relatively limited at the Site, and were documented at only four groundwater sample locations. HI04-PZM006, TM04-PZM006, and Well 2 had only one metal exceedance each (manganese, hexavalent chromium, and vanadium, respectively). TM08-PZM007 exhibited exceedances of four metals (chromium, iron, lead, and manganese). Manganese was the only inorganic parameter with exceedances noted at multiple sample locations. Benzene was the only VOC detected above its applicable aqueous PAL, with a maximum detection of 653 ug/L reported in the sample collected from TM04-PZM006 adjacent to the TMC. Among the five SVOCs which were detected above their PALs, two of these analytes had exceedances observed in more than one aqueous sample (benz[a]anthracene and naphthalene). The maximum observed concentration of naphthalene (405 ug/L) was detected in TM04-PZM006, along with the maximum detection of benzene identified above.

DRO was detected above its PAL in six groundwater samples (all of the locations for which it was analyzed). Oil & Grease and GRO were each responsible for two PAL exceedances. The maximum detections of DRO, GRO, and Oil & Grease (2,770 ug/L, 1,450 ug/L, and 1,200 ug/L, respectively) were all identified at sample location TM04-PZM006 (with co-located benzene and naphthalene). This location was observed to have the most significant impacts among all of the aqueous sample locations, and conditions in the vicinity of this well may present a potential risk for future vapor intrusion (see discussion below). 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 permanent groundwater monitoring wells surrounding Parcel B14. However, measureable NAPL has been documented in several temporary screening piezometers which were installed throughout the parcel.

7.3. NON-AQUEOUS PHASE LIQUID

A comprehensive NAPL investigation has been completed for Parcel B14 within the berm surrounding the Humphrey Impoundment. A series of 23 temporary piezometers have been installed in an extensive network across the Site for ongoing NAPL monitoring events. **Figure 5** displays all of the soil borings with documented evidence of NAPL in the soil cores, including the original 31 soil borings completed for the Phase II Investigation as well as the nine supplemental soil borings completed during the installation of additional NAPL screening piezometers. NAPL has been observed to accumulate at several piezometer locations, as indicated on **Figure 6** (showing the gauging events completed through February 1, 2018). Based on the documentation of existing NAPL impacts throughout the parcel, continued monitoring and/or appropriate response actions will be coordinated as needed with the MDE.

A total of 23 historical monitoring wells are located along the berm which surrounds the Humphrey Impoundment. The locations of these 23 perimeter wells are displayed on **Figure 7**. Each perimeter well was inspected during the development of the Parcel B14 Work Plan, and NAPL was not detected at any location. Based on the documented presence of NAPL in numerous piezometers located inside of the berm area and the absence of NAPL in groundwater monitoring wells located outside of the berm area, this suggests that the NAPL is contained within the waste materials disposed of inside the impoundment area with potential migration laterally restricted by the presence of the constructed berm.

7.4. HUMAN HEALTH SCREENING LEVEL RISK ASSESSMENT

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. 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. These two parameters (benzene at 653 ug/L and naphthalene at 405 ug/L) exceeded the individual VI screening levels at a single location (TM04-PZM006). Sample location TM04-PZM006 was also observed to have elevated TPH/Oil & Grease detections above the aqueous PALs. There were no exceedances of the individual VI THQ criteria.

When the cumulative VI risks were evaluated based on the individual groundwater sample locations, TM04-PZM006 was the only location where the cumulative risk or hazard exceeded the acceptable levels for no further action. TM04-PZM006 had a computed cumulative cancer risk of 1E-4. Further assessment or mitigation is recommended to address the potential VI risk identified at location TM04-PZM006 if development is proposed in this area. The selection of appropriate response measures, based on the specific development plan for the parcel, should be addressed in a project-specific Response and Development Work Plan.

The current Composite Worker could potentially be exposed to surface soils at the Site. Future development of the Site could potentially lead to Composite Worker exposures to subsurface soils. The risk ratios indicated that the cumulative cancer risks for the Composite Worker scenario were equal to 1E-5 for both surface and subsurface soils (equal to the target benchmark). A non-cancer cumulative HI of 1 was not exceeded for any organ system evaluated for Composite Worker exposures to surface or subsurface soils. Since the cumulative HI values did not exceed 1 for any target organ and the estimates of cumulative cancer risk did not exceed 1E-5 for surface or subsurface soils in the parcel, no additional action is required to address potential risks to a Composite Worker. The Site is suitable for occupancy and use by a Composite Worker without special land-use considerations or corrective measures.

7.5. RECOMMENDATIONS

Sufficient remedial investigation data has been collected to present this evaluation of the nature and extent of possible constituents of concern in Parcel B14. The presence and absence of soil and groundwater impacts within Parcel B14 have been adequately described and further investigation is not warranted, with the exception of ongoing NAPL gauging activities and associated work (response actions will be coordinated as needed with the MDE). Based on the evaluation of risk presented in the SLRA, the Site is suitable for use by industrial workers; remedial action is not required to support occupancy and use of the parcel in its current condition. Recommendations for the parcel are as follows:

- Based on the risk assessment presented in this Phase II Investigation Report, the future use of the parcel should be restricted as follows:
    - Deed restriction for industrial Site use only; no portion of the Site should be used for agricultural, recreational, or residential purposes.
    - Deed restriction on groundwater use; no subsurface water or groundwater should be extracted from aquifers for any purpose.
- Although the SLRA did not indicate any unacceptable risks for future Composite Workers, institutional controls should be implemented for the protection of Construction Workers to ensure proper oversight and management of any future construction activity that includes disturbances of the existing soil. These institutional controls will necessarily include a written notice to the MDE of any future soil disturbance activities, proper management and characterization of any material disturbed at the Site, and may require health and safety requirements for any excavations of substantial time periods. Construction Worker risks will be evaluated in site-specific Response and Development Work Plans.

- If an enclosed structure is proposed for construction in the vicinity of TM04-PZM006, 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.

- The soil boring locations with elevated detections of TPH/Oil & Grease (**Figure S-3**); or physical evidence of NAPL in the soil cores (**Figure 5**); and temporary NAPL screening piezometers with evidence of measureable or trace product (**Figure 6**); should be considered for proximity to proposed utilities in any future development planning. If future utilities are proposed in the vicinity of these borings/piezometers, appropriate protocols for the mitigation of potential product (NAPL) mobility should be addressed in a Response and Development Work Plan. Given the widespread nature of the apparent NAPL impacts, future utility construction is discouraged when possible in this area.

- A comprehensive NAPL investigation has been completed to evaluate the potential for product mobility and the extent of NAPL throughout Parcel B14. Based on the documentation of existing NAPL impacts, continued monitoring and/or appropriate response actions will be coordinated as needed with the MDE. The absence of NAPL in the perimeter groundwater monitoring wells surrounding the impoundment suggests that the NAPL is contained within the berm. To avoid the need for continued updates to this Phase II Investigation Report, NAPL gauging activities completed after February 1, 2018 (the final 30-day gauging measurement for the existing NAPL monitoring network) will be addressed in separate documents for the NAPL investigation in Parcel B14.

- During the field investigation, an area of oil stained ground was observed approximately 100 feet southeast of soil boring B14-016-SB, near an oil baffle installed in the TMC. Based on the visual evidence of contamination near the surface in the oil stained area, appropriate response actions will be coordinated as needed with the MDE.

- Based on the historical use of the Humphrey Impoundment as a disposal area for non-hazardous sludges and slurries from the various on-site water treatment plants the impoundment is recommended to be redeveloped as a single comprehensive unit. Although the SLRA did not indicate any unacceptable risks for future Composite Workers, the documented presence of NAPL below a significant portion of the Site is representative of its past use as a waste disposal area, and redevelopment of the Site should include the installation of a capping remedy. The presence of NAPL will be considered in any capping plan. The capping of the Site could potentially coincide with the innovative reuse of dredge materials or development excavation spoils (soil only) which could serve as cap materials. The capped Site could be considered for a variety of potential uses, and would be developed in the future under a Response and Development Work Plan.

8.0 REFERENCES

ARM Group, Inc. (2017). *Phase II Investigation Work Plan: Parcel B14.* Revision 0. August 3, 2017.

ARM Group, Inc. (2017). *Phase II Investigation Work Plan (Revision 0) Responses to Agency Comments.* Final Draft. August 10, 2017.

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

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.

FIGURES

Site Boundary

Parcel Boundaries

Private Property

Parcel A9
Parcel A5
Parcel A13
Parcel A7
Parcel A14
Parcel A11
Parcel A8
Parcel A12
Parcel A2
Parcel A15
Parcel A17
Parcel A18
Parcel A16
Parcel A6
Parcel A4
Parcel A10
Parcel A3
Parcel A1
Parcel B6
Parcel B8
Parcel B14
Parcel B22
Parcel B16
Parcel B21
Parcel B15
Parcel B24
Parcel B23
Parcel B25
Parcel B7
Parcel B1
Parcel B2
Parcel B3
Parcel B17
Parcel B19
Parcel B4
Parcel B5
Parcel B9
Parcel B18
Parcel B10
Parcel B13
Parcel B20
Parcel B11
Parcel B12

Tradepoint Atlantic
Area A and Area B Parcels

March 1, 2018

Figure 1

N

ARM Group Inc.
Earth Resource Engineers and Consultants

0 500 1,000 2,000 Feet

Tradepoint Atlantic

Baltimore County, MD

EnviroAnalytics Group

Area A: Project 150298M
Area B: Project 150300M
Development: Project 160443M

Site Boundary

Parcel Boundaries

1916 Shoreline:

Land

Marsh

Water

Parcel A9

Parcel A5

Parcel A13

Parcel A7

Parcel A14

Greys Creek

Bear Creek

Parcel A11

Parcel A8

Parcel A12

Parcel A2

Parcel A15

Parcel A17

Parcel A18

Parcel A16

Parcel A6

Parcel A3

Parcel A4

Parcel A10

Parcel A1

Parcel B6

Humphrey Creek

Parcel B8

Parcel B14

Parcel B21

Parcel B22

Parcel B16

Parcel B15

Parcel B24

Parcel B23

Parcel B25

Old Road Bay

Block House Cove

Parcel B7

Jones Creek

Parcel B1

Parcel B2

Parcel B3

Parcel B17

Parcel B19

Parcel B4

Parcel B5

Parcel B9

Parcel B18

Parcel B10

Parcel B13

Parcel B20

Parcel B11

Parcel B12

Patapsco River

Approximate Shoreline 1916

March 1, 2018

Adapted from Figure 2-20 of the Description of Current Conditions Report prepared by Rust Environmental and Infrastructure, dated January 1998

Figure 2

ARM Group Inc.
Earth Resource Engineers and Consultants

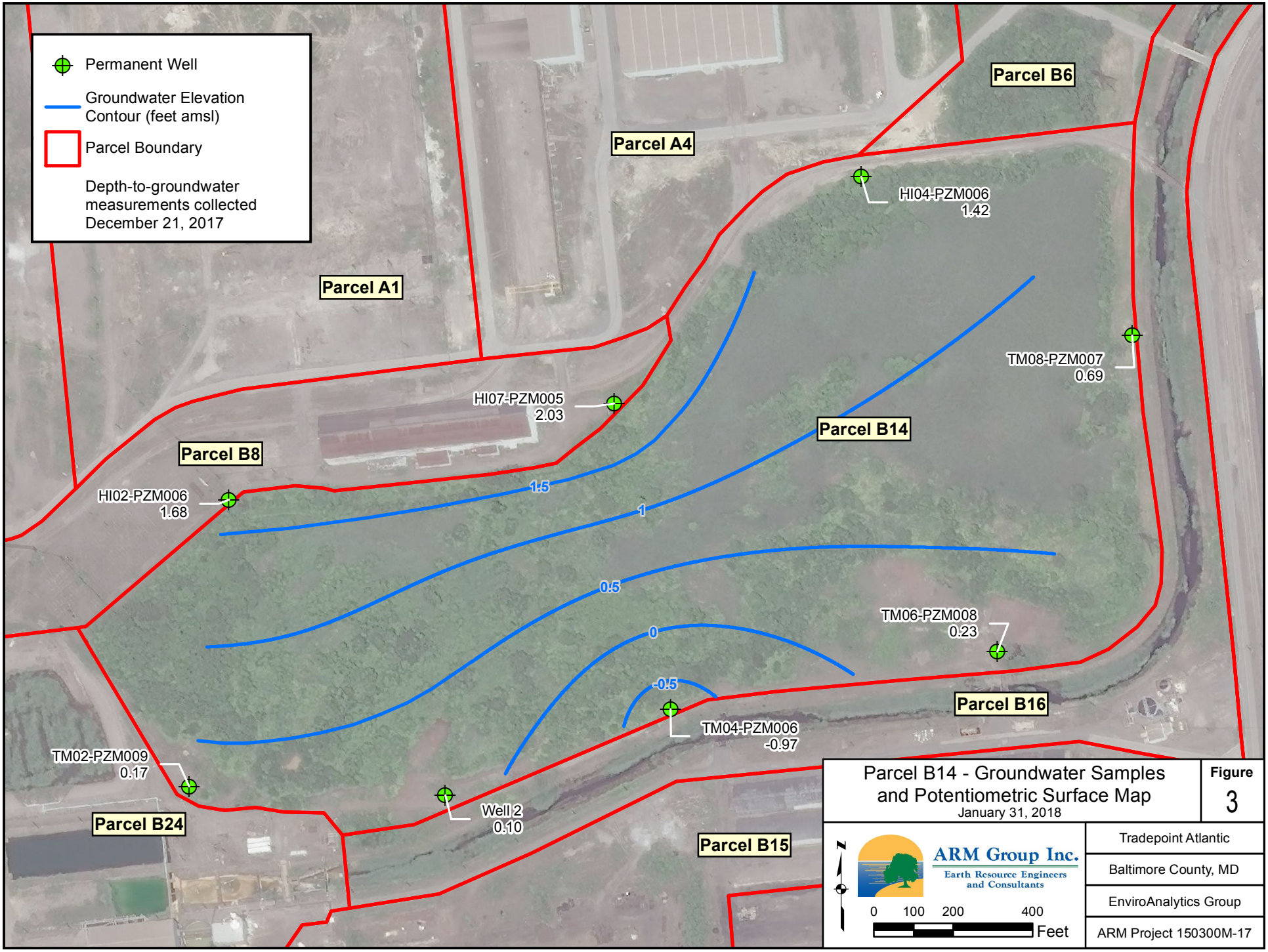
0 500 1,000 2,000 Feet

Tradepoint Atlantic

Baltimore County, MD

EnviroAnalytics Group

Area A: Project 150298M
Area B: Project 150300M
Development: Project 160443M



Parcel B14 - Groundwater Samples and Potentiometric Surface Map
January 31, 2018

Figure 3

Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-17

Parcel B14 Soil Borings
Final Field Sample Locations
December 1, 2017

Figure 4

ARM Group Inc.
Earth Resource Engineers and Consultants

0 75 150 300 Feet

Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-17

Soil Boring

Parcel Boundary

Parcel A1

Parcel A3

Parcel A4

Parcel B6

Parcel B8

Parcel B14

Parcel B15

Parcel B16

Parcel B24

B14-003-SB-1

B14-003-SB-5

B14-027-SB-1

B14-027-SB-5

B14-026-SB-1

B14-026-SB-8.5

B14-002-SB-1

Benzo[a]pyrene: 4.4

B14-006-SB-1

B14-006-SB-5

B14-025-SB-1

B14-025-SB-5

B14-024-SB-1

B14-023-SB-1

B14-009-SB-1

B14-009-SB-5

B14-010-SB-1

B14-010-SB-5

B14-022-SB-1

B14-022-SB-7.5

B14-021-SB-1

B14-021-SB-9

B14-007-SB-1

B14-007-SB-8

B14-007-SB-10

B14-008-SB-1

B14-008-SB-9

B14-011-SB-1

B14-011-SB-5

B14-028-SB-1

B14-028-SB-8

B14-015-SB-1

B14-015-SB-5

B14-012-SB-1

B14-012-SB-9

B14-012-SB-10

B14-013-SB-1

B14-013-SB-9

B14-013-SB-10

B14-014-SB-1

B14-014-SB-5

Benzo[a]pyrene: 5.9

B14-016-SB-1

B14-016-SB-7.5

B14-017-SB-1

B14-017-SB-4

B14-033-SB-1

B14-034-SB-1

B14-034-SB-5

B14-030-SB-1

B14-030-SB-6

B14-030-SB-10

B14-029-SB-1

B14-029-SB-5

B14-032-SB-1

B14-032-SB-8.5

B14-018-SB-1

Benzo[a]pyrene: 2.3

B14-018-SB-5

Benzo[a]pyrene: 3.8

B14-019-SB-1

B14-019-SB-4

B14-020-SB-1

Benzo[a]pyrene: 7.9

B14-031-SB-1

B14-031-SB-7

Parcel B14 Soil Borings
Phase II SVOC Exceedances (mg/kg)

December 1, 2017

Figure S-1

ARM Group Inc.
Earth Resource Engineers and Consultants

0 75 150 300 Feet

Tradepoint Atlantic

Baltimore County, MD

EnviroAnalytics Group

ARM Project 150300M-17


Soil Boring
Parcel Boundary
Parcel A1
Parcel A3
Parcel A4
Parcel B6
Parcel B8
Parcel B14
Parcel B15
Parcel B16
Parcel B24
B14-002-SB-1
Aroclor 1254: 1.3 J
PCBs (total): 1.3
B14-003-SB-1
B14-027-SB-1
B14-026-SB-1
B14-025-SB-1
B14-006-SB-1
Aroclor 1254: 3.4
PCBs (total): 3.4
B14-024-SB-1
B14-023-SB-1
B14-009-SB-1
B14-010-SB-1
B14-021-SB-1
Aroclor 1260: 2.8 J
PCBs (total): 2.8
B14-022-SB-1
B14-008-SB-1
B14-007-SB-1
B14-011-SB-1
Aroclor 1260: 3.4 J
PCBs (total): 3.4
B14-028-SB-1
B14-015-SB-1
B14-016-SB-1
B14-017-SB-1
B14-014-SB-1
B14-033-SB-1
B14-034-SB-1
Aroclor 1260: 3.1 J
PCBs (total): 3.1
B14-012-SB-1
B14-013-SB-1
B14-029-SB-1
B14-030-SB-1
B14-032-SB-1
B14-020-SB-1
B14-019-SB-1
B14-018-SB-1
B14-031-SB-1
Parcel B14 Soil Borings
Phase II PCB Exceedances (mg/kg)
December 1, 2017
Figure
S-2
ARM Group Inc.
Earth Resource Engineers and Consultants
0 75 150 300
Feet
Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-17

Soil Boring

Soil Boring (NAPL Identified)

Parcel Boundary

Parcel A1

Parcel A3

Parcel A4

Parcel B6

Parcel B8

Parcel B14

Parcel B15

Parcel B16

Parcel B24

B14-003-SB-1

B14-003-SB-5

B14-027-SB-1

B14-027-SB-5

B14-002-SB-1

B14-026-SB-1

B14-026-SB-8.5

B14-025-SB-1

B14-025-SB-5

B14-006-SB-1
OG: 16,200 J-

B14-006-SB-5
DRO: 6,890 J
OG: 120,000 J-

B14-024-SB-1

B14-023-SB-1

B14-009-SB-1

B14-009-SB-5

B14-010-SB-1

B14-010-SB-5

B14-021-SB-1
OG: 18,400 J+

B14-021-SB-9
DRO: 21,700 J
OG: 120,000 J+

B14-022-SB-1

B14-022-SB-7.5
DRO: 17,700 J
OG: 110,000 J+

B14-008-SB-1

B14-008-SB-9
DRO: 7,980
OG: 22,400

B14-008-SB-10
DRO: 23,400
OG: 63,400

B14-007-SB-1

B14-007-SB-8
DRO: 10,800 J
OG: 59,100 J+

B14-007-SB-10
DRO: 18,800 J
OG: 89,400 J+

B14-011-SB-1
OG: 16,200 J+

B14-011-SB-5

B14-012-SB-1

B14-012-SB-9

B14-012-SB-10
DRO: 11,000 J
OG: 75,700 J-

B14-028-SB-1

B14-028-SB-8

B14-016-SB-1

B14-016-SB-7.5

B14-017-SB-1

B14-017-SB-4

B14-014-SB-1

B14-014-SB-5

B14-015-SB-1

B14-015-SB-5

B14-034-SB-1
OG: 32,000 J-

B14-034-SB-5
OG: 14,400 J-

B14-033-SB-1

B14-013-SB-1

B14-013-SB-9
DRO: 36,100 J
OG: 172,000 J+

B14-013-SB-10
DRO: 30,700 J
OG: 122,000 J+

B14-029-SB-1

B14-029-SB-5

B14-030-SB-1

B14-030-SB-6

B14-030-SB-10

B14-032-SB-1

B14-032-SB-8.5

B14-018-SB-1

B14-018-SB-5

B14-019-SB-1

B14-019-SB-4

B14-020-SB-1

B14-031-SB-1
OG: 12,700 J-

B14-031-SB-7

Parcel B14 Soil Borings
Phase II TPH/O&G Exceedances (mg/kg)

December 12, 2017

Figure S-3

ARM Group Inc.
Earth Resource Engineers and Consultants

0 75 150 300 Feet

Tradepoint Atlantic

Baltimore County, MD

EnviroAnalytics Group

ARM Project 150300M-17

Soil Boring

Parcel Boundary

Parcel A1

Parcel A3

Parcel A4

Parcel B6

Parcel B8

Parcel B14

Parcel B15

Parcel B16

Parcel B24

B14-003-SB-1
Arsenic: 4.6

B14-003-SB-5
Chromium VI: 11.6 J-

B14-002-SB-1
Arsenic: 11.4

B14-026-SB-1

B14-026-SB-8.5
Arsenic: 8.2

B14-027-SB-1
Arsenic: 4.8

B14-027-SB-5
Arsenic: 6.7

B14-027-SB-10
Arsenic: 7.0

B14-025-SB-1

B14-025-SB-5

B14-006-SB-1
Arsenic: 26.6

B14-006-SB-5
Arsenic: 56.3

B14-024-SB-1
Arsenic: 4.5

B14-023-SB-1
Arsenic: 7.5

B14-009-SB-1
Arsenic: 33.1

B14-009-SB-5
Arsenic: 24.3

B14-010-SB-1

B14-010-SB-5
Arsenic: 3.0

B14-022-SB-1
Arsenic: 30.2
Lead: 1,160

B14-022-SB-7.5
Arsenic: 51.4

B14-021-SB-1
Arsenic: 44.0

B14-021-SB-9
Arsenic: 73.9
Lead: 1,440

B14-007-SB-1
Arsenic: 26.7
Lead: 1,600

B14-007-SB-8
Arsenic: 55.0
Lead: 2,020

B14-007-SB-10
Arsenic: 50.2
Lead: 1,390

B14-008-SB-1
Arsenic: 32.6

B14-008-SB-9
Arsenic: 28.6
Lead: 1,510

B14-008-SB-10
Arsenic: 136

B14-028-SB-1
Arsenic: 8.7

B14-028-SB-8
Arsenic: 7.0
Manganese: 26,100

B14-028-SB-10
Arsenic: 9.2

B14-011-SB-1
Arsenic: 42.1

B14-011-SB-5
Arsenic: 38.8
Lead: 820

B14-011-SB-10
Arsenic: 7.8

B14-012-SB-1
Arsenic: 43.7
Lead: 1,330 J

B14-012-SB-9
Arsenic: 33.8
Lead: 1,020 J

B14-012-SB-10
Arsenic: 30.3
Lead: 868 J

B14-013-SB-1
Arsenic: 36.3

B14-013-SB-9
Arsenic: 51.8
Lead: 916

B14-013-SB-10
Arsenic: 19.3
Lead: 818

B14-016-SB-1
Arsenic: 14.7

B14-016-SB-7.5
Arsenic: 8.0

B14-016-SB-10
Arsenic: 12.5

B14-017-SB-1

B14-017-SB-4
Arsenic: 3.7

B14-017-SB-10
Arsenic: 3.7

B14-034-SB-1
Arsenic: 46.0
Lead: 1,010 J

B14-034-SB-5
Arsenic: 20.2

B14-033-SB-1

B14-014-SB-1
Arsenic: 39.1

B14-014-SB-5
Arsenic: 38.2
Lead: 3,550

B14-015-SB-1
Arsenic: 23.4
Lead: 1,580

B14-015-SB-5
Arsenic: 37.9
Lead: 1,810

B14-015-SB-10
Arsenic: 5.1

B14-029-SB-1
Arsenic: 10.7
Lead: 1,370

B14-029-SB-5
Arsenic: 6.3
Lead: 2,660

B14-029-SB-10
Arsenic: 5.9

B14-032-SB-1

B14-032-SB-8.5
Arsenic: 10.8

B14-018-SB-1
Arsenic: 5.2

B14-018-SB-5
Arsenic: 5.6

B14-019-SB-1

B14-019-SB-4
Manganese: 32,600

B14-020-SB-1
Arsenic: 10.8

B14-030-SB-1

B14-030-SB-6
Arsenic: 3.0

B14-030-SB-10
Arsenic: 9.8

B14-031-SB-1
Arsenic: 12.3

B14-031-SB-7
Arsenic: 3.7
Manganese: 33,700

Parcel B14 Soil Borings
Phase II Inorganic Exceedances (mg/kg)

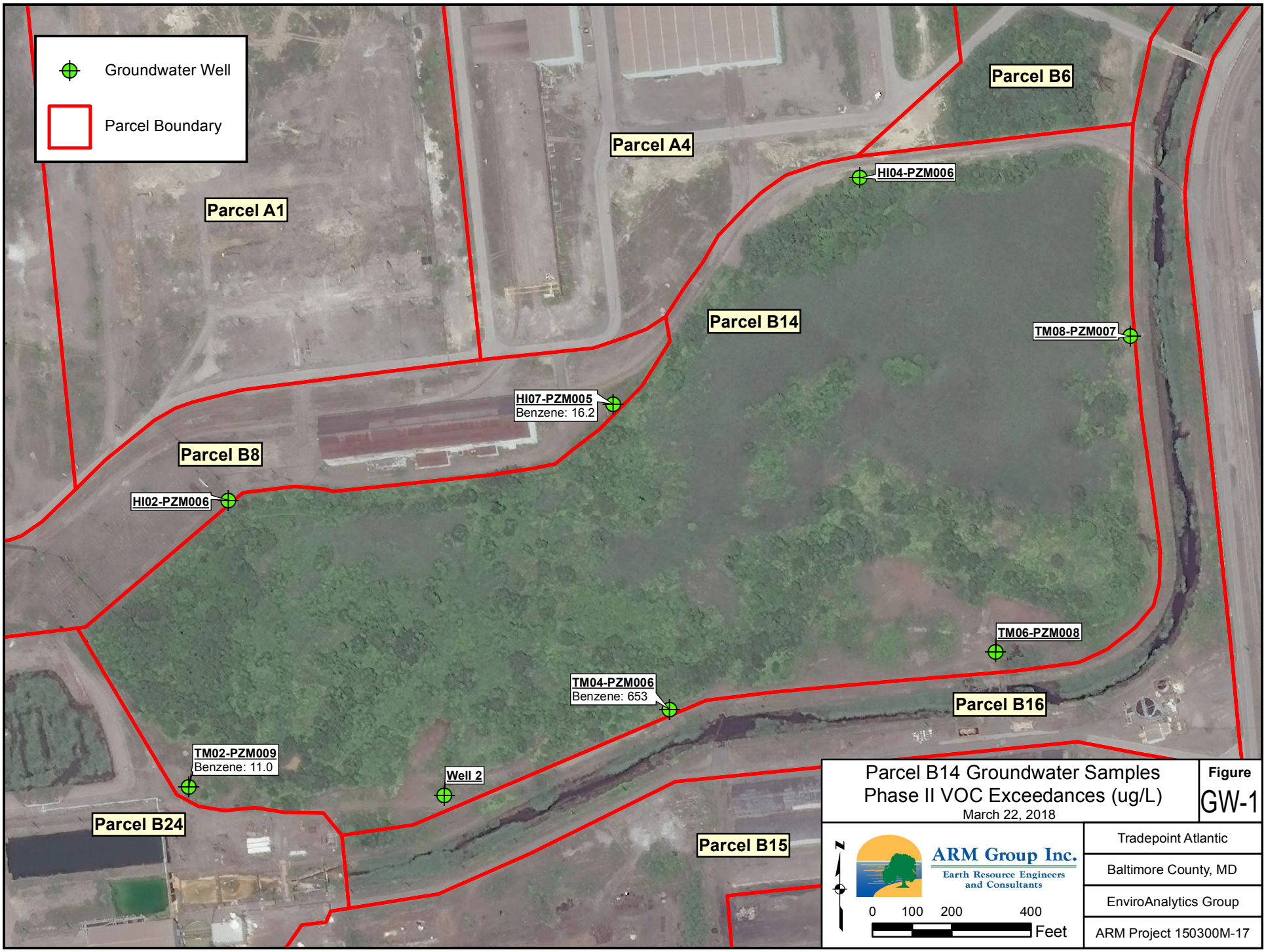
February 1, 2018

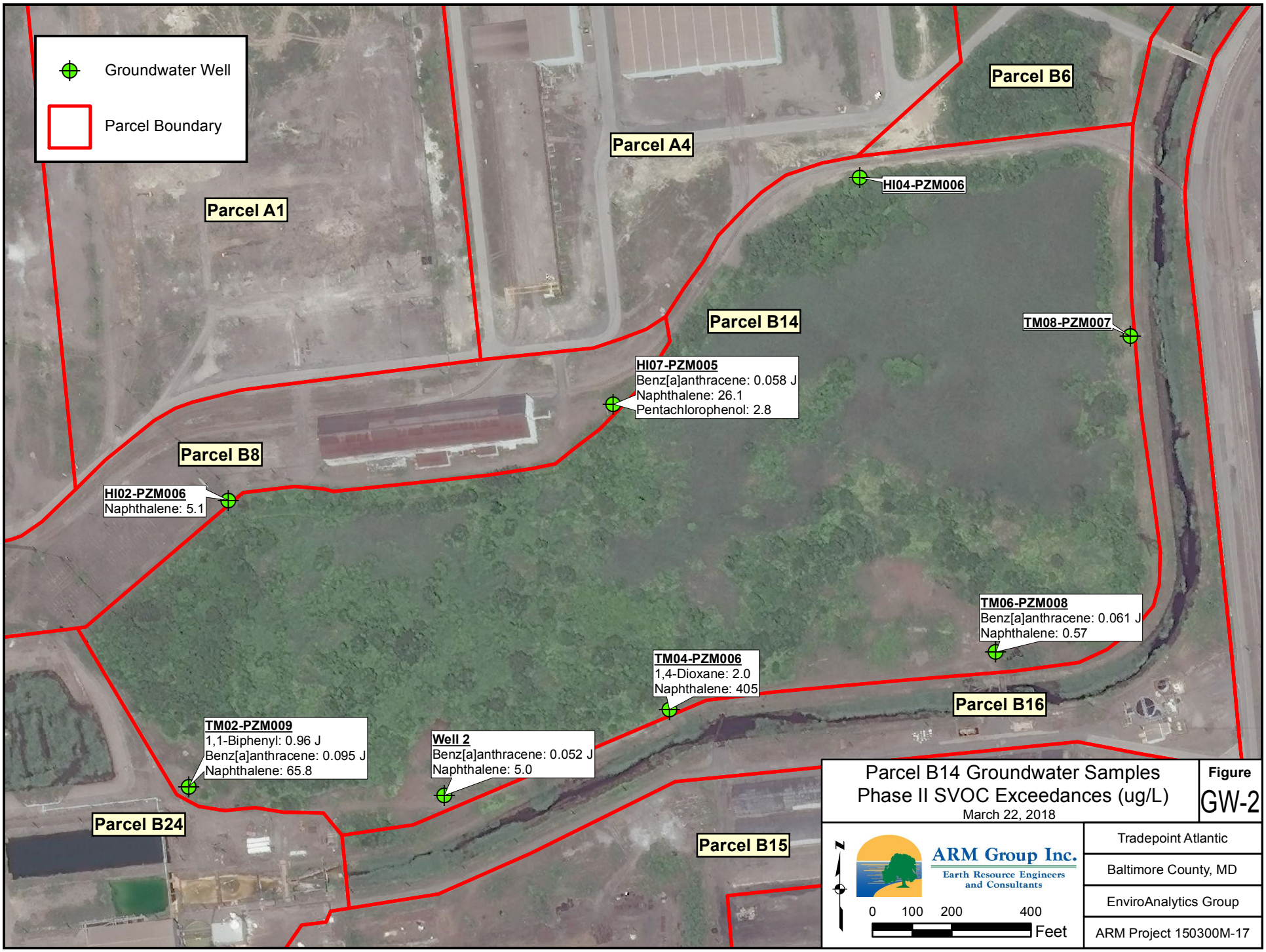
Figure S-4

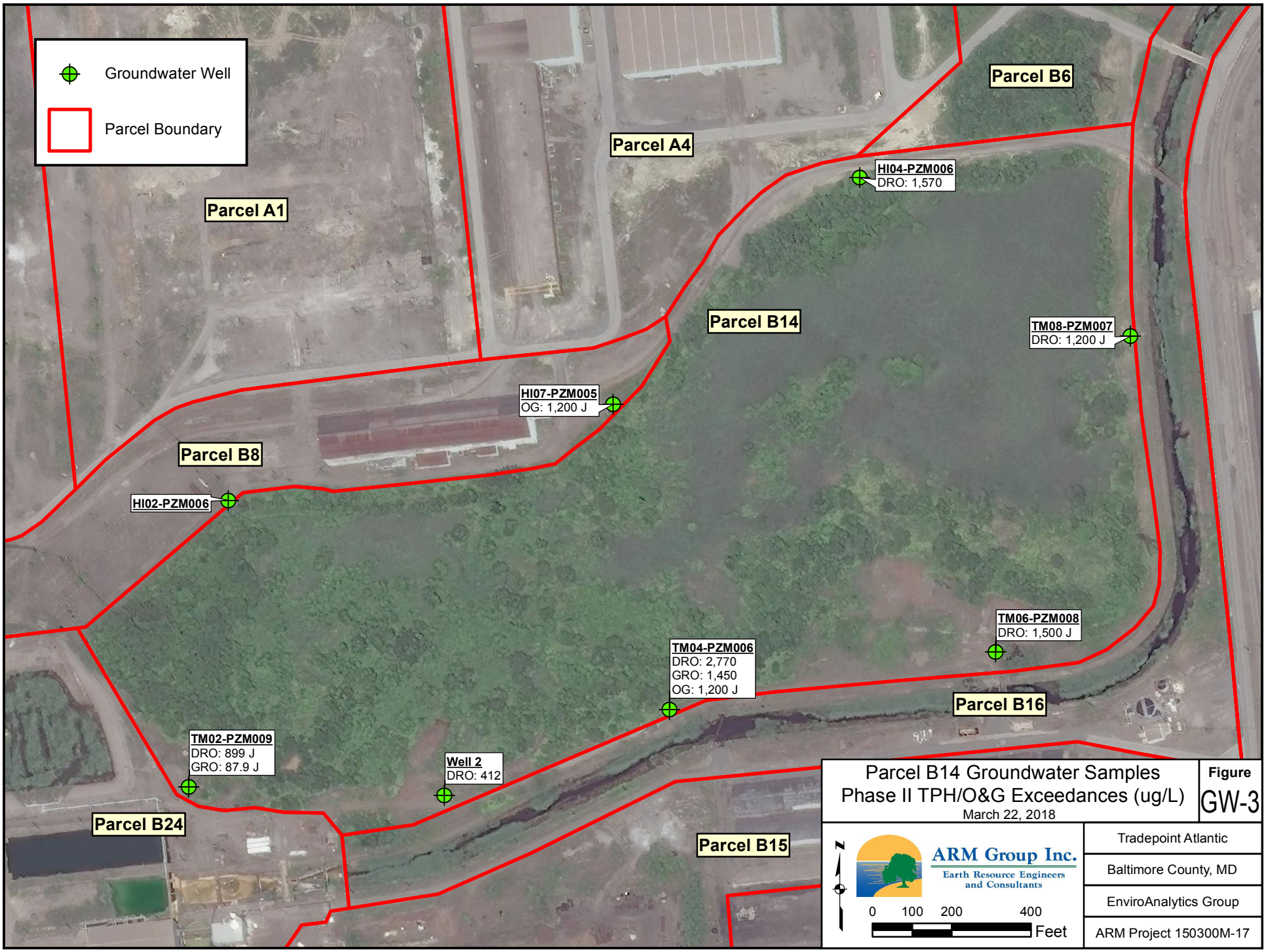
ARM Group Inc.
Earth Resource Engineers and Consultants

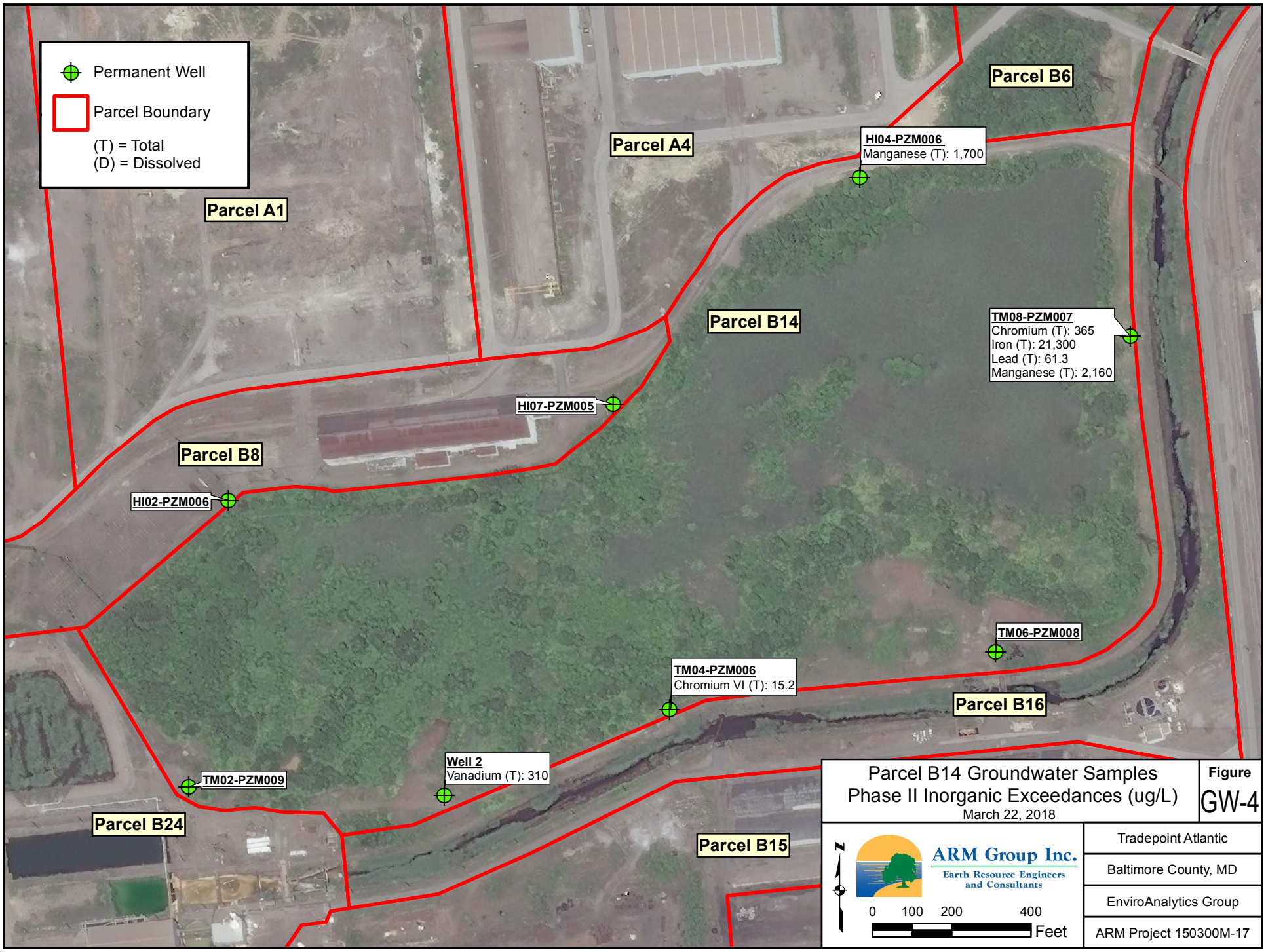
0 75 150 300 Feet

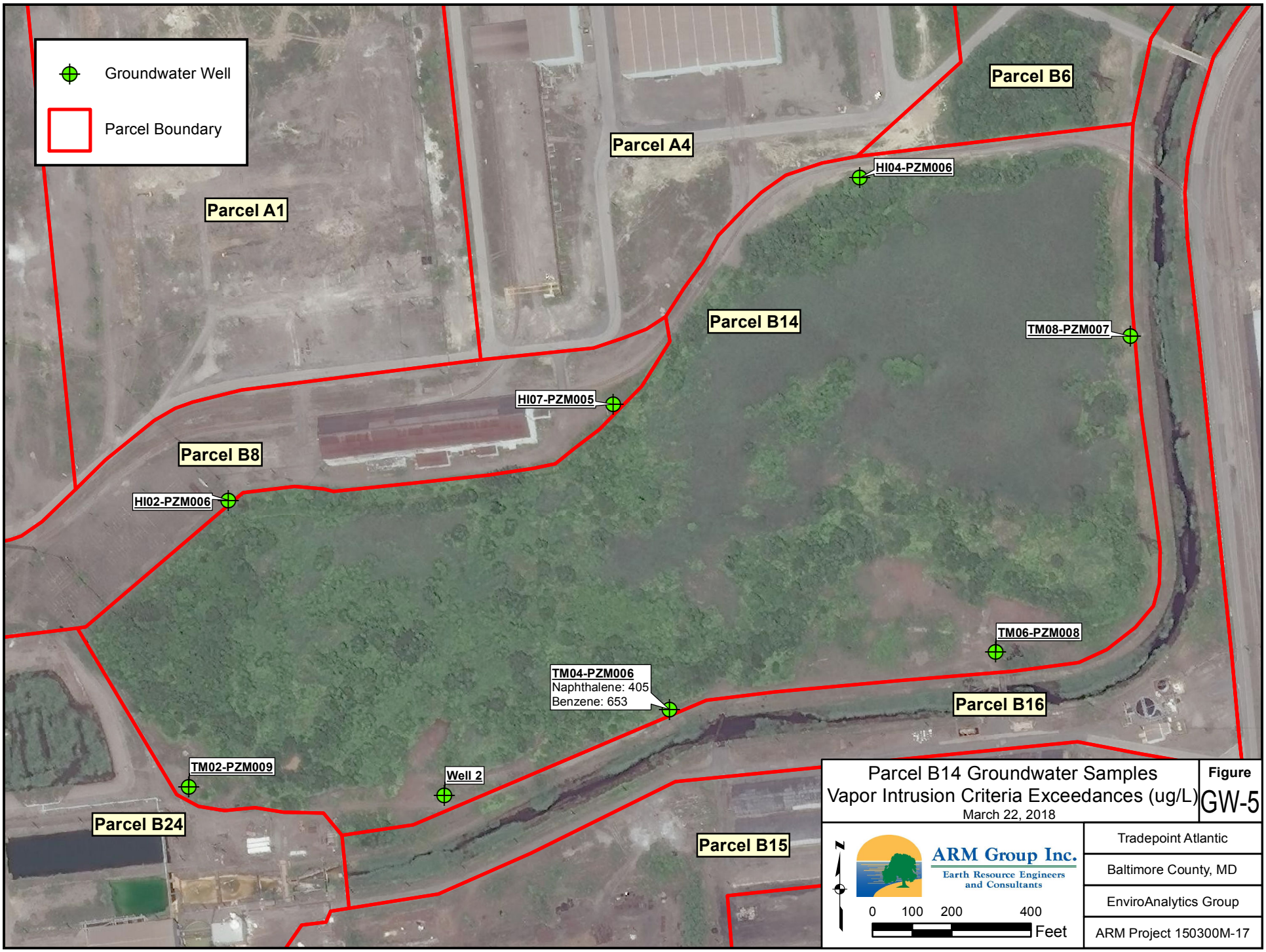
Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-17

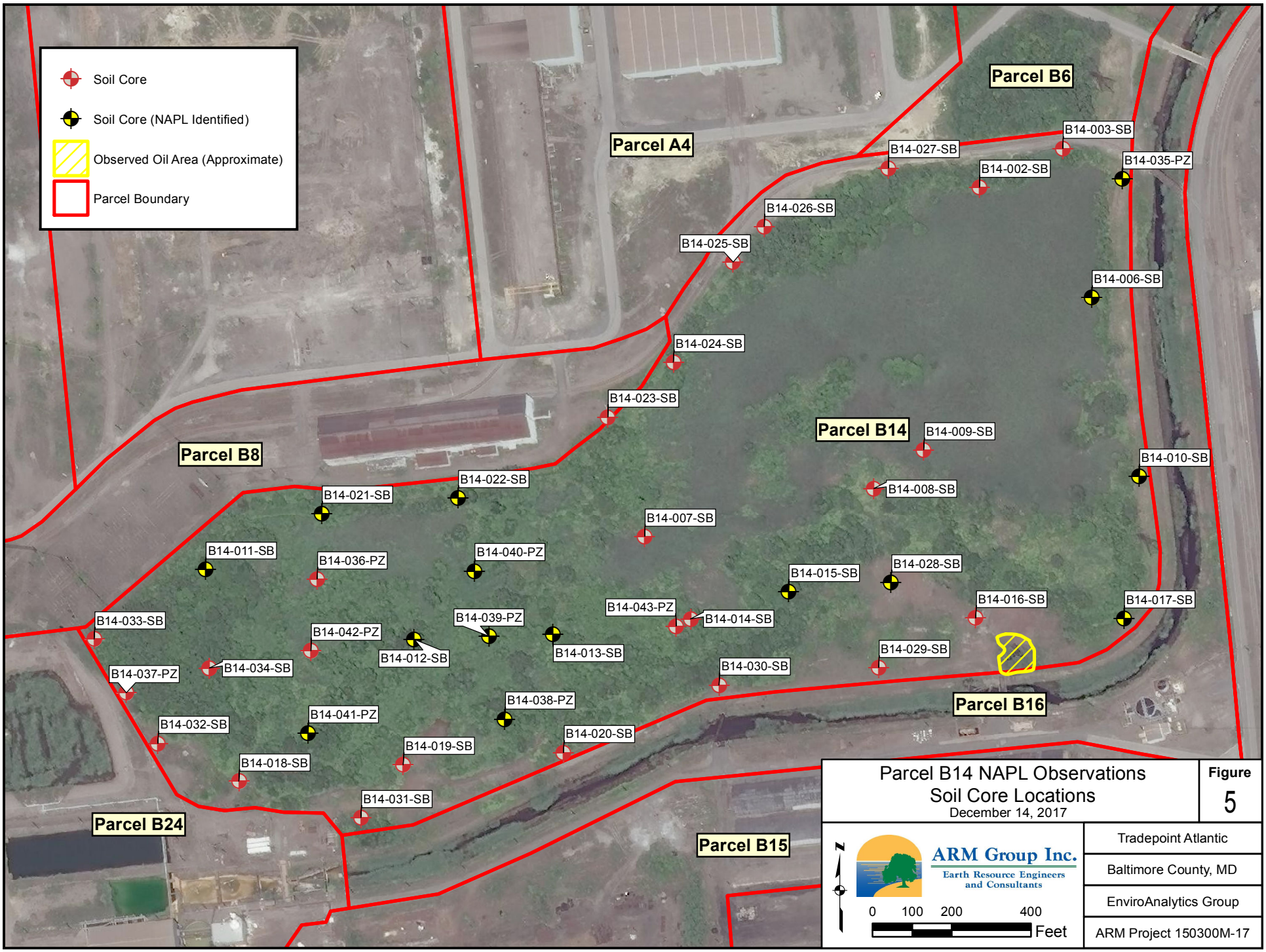

Groundwater Well
Parcel Boundary
Parcel A1
Parcel A4
Parcel B6
Parcel B14
Parcel B8
Parcel B24
Parcel B15
Parcel B16
HI04-PZM006
TM08-PZM007
HI07-PZM005
Benzene: 16.2
HI02-PZM006
TM06-PZM008
TM04-PZM006
Benzene: 653
TM02-PZM009
Benzene: 11.0
Well 2
Parcel B14 Groundwater Samples
Phase II VOC Exceedances (ug/L)
March 22, 2018
Figure
GW-1
ARM Group Inc.
Earth Resource Engineers and Consultants
0 100 200 400
Feet
Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-17


Groundwater Well
Parcel Boundary
Parcel A1
Parcel A4
Parcel B6
Parcel B14
Parcel B8
Parcel B16
Parcel B24
Parcel B15
HI04-PZM006
TM08-PZM007
HI07-PZM005
Benz[a]anthracene: 0.058 J
Naphthalene: 26.1
Pentachlorophenol: 2.8
HI02-PZM006
Naphthalene: 5.1
TM06-PZM008
Benz[a]anthracene: 0.061 J
Naphthalene: 0.57
TM04-PZM006
1,4-Dioxane: 2.0
Naphthalene: 405
TM02-PZM009
1,1-Biphenyl: 0.96 J
Benz[a]anthracene: 0.095 J
Naphthalene: 65.8
Well 2
Benz[a]anthracene: 0.052 J
Naphthalene: 5.0
Parcel B14 Groundwater Samples
Phase II SVOC Exceedances (ug/L)
March 22, 2018
Figure
GW-2
ARM Group Inc.
Earth Resource Engineers and Consultants
0 100 200 400
Feet
Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-17


Groundwater Well
Parcel Boundary
Parcel A1
Parcel A4
Parcel B6
Parcel B14
Parcel B8
Parcel B24
Parcel B15
Parcel B16
HI04-PZM006
DRO: 1,570
TM08-PZM007
DRO: 1,200 J
HI07-PZM005
OG: 1,200 J
HI02-PZM006
TM06-PZM008
DRO: 1,500 J
TM04-PZM006
DRO: 2,770
GRO: 1,450
OG: 1,200 J
TM02-PZM009
DRO: 899 J
GRO: 87.9 J
Well 2
DRO: 412
Parcel B14 Groundwater Samples
Phase II TPH/O&G Exceedances (ug/L)
March 22, 2018
Figure
GW-3
ARM Group Inc.
Earth Resource Engineers and Consultants
0 100 200 400
Feet
Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-17


Permanent Well
Parcel Boundary
(T) = Total
(D) = Dissolved
Parcel A1
Parcel A4
Parcel B6
Parcel B14
Parcel B8
Parcel B16
Parcel B24
Parcel B15
HI04-PZM006
Manganese (T): 1,700
TM08-PZM007
Chromium (T): 365
Iron (T): 21,300
Lead (T): 61.3
Manganese (T): 2,160
HI07-PZM005
HI02-PZM006
TM06-PZM008
TM04-PZM006
Chromium VI (T): 15.2
Well 2
Vanadium (T): 310
TM02-PZM009
Parcel B14 Groundwater Samples
Phase II Inorganic Exceedances (ug/L)
March 22, 2018
Figure
GW-4
ARM Group Inc.
Earth Resource Engineers and Consultants
0 100 200 400
Feet
Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-17


Groundwater Well
Parcel Boundary
Parcel A1
Parcel A4
Parcel B6
Parcel B14
Parcel B8
Parcel B16
Parcel B15
Parcel B24
HI04-PZM006
TM08-PZM007
HI07-PZM005
HI02-PZM006
TM06-PZM008
TM04-PZM006
Naphthalene: 405
Benzene: 653
TM02-PZM009
Well 2
Parcel B14 Groundwater Samples
Vapor Intrusion Criteria Exceedances (ug/L)
March 22, 2018
Figure
GW-5
ARM Group Inc.
Earth Resource Engineers and Consultants
0 100 200 400
Feet
Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-17


Soil Core
Soil Core (NAPL Identified)
Observed Oil Area (Approximate)
Parcel Boundary
Parcel A4
Parcel B6
Parcel B8
Parcel B14
Parcel B15
Parcel B16
Parcel B24
B14-003-SB
B14-027-SB
B14-002-SB
B14-035-PZ
B14-026-SB
B14-025-SB
B14-006-SB
B14-024-SB
B14-023-SB
B14-009-SB
B14-010-SB
B14-008-SB
B14-022-SB
B14-021-SB
B14-007-SB
B14-011-SB
B14-036-PZ
B14-040-PZ
B14-015-SB
B14-028-SB
B14-016-SB
B14-017-SB
B14-033-SB
B14-043-PZ
B14-014-SB
B14-039-PZ
B14-042-PZ
B14-012-SB
B14-013-SB
B14-029-SB
B14-034-SB
B14-030-SB
B14-037-PZ
B14-038-PZ
B14-041-PZ
B14-032-SB
B14-020-SB
B14-019-SB
B14-018-SB
B14-031-SB
Parcel B14 NAPL Observations
Soil Core Locations
December 14, 2017
Figure
5
ARM Group Inc.
Earth Resource Engineers and Consultants
0 100 200 400
Feet
Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-17

Parcel B14 NAPL Observations
Groundwater Screening Locations
February 1, 2018

Figure 6

ARM Group Inc.
Earth Resource Engineers and Consultants

Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 150300M-17

Parcel B14 Perimeter Groundwater Well Locations
Aerial View
December 20, 2017

Figure
7

ARM Group Inc.
Earth Resource Engineers and Consultants

0 125 250 500 Feet

Tradepoint Atlantic

Baltimore County, MD

EnviroAnalytics Group

ARM Project 150300M-17

TABLES

TABLE 1 GROUNDWATER ELEVATION DATA				
Location Name	TOC Elevation (feet AMSL)	Ground Elevation (feet AMSL)	Measured DTW (ft)	Groundwater Elevation (feet AMSL)
HI02-PZM006	10.11	10.42	8.43	1.68
HI04-PZM006	12.39	10.37	10.97	1.42
HI07-PZM005	12.66	9.64	10.63	2.03
TM02-PZM009	10.46	8.26	10.29	0.17
TM04-PZM006	11.55	9.83	12.52	-0.97
TM06-PZM008	13.57	11.13	13.34	0.23
TM08-PZM007	9.72	7.11	9.03	0.69
Well 2	12.27	9.96	12.17	0.10

DTW = Depth to water
TOC = Top of casing
AMSL = Above mean sea level

TABLE 2
HISTORICAL SITE DRAWING DETAILS

Set Name	Typical Features Shown	Drawing Number	Original Date Drawn	Latest Revision Date
Plant Arrangement	Roads, water bodies, building/structure footprints, electric lines, above-ground pipelines (e.g.: steam, nitrogen, etc.)	5038	9/1/1958	3/11/1982
		5039	9/1/1958	3/11/1982
		5040	6/15/1958	3/19/1982
		5043	8/3/1959	3/11/1982
		5044	8/3/1959	3/11/1982
		5045	9/21/1959	3/19/1982
		5050	*Unknown*	3/18/1982
Plant Index	Roads, water bodies, demolished buildings/structures, electric lines, above-ground pipelines	5138	*Unknown*	1/10/2008
		5139	*Unknown*	1/16/2008
		5140	*Unknown*	8/15/2008
		5143	*Unknown*	8/15/2008
		5144	*Unknown*	8/5/2008
		5145	*Unknown*	8/18/2008
		5150	*Unknown*	8/18/2008
Plant Sewer Lines	Same as above plus trenches, sumps, underground piping (includes pipe materials)	5538	*Unknown*	2/10/1975
		5539	8/28/1959	2/21/1975
		5540	6/15/1958	7/14/1991
		5543	9/16/1959	4/1/1975
		5544*	9/16/1959	2/27/1976
		5545	9/21/1959	6/6/1985
		5550	9/16/1959	3/5/1976
Drip Legs	Coke Oven Gas Drip Legs Locations	5887	*Unknown*	Sept. 1988
		5888	*Unknown*	Sept. 1988

*Spatial references for Drawing 5544 appears to be obstructed. Based on Drawings 5144 and 5044, it is unlikely that any additional targets are shown on Drawing 5544.

TABLE 3
FIELD SHIFTED BORING LOCATIONS

Location ID	Sample Target	Proposed Location¥		Final Location¥		Relocation Distance & Direction	
		Northing	Easting	Northing	Easting		
B14-002-SB	Humphrey Impoundment	570,755	1,459,329	570,757	1,459,351	22	E
B14-003-SB	Humphrey Impoundment	570,852	1,459,564	570,856	1,459,561	5	NW
B14-006-SB	Humphrey Impoundment	570,458	1,459,629	570,478	1,459,634	22	NE
B14-008-SB	Humphrey Impoundment	570,033	1,458,992	569,996	1,459,084	99	SE
B14-009-SB	Humphrey Impoundment	570,036	1,459,354	570,094	1,459,210	155	NW
B14-010-SB	Humphrey Impoundment	570,038	1,459,718	570,027	1,459,754	37	SE
B14-011-SB	Humphrey Impoundment	569,814	1,457,380	569,793	1,457,397	28	SE
B14-016-SB	Humphrey Impoundment	569,666	1,459,350	569,670	1,459,341	9	NW
B14-018-SB	Humphrey Impoundment	569,297	1,457,491	569,257	1,457,481	41	SW
B14-020-SB	Humphrey Impoundment	569,338	1,458,295	569,329	1,458,300	10	SE
B14-021-SB	Humphrey Impoundment	569,966	1,457,690	569,933	1,457,690	33	S
B14-022-SB	Humphrey Impoundment	569,995	1,458,034	569,973	1,458,034	22	S
B14-023-SB	Humphrey Impoundment	570,076	1,458,415	570,177	1,458,412	101	N
B14-024-SB	Humphrey Impoundment	570,344	1,458,570	570,316	1,458,578	30	SE
B14-026-SB	Humphrey Impoundment	570,669	1,458,962	570,658	1,458,807	155	W
B14-028-SB	Humphrey Impoundment	569,777	1,459,138	569,760	1,459,127	20	SW
B14-029-SB	Humphrey Impoundment	569,543	1,459,090	569,544	1,459,096	6	E

¥Reported northings and eastings are not survey accurate.
Coordinates are reported in NAD 1983 Maryland State Plane (US feet).

TABLE 4 CHARACTERIZATION RESULTS FOR SOLID IDW					
Parameter	Result (mg/L)	TCLP Limit (mg/L)	TCLP Exceedance	Laboratory Flag	Laboratory LLQ (mg/L)
1,1-Dichloroethene	0.025	0.7	no	U	0.025
1,2-Dichloroethane	0.025	0.5	no	U	0.025
1,4-Dichlorobenzene	0.025	7.5	no	U	0.025
2,4,5-Trichlorophenol	0.1	400	no	U	0.1
2,4,6-Trichlorophenol	0.1	2	no	U	0.1
2,4-Dinitrotoluene	0.1	0.13	no	U	0.1
2-Butanone (MEK)	0.049	200	no	U	0.049
2-Methylphenol	0.1	200	no	U	0.1
3&4-Methylphenol(m&p Cresol)	0.2	200	no	U	0.2
Arsenic	0.5	5	no	U	0.5
Barium	10	100	no	U	10
Benzene	0.025	0.5	no	U	0.025
Cadmium	0.1	1	no	U	0.1
Carbon tetrachloride	0.025	0.5	no	U	0.025
Chlorobenzene	0.025	100	no	U	0.025
Chloroform	0.025	6	no	U	0.025
Chromium	0.5	5	no	U	0.5
Hexachlorobenzene	0.1	0.13	no	U	0.1
Hexachlorobutadiene	0.1	0.5	no	U	0.1
Hexachloroethane	0.1	3	no	U	0.1
Lead	0.5	5	no	U	0.5
Mercury	0.02	0.2	no	U	0.02
Nitrobenzene	0.1	2	no	U	0.1
Pentachlorophenol	0.5	100	no	U	0.5
Pyridine	0.1	5	no	U	0.1
Selenium	0.1	1	no	U	0.1
Silver	0.5	5	no	U	0.5
Tetrachloroethene	0.025	0.7	no	U	0.025
Trichloroethene	0.025	0.5	no	U	0.025
Vinyl chloride	0.025	0.2	no	U	0.025

U = The analyte was not detected in the sample. The numeric value represents the sample LLQ.
TCLP = Toxicity characteristic leaching procedure
LLQ = Lowest Level of Quantitation

TABLE 5
CHARACTERIZATION RESULTS FOR LIQUID IDW

Parameter	Result (mg/L)	TCLP Limit (mg/L)	TCLP Exceedance	Laboratory Flag	Laboratory LLQ (mg/L)
1,1,1-Trichloroethane	0.005		no	U	0.005
1,1,2,2-Tetrachloroethane	0.005		no	U	0.005
1,1,2-Trichloroethane	0.005		no	U	0.005
1,1,2-Trichlorotrifluoroethane	0.005		no	U	0.005
1,1-Dichloroethane	0.005		no	U	0.005
1,1-Dichloroethene	0.005	0.7	no	U	0.005
1,2,4-Trichlorobenzene	0.005		no	U	0.005
1,2-Dibromo-3-chloropropane	0.005		no	U	0.005
1,2-Dibromoethane	0.005		no	U	0.005
1,2-Dichlorobenzene	0.005		no	U	0.005
1,2-Dichloroethane	0.005	0.5	no	U	0.005
1,2-Dichloropropane	0.005		no	U	0.005
1,3-Dichlorobenzene	0.005		no	U	0.005
1,4-Dichlorobenzene	0.005	7.5	no	U	0.005
2-Butanone (MEK)	0.025	200	no	U	0.025
2-Hexanone (MBK)	0.025		no	U	0.025
4-Methyl-2-pentanone (MIBK)	0.025		no	U	0.025
Acetone	0.025		no	U	0.025
Antimony	0.005		no	U	0.005
Aroclor 1016	0.0005		no	U	0.0005
Aroclor 1221	0.0005		no	U	0.0005
Aroclor 1232	0.0005		no	U	0.0005
Aroclor 1242	0.0005		no	U	0.0005
Aroclor 1248	0.0005		no	U	0.0005
Aroclor 1254	0.0005		no	U	0.0005
Aroclor 1260	0.0005		no	U	0.0005
Arsenic	0.005	5	no	U	0.005
Benzene	0.007	0.5	no		0.001
Beryllium	0.004		no	U	0.004
Bromodichloromethane	0.005		no	U	0.005
Bromoform	0.005		no	U	0.005
Bromomethane	0.005		no	U	0.005
Cadmium	0.005	1	no	U	0.005
Carbon disulfide	0.005		no	U	0.005
Carbon tetrachloride	0.005	0.5	no	U	0.005
Chlorobenzene	0.005	100	no	U	0.005
Chloroethane	0.005		no	U	0.005
Chloroform	0.005	6	no	U	0.005
Chloromethane	0.005		no	U	0.005
Chromium	0.005	5	no	U	0.005

TABLE 5
CHARACTERIZATION RESULTS FOR LIQUID IDW

Parameter	Result (mg/L)	TCLP Limit (mg/L)	TCLP Exceedance	Laboratory Flag	Laboratory LLQ (mg/L)
cis-1,2-Dichloroethene	0.005		no	U	0.005
cis-1,3-Dichloropropene	0.005		no	U	0.005
Copper	0.005		no	U	0.005
Cyclohexane	0.005		no	U	0.005
Dibromochloromethane	0.005		no	U	0.005
Dichlorodifluoromethane	0.005		no	U	0.005
Diisopropyl ether (DIPE)	0.025		no	U	0.025
Ethyl t-butyl ether (ETBE)	0.025		no	U	0.025
Ethylbenzene	0.001		no	U	0.001
Isopropylbenzene	0.005		no	U	0.005
Lead	0.0072	5	no		0.005
m&p-Xylene	0.005		no	U	0.005
Mercury	0.001	0.2	no	U	0.001
Methyl acetate	0.005		no	U	0.005
Methyl t-butyl ether (MTBE)	0.005		no	U	0.005
Methylcyclohexane	0.005		no	U	0.005
Methylene chloride	0.01		no	U	0.01
Naphthalene	0.01		no	U	0.01
Nickel	0.024		no		0.005
o-Xylene	0.005		no	U	0.005
Selenium	0.013	1	no		0.005
Silver	0.005	5	no	U	0.005
Styrene	0.005		no	U	0.005
tert-Amyl alcohol (TAA)	0.025		no	U	0.025
tert-Amyl ethyl ether (TAEE)	0.025		no	U	0.025
tert-Amyl methyl ether (TAME)	0.025		no	U	0.025
tert-Butanol (TBA)	0.025		no	U	0.025
Tetrachloroethene	0.005	0.7	no	U	0.005
Thallium	0.002		no	U	0.002
Toluene	0.001		no	U	0.001
trans-1,2-Dichloroethene	0.005		no	U	0.005
trans-1,3-Dichloropropene	0.005		no	U	0.005
Trichloroethene	0.005	0.5	no	U	0.005
Trichlorofluoromethane	0.005		no	U	0.005
Vinyl chloride	0.001	0.2	no	U	0.001
Zinc	0.32		no		0.005

U = The analyte was not detected in the sample. The numeric value represents the sample LLQ.
TCLP = Toxicity characteristic leaching procedure
LLQ = Lowest Level of Quantitation

Table 6
Summary of Organics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-002-SB-1	B14-003-SB-1	B14-003-SB-5	B14-006-SB-1	B14-006-SB-5	B14-007-SB-1	B14-007-SB-8
Volatile Organic Compounds									
1,1-Dichloroethane	mg/kg	16	N/A	N/A	N/A	N/A	N/A	N/A	0.013 U
1,2,3-Trichlorobenzene	mg/kg	930	N/A	N/A	N/A	N/A	N/A	N/A	0.013 U
1,2,4-Trichlorobenzene	mg/kg	110	N/A	N/A	N/A	N/A	N/A	N/A	0.013 U
1,2-Dichlorobenzene	mg/kg	9,300	N/A	N/A	N/A	N/A	N/A	N/A	**0.0061 J**
1,2-Dichloroethene (Total)	mg/kg	2,300	N/A	N/A	N/A	N/A	N/A	N/A	0.027 U
1,2-Dichloropropane	mg/kg	4.4	N/A	N/A	N/A	N/A	N/A	N/A	0.013 U
1,3-Dichlorobenzene	mg/kg		N/A	N/A	N/A	N/A	N/A	N/A	**0.038**
1,4-Dichlorobenzene	mg/kg	11	N/A	N/A	N/A	N/A	N/A	N/A	**0.037**
2-Butanone (MEK)	mg/kg	190,000	N/A	N/A	N/A	N/A	N/A	N/A	**0.064**
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	N/A	N/A	N/A	N/A	N/A	N/A	0.027 U
Acetone	mg/kg	670,000	N/A	N/A	N/A	N/A	N/A	N/A	**0.18 J**
Benzene	mg/kg	5.1	N/A	N/A	N/A	N/A	N/A	N/A	**0.012 J**
Carbon disulfide	mg/kg	3,500	N/A	N/A	N/A	N/A	N/A	N/A	0.013 U
cis-1,2-Dichloroethene	mg/kg	2,300	N/A	N/A	N/A	N/A	N/A	N/A	0.013 U
Cyclohexane	mg/kg	27,000	N/A	N/A	N/A	N/A	N/A	N/A	**0.029**
Ethylbenzene	mg/kg	25	N/A	N/A	N/A	N/A	N/A	N/A	**0.02**
Isopropylbenzene	mg/kg	9,900	N/A	N/A	N/A	N/A	N/A	N/A	**0.018**
Methylene Chloride	mg/kg	1,000	N/A	N/A	N/A	N/A	N/A	N/A	0.013 U
Styrene	mg/kg	35,000	N/A	N/A	N/A	N/A	N/A	N/A	0.013 U
Toluene	mg/kg	47,000	N/A	N/A	N/A	N/A	N/A	N/A	**0.018**
Xylenes	mg/kg	2,800	N/A	N/A	N/A	N/A	N/A	N/A	**0.051**
Semi-Volatile Organic Compounds^									
1,1-Biphenyl	mg/kg	200	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	**0.21**
1,2,4,5-Tetrachlorobenzene	mg/kg	350	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
2,3,4,6-Tetrachlorophenol	mg/kg	25,000	1.8 U	1.5 U	0.072 R	2.1 U	2.3 U	0.086 U	0.13 U
2,4,5-Trichlorophenol	mg/kg	82,000	4.4 U	3.7 U	0.18 R	5.2 U	5.8 U	0.22 U	0.33 U
2,4,6-Trichlorophenol	mg/kg	210	1.8 U	1.5 U	0.072 R	2.1 U	2.3 U	0.086 U	0.13 U
2,4-Dichlorophenol	mg/kg	2,500	1.8 U	1.5 U	0.072 R	2.1 U	2.3 U	0.086 U	0.13 U
2,4-Dimethylphenol	mg/kg	16,000	1.8 U	1.5 U	0.072 R	2.1 U	**0.78 J**	0.086 U	0.13 U
2,4-Dinitrophenol	mg/kg	1,600	4.4 U	3.7 U	0.18 R	5.2 U	5.8 U	0.22 UJ	0.33 UJ
2,4-Dinitrotoluene	mg/kg	7.4	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
2,6-Dinitrotoluene	mg/kg	1.5	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
2-Chloronaphthalene	mg/kg	60,000	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
2-Chlorophenol	mg/kg	5,800	1.8 U	1.5 U	0.072 R	2.1 U	2.3 U	0.086 U	0.13 U
2-Methylnaphthalene	mg/kg	3,000	**0.18**	**0.045 J**	**0.005 J**	**0.053 J**	**0.28**	**0.0086 J**	**0.59**
2-Methylphenol	mg/kg	41,000	1.8 U	1.5 U	0.072 R	2.1 U	2.3 U	0.086 U	0.13 U
2-Nitroaniline	mg/kg	8,000	4.4 U	3.7 U	0.18 U	5.2 U	5.8 U	0.22 U	0.33 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	3.5 U	2.9 U	0.14 R	4.1 U	4.6 U	0.17 U	**0.084 J**
4-Chloroaniline	mg/kg	11	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	**0.58**
Acenaphthene	mg/kg	45,000	**0.64**	**0.0054 J**	**0.00087 J**	**0.0087 J**	**0.083 J**	0.0086 U	**0.25 J**
Acenaphthylene	mg/kg	45,000	**0.27**	**0.14**	**0.002 J**	**0.11**	**0.065 J**	**0.0075 J**	**0.1 J**
Acetophenone	mg/kg	120,000	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
Anthracene	mg/kg	230,000	**2.4**	**0.097**	**0.0046 J**	**0.095 J**	**0.085 J**	**0.0042 J**	**0.45**
Benz[a]anthracene	mg/kg	21	**5.2**	**0.25**	**0.037**	**0.095 J**	**0.17**	**0.017**	**0.19 J**
Benzaldehyde	mg/kg	120,000	1.8 R	1.5 R	0.072 R	2.1 R	2.3 R	0.086 R	**0.078 J**
Benzo[a]pyrene	mg/kg	2.1	**4.4**	**0.68**	**0.057**	**0.087 J**	**0.19**	**0.028**	**0.13 J**
Benzo[b]fluoranthene	mg/kg	21	**7**	**0.93**	**0.098**	**0.2**	**0.65**	**0.04**	**0.24 J**
Benzo[g,h,i]perylene	mg/kg		**1.9**	**0.58**	**0.048**	**0.14**	**0.064 J**	**0.022**	**0.055 J**
Benzo[k]fluoranthene	mg/kg	210	**5.4**	**0.72**	**0.076**	**0.15**	**0.5**	**0.035**	**0.2 J**
bis(2-chloroethoxy)methane	mg/kg	2,500	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
bis(2-Chloroethyl)ether	mg/kg	1	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
bis(2-Chloroisopropyl)ether	mg/kg	22	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	1.8 U	1.5 U	0.072 U	2.1 U	**3.5**	0.086 U	0.13 UJ
Caprolactam	mg/kg	400,000	4.4 U	3.7 U	0.18 U	5.2 U	5.8 U	0.22 U	**0.98**
Carbazole	mg/kg		1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
Chrysene	mg/kg	2,100	**4.4**	**0.26**	**0.042**	**0.097 J**	**0.87**	**0.014**	**0.33**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.63**	**0.13**	**0.011**	**0.021 J**	0.12 U	**0.0048 J**	0.27 U
Diethylphthalate	mg/kg	660,000	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
Di-n-butylphthalate	mg/kg	82,000	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
Di-n-ocytlphthalate	mg/kg	8,200	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 UJ
Fluoranthene	mg/kg	30,000	**11.4**	**0.36**	**0.045**	**0.17**	**0.38**	**0.026**	**0.48**
Fluorene	mg/kg	30,000	**0.61**	**0.014 J**	**0.00074 J**	**0.018 J**	**0.14**	**0.002 J**	**0.36**
Hexachlorobenzene	mg/kg	0.96	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
Hexachlorobutadiene	mg/kg	5.3	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
Hexachlorocyclopentadiene	mg/kg	7.5	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 UJ	0.13 UJ
Hexachloroethane	mg/kg	8	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**1.9**	**0.48**	**0.039**	**0.082 J**	**0.032 J**	**0.02**	0.27 U
Isophorone	mg/kg	2,400	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
Naphthalene	mg/kg	17	**0.36**	**0.27 J**	**0.0083 J**	**0.083 J**	**0.17 J**	**0.17 J**	**0.49 J**
Nitrobenzene	mg/kg	22	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
N-Nitroso-di-n-propylamine	mg/kg	0.33	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
N-Nitrosodiphenylamine	mg/kg	470	1.8 U	1.5 U	0.072 U	2.1 U	2.3 U	0.086 U	0.13 U
Pentachlorophenol	mg/kg	4	4.4 U	3.7 U	0.18 R	5.2 U	5.8 U	0.22 UJ	0.33 UJ
Phenanthrene	mg/kg		**7.8**	**0.28**	**0.022**	**0.17**	**0.46**	**0.016**	**1.2**
Phenol	mg/kg	250,000	1.8 U	1.5 U	0.072 R	2.1 U	2.3 U	0.086 U	**0.051 J**
Pyrene	mg/kg	23,000	**9.4**	**0.36**	**0.045**	**0.16**	**0.63**	**0.027**	**1.4**
PCBs									
Aroclor 1248	mg/kg	0.94	0.11 U	0.18 U	N/A	0.26 U	N/A	0.022 U	N/A
Aroclor 1254	mg/kg	0.97	**1.3 J**	**0.097 J**	N/A	**3.4**	N/A	0.022 U	N/A
Aroclor 1260	mg/kg	0.99	0.11 UJ	0.18 U	N/A	0.26 U	N/A	**0.089 J**	N/A
PCBs (total)	mg/kg	0.97	**1.3**	1.7 U	N/A	**3.4**	N/A	**0.089 J**	N/A
TPH/Oil and Grease									
Diesel Range Organics	mg/kg	6,200	**170 J**	**56.2 J**	**9.9 J**	**2,080 J**	**6,890 J**	**220 J**	**10,800 J**
Gasoline Range Organics	mg/kg	6,200	13.5 U	12.2 U	11 U	17.7 U	**8.8 J**	18.9 UJ	**45.2 J**
Oil and Grease	mg/kg	6,200	**3,980 J-**	**736 J-**	**124 J-**	**16,200 J-**	**120,000 J-**	**1,410 J+**	**59,100 J+**

Bold indicates detection
* indicates nonvalidated data result
^ PAH compounds were analyzed for SIM
N/A indicates not analyzed in the sample
Red values indicate an exceedance of the Project Action Limit (PAL)

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

Table 6
Summary of Organics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-007-SB-10	B14-008-SB-1*	B14-008-SB-9*	B14-008-SB-10*	B14-009-SB-1*	B14-009-SB-5*	B14-010-SB-1
Volatile Organic Compounds									
1,1-Dichloroethane	mg/kg	16	0.012 U	N/A	**0.011**	N/A	N/A	N/A	N/A
1,2,3-Trichlorobenzene	mg/kg	930	0.012 U	N/A	0.0077 U	N/A	N/A	N/A	N/A
1,2,4-Trichlorobenzene	mg/kg	110	0.012 U	N/A	0.0077 U	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	mg/kg	9,300	**0.0099 J**	N/A	**0.0074 J**	N/A	N/A	N/A	N/A
1,2-Dichloroethene (Total)	mg/kg	2,300	0.025 U	N/A	**0.14**	N/A	N/A	N/A	N/A
1,2-Dichloropropane	mg/kg	4.4	0.012 U	N/A	**0.0021 J**	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	mg/kg		0.012 U	N/A	0.0077 U	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	mg/kg	11	**0.014**	N/A	**0.0051 J**	N/A	N/A	N/A	N/A
2-Butanone (MEK)	mg/kg	190,000	**0.065**	N/A	**0.054**	N/A	N/A	N/A	N/A
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.025 U	N/A	**0.024**	N/A	N/A	N/A	N/A
Acetone	mg/kg	670,000	**0.26 J**	N/A	**0.17**	N/A	N/A	N/A	N/A
Benzene	mg/kg	5.1	**0.017**	N/A	**0.38**	N/A	N/A	N/A	N/A
Carbon disulfide	mg/kg	3,500	0.012 U	N/A	**0.026**	N/A	N/A	N/A	N/A
cis-1,2-Dichloroethene	mg/kg	2,300	0.012 U	N/A	**0.14**	N/A	N/A	N/A	N/A
Cyclohexane	mg/kg	27,000	0.025 U	N/A	**0.0035 J**	N/A	N/A	N/A	N/A
Ethylbenzene	mg/kg	25	**0.012 J**	N/A	**0.06**	N/A	N/A	N/A	N/A
Isopropylbenzene	mg/kg	9,900	**0.0041 J**	N/A	**0.0068 J**	N/A	N/A	N/A	N/A
Methylene Chloride	mg/kg	1,000	0.012 U	N/A	**0.0096**	N/A	N/A	N/A	N/A
Styrene	mg/kg	35,000	0.012 U	N/A	**0.0039 J**	N/A	N/A	N/A	N/A
Toluene	mg/kg	47,000	**0.035**	N/A	**5.6**	N/A	N/A	N/A	N/A
Xylenes	mg/kg	2,800	**0.044**	N/A	**0.21**	N/A	N/A	N/A	N/A
Semi-Volatile Organic Compounds^									
1,1-Biphenyl	mg/kg	200	1.4 U	0.078 U	**0.11**	N/A	0.084 U	0.081 U	1.5 U
1,2,4,5-Tetrachlorobenzene	mg/kg	350	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
2,3,4,6-Tetrachlorophenol	mg/kg	25,000	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
2,4,5-Trichlorophenol	mg/kg	82,000	3.6 U	0.2 U	0.23 U	N/A	0.21 U	0.2 U	3.7 U
2,4,6-Trichlorophenol	mg/kg	210	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
2,4-Dichlorophenol	mg/kg	2,500	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
2,4-Dimethylphenol	mg/kg	16,000	**4.3**	0.078 U	**4**	N/A	0.084 U	0.081 U	1.5 U
2,4-Dinitrophenol	mg/kg	1,600	3.6 UJ	0.2 U	0.23 U	N/A	0.21 U	0.2 U	3.7 U
2,4-Dinitrotoluene	mg/kg	7.4	1.4 U	0.078 U	**0.055 J**	N/A	0.084 U	0.081 U	1.5 U
2,6-Dinitrotoluene	mg/kg	1.5	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
2-Chloronaphthalene	mg/kg	60,000	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
2-Chlorophenol	mg/kg	5,800	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
2-Methylnaphthalene	mg/kg	3,000	**0.91**	**0.013**	**0.67**	N/A	**0.0027 J**	**0.048**	**0.031 J**
2-Methylphenol	mg/kg	41,000	1.4 U	0.078 U	**0.75**	N/A	0.084 U	0.081 U	1.5 U
2-Nitroaniline	mg/kg	8,000	3.6 U	0.2 U	0.23 U	N/A	0.21 U	0.2 U	3.7 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	2.9 U	0.16 U	**2.2**	N/A	0.17 U	0.16 U	3 U
4-Chloroaniline	mg/kg	11	**0.64 J**	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
Acenaphthene	mg/kg	45,000	**0.68 J**	**0.002 J**	**0.13**	N/A	0.0084 U	**0.0012 J**	0.074 U
Acenaphthylene	mg/kg	45,000	**0.19 J**	**0.0072 J**	**0.18**	N/A	**0.0032 J**	**0.04**	**0.11**
Acetophenone	mg/kg	120,000	1.4 U	0.078 U	**0.19**	N/A	0.084 U	0.081 U	1.5 U
Anthracene	mg/kg	230,000	**0.74**	**0.023**	**0.31**	N/A	**0.0055 J**	**0.042**	**0.058 J**
Benz[a]anthracene	mg/kg	21	**0.78**	**0.076**	**0.58**	N/A	**0.014**	**0.14**	**0.31**
Benzaldehyde	mg/kg	120,000	1.4 R	**0.031 J**	0.091 U	N/A	0.084 U	0.081 U	1.5 R
Benzo[a]pyrene	mg/kg	2.1	**0.47 J**	**0.064**	**0.3**	N/A	**0.017**	**0.21**	**0.26**
Benzo[b]fluoranthene	mg/kg	21	**0.98**	**0.24**	**1.2**	N/A	**0.047**	**0.38**	**0.88**
Benzo[g,h,i]perylene	mg/kg		**0.24 J**	**0.079**	**0.11**	N/A	**0.013**	**0.13**	**0.15**
Benzo[k]fluoranthene	mg/kg	210	**0.87**	**0.2**	**1**	N/A	**0.036**	**0.3**	**0.68**
bis(2-chloroethoxy)methane	mg/kg	2,500	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
bis(2-Chloroethyl)ether	mg/kg	1	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
bis(2-Chloroisopropyl)ether	mg/kg	22	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	**8.2**	0.078 U	**1.2**	N/A	0.084 U	0.081 U	1.5 U
Caprolactam	mg/kg	400,000	3.6 U	0.2 U	**0.11 J**	N/A	0.21 U	0.2 U	3.7 U
Carbazole	mg/kg		1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
Chrysene	mg/kg	2,100	**1.3**	**0.095**	**1.3**	N/A	**0.019**	**0.18**	**0.29**
Dibenz[a,h]anthracene	mg/kg	2.1	0.73 U	**0.022**	**0.039 J**	N/A	**0.0041 J**	**0.039**	**0.054 J**
Diethylphthalate	mg/kg	660,000	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
Di-n-butylphthalate	mg/kg	82,000	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
Di-n-ocytlphthalate	mg/kg	8,200	1.4 UJ	0.078 U	0.91 U	N/A	0.084 U	0.081 U	1.5 U
Fluoranthene	mg/kg	30,000	**2.5**	**0.12**	**1.4**	N/A	**0.026**	**0.22**	**0.51**
Fluorene	mg/kg	30,000	**0.98**	**0.0047 J**	**0.42**	N/A	**0.00069 J**	**0.0079 J**	**0.0067 J**
Hexachlorobenzene	mg/kg	0.96	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
Hexachlorobutadiene	mg/kg	5.3	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
Hexachlorocyclopentadiene	mg/kg	7.5	1.4 UJ	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
Hexachloroethane	mg/kg	8	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.16 J**	**0.065**	**0.083 J**	N/A	**0.013**	**0.12**	**0.17**
Isophorone	mg/kg	2,400	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
Naphthalene	mg/kg	17	**1.1 J**	**0.023**	**1.3**	N/A	**0.0062 J**	**0.22**	**0.14 J**
Nitrobenzene	mg/kg	22	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
N-Nitroso-di-n-propylamine	mg/kg	0.33	1.4 U	0.078 U	0.091 U	N/A	0.084 U	0.081 U	1.5 U
N-Nitrosodiphenylamine	mg/kg	470	1.4 U	0.078 U	**0.11**	N/A	0.084 U	0.081 U	1.5 U
Pentachlorophenol	mg/kg	4	3.6 UJ	0.2 U	0.23 U	N/A	0.21 U	0.2 U	3.7 U
Phenanthrene	mg/kg		**4.8**	**0.092**	**1.6**	N/A	**0.017**	**0.075**	**0.21**
Phenol	mg/kg	250,000	1.4 U	0.078 U	**0.44**	N/A	0.084 U	0.081 U	1.5 U
Pyrene	mg/kg	23,000	**2.6**	**0.073**	**1.3**	N/A	**0.019**	**0.2**	**0.39**
PCBs									
Aroclor 1248	mg/kg	0.94	N/A	0.019 U	N/A	N/A	0.021 U	N/A	0.094 U
Aroclor 1254	mg/kg	0.97	N/A	0.019 U	N/A	N/A	0.021 U	N/A	0.094 U
Aroclor 1260	mg/kg	0.99	N/A	**0.031**	N/A	N/A	**0.027**	N/A	**0.064 J**
PCBs (total)	mg/kg	0.97	N/A	0.18 U	N/A	N/A	0.19 U	N/A	0.84 U
TPH/Oil and Grease									
Diesel Range Organics	mg/kg	6,200	**18,800 J**	**82.8**	**7,980**	**23,400**	**53.2**	**98.4**	**36.7 J**
Gasoline Range Organics	mg/kg	6,200	8.4 B	13.6 U	**23.9**	**62.8**	3.4 B	5.3 B	13.3 U
Oil and Grease	mg/kg	6,200	**89,400 J+**	**423**	**22,400**	**63,400**	**528**	**527**	**289 J-**

Bold indicates detection
* indicates nonvalidated data result
^ PAH compounds were analyzed for SIM
N/A indicates not analyzed in the sample
Red values indicate an exceedance of the Project Action Limit (PAL)

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

Table 6
Summary of Organics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-010-SB-5	B14-011-SB-1	B14-011-SB-5	B14-012-SB-1	B14-012-SB-9	B14-012-SB-10	B14-013-SB-1
Volatile Organic Compounds									
1,1-Dichloroethane	mg/kg	16	N/A	N/A	N/A	N/A	0.0049 U	0.59 U	N/A
1,2,3-Trichlorobenzene	mg/kg	930	N/A	N/A	N/A	N/A	0.0049 U	**0.47 J**	N/A
1,2,4-Trichlorobenzene	mg/kg	110	N/A	N/A	N/A	N/A	0.0049 U	**0.46 J**	N/A
1,2-Dichlorobenzene	mg/kg	9,300	N/A	N/A	N/A	N/A	0.0049 U	**0.84**	N/A
1,2-Dichloroethene (Total)	mg/kg	2,300	N/A	N/A	N/A	N/A	0.0097 U	1.2 U	N/A
1,2-Dichloropropane	mg/kg	4.4	N/A	N/A	N/A	N/A	0.0049 U	0.59 U	N/A
1,3-Dichlorobenzene	mg/kg		N/A	N/A	N/A	N/A	0.0049 U	0.59 U	N/A
1,4-Dichlorobenzene	mg/kg	11	N/A	N/A	N/A	N/A	0.0049 U	**0.34 J**	N/A
2-Butanone (MEK)	mg/kg	190,000	N/A	N/A	N/A	N/A	**0.0071 J**	1.2 U	N/A
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	N/A	N/A	N/A	N/A	0.0097 U	1.2 U	N/A
Acetone	mg/kg	670,000	N/A	N/A	N/A	N/A	**0.033 J**	1.2 UJ	N/A
Benzene	mg/kg	5.1	N/A	N/A	N/A	N/A	0.0049 U	0.59 U	N/A
Carbon disulfide	mg/kg	3,500	N/A	N/A	N/A	N/A	0.0049 U	0.59 U	N/A
cis-1,2-Dichloroethene	mg/kg	2,300	N/A	N/A	N/A	N/A	0.0049 U	0.59 U	N/A
Cyclohexane	mg/kg	27,000	N/A	N/A	N/A	N/A	0.0097 U	**0.35 J**	N/A
Ethylbenzene	mg/kg	25	N/A	N/A	N/A	N/A	0.0049 U	**1.1**	N/A
Isopropylbenzene	mg/kg	9,900	N/A	N/A	N/A	N/A	0.0049 U	**1.2**	N/A
Methylene Chloride	mg/kg	1,000	N/A	N/A	N/A	N/A	0.0049 U	0.51 B	N/A
Styrene	mg/kg	35,000	N/A	N/A	N/A	N/A	0.0049 U	0.59 U	N/A
Toluene	mg/kg	47,000	N/A	N/A	N/A	N/A	0.0049 U	**0.83**	N/A
Xylenes	mg/kg	2,800	N/A	N/A	N/A	N/A	0.015 U	**4.4**	N/A
Semi-Volatile Organic Compounds^									
1,1-Biphenyl	mg/kg	200	**0.45 J**	1 U	0.097 U	0.084 U	0.087 U	**1.5 J**	0.079 U
1,2,4,5-Tetrachlorobenzene	mg/kg	350	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
2,3,4,6-Tetrachlorophenol	mg/kg	25,000	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
2,4,5-Trichlorophenol	mg/kg	82,000	3.7 U	2.6 U	0.24 U	0.21 U	0.22 U	6.4 U	0.2 U
2,4,6-Trichlorophenol	mg/kg	210	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
2,4-Dichlorophenol	mg/kg	2,500	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
2,4-Dimethylphenol	mg/kg	16,000	1.5 U	1 U	**0.06 J**	0.084 U	0.087 U	2.5 U	0.079 U
2,4-Dinitrophenol	mg/kg	1,600	3.7 U	2.6 UJ	0.24 UJ	0.21 R	0.22 R	6.4 R	0.2 UJ
2,4-Dinitrotoluene	mg/kg	7.4	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
2,6-Dinitrotoluene	mg/kg	1.5	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
2-Chloronaphthalene	mg/kg	60,000	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
2-Chlorophenol	mg/kg	5,800	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
2-Methylnaphthalene	mg/kg	3,000	**0.1**	**0.063 J**	**0.0026 J**	**0.016**	**0.0088 J**	**8.2**	**0.0062 J**
2-Methylphenol	mg/kg	41,000	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
2-Nitroaniline	mg/kg	8,000	3.7 U	2.6 U	0.24 U	0.21 U	0.22 U	6.4 U	0.2 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	2.9 U	2 U	**0.031 J**	0.17 U	0.17 U	5.1 U	0.16 U
4-Chloroaniline	mg/kg	11	1.5 U	1 U	0.097 U	0.084 U	0.087 U	**3.6**	0.079 U
Acenaphthene	mg/kg	45,000	**0.014 J**	0.1 U	0.0097 U	**0.0018 J**	**0.0012 J**	**1.1**	**0.00066 J**
Acenaphthylene	mg/kg	45,000	**0.44**	**0.15**	**0.003 J**	**0.016**	**0.0092**	**0.79**	**0.0013 J**
Acetophenone	mg/kg	120,000	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
Anthracene	mg/kg	230,000	**0.7**	**0.13**	**0.0057 J**	**0.017**	**0.011**	**1.7**	**0.0024 J**
Benz[a]anthracene	mg/kg	21	**2.9**	**0.055 J**	0.0097 U	**0.065**	**0.023**	**1.1**	**0.014**
Benzaldehyde	mg/kg	120,000	1.5 R	1 R	0.097 R	**0.025 J**	0.087 R	2.5 R	0.079 R
Benzo[a]pyrene	mg/kg	2.1	**1.9**	**0.065 J**	0.0097 U	**0.074**	**0.023**	**0.78**	**0.018**
Benzo[b]fluoranthene	mg/kg	21	**6**	**0.11**	0.0097 U	**0.16**	**0.041**	**1.3**	**0.032**
Benzo[g,h,i]perylene	mg/kg		**1**	**0.086 J**	**0.0063 J**	**0.097**	**0.022**	**0.25 J**	**0.017**
Benzo[k]fluoranthene	mg/kg	210	**4.6**	**0.095 J**	0.0097 U	**0.14**	**0.036**	**1.1**	**0.029**
bis(2-chloroethoxy)methane	mg/kg	2,500	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
bis(2-Chloroethyl)ether	mg/kg	1	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
bis(2-Chloroisopropyl)ether	mg/kg	22	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	1.5 U	1 UJ	0.097 UJ	0.084 U	0.087 U	**18.9**	0.079 U
Caprolactam	mg/kg	400,000	3.7 U	2.6 U	0.24 U	0.21 U	0.22 U	6.4 U	0.2 U
Carbazole	mg/kg		**0.68 J**	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
Chrysene	mg/kg	2,100	**2.5**	**0.058 J**	0.0097 U	**0.067**	**0.024**	**1.2**	**0.014**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.45**	0.1 U	0.0097 U	**0.027**	**0.0055 J**	**0.052 J**	**0.0045 J**
Diethylphthalate	mg/kg	660,000	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
Di-n-butylphthalate	mg/kg	82,000	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
Di-n-ocytlphthalate	mg/kg	8,200	1.5 UJ	1 UJ	0.097 UJ	0.084 U	0.087 U	**2.7 J**	0.079 U
Fluoranthene	mg/kg	30,000	**5.9**	**0.062 J**	**0.0025 J**	**0.085**	**0.037**	**2.4**	**0.014**
Fluorene	mg/kg	30,000	**0.075**	**0.016 J**	0.0097 U	**0.0044 J**	**0.0054 J**	**1.8**	**0.00076 J**
Hexachlorobenzene	mg/kg	0.96	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
Hexachlorobutadiene	mg/kg	5.3	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
Hexachlorocyclopentadiene	mg/kg	7.5	1.5 U	1 UJ	0.097 UJ	0.084 U	0.087 U	2.5 UJ	0.079 UJ
Hexachloroethane	mg/kg	8	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**1.3**	**0.033 J**	0.0097 U	**0.077**	**0.02**	**0.19 J**	**0.013**
Isophorone	mg/kg	2,400	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
Naphthalene	mg/kg	17	**0.75 J**	**0.075 J**	**0.0073 J**	**0.021**	**0.075**	**5.9**	**0.0065 J**
Nitrobenzene	mg/kg	22	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
N-Nitroso-di-n-propylamine	mg/kg	0.33	1.5 U	1 U	0.097 U	0.084 U	0.087 U	2.5 U	0.079 U
N-Nitrosodiphenylamine	mg/kg	470	1.5 U	1 U	0.097 U	0.084 U	0.087 U	**2 J**	0.079 U
Pentachlorophenol	mg/kg	4	3.7 U	2.6 UJ	0.24 UJ	0.21 U	0.22 U	6.4 UJ	0.2 UJ
Phenanthrene	mg/kg		**3.4**	**0.088 J**	**0.0039 J**	**0.078**	**0.038**	**5.1**	**0.012**
Phenol	mg/kg	250,000	1.5 U	1 U	**0.11**	0.084 U	0.087 U	2.5 U	0.079 U
Pyrene	mg/kg	23,000	**4.2**	**0.087 J**	**0.0026 J**	**0.066**	**0.031**	**3.5**	**0.013**
PCBs									
Aroclor 1248	mg/kg	0.94	N/A	0.26 U	N/A	0.021 U	N/A	N/A	0.02 U
Aroclor 1254	mg/kg	0.97	N/A	0.26 U	N/A	0.021 U	N/A	N/A	0.02 U
Aroclor 1260	mg/kg	0.99	N/A	**3.4 J**	N/A	**0.15 J**	N/A	N/A	0.02 U
PCBs (total)	mg/kg	0.97	N/A	**3.4**	N/A	**0.15 J**	N/A	N/A	0.18 U
TPH/Oil and Grease									
Diesel Range Organics	mg/kg	6,200	**87.7 J**	**942 J**	**857 J**	**50.7 J**	**582 J**	**11,000 J**	**65.1 J**
Gasoline Range Organics	mg/kg	6,200	13.7 U	21.2 UJ	15.5 UJ	10 U	2.5 B	**126**	7.2 UJ
Oil and Grease	mg/kg	6,200	**229 J-**	**16,200 J+**	**3,750 J+**	**176 J-**	**535 J-**	**75,700 J-**	**212 J+**

Bold indicates detection
* indicates nonvalidated data result
^ PAH compounds were analyzed for SIM
N/A indicates not analyzed in the sample
Red values indicate an exceedance of the Project Action Limit (PAL)

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

Table 6
Summary of Organics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-013-SB-9	B14-013-SB-10	B14-014-SB-1*	B14-014-SB-5*	B14-015-SB-1*	B14-015-SB-5*	B14-016-SB-1*
Volatile Organic Compounds									
1,1-Dichloroethane	mg/kg	16	0.011 U	0.013 U	N/A	N/A	N/A	N/A	N/A
1,2,3-Trichlorobenzene	mg/kg	930	0.011 U	0.013 U	N/A	N/A	N/A	N/A	N/A
1,2,4-Trichlorobenzene	mg/kg	110	0.011 U	0.013 U	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	mg/kg	9,300	**0.016**	0.013 U	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethene (Total)	mg/kg	2,300	0.022 U	0.026 U	N/A	N/A	N/A	N/A	N/A
1,2-Dichloropropane	mg/kg	4.4	0.011 U	0.013 U	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	mg/kg		**0.011 J**	0.013 U	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	mg/kg	11	**0.026**	**0.0085 J**	N/A	N/A	N/A	N/A	N/A
2-Butanone (MEK)	mg/kg	190,000	0.022 U	**0.12**	N/A	N/A	N/A	N/A	N/A
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.022 U	0.026 U	N/A	N/A	N/A	N/A	N/A
Acetone	mg/kg	670,000	**0.34**	**0.44**	N/A	N/A	N/A	N/A	N/A
Benzene	mg/kg	5.1	**0.02**	**0.038**	N/A	N/A	N/A	N/A	N/A
Carbon disulfide	mg/kg	3,500	**0.0061 J**	**0.0082 J**	N/A	N/A	N/A	N/A	N/A
cis-1,2-Dichloroethene	mg/kg	2,300	0.011 U	0.013 U	N/A	N/A	N/A	N/A	N/A
Cyclohexane	mg/kg	27,000	**0.052**	0.026 U	N/A	N/A	N/A	N/A	N/A
Ethylbenzene	mg/kg	25	**0.069**	**0.026**	N/A	N/A	N/A	N/A	N/A
Isopropylbenzene	mg/kg	9,900	**0.044**	**0.0056 J**	N/A	N/A	N/A	N/A	N/A
Methylene Chloride	mg/kg	1,000	0.011 UJ	0.013 UJ	N/A	N/A	N/A	N/A	N/A
Styrene	mg/kg	35,000	0.011 U	0.013 U	N/A	N/A	N/A	N/A	N/A
Toluene	mg/kg	47,000	**0.14**	**0.12**	N/A	N/A	N/A	N/A	N/A
Xylenes	mg/kg	2,800	**0.29**	**0.087**	N/A	N/A	N/A	N/A	N/A
Semi-Volatile Organic Compounds^									
1,1-Biphenyl	mg/kg	200	**2.3**	**0.82**	0.078 U	**0.13**	0.084 U	0.076 U	0.07 U
1,2,4,5-Tetrachlorobenzene	mg/kg	350	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
2,3,4,6-Tetrachlorophenol	mg/kg	25,000	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
2,4,5-Trichlorophenol	mg/kg	82,000	3 U	0.37 U	0.2 U	0.22 U	0.21 U	0.19 U	0.17 U
2,4,6-Trichlorophenol	mg/kg	210	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
2,4-Dichlorophenol	mg/kg	2,500	1.2 U	3 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
2,4-Dimethylphenol	mg/kg	16,000	1.2 U	3 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
2,4-Dinitrophenol	mg/kg	1,600	3 UJ	0.37 UJ	0.2 U	**0.1 J**	0.21 U	0.19 U	0.17 U
2,4-Dinitrotoluene	mg/kg	7.4	1.2 U	**0.32**	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
2,6-Dinitrotoluene	mg/kg	1.5	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
2-Chloronaphthalene	mg/kg	60,000	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
2-Chlorophenol	mg/kg	5,800	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
2-Methylnaphthalene	mg/kg	3,000	**5.4**	**0.8**	**0.02 J**	**0.29**	**0.031**	**0.006 J**	**0.011 J**
2-Methylphenol	mg/kg	41,000	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
2-Nitroaniline	mg/kg	8,000	3 U	0.37 U	0.2 U	0.22 U	0.21 U	0.19 U	0.17 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	**0.3 J**	**0.21 J**	0.16 U	**0.024 J**	0.17 U	0.15 U	0.14 U
4-Chloroaniline	mg/kg	11	1.2 U	**1.2 J**	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
Acenaphthene	mg/kg	45,000	**3.7**	**0.4**	0.078 U	**0.01 J**	**0.0059 J**	**0.00063 J**	0.07 U
Acenaphthylene	mg/kg	45,000	**1.1**	**0.13 J**	**0.24**	**0.79**	**0.0062 J**	**0.0025 J**	**0.16**
Acetophenone	mg/kg	120,000	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
Anthracene	mg/kg	230,000	**3.1**	**0.44**	**0.058 J**	**0.39**	**0.054**	**0.011**	**0.053 J**
Benz[a]anthracene	mg/kg	21	**1.1**	**0.44**	**0.73**	**4.6**	**0.21**	**0.057**	**0.29**
Benzaldehyde	mg/kg	120,000	1.2 R	0.15 R	0.078 U	**0.051 J**	0.084 U	0.076 U	0.07 U
Benzo[a]pyrene	mg/kg	2.1	**0.72**	**0.2 J**	**1.8**	**5.9**	**0.15**	**0.05**	**0.33**
Benzo[b]fluoranthene	mg/kg	21	**1.2**	**0.51**	**3.1**	**10.2**	**0.59**	**0.17**	**0.78**
Benzo[g,h,i]perylene	mg/kg		**0.12**	**0.055 J**	**0.86**	**2.4**	**0.16**	**0.073**	**0.16**
Benzo[k]fluoranthene	mg/kg	210	**1.1**	**0.43**	**2.8**	**9.2**	**0.5**	**0.15**	**0.66**
bis(2-chloroethoxy)methane	mg/kg	2,500	1.2 U	3 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
bis(2-Chloroethyl)ether	mg/kg	1	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
bis(2-Chloroisopropyl)ether	mg/kg	22	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	**20**	**15.5**	**0.031 J**	**0.043 J**	0.084 U	0.076 U	0.07 U
Caprolactam	mg/kg	400,000	3 U	7.4 U	0.2 U	0.22 U	0.21 U	0.19 U	0.17 U
Carbazole	mg/kg		1.2 U	0.15 UJ	0.078 U	**0.13**	**0.022 J**	0.076 U	0.07 U
Chrysene	mg/kg	2,100	**1.2**	**0.66**	**0.71**	**3**	**0.26**	**0.082**	**0.28**
Dibenz[a,h]anthracene	mg/kg	2.1	0.12 U	0.29 U	**0.3**	**0.76**	**0.065**	**0.022**	**0.042 J**
Diethylphthalate	mg/kg	660,000	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
Di-n-butylphthalate	mg/kg	82,000	1.2 U	**0.39 J**	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
Di-n-ocytlphthalate	mg/kg	8,200	1.2 UJ	0.15 UJ	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
Fluoranthene	mg/kg	30,000	**5.3**	**1.4**	**0.42**	**7**	**0.31**	**0.07**	**0.41**
Fluorene	mg/kg	30,000	**4.7**	**0.69**	**0.0068 J**	**0.085 J**	**0.011**	**0.0027 J**	**0.0099 J**
Hexachlorobenzene	mg/kg	0.96	1.2 U	0.15 UJ	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
Hexachlorobutadiene	mg/kg	5.3	1.2 U	3 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
Hexachlorocyclopentadiene	mg/kg	7.5	1.2 UJ	0.15 UJ	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
Hexachloroethane	mg/kg	8	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.078 J**	0.29 U	**0.95**	**2.7**	**0.16**	**0.061**	**0.15**
Isophorone	mg/kg	2,400	1.2 U	3 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
Naphthalene	mg/kg	17	**1.8 J**	**2.4 J**	**0.074 J**	**2.7**	**0.034**	**0.0066 J**	**0.037 J**
Nitrobenzene	mg/kg	22	1.2 U	3 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
N-Nitroso-di-n-propylamine	mg/kg	0.33	1.2 U	0.15 U	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
N-Nitrosodiphenylamine	mg/kg	470	1.2 U	0.15 UJ	0.078 U	0.086 U	0.084 U	0.076 U	0.07 U
Pentachlorophenol	mg/kg	4	3 UJ	0.37 UJ	0.2 U	0.22 U	0.21 U	0.19 U	0.17 U
Phenanthrene	mg/kg		**15.7**	**2.5**	**0.071 J**	**1.1**	**0.24**	**0.058**	**0.16**
Phenol	mg/kg	250,000	1.2 U	0.15 U	0.078 U	**0.028 J**	0.084 U	0.076 U	0.07 U
Pyrene	mg/kg	23,000	**9**	**1.9**	**1.2**	**7.9**	**0.18**	**0.049**	**0.33**
PCBs									
Aroclor 1248	mg/kg	0.94	N/A	N/A	0.02 U	N/A	0.021 U	N/A	0.017 U
Aroclor 1254	mg/kg	0.97	N/A	N/A	0.02 U	N/A	0.021 U	N/A	0.017 U
Aroclor 1260	mg/kg	0.99	N/A	N/A	0.02 U	N/A	**0.063**	N/A	**0.036**
PCBs (total)	mg/kg	0.97	N/A	N/A	0.18 U	N/A	**0.063 J**	N/A	0.16 U
TPH/Oil and Grease									
Diesel Range Organics	mg/kg	6,200	**36,100 J**	**30,700 J**	**33.5**	**161**	**116**	**87.5**	**23.7**
Gasoline Range Organics	mg/kg	6,200	**47.4 J**	8.6 B	10.4 U	10.8 U	8.3 U	8.1 U	10.7 U
Oil and Grease	mg/kg	6,200	**172,000 J+**	**122,000 J+**	**534**	**557**	**193**	**171**	**228**

Bold indicates detection
* indicates nonvalidated data result
^ PAH compounds were analyzed for SIM
N/A indicates not analyzed in the sample
Red values indicate an exceedance of the Project Action Limit (PAL)

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

Table 6
Summary of Organics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-016-SB-7.5*	B14-017-SB-1	B14-017-SB-4	B14-018-SB-1	B14-018-SB-5	B14-019-SB-1	B14-019-SB-4
Volatile Organic Compounds									
1,1-Dichloroethane	mg/kg	16	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
1,2,3-Trichlorobenzene	mg/kg	930	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
1,2,4-Trichlorobenzene	mg/kg	110	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
1,2-Dichlorobenzene	mg/kg	9,300	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
1,2-Dichloroethene (Total)	mg/kg	2,300	N/A	N/A	0.011 U	N/A	N/A	N/A	0.012 U
1,2-Dichloropropane	mg/kg	4.4	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
1,3-Dichlorobenzene	mg/kg		N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
1,4-Dichlorobenzene	mg/kg	11	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
2-Butanone (MEK)	mg/kg	190,000	N/A	N/A	0.011 U	N/A	N/A	N/A	**0.018**
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	N/A	N/A	0.011 U	N/A	N/A	N/A	0.012 U
Acetone	mg/kg	670,000	N/A	N/A	**0.036**	N/A	N/A	N/A	**0.051 J**
Benzene	mg/kg	5.1	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
Carbon disulfide	mg/kg	3,500	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
cis-1,2-Dichloroethene	mg/kg	2,300	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
Cyclohexane	mg/kg	27,000	N/A	N/A	0.011 U	N/A	N/A	N/A	0.012 U
Ethylbenzene	mg/kg	25	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
Isopropylbenzene	mg/kg	9,900	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
Methylene Chloride	mg/kg	1,000	N/A	N/A	**0.013**	N/A	N/A	N/A	0.0059 U
Styrene	mg/kg	35,000	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
Toluene	mg/kg	47,000	N/A	N/A	0.0054 U	N/A	N/A	N/A	0.0059 U
Xylenes	mg/kg	2,800	N/A	N/A	0.016 U	N/A	N/A	N/A	0.018 U
Semi-Volatile Organic Compounds^									
1,1-Biphenyl	mg/kg	200	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
1,2,4,5-Tetrachlorobenzene	mg/kg	350	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
2,3,4,6-Tetrachlorophenol	mg/kg	25,000	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
2,4,5-Trichlorophenol	mg/kg	82,000	0.18 U	0.17 U	0.19 U	3.6 U	3.7 U	0.18 U	0.18 U
2,4,6-Trichlorophenol	mg/kg	210	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
2,4-Dichlorophenol	mg/kg	2,500	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
2,4-Dimethylphenol	mg/kg	16,000	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
2,4-Dinitrophenol	mg/kg	1,600	0.18 U	0.17 U	0.19 U	3.6 U	3.7 U	0.18 R	0.18 R
2,4-Dinitrotoluene	mg/kg	7.4	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
2,6-Dinitrotoluene	mg/kg	1.5	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
2-Chloronaphthalene	mg/kg	60,000	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
2-Chlorophenol	mg/kg	5,800	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
2-Methylnaphthalene	mg/kg	3,000	**0.0023 J**	**0.0055 J**	**0.0066 J**	**0.075**	**0.23**	**0.0025 J**	**0.024**
2-Methylphenol	mg/kg	41,000	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
2-Nitroaniline	mg/kg	8,000	0.18 U	0.17 U	0.19 U	3.6 U	3.7 U	0.18 U	0.18 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.14 U	0.14 U	0.15 U	2.9 U	3 U	0.15 U	0.15 U
4-Chloroaniline	mg/kg	11	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
Acenaphthene	mg/kg	45,000	**0.0012 J**	**0.0017 J**	**0.001 J**	**0.24**	**0.2**	0.0074 U	**0.0045 J**
Acenaphthylene	mg/kg	45,000	**0.01**	**0.024**	**0.0044 J**	**0.083**	**0.53**	**0.0082**	**0.017**
Acetophenone	mg/kg	120,000	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
Anthracene	mg/kg	230,000	**0.016**	**0.02**	**0.0041 J**	**0.21**	**1.4**	**0.0074 J**	**0.034**
Benz[a]anthracene	mg/kg	21	**0.13**	**0.17**	**0.022**	**1.3**	**3.7**	**0.034**	**0.18**
Benzaldehyde	mg/kg	120,000	0.072 U	0.07 R	0.074 R	1.5 R	1.5 R	**0.025 J**	0.073 R
Benzo[a]pyrene	mg/kg	2.1	**0.13**	**0.12**	**0.024**	**2.3**	**3.8**	**0.033**	**0.19**
Benzo[b]fluoranthene	mg/kg	21	**0.31**	**0.39**	**0.05**	**3.8**	**8.9**	**0.061**	**0.38**
Benzo[g,h,i]perylene	mg/kg		**0.05**	**0.11**	**0.017**	**1.6**	**2.9**	**0.022**	**0.15**
Benzo[k]fluoranthene	mg/kg	210	**0.26**	**0.3**	**0.039**	**3**	**6.9**	**0.054**	**0.34**
bis(2-chloroethoxy)methane	mg/kg	2,500	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
bis(2-Chloroethyl)ether	mg/kg	1	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
bis(2-Chloroisopropyl)ether	mg/kg	22	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.072 U	0.07 U	0.074 U	1.5 U	1.5 UJ	0.073 U	0.073 U
Caprolactam	mg/kg	400,000	0.18 U	0.17 U	0.19 U	3.6 U	3.7 U	0.18 U	0.18 U
Carbazole	mg/kg		0.072 U	0.07 U	0.074 U	1.5 U	**0.7 J**	0.073 U	0.073 U
Chrysene	mg/kg	2,100	**0.12**	**0.17**	**0.022**	**1.3**	**3.9**	**0.033**	**0.23**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.017**	**0.041**	**0.0061 J**	**0.42**	**0.82**	**0.0069 J**	**0.043**
Diethylphthalate	mg/kg	660,000	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
Di-n-butylphthalate	mg/kg	82,000	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
Di-n-ocytlphthalate	mg/kg	8,200	0.072 U	0.07 U	0.074 U	1.5 U	1.5 UJ	0.073 U	0.073 U
Fluoranthene	mg/kg	30,000	**0.1**	**0.31**	**0.032**	**1.6**	**7.1**	**0.054**	**0.37**
Fluorene	mg/kg	30,000	**0.0011 J**	**0.0019 J**	0.0075 U	**0.058 J**	**0.17**	**0.0009 J**	**0.0025 J**
Hexachlorobenzene	mg/kg	0.96	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
Hexachlorobutadiene	mg/kg	5.3	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
Hexachlorocyclopentadiene	mg/kg	7.5	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
Hexachloroethane	mg/kg	8	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.049**	**0.11**	**0.017**	**1.5**	**2.7**	**0.02**	**0.13**
Isophorone	mg/kg	2,400	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
Naphthalene	mg/kg	17	**0.0035 J**	**0.017 J**	**0.013 J**	**0.28**	**1.2**	**0.0064 J**	**0.049**
Nitrobenzene	mg/kg	22	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
N-Nitroso-di-n-propylamine	mg/kg	0.33	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
N-Nitrosodiphenylamine	mg/kg	470	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
Pentachlorophenol	mg/kg	4	0.18 U	0.17 U	0.19 U	3.6 U	3.7 U	0.18 U	0.18 U
Phenanthrene	mg/kg		**0.039**	**0.098**	**0.016**	**0.66**	**4.4**	**0.019**	**0.13**
Phenol	mg/kg	250,000	0.072 U	0.07 U	0.074 U	1.5 U	1.5 U	0.073 U	0.073 U
Pyrene	mg/kg	23,000	**0.13**	**0.22**	**0.028**	**1.7**	**9.6**	**0.042**	**0.29**
PCBs									
Aroclor 1248	mg/kg	0.94	N/A	0.018 U	N/A	0.019 U	N/A	0.018 U	N/A
Aroclor 1254	mg/kg	0.97	N/A	0.018 U	N/A	0.019 UJ	N/A	0.018 U	N/A
Aroclor 1260	mg/kg	0.99	N/A	**0.018 J**	N/A	**0.096 J**	N/A	0.018 U	N/A
PCBs (total)	mg/kg	0.97	N/A	0.16 U	N/A	**0.096 J**	N/A	0.17 U	N/A
TPH/Oil and Grease									
Diesel Range Organics	mg/kg	6,200	**22.1**	**8.1 J**	**53.1 J**	**154 J**	**299 J**	**12.8 J**	**47.2 J**
Gasoline Range Organics	mg/kg	6,200	9.6 U	12.2 U	**2.1 J**	11.3 U	11.4 U	3.8 B	10.1 U
Oil and Grease	mg/kg	6,200	**177**	**189 J-**	**292 J-**	**903 J-**	**3,500 J-**	**292 J-**	**261 J-**

Bold indicates detection
* indicates nonvalidated data result
^ PAH compounds were analyzed for SIM
N/A indicates not analyzed in the sample
Red values indicate an exceedance of the Project Action Limit (PAL)

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

Table 6
Summary of Organics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-020-SB-1*	B14-021-SB-1	B14-021-SB-9	B14-022-SB-1	B14-022-SB-7.5	B14-023-SB-1*	B14-024-SB-1*
Volatile Organic Compounds									
1,1-Dichloroethane	mg/kg	16	N/A	N/A	0.013 U	N/A	N/A	N/A	N/A
1,2,3-Trichlorobenzene	mg/kg	930	N/A	N/A	0.013 U	N/A	N/A	N/A	N/A
1,2,4-Trichlorobenzene	mg/kg	110	N/A	N/A	0.013 U	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	mg/kg	9,300	N/A	N/A	**0.008 J**	N/A	N/A	N/A	N/A
1,2-Dichloroethene (Total)	mg/kg	2,300	N/A	N/A	0.027 U	N/A	N/A	N/A	N/A
1,2-Dichloropropane	mg/kg	4.4	N/A	N/A	0.013 U	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	mg/kg		N/A	N/A	0.013 U	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	mg/kg	11	N/A	N/A	0.013 U	N/A	N/A	N/A	N/A
2-Butanone (MEK)	mg/kg	190,000	N/A	N/A	**0.03**	N/A	N/A	N/A	N/A
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	N/A	N/A	0.027 U	N/A	N/A	N/A	N/A
Acetone	mg/kg	670,000	N/A	N/A	**0.13 J**	N/A	N/A	N/A	N/A
Benzene	mg/kg	5.1	N/A	N/A	**0.013 J**	N/A	N/A	N/A	N/A
Carbon disulfide	mg/kg	3,500	N/A	N/A	0.013 U	N/A	N/A	N/A	N/A
cis-1,2-Dichloroethene	mg/kg	2,300	N/A	N/A	0.013 U	N/A	N/A	N/A	N/A
Cyclohexane	mg/kg	27,000	N/A	N/A	0.027 U	N/A	N/A	N/A	N/A
Ethylbenzene	mg/kg	25	N/A	N/A	**0.0062 J**	N/A	N/A	N/A	N/A
Isopropylbenzene	mg/kg	9,900	N/A	N/A	0.013 U	N/A	N/A	N/A	N/A
Methylene Chloride	mg/kg	1,000	N/A	N/A	0.013 U	N/A	N/A	N/A	N/A
Styrene	mg/kg	35,000	N/A	N/A	0.013 U	N/A	N/A	N/A	N/A
Toluene	mg/kg	47,000	N/A	N/A	**0.01 J**	N/A	N/A	N/A	N/A
Xylenes	mg/kg	2,800	N/A	N/A	**0.026 J**	N/A	N/A	N/A	N/A
Semi-Volatile Organic Compounds^									
1,1-Biphenyl	mg/kg	200	**0.03 J**	1.1 U	0.17 U	0.91 U	**0.053 J**	1.4 U	0.07 U
1,2,4,5-Tetrachlorobenzene	mg/kg	350	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
2,3,4,6-Tetrachlorophenol	mg/kg	25,000	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
2,4,5-Trichlorophenol	mg/kg	82,000	0.28 U	2.8 U	0.42 U	2.3 U	0.33 U	3.6 U	0.17 U
2,4,6-Trichlorophenol	mg/kg	210	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
2,4-Dichlorophenol	mg/kg	2,500	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
2,4-Dimethylphenol	mg/kg	16,000	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
2,4-Dinitrophenol	mg/kg	1,600	0.28 U	2.8 UJ	0.42 UJ	2.3 UJ	0.33 UJ	3.6 U	0.17 U
2,4-Dinitrotoluene	mg/kg	7.4	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
2,6-Dinitrotoluene	mg/kg	1.5	0.11 U	1.1 U	0.17 U	0.91 U	**0.16**	1.4 U	0.07 U
2-Chloronaphthalene	mg/kg	60,000	0.11 U	1.1 U	0.17 U	0.91 U	**3.1**	1.4 U	0.07 U
2-Chlorophenol	mg/kg	5,800	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
2-Methylnaphthalene	mg/kg	3,000	**0.078 J**	**0.044 J**	**1.7**	**0.048 J**	**0.71**	**0.06 J**	**0.015 J**
2-Methylphenol	mg/kg	41,000	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
2-Nitroaniline	mg/kg	8,000	0.28 U	2.8 U	0.42 U	2.3 U	0.33 U	3.6 U	0.17 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.23 U	2.2 U	**0.23 J**	1.8 U	**0.08 J**	2.9 U	0.14 U
4-Chloroaniline	mg/kg	11	0.11 U	1.1 U	**0.24**	**0.26 J**	**1.7**	1.4 U	0.07 U
Acenaphthene	mg/kg	45,000	**0.089 J**	0.11 U	**0.68**	**0.009 J**	**0.47**	**0.028 J**	**0.0086 J**
Acenaphthylene	mg/kg	45,000	**0.027 J**	**0.071 J**	**0.26 J**	**0.066 J**	**0.17 J**	**0.069 J**	**0.025 J**
Acetophenone	mg/kg	120,000	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
Anthracene	mg/kg	230,000	**0.09 J**	**0.064 J**	**1.8**	**0.066 J**	**0.88**	**0.055 J**	**0.036 J**
Benz[a]anthracene	mg/kg	21	**3.8**	**0.087 J**	**1.1**	**0.14**	**0.43**	**0.25**	**0.089**
Benzaldehyde	mg/kg	120,000	**0.074 J**	1.1 R	0.17 R	0.91 R	**0.25 J**	1.4 U	0.07 U
Benzo[a]pyrene	mg/kg	2.1	**7.9**	**0.089 J**	**0.46**	**0.18**	**0.26 J**	**0.31**	**0.1**
Benzo[b]fluoranthene	mg/kg	21	**14.1**	**0.15**	**1.3**	**0.32**	**0.5**	**0.68**	**0.37**
Benzo[g,h,i]perylene	mg/kg		**3.4**	**0.18**	**0.11 J**	**0.1**	**0.091 J**	**0.15**	**0.065 J**
Benzo[k]fluoranthene	mg/kg	210	**12**	**0.13**	**1.2**	**0.28**	**0.43**	**0.53**	**0.29**
bis(2-chloroethoxy)methane	mg/kg	2,500	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
bis(2-Chloroethyl)ether	mg/kg	1	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
bis(2-Chloroisopropyl)ether	mg/kg	22	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	**0.035 J**	1.1 U	**5.4**	0.91 U	**2.9**	1.4 U	0.07 U
Caprolactam	mg/kg	400,000	0.28 U	2.8 U	0.42 U	2.3 U	0.33 U	3.6 U	0.17 U
Carbazole	mg/kg		**0.072 J**	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
Chrysene	mg/kg	2,100	**3.9**	**0.063 J**	**2.8**	**0.13**	**0.8**	**0.25**	**0.15**
Dibenz[a,h]anthracene	mg/kg	2.1	**1.1**	**0.022 J**	0.17 U	**0.032 J**	0.27 U	**0.051 J**	**0.021 J**
Diethylphthalate	mg/kg	660,000	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
Di-n-butylphthalate	mg/kg	82,000	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
Di-n-ocytlphthalate	mg/kg	8,200	0.11 U	1.1 UJ	0.17 UJ	0.91 U	0.13 UJ	1.4 U	0.07 U
Fluoranthene	mg/kg	30,000	**2.3**	**0.098 J**	**3.3**	**0.17**	**1**	**0.29**	**0.21**
Fluorene	mg/kg	30,000	**0.02 J**	0.11 U	**1.7**	**0.0094 J**	**0.7**	0.073 U	0.071 U
Hexachlorobenzene	mg/kg	0.96	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
Hexachlorobutadiene	mg/kg	5.3	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
Hexachlorocyclopentadiene	mg/kg	7.5	0.11 U	1.1 UJ	0.17 UJ	0.91 UJ	0.13 UJ	1.4 U	0.07 U
Hexachloroethane	mg/kg	8	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**3.4**	**0.074 J**	**0.072 J**	**0.097**	**0.051 J**	**0.15**	**0.063 J**
Isophorone	mg/kg	2,400	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
Naphthalene	mg/kg	17	**0.1 J**	**0.059 J**	**0.42 J**	**0.058 J**	**0.33 J**	**0.15**	0.071 U
Nitrobenzene	mg/kg	22	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
N-Nitroso-di-n-propylamine	mg/kg	0.33	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
N-Nitrosodiphenylamine	mg/kg	470	0.11 U	1.1 U	0.17 U	0.91 U	0.13 U	1.4 U	0.07 U
Pentachlorophenol	mg/kg	4	0.28 U	2.8 UJ	0.42 UJ	2.3 UJ	0.33 UJ	3.6 U	0.17 U
Phenanthrene	mg/kg		**0.33**	**0.083 J**	**8**	**0.16**	**2.3**	**0.13**	**0.053 J**
Phenol	mg/kg	250,000	0.11 U	1.1 U	**0.12 J**	0.91 U	**0.11 J**	1.4 U	0.07 U
Pyrene	mg/kg	23,000	**2.8**	**0.099 J**	**3.9**	**0.15**	**2.8**	**0.26**	**0.18**
PCBs									
Aroclor 1248	mg/kg	0.94	0.028 U	0.28 U	N/A	0.045 U	N/A	0.018 U	0.017 U
Aroclor 1254	mg/kg	0.97	**0.12**	0.28 U	N/A	0.045 U	N/A	0.018 U	0.017 U
Aroclor 1260	mg/kg	0.99	0.028 U	**2.8 J**	N/A	**0.52 J**	N/A	**0.035**	**0.05 L1**
PCBs (total)	mg/kg	0.97	**0.12 J**	**2.8**	N/A	**0.52**	N/A	0.16 U	**0.05 J**
TPH/Oil and Grease									
Diesel Range Organics	mg/kg	6,200	**85.6**	**550 J**	**21,700 J**	**448 J**	**17,700 J**	**60.9**	**22.8**
Gasoline Range Organics	mg/kg	6,200	21.7 U	16.3 UJ	20.8 B	15.6 UJ	7.4 B	3.2 B	3.2 B
Oil and Grease	mg/kg	6,200	**834**	**18,400 J+**	**120,000 J+**	**1,510 J+**	**110,000 J+**	**590**	**145**

Bold indicates detection
* indicates nonvalidated data result
^ PAH compounds were analyzed for SIM
N/A indicates not analyzed in the sample
Red values indicate an exceedance of the Project Action Limit (PAL)

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

Table 6
Summary of Organics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-025-SB-1	B14-025-SB-5	B14-026-SB-1	B14-026-SB-8.5	B14-027-SB-1	B14-027-SB-5	B14-028-SB-1*
Volatile Organic Compounds									
1,1-Dichloroethane	mg/kg	16	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2,3-Trichlorobenzene	mg/kg	930	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2,4-Trichlorobenzene	mg/kg	110	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	mg/kg	9,300	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethene (Total)	mg/kg	2,300	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloropropane	mg/kg	4.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichlorobenzene	mg/kg		N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	mg/kg	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Butanone (MEK)	mg/kg	190,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acetone	mg/kg	670,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	mg/kg	5.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbon disulfide	mg/kg	3,500	N/A	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,2-Dichloroethene	mg/kg	2,300	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cyclohexane	mg/kg	27,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ethylbenzene	mg/kg	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Isopropylbenzene	mg/kg	9,900	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Chloride	mg/kg	1,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Styrene	mg/kg	35,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	mg/kg	47,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Xylenes	mg/kg	2,800	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Semi-Volatile Organic Compounds^									
1,1-Biphenyl	mg/kg	200	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
1,2,4,5-Tetrachlorobenzene	mg/kg	350	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
2,3,4,6-Tetrachlorophenol	mg/kg	25,000	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
2,4,5-Trichlorophenol	mg/kg	82,000	0.18 U	3.6 U	3.6 U	4.1 U	0.18 U	3.9 U	3.6 U
2,4,6-Trichlorophenol	mg/kg	210	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
2,4-Dichlorophenol	mg/kg	2,500	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
2,4-Dimethylphenol	mg/kg	16,000	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
2,4-Dinitrophenol	mg/kg	1,600	0.18 U	3.6 U	3.6 U	4.1 U	0.18 U	3.9 U	3.6 U
2,4-Dinitrotoluene	mg/kg	7.4	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
2,6-Dinitrotoluene	mg/kg	1.5	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
2-Chloronaphthalene	mg/kg	60,000	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
2-Chlorophenol	mg/kg	5,800	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
2-Methylnaphthalene	mg/kg	3,000	0.0066 B	0.0062 B	0.02 B	**2.5**	0.0061 B	0.016 B	**0.011 J**
2-Methylphenol	mg/kg	41,000	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
2-Nitroaniline	mg/kg	8,000	0.18 U	3.6 U	3.6 U	4.1 U	0.18 U	3.9 U	3.6 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.14 U	2.8 U	2.9 U	3.3 U	0.15 U	3.1 U	2.8 U
4-Chloroaniline	mg/kg	11	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Acenaphthene	mg/kg	45,000	**0.0093 J**	**0.0067 J**	**0.023 J**	**11.4**	**0.0058 J**	**0.0067 J**	**0.066 J**
Acenaphthylene	mg/kg	45,000	**0.0064 J**	**0.0053 J**	**0.053 J**	**0.39**	**0.02**	**0.044 J**	**0.045 J**
Acetophenone	mg/kg	120,000	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Anthracene	mg/kg	230,000	**0.027 J**	**0.031**	**0.098**	**2.9**	**0.035**	**0.036 J**	**0.17**
Benz[a]anthracene	mg/kg	21	**0.14**	**0.12**	**0.4**	**1.5**	**0.24**	**0.17**	**1**
Benzaldehyde	mg/kg	120,000	0.07 R	1.4 R	1.4 R	1.6 R	0.074 R	1.5 R	1.4 U
Benzo[a]pyrene	mg/kg	2.1	**0.17**	**0.14**	**0.4**	**1.1**	**0.23**	**0.18**	**1.7**
Benzo[b]fluoranthene	mg/kg	21	**0.18**	**0.27**	**0.82**	**2.6**	**0.45**	**0.37**	**2.9**
Benzo[g,h,i]perylene	mg/kg		**0.11**	**0.099**	**0.26**	**0.44**	**0.14**	**0.12**	**0.7**
Benzo[k]fluoranthene	mg/kg	210	**0.14**	**0.21**	**0.63**	**2**	**0.35**	**0.29**	**2.5**
bis(2-chloroethoxy)methane	mg/kg	2,500	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
bis(2-Chloroethyl)ether	mg/kg	1	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
bis(2-Chloroisopropyl)ether	mg/kg	22	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Caprolactam	mg/kg	400,000	0.18 U	3.6 U	3.6 U	4.1 U	0.18 U	3.9 U	3.6 U
Carbazole	mg/kg		0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	**0.92 J**
Chrysene	mg/kg	2,100	**0.15**	**0.11**	**0.37**	**1.5**	**0.21**	**0.16**	**0.85**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.033 J**	**0.026**	**0.08**	**0.18**	**0.048**	**0.035 J**	**0.23**
Diethylphthalate	mg/kg	660,000	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Di-n-butylphthalate	mg/kg	82,000	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Di-n-ocytlphthalate	mg/kg	8,200	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Fluoranthene	mg/kg	30,000	**0.19**	**0.2**	**0.65**	**6.1**	**0.36**	**0.33**	**1.2**
Fluorene	mg/kg	30,000	**0.008 J**	**0.0064 J**	**0.014 J**	**3.7**	**0.005 J**	0.077 U	**0.022 J**
Hexachlorobenzene	mg/kg	0.96	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Hexachlorobutadiene	mg/kg	5.3	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Hexachlorocyclopentadiene	mg/kg	7.5	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Hexachloroethane	mg/kg	8	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.062 J**	**0.084**	**0.24**	**0.48**	**0.13**	**0.11**	**0.71**
Isophorone	mg/kg	2,400	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Naphthalene	mg/kg	17	0.071 U	**0.011**	**0.045 J**	**1.3**	**0.013**	**0.17**	**0.034 J**
Nitrobenzene	mg/kg	22	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
N-Nitroso-di-n-propylamine	mg/kg	0.33	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
N-Nitrosodiphenylamine	mg/kg	470	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Pentachlorophenol	mg/kg	4	0.18 U	3.6 U	3.6 U	4.1 U	0.18 U	3.9 U	3.6 U
Phenanthrene	mg/kg		**0.1**	**0.11**	**0.29**	**4.8**	**0.11**	**0.11**	**0.44**
Phenol	mg/kg	250,000	0.07 U	1.4 U	1.4 U	1.6 U	0.074 U	1.5 U	1.4 U
Pyrene	mg/kg	23,000	**0.2**	**0.17**	**0.57**	**4.3**	**0.3**	**0.28**	**1.1**
PCBs									
Aroclor 1248	mg/kg	0.94	0.017 U	N/A	0.018 U	N/A	0.019 U	N/A	**0.049**
Aroclor 1254	mg/kg	0.97	0.017 UJ	N/A	0.018 UJ	N/A	0.019 UJ	N/A	0.018 U
Aroclor 1260	mg/kg	0.99	0.017 UJ	N/A	**0.08 J**	N/A	**0.092 J**	N/A	0.018 U
PCBs (total)	mg/kg	0.97	0.16 U	N/A	**0.08 J**	N/A	**0.092 J**	N/A	**0.049 J**
TPH/Oil and Grease									
Diesel Range Organics	mg/kg	6,200	**15.9 J**	**42 J**	**110 J**	**144 J**	**30.4 J**	**29.7 J**	**64.9**
Gasoline Range Organics	mg/kg	6,200	2.5 B	10.8 U	11.2 U	12.5 U	11.4 U	11.9 U	9.9 U
Oil and Grease	mg/kg	6,200	**477 J-**	**247 J-**	**761 J-**	**2,990 J-**	**673 J-**	**307 J-**	**326**

Bold indicates detection
* indicates nonvalidated data result
^ PAH compounds were analyzed for SIM
N/A indicates not analyzed in the sample
Red values indicate an exceedance of the Project Action Limit (PAL)

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

Table 6
Summary of Organics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-028-SB-8*	B14-029-SB-1*	B14-029-SB-5*	B14-030-SB-1*	B14-030-SB-6*	B14-030-SB-10*	B14-031-SB-1
Volatile Organic Compounds									
1,1-Dichloroethane	mg/kg	16	0.005 U	N/A	N/A	0.0057 U	0.0054 U	0.006 U	N/A
1,2,3-Trichlorobenzene	mg/kg	930	0.005 U	N/A	N/A	0.0057 U	0.0054 U	0.006 U	N/A
1,2,4-Trichlorobenzene	mg/kg	110	0.005 U	N/A	N/A	0.0057 U	0.0054 U	0.006 U	N/A
1,2-Dichlorobenzene	mg/kg	9,300	0.005 U	N/A	N/A	0.0057 U	0.0054 U	0.006 U	N/A
1,2-Dichloroethene (Total)	mg/kg	2,300	0.0099 U	N/A	N/A	0.011 U	0.011 U	0.012 U	N/A
1,2-Dichloropropane	mg/kg	4.4	0.005 U	N/A	N/A	0.0057 U	0.0054 U	0.006 U	N/A
1,3-Dichlorobenzene	mg/kg		0.005 U	N/A	N/A	0.0057 U	0.0054 U	0.006 U	N/A
1,4-Dichlorobenzene	mg/kg	11	0.005 U	N/A	N/A	0.0057 U	0.0054 U	0.006 U	N/A
2-Butanone (MEK)	mg/kg	190,000	0.0099 U	N/A	N/A	0.011 U	0.011 U	0.012 U	N/A
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.0099 U	N/A	N/A	0.011 U	0.011 U	0.012 U	N/A
Acetone	mg/kg	670,000	**0.036**	N/A	N/A	0.011 U	**0.019**	0.012 U	N/A
Benzene	mg/kg	5.1	**0.0021 J**	N/A	N/A	0.0057 U	**0.0022 J**	0.006 U	N/A
Carbon disulfide	mg/kg	3,500	0.005 U	N/A	N/A	0.0057 U	**0.0033 J**	0.006 U	N/A
cis-1,2-Dichloroethene	mg/kg	2,300	0.005 U	N/A	N/A	0.0057 U	0.0054 U	0.006 U	N/A
Cyclohexane	mg/kg	27,000	0.0099 U	N/A	N/A	0.011 U	0.011 U	0.012 U	N/A
Ethylbenzene	mg/kg	25	0.005 U	N/A	N/A	0.0057 U	0.0054 U	0.006 U	N/A
Isopropylbenzene	mg/kg	9,900	0.005 U	N/A	N/A	0.0057 U	0.0054 U	0.006 U	N/A
Methylene Chloride	mg/kg	1,000	0.005 U	N/A	N/A	0.0057 U	0.0054 U	0.006 U	N/A
Styrene	mg/kg	35,000	0.005 U	N/A	N/A	0.0057 U	0.0054 U	0.006 U	N/A
Toluene	mg/kg	47,000	0.005 U	N/A	N/A	0.0057 U	**0.0018 J**	0.006 U	N/A
Xylenes	mg/kg	2,800	0.015 U	N/A	N/A	0.017 U	0.016 U	0.018 U	N/A
Semi-Volatile Organic Compounds^									
1,1-Biphenyl	mg/kg	200	**0.083**	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	**0.036 J**
1,2,4,5-Tetrachlorobenzene	mg/kg	350	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
2,3,4,6-Tetrachlorophenol	mg/kg	25,000	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
2,4,5-Trichlorophenol	mg/kg	82,000	0.19 U	0.18 U	0.17 U	0.17 U	0.17 U	0.19 U	0.21 U
2,4,6-Trichlorophenol	mg/kg	210	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
2,4-Dichlorophenol	mg/kg	2,500	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
2,4-Dimethylphenol	mg/kg	16,000	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
2,4-Dinitrophenol	mg/kg	1,600	0.19 U	0.18 U	0.17 U	0.17 U	0.17 U	0.19 U	0.21 R
2,4-Dinitrotoluene	mg/kg	7.4	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
2,6-Dinitrotoluene	mg/kg	1.5	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
2-Chloronaphthalene	mg/kg	60,000	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
2-Chlorophenol	mg/kg	5,800	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
2-Methylnaphthalene	mg/kg	3,000	**0.44**	**0.026 J**	**0.0058 J**	**0.0092**	**0.012**	**0.029 J**	**0.09**
2-Methylphenol	mg/kg	41,000	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
2-Nitroaniline	mg/kg	8,000	0.19 U	0.18 U	0.17 U	0.17 U	0.17 U	0.19 U	0.21 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.15 U	0.14 U	0.14 U	0.14 U	0.14 U	0.15 U	0.17 U
4-Chloroaniline	mg/kg	11	**0.043 J**	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
Acenaphthene	mg/kg	45,000	**0.037 J**	**0.01 J**	**0.0039 J**	**0.00081 J**	**0.0028 J**	**0.0058 J**	**0.014 J**
Acenaphthylene	mg/kg	45,000	**0.43**	**0.059 J**	**0.0068 J**	**0.011**	**0.0063 J**	**0.027 J**	**0.094**
Acetophenone	mg/kg	120,000	0.076 U	0.07 U	0.069 U	**0.031 J**	**0.025 J**	0.076 U	0.085 U
Anthracene	mg/kg	230,000	**0.35**	**0.035 J**	**0.011**	**0.0062 J**	**0.016**	**0.043 J**	**0.077 J**
Benz[a]anthracene	mg/kg	21	**0.74**	**0.15**	**0.064**	**0.022**	**0.02**	**0.16**	**0.17**
Benzaldehyde	mg/kg	120,000	0.076 U	**0.033 J**	0.069 U	**0.085**	**0.068 J**	**0.03 J**	**0.13 J**
Benzo[a]pyrene	mg/kg	2.1	**0.66**	**0.22**	**0.089**	**0.046**	**0.022**	**0.12**	**0.21**
Benzo[b]fluoranthene	mg/kg	21	**1.4**	**0.48**	**0.25**	**0.089**	**0.047**	**0.37**	**0.35**
Benzo[g,h,i]perylene	mg/kg		**0.22**	**0.13**	**0.052**	**0.023**	**0.0096**	**0.044 J**	**0.23**
Benzo[k]fluoranthene	mg/kg	210	**1.2**	**0.41**	**0.22**	**0.076**	**0.04**	**0.31**	**0.31**
bis(2-chloroethoxy)methane	mg/kg	2,500	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
bis(2-Chloroethyl)ether	mg/kg	1	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
bis(2-Chloroisopropyl)ether	mg/kg	22	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	**0.45**	0.07 U	0.069 U	**0.02 J**	0.07 U	0.076 U	0.085 U
Caprolactam	mg/kg	400,000	0.19 U	0.18 U	0.17 U	0.17 U	0.17 U	0.19 U	0.21 U
Carbazole	mg/kg		0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
Chrysene	mg/kg	2,100	**0.66**	**0.18**	**0.077**	**0.027**	**0.025**	**0.17**	**0.16**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.083**	**0.036 J**	**0.018**	**0.0065 J**	**0.0037 J**	**0.018 J**	**0.046 J**
Diethylphthalate	mg/kg	660,000	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
Di-n-butylphthalate	mg/kg	82,000	**0.024 J**	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
Di-n-ocytlphthalate	mg/kg	8,200	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 UJ
Fluoranthene	mg/kg	30,000	**1.4**	**0.19**	**0.083**	**0.022**	**0.032**	**0.29**	**0.24**
Fluorene	mg/kg	30,000	**0.17**	**0.0064 J**	**0.0031 J**	**0.0012 J**	**0.0039 J**	**0.0096 J**	**0.012 J**
Hexachlorobenzene	mg/kg	0.96	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
Hexachlorobutadiene	mg/kg	5.3	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
Hexachlorocyclopentadiene	mg/kg	7.5	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
Hexachloroethane	mg/kg	8	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.23**	**0.11**	**0.048**	**0.02**	**0.009**	**0.05 J**	**0.15**
Isophorone	mg/kg	2,400	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
Naphthalene	mg/kg	17	**3.6**	**0.048 J**	**0.017**	**0.014**	**0.012**	**0.056 J**	**0.21**
Nitrobenzene	mg/kg	22	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
N-Nitroso-di-n-propylamine	mg/kg	0.33	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
N-Nitrosodiphenylamine	mg/kg	470	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
Pentachlorophenol	mg/kg	4	0.19 U	0.18 U	0.17 U	0.17 U	0.17 U	0.19 U	0.21 U
Phenanthrene	mg/kg		**1.1**	**0.1**	**0.041**	**0.018**	**0.066**	**0.14**	**0.25**
Phenol	mg/kg	250,000	0.076 U	0.07 U	0.069 U	0.069 U	0.07 U	0.076 U	0.085 U
Pyrene	mg/kg	23,000	**1.1**	**0.17**	**0.08**	**0.023**	**0.031**	**0.25**	**0.21**
PCBs									
Aroclor 1248	mg/kg	0.94	N/A	0.018 U	N/A	0.018 U	N/A	N/A	0.021 U
Aroclor 1254	mg/kg	0.97	N/A	0.018 U	N/A	0.018 U	N/A	N/A	0.021 U
Aroclor 1260	mg/kg	0.99	N/A	**0.089**	N/A	**0.061**	N/A	N/A	**0.22 J**
PCBs (total)	mg/kg	0.97	N/A	**0.089 J**	N/A	**0.061 J**	N/A	N/A	**0.22**
TPH/Oil and Grease									
Diesel Range Organics	mg/kg	6,200	**415**	**51.5**	**15.1**	**77.6**	**114**	**323**	**344 J**
Gasoline Range Organics	mg/kg	6,200	9.5 U	11 U	11.8 U	**3 J**	12.5 U	9.9 U	5.7 B
Oil and Grease	mg/kg	6,200	**1,950**	**287**	**332**	**447**	**155**	**1,200**	**12,700 J-**

Bold indicates detection
* indicates nonvalidated data result
^ PAH compounds were analyzed for SIM
N/A indicates not analyzed in the sample
Red values indicate an exceedance of the Project Action Limit (PAL)

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

Table 6
Summary of Organics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-031-SB-7	B14-032-SB-1	B14-032-SB-8.5	B14-033-SB-1*	B14-034-SB-1	B14-034-SB-5
Volatile Organic Compounds								
1,1-Dichloroethane	mg/kg	16	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
1,2,3-Trichlorobenzene	mg/kg	930	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
1,2,4-Trichlorobenzene	mg/kg	110	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
1,2-Dichlorobenzene	mg/kg	9,300	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
1,2-Dichloroethene (Total)	mg/kg	2,300	0.0091 U	N/A	0.012 U	N/A	N/A	N/A
1,2-Dichloropropane	mg/kg	4.4	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
1,3-Dichlorobenzene	mg/kg		0.0045 U	N/A	0.006 U	N/A	N/A	N/A
1,4-Dichlorobenzene	mg/kg	11	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
2-Butanone (MEK)	mg/kg	190,000	0.0091 U	N/A	0.012 U	N/A	N/A	N/A
4-Methyl-2-pentanone (MIBK)	mg/kg	56,000	0.0091 U	N/A	0.012 U	N/A	N/A	N/A
Acetone	mg/kg	670,000	**0.01 J**	N/A	0.012 UJ	N/A	N/A	N/A
Benzene	mg/kg	5.1	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
Carbon disulfide	mg/kg	3,500	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
cis-1,2-Dichloroethene	mg/kg	2,300	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
Cyclohexane	mg/kg	27,000	0.0091 U	N/A	0.012 U	N/A	N/A	N/A
Ethylbenzene	mg/kg	25	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
Isopropylbenzene	mg/kg	9,900	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
Methylene Chloride	mg/kg	1,000	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
Styrene	mg/kg	35,000	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
Toluene	mg/kg	47,000	0.0045 U	N/A	0.006 U	N/A	N/A	N/A
Xylenes	mg/kg	2,800	0.014 U	N/A	0.018 U	N/A	N/A	N/A
Semi-Volatile Organic Compounds^								
1,1-Biphenyl	mg/kg	200	0.73 U	**0.075**	0.098 U	0.36 U	2.5 U	0.11 U
1,2,4,5-Tetrachlorobenzene	mg/kg	350	0.73 U	**0.029 J**	0.098 U	0.36 U	2.5 U	0.11 U
2,3,4,6-Tetrachlorophenol	mg/kg	25,000	0.73 U	**0.037 J**	0.098 U	0.36 U	2.5 U	0.11 U
2,4,5-Trichlorophenol	mg/kg	82,000	1.8 U	**0.034 J**	0.25 U	0.89 U	6.2 U	0.26 U
2,4,6-Trichlorophenol	mg/kg	210	0.73 U	**0.031 J**	0.098 U	0.36 U	2.5 U	0.11 U
2,4-Dichlorophenol	mg/kg	2,500	0.73 U	**0.029 J**	0.098 U	0.36 U	2.5 U	0.11 U
2,4-Dimethylphenol	mg/kg	16,000	0.73 U	**0.028 J**	0.098 U	0.36 U	2.5 U	0.11 U
2,4-Dinitrophenol	mg/kg	1,600	1.8 R	**0.049 J**	0.25 R	0.89 U	6.2 R	0.26 R
2,4-Dinitrotoluene	mg/kg	7.4	0.73 U	**0.037 J**	0.098 U	0.36 U	2.5 U	0.11 U
2,6-Dinitrotoluene	mg/kg	1.5	0.73 U	**0.034 J**	0.098 U	0.36 U	2.5 U	0.11 U
2-Chloronaphthalene	mg/kg	60,000	0.73 U	**0.028 J**	0.098 U	0.36 U	2.5 U	0.11 U
2-Chlorophenol	mg/kg	5,800	0.73 U	**0.026 J**	0.098 U	0.36 U	2.5 U	0.11 U
2-Methylnaphthalene	mg/kg	3,000	**0.1**	**0.088**	**0.0082 J**	**0.016 J**	**0.12 J**	**0.013 J**
2-Methylphenol	mg/kg	41,000	0.73 U	**0.03 J**	0.098 U	0.36 U	2.5 U	0.11 U
2-Nitroaniline	mg/kg	8,000	1.8 U	**0.033 J**	0.25 U	0.89 U	6.2 U	0.26 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	1.5 U	**0.03 J**	0.2 U	0.71 U	5 U	0.21 U
4-Chloroaniline	mg/kg	11	0.73 U	0.073 U	0.098 U	0.36 U	2.5 U	0.11 U
Acenaphthene	mg/kg	45,000	**0.065 J**	**0.08**	**0.0022 J**	0.073 U	0.25 U	0.11 U
Acenaphthylene	mg/kg	45,000	**0.2**	**0.075**	**0.024**	**0.013 J**	**0.27**	**0.0098 J**
Acetophenone	mg/kg	120,000	0.73 U	**0.031 J**	0.098 U	0.36 U	2.5 U	0.11 U
Anthracene	mg/kg	230,000	**0.23**	**0.16**	**0.023**	**0.013 J**	**0.21 J**	**0.04 J**
Benz[a]anthracene	mg/kg	21	**1.2**	**0.58**	**0.1**	**0.089**	**0.12 J**	**0.04 J**
Benzaldehyde	mg/kg	120,000	0.73 R	**0.028 J**	0.098 R	0.36 U	2.5 R	**0.1 J**
Benzo[a]pyrene	mg/kg	2.1	**1.4**	**0.73**	**0.11**	**0.097**	**0.088 J**	**0.018 J**
Benzo[b]fluoranthene	mg/kg	21	**2.5**	**0.87**	**0.18**	**0.18**	**0.11 J**	**0.052 J**
Benzo[g,h,i]perylene	mg/kg		**0.84**	**0.54**	**0.066**	**0.054 J**	**0.27**	**0.039 J**
Benzo[k]fluoranthene	mg/kg	210	**2.2**	**0.32**	**0.16**	**0.14**	**0.093 J**	**0.046 J**
bis(2-chloroethoxy)methane	mg/kg	2,500	0.73 U	**0.027 J**	0.098 U	0.36 U	2.5 U	0.11 U
bis(2-Chloroethyl)ether	mg/kg	1	0.73 U	**0.022 J**	0.098 U	0.36 U	2.5 U	0.11 U
bis(2-Chloroisopropyl)ether	mg/kg	22	0.73 U	**0.024 J**	0.098 U	0.36 U	2.5 U	0.11 U
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.73 U	**0.041 J**	0.098 U	0.36 U	2.5 U	**0.14 J**
Caprolactam	mg/kg	400,000	1.8 U	**0.039 J**	0.25 U	0.89 U	6.2 U	0.26 U
Carbazole	mg/kg		0.73 U	**0.088**	0.098 U	0.36 U	2.5 U	0.11 U
Chrysene	mg/kg	2,100	**1.1**	**0.51**	**0.1**	**0.085**	**0.053 J**	**0.021 J**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.24**	**0.16**	**0.023**	**0.017 J**	0.25 U	0.11 U
Diethylphthalate	mg/kg	660,000	0.73 U	**0.041 J**	0.098 U	0.36 U	2.5 U	0.11 U
Di-n-butylphthalate	mg/kg	82,000	0.73 U	**0.043 J**	0.098 U	0.36 U	2.5 U	0.11 U
Di-n-ocytlphthalate	mg/kg	8,200	0.73 U	**0.085 J**	0.098 U	0.36 U	2.5 UJ	0.11 UJ
Fluoranthene	mg/kg	30,000	**1.5**	**0.86**	**0.12**	**0.13**	**0.081 J**	**0.022 J**
Fluorene	mg/kg	30,000	**0.033 J**	**0.046 J**	**0.0038 J**	0.073 U	0.25 U	0.11 U
Hexachlorobenzene	mg/kg	0.96	0.73 U	**0.041 J**	0.098 U	0.36 U	2.5 U	0.11 U
Hexachlorobutadiene	mg/kg	5.3	0.73 U	**0.028 J**	0.098 U	0.36 U	2.5 U	0.11 U
Hexachlorocyclopentadiene	mg/kg	7.5	0.73 UJ	**0.019 J**	0.098 U	0.36 U	2.5 UJ	0.11 U
Hexachloroethane	mg/kg	8	0.73 U	**0.026 J**	0.098 U	0.36 U	2.5 U	0.11 U
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.81**	**0.49**	**0.064**	**0.05 J**	**0.061 J**	0.11 U
Isophorone	mg/kg	2,400	0.73 U	**0.027 J**	0.098 U	0.36 U	2.5 U	0.11 U
Naphthalene	mg/kg	17	**0.4**	**0.26**	**0.054**	0.073 U	**0.15 J**	0.11 U
Nitrobenzene	mg/kg	22	0.73 U	**0.026 J**	0.098 U	0.36 U	2.5 U	0.11 U
N-Nitroso-di-n-propylamine	mg/kg	0.33	0.73 U	**0.027 J**	0.098 U	0.36 U	2.5 U	0.11 U
N-Nitrosodiphenylamine	mg/kg	470	0.73 U	**0.029 J**	0.098 U	0.36 U	2.5 U	0.11 U
Pentachlorophenol	mg/kg	4	1.8 UJ	**0.038 J**	0.25 U	0.89 U	6.2 UJ	0.26 U
Phenanthrene	mg/kg		**0.54**	**0.59**	**0.045**	**0.051 J**	**0.15 J**	**0.025 J**
Phenol	mg/kg	250,000	0.73 U	**0.029 J**	0.098 U	0.36 U	2.5 U	**0.1 J**
Pyrene	mg/kg	23,000	**1.9**	**0.69**	**0.085**	**0.11**	**0.1 J**	**0.025 J**
PCBs								
Aroclor 1248	mg/kg	0.94	N/A	0.018 U	N/A	0.018 U	0.31 U	N/A
Aroclor 1254	mg/kg	0.97	N/A	**0.06 J**	N/A	0.018 U	0.31 U	N/A
Aroclor 1260	mg/kg	0.99	N/A	0.018 U	N/A	**0.014 J**	**3.1 J**	N/A
PCBs (total)	mg/kg	0.97	N/A	**0.06 J**	N/A	0.16 U	**3.1**	N/A
TPH/Oil and Grease								
Diesel Range Organics	mg/kg	6,200	**200 J**	**47.8 J**	**44.6 J**	**22.1**	**678 J**	**1,220 J**
Gasoline Range Organics	mg/kg	6,200	7.3 B	**9.7**	6.8 B	3.3 B	31.6 U	19.9 U
Oil and Grease	mg/kg	6,200	**819 J-**	**262 J-**	**238 J-**	**2,350**	**32,000 J-**	**14,400 J-**

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^ PAH compounds were analyzed for SIM
N/A indicates not analyzed in the sample
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J+: The positive result reported for this analyte is a quantitative estimate but may be biased high.
J-: The positive result reported for this analyte is a quantitative estimate but may be biased low.
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/disprove the presence of this analyte in the sample.

Table 7
Summary of Inorganics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-002-SB-1	B14-003-SB-1	B14-003-SB-5	B14-006-SB-1	B14-006-SB-5	B14-007-SB-1	B14-007-SB-8
Metals									
Aluminum	mg/kg	1,100,000	**9,310**	**11,300**	**4,700**	**4,130**	**1,720**	**2,130**	**4,180**
Antimony	mg/kg	470	3.1 UJ	**1.7 J**	**4.4 J**	**39.2 J**	**11.6 J**	**1.8 J**	4.7 UJ
Arsenic	mg/kg	3	**11.4**	**4.6**	**2.4**	**26.6**	**56.3**	**26.7**	**55**
Barium	mg/kg	220,000	**163 J**	**135**	**63.4**	**134**	**57.5**	**32.7 J**	**212 J**
Beryllium	mg/kg	2,300	0.56 B	**1.2**	0.87 U	0.32 B	0.2 B	**0.38 J**	**0.48 J**
Cadmium	mg/kg	980	**8.7**	**0.73 J**	**0.56 J**	**35.2**	**2.7**	**14.8 J**	**96.8 J**
Chromium	mg/kg	120,000	**838 J**	**611 J**	**1,050 J**	**3,250 J**	**527 J**	**233**	**5,670**
Chromium VI	mg/kg	6.3	0.67 B	0.62 B	**11.6 J-**	1.1 B	0.97 B	0.81 B	0.91 B
Cobalt	mg/kg	350	**10**	**3 J**	**1.3 J**	**7.6**	**36.6**	**10.5**	**17.7**
Copper	mg/kg	47,000	**123**	**34.2**	**18.3**	**184**	**905**	**183**	**552**
Iron	mg/kg	820,000	**93,000**	**94,800**	**124,000**	**122,000**	**328,000**	**404,000**	**421,000**
Lead	mg/kg	800	**374 J**	**43.5**	**24.6**	**340**	**191**	**1,600**	**2,020**
Manganese	mg/kg	26,000	**5,130**	**12,600**	**17,700**	**3,900**	**2,010**	**6,570**	**4,820**
Mercury	mg/kg	350	**0.37 J**	**0.073 J**	0.1 U	**0.79**	**2.2**	**0.4 J+**	**0.29 J+**
Nickel	mg/kg	22,000	**40.2**	**19.8**	**13.3**	**75.4**	**117**	**61.5 J**	**194 J**
Selenium	mg/kg	5,800	4.1 U	3.5 U	3.5 U	**3.3 J**	5.6 U	**1.8 J**	6.3 U
Silver	mg/kg	5,800	**10.5 J**	**22.5**	**24.2**	**11.2**	**22.5**	**9.1 J**	**16.3 J**
Thallium	mg/kg	12	10.2 U	8.8 U	8.7 U	11.7 U	8.3 U	10.1 U	9.4 U
Vanadium	mg/kg	5,800	**229 J**	**462 J**	**564 J**	**106 J**	**36 J**	**51.5**	**37**
Zinc	mg/kg	350,000	**2,550**	**220 J**	**151 J**	**7,540 J**	**566 J**	**15,400**	**27,800**
Other									
Cyanide, Total	mg/kg	150	**1.9 J-**	**0.53 J**	1 U	**6.7**	**0.57 J**	**12.3 J+**	**7.5 J+**

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Table 7
Summary of Inorganics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-007-SB-10	B14-008-SB-1*	B14-008-SB-9*	B14-008-SB-10*	B14-009-SB-1*	B14-009-SB-5*	B14-010-SB-1
Metals									
Aluminum	mg/kg	1,100,000	N/A	**1,480**	**762**	N/A	**638**	**267**	**36,400**
Antimony	mg/kg	470	N/A	**4.1**	**7.9**	N/A	**4.2**	**2.5 J**	2.7 UJ
Arsenic	mg/kg	3	**50.2**	**32.6**	**28.6**	**136**	**33.1**	**24.3**	**2.5**
Barium	mg/kg	220,000	N/A	**15**	**28.1**	N/A	**10.5**	**13.4**	**530**
Beryllium	mg/kg	2,300	N/A	**0.24 J**	1.1 U	N/A	0.94 U	0.97 U	**4.8**
Cadmium	mg/kg	980	N/A	**6.8**	**9.4**	N/A	**6.7**	**3.7**	**0.6 J**
Chromium	mg/kg	120,000	N/A	**398**	**378**	N/A	**357**	**246**	**85.7 J**
Chromium VI	mg/kg	6.3	N/A	0.96 B	0.49 B	N/A	0.85 B	0.6 B	0.46 B
Cobalt	mg/kg	350	N/A	**12.5**	**16.6**	N/A	**13.4**	**10.6**	**2 J**
Copper	mg/kg	47,000	N/A	**188**	**247**	N/A	**190**	**126**	**10.4**
Iron	mg/kg	820,000	N/A	**373,000**	**527,000**	N/A	**474,000**	**482,000**	**23,500**
Lead	mg/kg	800	**1,390**	**690**	**1,510**	**440**	**600**	**366**	**26.3**
Manganese	mg/kg	26,000	N/A	**7,960**	**9,620**	N/A	**10,000**	**8,070**	**5,270**
Mercury	mg/kg	350	N/A	**0.2**	**0.17**	N/A	**0.44**	**0.08 J**	**0.068 J**
Nickel	mg/kg	22,000	N/A	**143**	**114**	N/A	**141**	**60.9**	**5.3 J**
Selenium	mg/kg	5,800	N/A	**4.3**	**2.8 J**	N/A	3.8 U	3.9 U	**2.8 J**
Silver	mg/kg	5,800	N/A	**6.5**	**13.5**	N/A	**7.3**	**7.2**	**21.6**
Thallium	mg/kg	12	N/A	8.9 U	10.6 U	N/A	9.4 U	9.7 U	9 U
Vanadium	mg/kg	5,800	N/A	**87.9**	**75.1**	N/A	**69.7**	**43.9**	**262 J**
Zinc	mg/kg	350,000	N/A	**5,950**	**11,000**	N/A	**10,900**	**3,330**	**112 J**
Other									
Cyanide, Total	mg/kg	150	N/A	**44.2**	**2.1**	N/A	**26**	**3**	**0.94 J**

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N/A: This analyte was not analysed for this sample.

Table 7
Summary of Inorganics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-010-SB-5	B14-011-SB-1	B14-011-SB-5	B14-011-SB-10*	B14-012-SB-1	B14-012-SB-9	B14-012-SB-10
Metals									
Aluminum	mg/kg	1,100,000	**32,300**	**3,460**	**4,920**	N/A	**2,380**	**1,720**	N/A
Antimony	mg/kg	470	2.7 UJ	3.5 UJ	3.5 UJ	N/A	**6.7 J**	**4.4 J**	N/A
Arsenic	mg/kg	3	**3**	**42.1**	**38.8**	**7.8**	**43.7**	**33.8**	**30.3**
Barium	mg/kg	220,000	**432**	**208 J**	**186 J**	N/A	**31.7 J**	**45.2 J**	N/A
Beryllium	mg/kg	2,300	**3.8**	1.2 U	**0.29 J**	N/A	**0.49 J**	**0.27 J**	N/A
Cadmium	mg/kg	980	1.4 U	**62.6 J**	**62.5 J**	N/A	**17.7**	**17.3**	N/A
Chromium	mg/kg	120,000	**108 J**	**3,760**	**4,230**	N/A	**262**	**521**	N/A
Chromium VI	mg/kg	6.3	0.86 B	**2 J-**	1 B	N/A	0.91 B	0.77 B	N/A
Cobalt	mg/kg	350	**2 J**	**22.4**	**17**	N/A	**13.2**	**11.3**	N/A
Copper	mg/kg	47,000	**10.9**	**591**	**453**	N/A	**191 J**	**220 J**	N/A
Iron	mg/kg	820,000	**20,500**	**375,000**	**292,000**	N/A	**374,000**	**392,000**	N/A
Lead	mg/kg	800	**11.4**	**401**	**820**	**16.4**	**1,330 J**	**1,020 J**	**868 J**
Manganese	mg/kg	26,000	**6,020**	**3,100**	**5,510**	N/A	**6,990**	**5,590**	N/A
Mercury	mg/kg	350	**0.038 J**	**0.96 J+**	**0.04 J+**	N/A	**1.1**	**0.11 J**	N/A
Nickel	mg/kg	22,000	**5.8 J**	**382 J**	**203 J**	N/A	**99.8**	**84.3**	N/A
Selenium	mg/kg	5,800	3.6 U	4.6 U	4.6 U	N/A	**2.2 J**	4.1 U	N/A
Silver	mg/kg	5,800	**21.7**	**6.4 J**	**13.4 J**	N/A	**9.4 J**	**9.4 J**	N/A
Thallium	mg/kg	12	9 U	11.6 U	11.6 U	N/A	9.6 U	10.2 U	N/A
Vanadium	mg/kg	5,800	**466 J**	**30.7**	**193**	N/A	**59.3**	**61.7**	N/A
Zinc	mg/kg	350,000	**21.6 J**	**12,300**	**18,100**	N/A	**6,870**	**14,100**	N/A
Other									
Cyanide, Total	mg/kg	150	**0.87 J**	**7.8 J+**	**1 J+**	N/A	**8.2**	**7.8**	N/A

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Table 7
Summary of Inorganics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-013-SB-1	B14-013-SB-9	B14-013-SB-10	B14-014-SB-1*	B14-014-SB-5*	B14-015-SB-1*	B14-015-SB-5*
Metals									
Aluminum	mg/kg	1,100,000	**2,250**	**3,260**	N/A	**1,140**	**4,210**	**3,110**	**931**
Antimony	mg/kg	470	2.7 UJ	4.2 UJ	N/A	**6.5**	**8.1**	**6.8**	**5.7**
Arsenic	mg/kg	3	**36.3**	**51.8**	**19.3**	**39.1**	**38.2**	**23.4**	**37.9**
Barium	mg/kg	220,000	**34.6 J**	**253 J**	N/A	**13.8**	**89.2**	**20.7**	**17.8**
Beryllium	mg/kg	2,300	**0.36 J**	1.4 U	N/A	**0.14 J**	**0.62 J**	**0.57 J**	**0.18 J**
Cadmium	mg/kg	980	**5.6 J**	**114 J**	N/A	**11.2**	**40.4**	**14.6**	**28.6**
Chromium	mg/kg	120,000	**174**	**6,450**	N/A	**427**	**164**	**375**	**267**
Chromium VI	mg/kg	6.3	0.64 B	1 B	N/A	1.1 B	0.76 B	0.82 B	0.69 B
Cobalt	mg/kg	350	**11.5**	**18.3**	N/A	**14.2**	**9.5**	**13**	**15.3**
Copper	mg/kg	47,000	**187**	**674**	N/A	**220**	**189**	**151**	**261**
Iron	mg/kg	820,000	**494,000**	**258,000**	N/A	**412,000**	**335,000**	**352,000**	**356,000**
Lead	mg/kg	800	**794**	**916**	**818**	**603**	**3,550**	**1,580**	**1,810**
Manganese	mg/kg	26,000	**7,810**	**2,280**	N/A	**8,180**	**5,890**	**6,980**	**5,920**
Mercury	mg/kg	350	**0.51 J+**	**0.66 J+**	N/A	**0.073 J**	**0.69**	**1.3**	**2.9**
Nickel	mg/kg	22,000	**69.1 J**	**238 J**	N/A	**151**	**69.1**	**137**	**145**
Selenium	mg/kg	5,800	**2.8 J**	5.6 U	N/A	3.7 U	**3.2 J**	**6.7**	3.6 U
Silver	mg/kg	5,800	**8.9 J**	**11.8 J**	N/A	**4.4**	**14.3**	**7.2**	**10.7**
Thallium	mg/kg	12	8.9 U	8.4 U	N/A	9.2 U	9.9 U	10.2 U	9.1 U
Vanadium	mg/kg	5,800	**41.5**	**17.2**	N/A	**80.1**	**62.6**	**111**	**28.5**
Zinc	mg/kg	350,000	**7,040**	**24,200**	N/A	**46,500**	**25,100**	**12,000**	**9,090**
Other									
Cyanide, Total	mg/kg	150	**18.8 J+**	**2.4 J+**	N/A	**14**	**22.2**	**29.5**	**5.5**

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Table 7
Summary of Inorganics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-015-SB-10*	B14-016-SB-1*	B14-016-SB-7.5*	B14-016-SB-10*	B14-017-SB-1	B14-017-SB-4	B14-017-SB-10
Metals									
Aluminum	mg/kg	1,100,000	N/A	**5,820**	**4,130**	N/A	**32,000**	**28,400**	N/A
Antimony	mg/kg	470	N/A	**4.1**	**7.8**	N/A	2.5 UJ	**2.1 J**	N/A
Arsenic	mg/kg	3	**5.1**	**14.7**	**8**	**12.5**	**2.1**	**3.7**	**3.7**
Barium	mg/kg	220,000	N/A	**42.3**	**138**	N/A	**350**	**446**	N/A
Beryllium	mg/kg	2,300	N/A	**0.44 J**	0.84 U	N/A	**4**	**4.2**	N/A
Cadmium	mg/kg	980	N/A	**3.2**	**2.5**	N/A	1.2 U	1.3 U	N/A
Chromium	mg/kg	120,000	N/A	**454**	**854**	N/A	**49.5 J**	**384 J**	N/A
Chromium VI	mg/kg	6.3	N/A	0.63 B	**2**	N/A	0.48 B	0.66 B	N/A
Cobalt	mg/kg	350	N/A	**13**	**8.1**	N/A	**4.3**	**6.3**	N/A
Copper	mg/kg	47,000	N/A	**62.2**	**53.3**	N/A	**6.7**	**13**	N/A
Iron	mg/kg	820,000	N/A	**61,500**	**99,800**	N/A	**16,100**	**25,600**	N/A
Lead	mg/kg	800	**189**	**187**	**122**	N/A	**8.7**	**10.7**	N/A
Manganese	mg/kg	26,000	N/A	**2,000**	**9,190**	N/A	**3,350**	**4,150**	N/A
Mercury	mg/kg	350	N/A	**0.06 J**	**0.0093 J**	N/A	**0.024 J**	**0.017 J**	N/A
Nickel	mg/kg	22,000	N/A	**64.1**	**51.2**	N/A	**18.2**	**28.5**	N/A
Selenium	mg/kg	5,800	N/A	3.2 U	3.4 U	N/A	3.3 U	**2.6 J**	N/A
Silver	mg/kg	5,800	N/A	**5.2**	**23.7**	N/A	**25.2**	**19.9**	N/A
Thallium	mg/kg	12	N/A	8.1 U	8.4 U	N/A	8.2 U	8.5 U	N/A
Vanadium	mg/kg	5,800	N/A	**284**	**1,040**	N/A	**129 J**	**154 J**	N/A
Zinc	mg/kg	350,000	N/A	**1,400**	**1,120**	N/A	**14.9 J**	**41.8 J**	N/A
Other									
Cyanide, Total	mg/kg	150	N/A	**3.4**	**0.93 J**	N/A	**1.3**	**0.79 J**	N/A

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Table 7
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Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-018-SB-1	B14-018-SB-5	B14-019-SB-1	B14-019-SB-4	B14-020-SB-1*	B14-021-SB-1	B14-021-SB-9
Metals									
Aluminum	mg/kg	1,100,000	**10,500**	**8,760**	**38,600**	**16,700**	**16,600**	**5,680**	**3,940**
Antimony	mg/kg	470	2.6 UJ	2.7 UJ	2.5 UJ	2.5 UJ	4 U	3.9 UJ	**13 J**
Arsenic	mg/kg	3	**5.2**	**5.6**	2.1 U	**2.8**	**10.8**	**44**	**73.9**
Barium	mg/kg	220,000	**176 J**	**193 J**	**315 J**	**153 J**	**235**	**222 J**	**101 J**
Beryllium	mg/kg	2,300	0.52 B	0.36 B	**6.4**	**2.2**	**1.5**	**0.42 J**	2 U
Cadmium	mg/kg	980	**1.1 J**	**1.7**	**1 J**	**0.66 J**	**2.5**	**73.4 J**	**15.9 J**
Chromium	mg/kg	120,000	**622 J**	**751**	**280**	**985**	**852**	**5,220**	**3,890**
Chromium VI	mg/kg	6.3	0.6 B	0.51 B	0.5 B	0.64 B	0.87 B	1.6 B	6.2 B
Cobalt	mg/kg	350	**9.1**	**10.9**	0.91 B	1.9 B	**8.8**	**19.1**	**50.3**
Copper	mg/kg	47,000	**79.7**	**104**	**11.3 J**	**43.3 J**	**110**	**515**	**1,080**
Iron	mg/kg	820,000	**124,000**	**164,000**	**39,700**	**130,000**	**199,000**	**303,000**	**250,000**
Lead	mg/kg	800	**148 J**	**273**	**69 J**	**16.4 J**	**158**	**757**	**1,440**
Manganese	mg/kg	26,000	**16,000**	**14,100**	**6,610**	**32,600**	**22,100**	**5,600**	**1,400**
Mercury	mg/kg	350	**0.083 J**	**0.17**	**0.052 J**	0.11 U	**0.099 J**	**0.57 J+**	**2.4 J+**
Nickel	mg/kg	22,000	**41.9**	**174 J**	**9**	**17.8**	**48.6**	**237 J**	**231 J**
Selenium	mg/kg	5,800	3.5 U	3.6 U	3.3 U	3.4 U	5.3 U	5.3 U	**6.2 J**
Silver	mg/kg	5,800	**43.4 J**	**29.7 J**	**11.1 J**	**22.3 J**	**30.5**	**16.5 J**	**34.2 J**
Thallium	mg/kg	12	8.8 U	8.9 U	8.2 U	8.5 U	7.9 U	7.9 U	11.8 U
Vanadium	mg/kg	5,800	**1,650 J**	**1,430**	**76.4**	**524**	**641**	**290**	**205**
Zinc	mg/kg	350,000	**300**	**490**	**334**	**132**	**862**	**19,300**	**5,940**
Other									
Cyanide, Total	mg/kg	150	**0.81 J-**	**1.2 J-**	**1.5**	**1.3**	**4.5**	**10.4 J+**	**8.1 J+**

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N/A: This analyte was not analysed for this sample.

Table 7
Summary of Inorganics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-022-SB-1	B14-022-SB-7.5	B14-023-SB-1*	B14-024-SB-1*	B14-025-SB-1	B14-025-SB-5	B14-026-SB-1
Metals									
Aluminum	mg/kg	1,100,000	**3,170**	**4,130**	**10,900**	**35,200**	**43,400**	**21,900**	**16,600**
Antimony	mg/kg	470	3.3 UJ	4.5 UJ	**2.9**	2.4 U	2.4 UJ	2.4 UJ	2.6 UJ
Arsenic	mg/kg	3	**30.2**	**51.4**	**7.5**	**4.5**	2 U	**2.2**	**2.6**
Barium	mg/kg	220,000	**55 J**	**215 J**	**121**	**335**	**461 J**	**267 J**	**92.9 J**
Beryllium	mg/kg	2,300	**0.77 J**	**0.23 J**	**1.2**	**6.4**	**7.5**	**3.6**	0.86 B
Cadmium	mg/kg	980	**13.1 J**	**153 J**	**2.1**	**1.3**	1.2 U	**1 J**	**1.9**
Chromium	mg/kg	120,000	**655**	**11,100**	**797**	**79.2**	**48.6 J**	**502 J**	**236 J**
Chromium VI	mg/kg	6.3	0.94 B	0.8 B	0.59 B	0.29 B	0.52 B	0.57 B	0.55 B
Cobalt	mg/kg	350	**15**	**18.9**	**7.5**	**1.8 J**	**0.89 J**	**4.2**	**5.1**
Copper	mg/kg	47,000	**185**	**718**	**50.3**	**14.4**	**5.1**	**42.6**	**28.5**
Iron	mg/kg	820,000	**508,000**	**263,000**	**153,000**	**23,600**	**20,100**	**98,700**	**43,800**
Lead	mg/kg	800	**1,160**	**567**	**98.5**	**45.8**	**6.7 J**	**116 J**	**111 J**
Manganese	mg/kg	26,000	**10,800**	**2,020**	**18,700**	**3,510**	**3,820**	**10,800**	**5,160**
Mercury	mg/kg	350	**0.23 J+**	**0.63 J+**	**0.053 J**	**0.015 J**	0.11 U	**0.065 J**	**0.11 J**
Nickel	mg/kg	22,000	**88.9 J**	**227 J**	**25.4**	**6.7 J**	**4.8 J**	**21.5**	**13.6**
Selenium	mg/kg	5,800	4.4 U	6.1 U	3.5 U	3.2 U	3.2 U	3.2 U	3.5 U
Silver	mg/kg	5,800	**10.1 J**	**13.1 J**	**42.5**	**12.3**	**10.8 J**	**15.6 J**	**7.4 J**
Thallium	mg/kg	12	10.9 U	9.1 U	8.8 U	8.1 U	8.1 U	8 U	8.8 U
Vanadium	mg/kg	5,800	**68.7**	**4.8 J**	**1,710**	**116**	**30.8 J**	**302 J**	**212 J**
Zinc	mg/kg	350,000	**6,680**	**24,900**	**606**	**527**	**48.2**	**613**	**1,160**
Other									
Cyanide, Total	mg/kg	150	**13.7 J+**	**6.5 J+**	**1.1**	**0.88 J**	**0.84 J-**	**0.45 J-**	**0.41 J-**

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N/A: This analyte was not analysed for this sample.

Table 7
Summary of Inorganics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-026-SB-8.5	B14-027-SB-1	B14-027-SB-5	B14-027-SB-10*	B14-028-SB-1*	B14-028-SB-8*	B14-028-SB-10
Metals									
Aluminum	mg/kg	1,100,000	**25,400**	**13,200**	**18,200**	N/A	**11,800**	**10,300**	N/A
Antimony	mg/kg	470	3 UJ	2.7 UJ	2.7 UJ	N/A	**3.2**	**4.1**	N/A
Arsenic	mg/kg	3	**8.2**	**4.8**	**6.7**	**7**	**8.7**	**7**	**9.2**
Barium	mg/kg	220,000	**359 J**	**70.5 J**	**132 J**	N/A	**102**	**139**	N/A
Beryllium	mg/kg	2,300	**3.5**	0.72 B	**1.1**	N/A	**1.2**	**0.54 J**	N/A
Cadmium	mg/kg	980	**3**	**0.85 J**	**0.62 J**	N/A	**0.86 J**	**2**	N/A
Chromium	mg/kg	120,000	**35.3 J**	**84.4 J**	**77.7 J**	N/A	**760**	**626**	N/A
Chromium VI	mg/kg	6.3	0.63 B	0.57 B	0.53 B	N/A	0.68 B	0.47 B	N/A
Cobalt	mg/kg	350	**12.5**	**6.2**	**8.1**	N/A	**10.1**	**8.4**	N/A
Copper	mg/kg	47,000	**36.8**	**30.9**	**26.2**	N/A	**61.7**	**74.9**	N/A
Iron	mg/kg	820,000	**33,900**	**27,500**	**35,200**	N/A	**97,300**	**71,900**	N/A
Lead	mg/kg	800	**393 J**	**162 J**	**79.3 J**	N/A	**58.4**	**128**	N/A
Manganese	mg/kg	26,000	**2,240**	**1,340**	**1,650**	N/A	**5,050**	**26,100**	**2010**
Mercury	mg/kg	350	**1 J**	**0.12 J**	**0.033 J**	N/A	**0.18**	**0.16**	N/A
Nickel	mg/kg	22,000	**12.4**	**14**	**14.5**	N/A	**59.3**	**27.6**	N/A
Selenium	mg/kg	5,800	4 U	3.6 U	3.6 U	N/A	3.2 U	3.5 U	N/A
Silver	mg/kg	5,800	**10.7 J**	**4.5 J**	**4.4 J**	N/A	**8.1**	**33.2**	N/A
Thallium	mg/kg	12	10.1 U	9.1 U	9.1 U	N/A	8.1 U	8.8 U	N/A
Vanadium	mg/kg	5,800	**60 J**	**147 J**	**145 J**	N/A	**203**	**1,630**	N/A
Zinc	mg/kg	350,000	**567**	**299**	**275**	N/A	**454**	**545**	N/A
Other									
Cyanide, Total	mg/kg	150	**0.5 J-**	1.1 UJ	0.95 UJ	N/A	**3.2**	**4.2**	N/A

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Table 7
Summary of Inorganics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-029-SB-1*	B14-029-SB-5*	B14-029-SB-10	B14-030-SB-1*	B14-030-SB-6*	B14-030-SB-10*	B14-031-SB-1
Metals									
Aluminum	mg/kg	1,100,000	**8,370**	**3,180**	N/A	**37,800**	**3,650**	N/A	**22,900**
Antimony	mg/kg	470	**3.6**	**5.1**	N/A	2.6 U	**2.3 J**	N/A	2.9 UJ
Arsenic	mg/kg	3	**10.7**	**6.3**	**5.9**	**2.2**	**3**	**9.8**	**12.3**
Barium	mg/kg	220,000	**101**	**29.2**	N/A	**373**	**30.1**	N/A	**243 J**
Beryllium	mg/kg	2,300	**0.66 J**	**0.14 J**	N/A	**5.6**	0.83 U	N/A	**3.6**
Cadmium	mg/kg	980	**2.7**	**1.1 J**	N/A	**0.82 J**	**0.61 J**	N/A	**12.1**
Chromium	mg/kg	120,000	**561**	**708**	N/A	**72.4**	**431**	N/A	**955**
Chromium VI	mg/kg	6.3	0.49 B	**1.6**	N/A	0.39 B	0.84 B	N/A	1.1 B
Cobalt	mg/kg	350	**11.3**	**18.4**	N/A	**2 J**	**6.4**	N/A	**10.3**
Copper	mg/kg	47,000	**91**	**59.5**	N/A	**31.2**	**18.1**	N/A	**134 J**
Iron	mg/kg	820,000	**81,200**	**44,500**	N/A	**34,400**	**36,100**	N/A	**107,000**
Lead	mg/kg	800	**1,370**	**2,660**	**194**	**35.2**	**41.9**	N/A	**252 J**
Manganese	mg/kg	26,000	**7,070**	**2,500**	N/A	**2,190**	**4,810**	N/A	**4,270**
Mercury	mg/kg	350	**0.088 J**	**0.11**	N/A	**0.02 J**	**0.0064 J**	N/A	**0.57**
Nickel	mg/kg	22,000	**72.6**	**206**	N/A	**7.1 J**	**83.2**	N/A	**76.3**
Selenium	mg/kg	5,800	3.3 U	3.2 U	N/A	**2.2 J**	3.3 U	N/A	3.9 U
Silver	mg/kg	5,800	**20.5**	**9.6**	N/A	**14.5**	**17.4**	N/A	**15.5 J**
Thallium	mg/kg	12	8.2 U	7.9 U	N/A	8.7 U	8.3 U	N/A	9.7 U
Vanadium	mg/kg	5,800	**1,050**	**368**	N/A	**45.1**	**745**	N/A	**242**
Zinc	mg/kg	350,000	**957**	**606**	N/A	**156**	**266**	N/A	**1,900**
Other									
Cyanide, Total	mg/kg	150	**4.8**	**2.7**	N/A	**4.4**	**0.58 J**	N/A	**4.3**

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Table 7
Summary of Inorganics Detected in Soil
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	B14-031-SB-7	B14-032-SB-1	B14-032-SB-8.5	B14-033-SB-1*	B14-034-SB-1	B14-034-SB-5
Metals								
Aluminum	mg/kg	1,100,000	**8,260**	**13,200**	**21,800**	**23,200**	**4,580**	**11,800**
Antimony	mg/kg	470	2.6 UJ	2.6 UJ	3.5 UJ	2.5 U	4.4 UJ	3.6 UJ
Arsenic	mg/kg	3	**3.7**	**2.4**	**10.8**	**1.7 J**	**46**	**20.2**
Barium	mg/kg	220,000	**101 J**	**135 J**	**58.3 J**	**143**	**381 J**	**90.2 J**
Beryllium	mg/kg	2,300	0.86 U	**1.2**	**1.2**	**2.3**	1.5 U	**3.2**
Cadmium	mg/kg	980	**1.7**	**1.3**	1.7 U	**0.85 J**	**109**	**45.8**
Chromium	mg/kg	120,000	**1,240**	**915**	**50.9**	**115**	**6,240**	**7,270**
Chromium VI	mg/kg	6.3	0.69 B	0.71 B	0.8 B	0.64 B	1.7 B	1.1 B
Cobalt	mg/kg	350	**8.9**	**10.3**	**11.5**	**15**	**25.9**	**35**
Copper	mg/kg	47,000	**62 J**	**57.3 J**	**22.7 J**	**21.1**	**841 J**	**386 J**
Iron	mg/kg	820,000	**160,000**	**128,000**	**37,800**	**30,900**	**318,000**	**233,000**
Lead	mg/kg	800	**169 J**	**88.7 J**	**27 J**	**45**	**1,010 J**	**627 J**
Manganese	mg/kg	26,000	**33,700**	**24,800**	**485**	**1,230**	**2,970**	**1,580**
Mercury	mg/kg	350	**0.058 J**	**0.059 J**	**0.071 J**	**0.026 J**	**1.1**	**0.83**
Nickel	mg/kg	22,000	**24**	**38.7**	**26.8**	**92.5**	**339**	**180**
Selenium	mg/kg	5,800	3.4 U	3.5 U	4.7 U	3.3 U	**3.6 J**	4.8 U
Silver	mg/kg	5,800	**87.8 J**	**63.2 J**	**2.9 J**	**9.8**	**12.9 J**	**8.2 J**
Thallium	mg/kg	12	**6.2 J**	8.8 U	11.6 U	8.3 U	14.7 U	12 U
Vanadium	mg/kg	5,800	**3,450**	**2,070**	**73.6**	**47.8**	**67.4**	**46.4**
Zinc	mg/kg	350,000	**401**	**276**	**149**	**236**	**21,400**	**10,400**
Other								
Cyanide, Total	mg/kg	150	**1**	**1.6**	1.2 U	**0.27 J**	**12.9**	**11.3**

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Table 8
SUMMARY OF SOIL PAL EXCEEDANCES

Parameter	CAS#	Frequency of Detections (%)	Sample ID of Max Result	Unit	PAL Solid	Max Result
Aroclor 1254	11097-69-1	16	B14-006-SB-1	mg/kg	0.97	3.4
Aroclor 1260	11096-82-5	68	B14-011-SB-1	mg/kg	0.99	3.4
Arsenic	7440-38-2	97	B14-008-SB-10	mg/kg	3	136
Benzo[a]pyrene	50-32-8	98	B14-020-SB-1	mg/kg	2.1	7.9
Chromium VI	18540-29-9	7	B14-003-SB-5	mg/kg	6.3	11.6
Diesel Range Organics	DRO	100	B14-013-SB-9	mg/kg	6,200	36,100
Lead	7439-92-1	100	B14-014-SB-5	mg/kg	800	3,550
Manganese	7439-96-5	100	B14-031-SB-7	mg/kg	26,000	33,700
Oil and Grease	O&G	100	B14-013-SB-9	mg/kg	6,200	172,000
PCBs (total)	1336-36-3	61	B14-011-SB-1 & B14-006-SB-1	mg/kg	0.97	3.4

Table 9
Summary of Organics Detected in Groundwater
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	HI02-PZM006	HI04-PZM006*	HI07-PZM005	TM02-PZM009	TM04-PZM006*	TM06-PZM008	TM08-PZM007	Well 2*
Volatile Organic Compounds										
2-Butanone (MEK)	µg/L	5,600	10 U	**936**	10 U	10 U	10 U	10 U	**7.3 J**	10 U
4-Methyl-2-pentanone (MIBK)	µg/L	1,200	10 U	10 U	10 U	10 U	**1.1 J**	10 U	10 U	10 U
Acetone	µg/L	14,000	10 U	**1,080**	10 U	8.9 B	**3.7 J**	4.9 B	**16.5 J**	**5.6 J**
Benzene	µg/L	5	**0.88 J**	1 U	**16.2**	**11**	**653**	1 U	1 U	1 U
Bromomethane	µg/L	7.5	1 U	**1.3**	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	µg/L	700	1 U	1 U	**0.36 J**	**0.75 J**	**14.2**	1 U	1 U	1 U
Isopropylbenzene	µg/L	450	1 U	1 U	1 U	**0.27 J**	1 U	1 U	1 U	1 U
Styrene	µg/L	100	1 U	1 U	1 U	**0.48 J**	**3.4**	1 U	1 U	1 U
Toluene	µg/L	1,000	**0.32 J**	1 U	**5.5**	**6**	**3.4**	1 U	1 U	1 U
Trichloroethene	µg/L	5	1 U	1 U	1 U	**1.6**	1 U	1 U	1 U	1 U
Vinyl chloride	µg/L	2	1 U	1 U	1 U	1 U	**0.84 J**	1 U	1 U	1 U
Xylenes	µg/L	10,000	3 U	3 U	**6**	**12.3**	**24.6**	3 U	3 U	3 U
Semi-Volatile Organic Compounds^										
1,1-Biphenyl	µg/L	0.83	1 U	0.98 U	**0.3 J**	**0.96 J**	**0.5 J**	0.98 U	0.97 U	**0.13 J**
1,4-Dioxane	µg/L	0.46	0.1 UJ	0.098 U	0.1 U	**0.02 J**	**2**	**0.052 J**	0.097 U	**0.091 J**
2,4-Dimethylphenol	µg/L	360	**22.2**	**3.1**	**9.2**	**18.2**	**18**	**0.24 J**	**0.32 J**	**0.19 J**
2-Methylnaphthalene	µg/L	36	**0.64**	0.098 U	**1.7**	**4.8**	**2.9**	0.098 U	0.097 U	**0.56**
2-Methylphenol	µg/L	930	**0.97 J**	**0.26 J**	**0.45 J**	**1.1**	**0.2 J**	0.98 U	0.97 U	0.97 U
3&4-Methylphenol(m&p Cresol)	µg/L	930	**8.8**	**0.26 J**	**3.9**	**7.8**	2 U	2 U	1.9 U	1.9 U
Acenaphthene	µg/L	530	**0.81**	**0.63**	**0.6**	**2.2**	**0.59**	**0.95**	**0.035 J**	**1.1**
Acenaphthylene	µg/L	530	0.1 U	0.098 U	**0.65**	**1.1**	**6.9**	**0.036 J**	0.097 U	**0.24**
Acetophenone	µg/L	1,900	1 U	0.98 U	**0.61 J**	**0.49 J**	0.98 U	0.98 U	0.97 U	0.97 U
Anthracene	µg/L	1,800	**0.12**	**0.24**	**0.27**	**0.64**	**0.13**	**0.27**	**0.09 J**	**0.26**
Benz[a]anthracene	µg/L	0.03	0.1 U	0.098 U	**0.058 J**	**0.095 J**	0.098 U	**0.061 J**	0.097 U	**0.052 J**
Benzaldehyde	µg/L	1,900	1 U	**0.76 J**	1 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U
bis(2-Ethylhexyl)phthalate	µg/L	6	1 U	**0.41 J**	**0.21 J**	0.98 U	**0.29 J**	0.98 U	0.97 U	0.97 U
Carbazole	µg/L		**1.3**	0.98 U	**2.4**	**5.6**	**1.1**	0.98 U	0.97 U	**1.2**
Chrysene	µg/L	25	0.1 U	0.098 U	**0.03 J**	**0.091 J**	0.098 U	**0.042 J**	0.097 U	**0.046 J**
Di-n-butylphthalate	µg/L	900	1 U	0.98 U	1 U	0.98 U	**0.14 J**	0.98 U	0.97 U	0.97 U
Di-n-ocytlphthalate	µg/L	200	1 U	**0.18 J**	1 U	**0.22 J**	0.98 U	0.98 U	0.97 U	0.97 U
Fluoranthene	µg/L	800	**0.19**	**0.082 J**	**0.63**	**1.6**	**0.086 J**	**0.74**	0.097 U	**0.71**
Fluorene	µg/L	290	**0.63**	**0.096 J**	**0.9**	**2.8**	**0.41**	**0.54**	**0.043 J**	**1.1**
Naphthalene	µg/L	0.17	**5.1**	**0.15**	**26.1**	**65.8**	**405**	**0.57**	**0.096 J**	**5**
N-Nitrosodiphenylamine	µg/L	12	1 U	0.98 U	1 U	0.98 U	**0.55 J**	0.98 U	0.97 U	0.97 U
Pentachlorophenol	µg/L	1	2.6 U	2.5 U	**2.8**	2.4 U	2.4 U	2.5 U	2.4 U	2.4 U
Phenanthrene	µg/L		**0.95**	**0.038 J**	**1.9**	**4.4**	**0.5**	**0.83**	**0.06 J**	**1.8**
Phenol	µg/L	5,800	1 U	**0.1 J**	1 U	0.98 U	**0.25 J**	0.98 U	**0.07 J**	0.97 U
Pyrene	µg/L	120	**0.13**	**0.076 J**	**0.38**	**1**	**0.069 J**	**0.41**	0.097 U	**0.53**
TPH/Oil and Grease										
Diesel Range Organics	µg/L	47	N/A	**1,570**	N/A	**899 J**	**2,770**	**1,500 J**	**1,200 J**	**412**
Gasoline Range Organics	µg/L	47	N/A	200 U	N/A	**87.9 J**	**1,450**	200 U	200 U	200 U
Oil and Grease	µg/L	47	4,820 U	4,750 U	**1,200 J**	4,770 U	**1,200 J**	4,770 U	4,770 U	4,770 U

Detection in bold
Values in red indicate an exceedance of the Project Action Limit (PAL)
* indicates non-validated data results
^ PAH compounds were analyzed via SIM
N/A indicates 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 quantitation/detection limit may be higher than reported.
B: The analyte was not detected substantially above the level of the associated method blank or field blank.
J: The positive result for this analyte is a quantitative estimate.

Table 10
Summary of Inorganics Detected in Groundwater
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	PAL	HI02-PZM006	HI04-PZM006*	HI07-PZM005	TM02-PZM009	TM04-PZM006*	TM06-PZM008	TM08-PZM007	Well 2*
Metals, Total										
Aluminum	µg/L	20,000	**137**	**461**	**162**	**98.7**	**66.9**	**22 J**	**11,400**	**274**
Arsenic	µg/L	10	5 U	**3.1 J**	5 U	5 U	5 U	**3.9 J**	5 U	5 U
Barium	µg/L	2,000	**41.4**	**208**	**74**	**65.8**	**28**	**31.7**	**205**	**49.2**
Beryllium	µg/L	4	1 U	1 U	1 U	1 U	**0.31 J**	**0.25 J**	**1.5**	1 U
Cadmium	µg/L	5	3 U	**0.92 J**	3 U	3 U	**3.7**	**0.92 J**	**4**	3 U
Chromium	µg/L	100	**0.9 J**	**23.7**	2 B	**2.2 J**	**9**	**1.4 J**	**365**	**1.3 J**
Chromium VI	µg/L	0.035	10 U	10 U	10 U	8.5 B	**15.2**	8.5 B	8.5 B	8.5 B
Cobalt	µg/L	6	5 U	5 U	5 U	5 U	5 U	5 U	**4.3 J**	5 U
Copper	µg/L	1,300	5 U	**3.5 J**	5 U	5 U	5 U	5 U	**69.1**	5 U
Iron	µg/L	14,000	70 U	**7,260**	70 U	**48.6 J**	**132**	**86.5**	**21,300**	**75.8**
Lead	µg/L	15	5 U	**9.3**	5 U	5 U	5 U	5 U	**61.3**	5 U
Manganese	µg/L	430	5 U	**1,700**	5 U	**3 J**	**18.9**	**134**	**2,160**	**4.5 J**
Mercury	µg/L	2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.1 J**	0.2 U
Nickel	µg/L	390	0.87 B	**4.5 J**	1.5 B	**4.5 J**	**3.8 J**	10 U	**25.2**	10 U
Selenium	µg/L	50	8 U	8 U	8 U	8 U	8 U	8 U	8 U	**8.7**
Silver	µg/L	94	6 U	6 U	6 U	6 U	6 U	6 U	**11.4**	6 U
Vanadium	µg/L	86	**68.9**	**9.3**	**53**	**48.7**	**10.6**	**3.2 J**	**80.6**	**310**
Zinc	µg/L	6,000	10 U	**108**	10 U	**4.2 J**	**4.3 J**	**6 J**	**640**	**3.3 J**
Metals, Dissolved										
Aluminum, Dissolved	µg/L	20,000	N/A	**817**	N/A	**91.4**	50 U	50 U	**21.1 J**	**286**
Arsenic, Dissolved	µg/L	10	N/A	5 U	N/A	5 U	**3.5 J**	5 U	5 U	5 U
Barium, Dissolved	µg/L	2,000	N/A	**208**	N/A	**62.5**	**24.6**	**31**	**61.8**	**48.6**
Chromium VI, Dissolved	µg/L	0.035	N/A	10 U	N/A	8.5 B	**16.4**	9.6 B	8.5 B	9.6 B
Chromium, Dissolved	µg/L	100	N/A	**30.3**	N/A	5 U	**9**	5 U	**1.2 J**	5 U
Copper, Dissolved	µg/L	1,300	N/A	**4 J**	N/A	5 U	5 U	5 U	5 U	5 U
Iron, Dissolved	µg/L	14,000	N/A	**7,810**	N/A	12.6 B	**25.6 J**	14 B	**330**	**23 J**
Lead, Dissolved	µg/L	15	N/A	**7.9**	N/A	5 U	5 U	5 U	5 U	5 U
Manganese, Dissolved	µg/L	430	N/A	**1,660**	N/A	5 U	**13.2**	**132**	**413**	5 U
Nickel, Dissolved	µg/L	390	N/A	**5.7 J**	N/A	**3.6 J**	**3 J**	10 U	**6.1 J**	10 U
Selenium, Dissolved	µg/L	50	N/A	8 U	N/A	8 U	8 U	8 U	8 U	**8 J**
Thallium, Dissolved	µg/L	2	N/A	10 U	N/A	10 U	10 U	10 U	10 U	4.2 B
Vanadium, Dissolved	µg/L	86	N/A	**9.9**	N/A	**46**	**7.4**	**2.5 J**	**2.7 J**	**278**
Zinc, Dissolved	µg/L	6,000	N/A	**116**	N/A	10 U	10 U	1.7 B	2.7 B	10 U
Other										
Cyanide, Available	µg/L	200	N/A	**4.5**	N/A	**1.4 J+**	**0.87 J**	**1.9 J+**	**1.7 J+**	**1.2 J**
Cyanide, Total	µg/L	200	10 U	**8.3 J**	10 U	**25**	**37**	**18**	**3.5 J**	**31**

Detections in bold
Values in red indicate an exceedance of the Project Action Limit (PAL)
* indicates non-validated data results
N/A indicates 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.
B: This analyte was not detected substantially above the level of the associated method blank or field blank.
J: The positive result for this analyte is a quantitative estimate.
J+: The positive result for this analyte is a quantitative estimate but may be biased high.

Table 11 - Parcel B14
Vapor Intrusion Criteria Comparison

Sample Location	Parameter	Result (ug/L)	Final Flag	Target Groundwater Concentration (ug/L) TCR=1E-05 or THQ=1	Exceeds Criteria	Comparison= Result / Target	Toxicity Type
TM04-PZM006*	Benzene	653		69	YES	9.46	C
TM04-PZM006*	Naphthalene	405		200	YES	2.03	C

C indicates carcinogenic
NC indicates non-carcinogenic
* indicates non-validated data results

Table 12 - Parcel B14
Cumulative Vapor Intrusion Criteria Comparison

				HI02-PZM006		HI04-PZM006*		HI07-PZM005		TM02-PZM009	
Parameter	**Type**	**Organ Systems**	**Target GW Conc**	Conc. (ug/L)	Risk/Hazard	Conc. (ug/L)	Risk/Hazard	Conc. (ug/L)	Risk/Hazard	Conc. (ug/L)	Risk/Hazard
Cancer Risk											
1,4-Dioxane	SVOC		130,000	0.1 UJ	0	0.098 U	0	0.1 U	0	0.02 J	1.5E-12
Naphthalene	SVOC		200	5.1	2.6E-07	0.15	7.5E-09	26.1	1.3E-06	65.8	3.3E-06
Benzene	VOC		69	0.88 J	1.3E-07	1 U	0	16.2	2.3E-06	11	1.6E-06
Ethylbenzene	VOC		150	1 U	0	1 U	0	0.36 J	2.4E-08	0.75 J	5.0E-08
Vinyl chloride	VOC		25	1 U	0	1 U	0	1 U	0	1 U	0
Trichloroethene	VOC		74	1 U	0	1 U	0	1 U	0	1.6	2.2E-07
Cumulative Vapor Intrusion Cancer Risk					4E-07		8E-09		4E-06		5E-06
Non-Cancer Hazard											
Cumulative Vapor Intrusion Non-Cancer Hazard Index					0		0		0		0

				TM04-PZM006*		TM06-PZM008		TM08-PZM007		Well 2*	
Parameter	**Type**	**Organ Systems**	**Target GW Conc**	Conc. (ug/L)	Risk/Hazard	Conc. (ug/L)	Risk/Hazard	Conc. (ug/L)	Risk/Hazard	Conc. (ug/L)	Risk/Hazard
Cancer Risk											
1,4-Dioxane	SVOC		130,000	2	1.5E-10	0.052 J	4.0E-12	0.097 U	0	0.091 J	7.0E-12
Naphthalene	SVOC		200	405	2.0E-05	0.57	2.9E-08	0.096 J	4.8E-09	5	2.5E-07
Benzene	VOC		69	653	9.5E-05	1 U	0	1 U	0	1 U	0
Ethylbenzene	VOC		150	14.2	9.5E-07	1 U	0	1 U	0	1 U	0
Vinyl chloride	VOC		25	0.84 J	3.4E-07	1 U	0	1 U	0	1 U	0
Trichloroethene	VOC		74	1 U	0	1 U	0	1 U	0	1 U	0
Cumulative Vapor Intrusion Cancer Risk					1E-04		3E-08		5E-09		3E-07
Non-Cancer Hazard											
Cumulative Vapor Intrusion Non-Cancer Hazard Index					0		0		0		0

Highlighted values indicate exceedances of the cumulative vapor intrusion criteria: TCR>1E-05 or THI>1
Conc. = Concentration
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 quantitation/detection limit may be higher than reported.
J: The positive result for this analyte is a quantitative estimate.
J+: The positive result for this analyte is a quantitative estimate but may be biased high.
* indicates non-validated data results

EnviroAnalytics Group

Parcel B14 - Table 13

Rejected Results for Soil

Parameter	Result	Units	PAL	Exceeds PAL?	Flag
Sample: *B14-002-SB-1*					
Benzaldehyde	1.8	mg/kg	120,000	no	R
Sample: *B14-003-SB-1*					
Benzaldehyde	1.5	mg/kg	120,000	no	R
Sample: *B14-003-SB-5*					
2,3,4,6-Tetrachlorophenol	0.072	mg/kg	25,000	no	R
2,4,5-Trichlorophenol	0.18	mg/kg	82,000	no	R
2,4,6-Trichlorophenol	0.072	mg/kg	210	no	R
2,4-Dichlorophenol	0.072	mg/kg	2,500	no	R
2,4-Dimethylphenol	0.072	mg/kg	16,000	no	R
2,4-Dinitrophenol	0.18	mg/kg	1,600	no	R
2-Chlorophenol	0.072	mg/kg	5,800	no	R
2-Methylphenol	0.072	mg/kg	41,000	no	R
3&4-Methylphenol(m&p Cresol)	0.14	mg/kg	41,000	no	R
Benzaldehyde	0.072	mg/kg	120,000	no	R
Pentachlorophenol	0.18	mg/kg	4	no	R
Phenol	0.072	mg/kg	250,000	no	R
Sample: *B14-006-SB-1*					
Benzaldehyde	2.1	mg/kg	120,000	no	R
Sample: *B14-006-SB-5*					
Benzaldehyde	2.3	mg/kg	120,000	no	R
Sample: *B14-007-SB-1*					
Benzaldehyde	0.086	mg/kg	120,000	no	R
Sample: *B14-007-SB-10*					
1,4-Dioxane	0.25	mg/kg	24	no	R

Rejected Results for Soil

Parameter	Result	Units	PAL	Exceeds PAL?	Flag
Sample: ***B14-007-SB-10***					
Benzaldehyde	1.4	mg/kg	120,000	no	R
Sample: ***B14-007-SB-8***					
1,4-Dioxane	0.27	mg/kg	24	no	R
Sample: ***B14-010-SB-1***					
Benzaldehyde	1.5	mg/kg	120,000	no	R
Sample: ***B14-010-SB-5***					
Benzaldehyde	1.5	mg/kg	120,000	no	R
Sample: ***B14-011-SB-1***					
Benzaldehyde	1	mg/kg	120,000	no	R
Sample: ***B14-011-SB-5***					
Benzaldehyde	0.097	mg/kg	120,000	no	R
Sample: ***B14-012-SB-1***					
2,4-Dinitrophenol	0.21	mg/kg	1,600	no	R
Sample: ***B14-012-SB-10***					
1,4-Dioxane	11.8	mg/kg	24	no	R
2,4-Dinitrophenol	6.4	mg/kg	1,600	no	R
Benzaldehyde	2.5	mg/kg	120,000	no	R
Sample: ***B14-012-SB-9***					
1,4-Dioxane	0.097	mg/kg	24	no	R
2,4-Dinitrophenol	0.22	mg/kg	1,600	no	R
Benzaldehyde	0.087	mg/kg	120,000	no	R
Sample: ***B14-013-SB-1***					
Benzaldehyde	0.079	mg/kg	120,000	no	R

Rejected Results for Soil

Parameter	Result	Units	PAL	Exceeds PAL?	Flag
Sample: ***B14-013-SB-10***					
1,4-Dioxane	0.26	mg/kg	24	no	R
Benzaldehyde	0.15	mg/kg	120,000	no	R
Sample: ***B14-013-SB-9***					
1,4-Dioxane	0.22	mg/kg	24	no	R
Benzaldehyde	1.2	mg/kg	120,000	no	R
Sample: ***B14-017-SB-1***					
Benzaldehyde	0.07	mg/kg	120,000	no	R
Sample: ***B14-017-SB-4***					
1,4-Dioxane	0.11	mg/kg	24	no	R
Benzaldehyde	0.074	mg/kg	120,000	no	R
Sample: ***B14-018-SB-1***					
Benzaldehyde	1.5	mg/kg	120,000	no	R
Sample: ***B14-018-SB-5***					
Benzaldehyde	1.5	mg/kg	120,000	no	R
Sample: ***B14-019-SB-1***					
2,4-Dinitrophenol	0.18	mg/kg	1,600	no	R
Sample: ***B14-019-SB-4***					
1,4-Dioxane	0.12	mg/kg	24	no	R
2,4-Dinitrophenol	0.18	mg/kg	1,600	no	R
Benzaldehyde	0.073	mg/kg	120,000	no	R
Sample: ***B14-021-SB-1***					
Benzaldehyde	1.1	mg/kg	120,000	no	R
Sample: ***B14-021-SB-9***					
1,4-Dioxane	0.27	mg/kg	24	no	R
Benzaldehyde	0.17	mg/kg	120,000	no	R

Rejected Results for Soil

Parameter	Result	Units	PAL	Exceeds PAL?	Flag
Sample: ***B14-022-SB-1***					
Benzaldehyde	0.91	mg/kg	120,000	no	R
Sample: ***B14-025-SB-1***					
Benzaldehyde	0.07	mg/kg	120,000	no	R
Sample: ***B14-025-SB-5***					
Benzaldehyde	1.4	mg/kg	120,000	no	R
Sample: ***B14-026-SB-1***					
Benzaldehyde	1.4	mg/kg	120,000	no	R
Sample: ***B14-026-SB-8.5***					
Benzaldehyde	1.6	mg/kg	120,000	no	R
Sample: ***B14-027-SB-1***					
Benzaldehyde	0.074	mg/kg	120,000	no	R
Sample: ***B14-027-SB-5***					
Benzaldehyde	1.5	mg/kg	120,000	no	R
Sample: ***B14-031-SB-1***					
2,4-Dinitrophenol	0.21	mg/kg	1,600	no	R
Sample: ***B14-031-SB-7***					
1,4-Dioxane	0.091	mg/kg	24	no	R
2,4-Dinitrophenol	1.8	mg/kg	1,600	no	R
Benzaldehyde	0.73	mg/kg	120,000	no	R
Sample: ***B14-032-SB-8.5***					
1,4-Dioxane	0.12	mg/kg	24	no	R
2,4-Dinitrophenol	0.25	mg/kg	1,600	no	R
Benzaldehyde	0.098	mg/kg	120,000	no	R

Rejected Results for Soil

Parameter	Result	Units	PAL	Exceeds PAL?	Flag
Sample:	***B14-034-SB-1***				
2,4-Dinitrophenol	6.2	mg/kg	1,600	no	R
Benzaldehyde	2.5	mg/kg	120,000	no	R
Sample:	***B14-034-SB-5***				
2,4-Dinitrophenol	0.26	mg/kg	1,600	no	R

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Parcel B14 - Table 14

Rejected Results for Groundwater

Parameter	Result	Units	PAL	Exceeds PAL?	Flag
Sample: *HI02-PZM006*					
3,3'-Dichlorobenzidine	1	µg/L	0.12	**YES**	R
Methyl Acetate	5	µg/L	20,000	no	R
Sample: *HI07-PZM005*					
3,3'-Dichlorobenzidine	1	µg/L	0.12	**YES**	R
Methyl Acetate	5	µg/L	20,000	no	R

ARM Group Inc.
Earth Resource Engineers and Consultants

Table 15 - Parcel B14
COPC Screen Analysis

Parameter	CAS#	Location of Max Result	Max Detection (mg/kg)	Final Flag	Min Detection (mg/kg)	Average Detection (mg/kg)	Total Samples	Frequency of Detection (%)	Cancer TR=1E-06 (mg/kg)	Non-Cancer HQ=0.1 (mg/kg)	COPC?
1,1-Biphenyl	92-52-4	B14-013-SB-9	2.3		0.03	0.48	61	19.67	410	20	no
1,1-Dichloroethane	75-34-3	B14-008-SB-9	0.011		0.011	0.01	16	6.25	16	23,000	no
1,2,3-Trichlorobenzene	87-61-6	B14-012-SB-10	0.47	J	0.47	0.47	16	6.25		93	no
1,2,4,5-Tetrachlorobenzene	95-94-3	B14-032-SB-1	0.029	J	0.029	0.03	61	1.64		35	no
1,2,4-Trichlorobenzene	120-82-1	B14-012-SB-10	0.46	J	0.46	0.46	16	6.25	110	26	no
1,2-Dichlorobenzene	95-50-1	B14-012-SB-10	0.84		0.0061	0.15	16	37.50		930	no
1,2-Dichloropropane	78-87-5	B14-008-SB-9	0.0021	J	0.0021	0.002	16	6.25	1.2	6.6	no
1,3-Dichlorobenzene	541-73-1	B14-007-SB-8	0.038		0.011	0.02	16	12.50			no
1,4-Dichlorobenzene	106-46-7	B14-012-SB-10	0.34	J	0.0051	0.07	16	37.50	11	2,500	no
2,3,4,6-Tetrachlorophenol	58-90-2	B14-032-SB-1	0.037	J	0.037	0.04	60	1.67		2,500	no
2,4,5-Trichlorophenol	95-95-4	B14-032-SB-1	0.034	J	0.034	0.03	60	1.67		8,200	no
2,4,6-Trichlorophenol	88-06-2	B14-032-SB-1	0.031	J	0.031	0.03	60	1.67	210	82	no
2,4-Dichlorophenol	120-83-2	B14-032-SB-1	0.029	J	0.029	0.03	60	1.67		250	no
2,4-Dimethylphenol	105-67-9	B14-007-SB-10	4.3		0.028	1.83	60	8.33		1,600	no
2,4-Dinitrophenol	51-28-5	B14-014-SB-5	0.1	J	0.049	0.07	50	4.00		160	no
2,4-Dinitrotoluene	121-14-2	B14-013-SB-10	0.32		0.037	0.14	61	4.92	7.4	160	no
2,6-Dinitrotoluene	606-20-2	B14-022-SB-7.5	0.16		0.034	0.10	61	3.28	1.5	25	no
2-Butanone (MEK)	78-93-3	B14-013-SB-10	0.12		0.0071	0.05	16	43.75		19,000	no
2-Chloronaphthalene	91-58-7	B14-022-SB-7.5	3.1		0.028	1.56	61	3.28		6,000	no
2-Chlorophenol	95-57-8	B14-032-SB-1	0.026	J	0.026	0.03	60	1.67		580	no
2-Methylnaphthalene	91-57-6	B14-012-SB-10	8.2		0.0023	0.43	61	91.80		300	no
2-Methylphenol	95-48-7	B14-008-SB-9	0.75		0.03	0.39	60	3.33		4,100	no
2-Nitroaniline	88-74-4	B14-032-SB-1	0.033	J	0.033	0.03	61	1.64		800	no
4-Chloroaniline	106-47-8	B14-012-SB-10	3.6		0.043	1.03	61	13.11	11	330	no
4-Methyl-2-pentanone (MIBK)	108-10-1	B14-008-SB-9	0.024		0.024	0.02	16	6.25		14,000	no
Acenaphthene	83-32-9	B14-026-SB-8.5	11.4		0.00063	0.42	61	80.33		4,500	no
Acenaphthylene	208-96-8	B14-013-SB-9	1.1		0.0013	0.13	61	100.00			no
Acetone	67-64-1	B14-013-SB-10	0.44		0.01	0.14	16	75.00		67,000	no
Acetophenone	98-86-2	B14-008-SB-9	0.19		0.025	0.07	61	6.56		12,000	no
Aluminum	7429-90-5	B14-025-SB-1	43,400		267	11,943	57	100.00		110,000	no
Anthracene	120-12-7	B14-013-SB-9	3.1		0.0024	0.33	61	100.00		23,000	no
Antimony	7440-36-0	B14-006-SB-1	39.2	J	1.7	6.55	57	43.86		47	no
Aroclor 1248	12672-29-6	B14-028-SB-1	0.049		0.049	0.05	31	3.23	0.95		no
Aroclor 1254	11097-69-1	B14-006-SB-1	3.4		0.06	1.00	31	16.13	0.97	1.5	YES (C/NC)
Aroclor 1260	11096-82-5	B14-011-SB-1	3.4	J	0.014	0.53	31	67.74	0.99		YES (C)
Arsenic	7440-38-2	B14-008-SB-10	136		1.7	21.1	69	97.10	3	48	YES (C/NC)

Table 15 - Parcel B14
COPC Screen Analysis

Parameter	CAS#	Location of Max Result	Max Detection (mg/kg)	Final Flag	Min Detection (mg/kg)	Average Detection (mg/kg)	Total Samples	Frequency of Detection (%)	Cancer TR=1E-06 (mg/kg)	Non-Cancer HQ=0.1 (mg/kg)	COPC?
Barium	7440-39-3	B14-010-SB-1	530		10.5	160	57	100.00		22,000	no
Benz[a]anthracene	56-55-3	B14-002-SB-1	5.2		0.014	0.63	61	98.36	21		no
Benzaldehyde	100-52-7	B14-022-SB-7.5	0.25	J	0.025	0.07	28	50.00	820	12,000	no
Benzene	71-43-2	B14-008-SB-9	0.38		0.0021	0.06	16	50.00	5.1	42	no
Benzo[a]pyrene	50-32-8	B14-020-SB-1	7.9		0.017	0.71	61	98.36	2.1	22	YES (C)
Benzo[b]fluoranthene	205-99-2	B14-020-SB-1	14.1		0.032	1.38	61	98.36	21		no
Benzo[g,h,i]perylene	191-24-2	B14-020-SB-1	3.4		0.0063	0.36	61	100.00			no
Benzo[k]fluoranthene	207-08-9	B14-020-SB-1	12		0.029	1.14	61	98.36	210		no
Beryllium	7440-41-7	B14-025-SB-1	7.5		0.14	1.97	57	68.42	6,900	230	no
bis(2-chloroethoxy)methane	111-91-1	B14-032-SB-1	0.027	J	0.027	0.03	61	1.64		250	no
bis(2-Chloroethyl)ether	111-44-4	B14-032-SB-1	0.022	J	0.022	0.02	61	1.64	1		no
bis(2-Chloroisopropyl)ether	108-60-1	B14-032-SB-1	0.024	J	0.024	0.02	61	1.64		4,700	no
bis(2-Ethylhexyl)phthalate	117-81-7	B14-013-SB-9	20		0.02	5.09	61	24.59	160	1,600	no
Cadmium	7440-43-9	B14-022-SB-7.5	153	J	0.56	19.6	57	91.23	9,300	98	YES (NC)
Caprolactam	105-60-2	B14-007-SB-8	0.98		0.039	0.38	61	4.92		40,000	no
Carbazole	86-74-8	B14-028-SB-1	0.92	J	0.022	0.37	61	11.48			no
Carbon disulfide	75-15-0	B14-008-SB-9	0.026		0.0033	0.01	16	25.00		350	no
Chromium	7440-47-3	B14-022-SB-7.5	11,100		35.3	1,373	57	100.00		180,000	no
Chromium VI	18540-29-9	B14-003-SB-5	11.6	J-	1.6	4.30	57	7.02	6.3	350	YES (C)
Chrysene	218-01-9	B14-002-SB-1	4.4		0.014	0.66	61	98.36	2,100		no
cis-1,2-Dichloroethene	156-59-2	B14-008-SB-9	0.14		0.14	0.14	16	6.25		230	no
Cobalt	7440-48-4	B14-021-SB-9	50.3		0.89	12.2	57	96.49	1,900	35	YES (NC)
Copper	7440-50-8	B14-021-SB-9	1,080		5.1	193	57	100.00		4,700	no
Cyanide	57-12-5	B14-008-SB-1	44.2		0.27	6.30	57	92.98		120	no
Cyclohexane	110-82-7	B14-012-SB-10	0.35	J	0.0035	0.11	16	25.00		2,700	no
Dibenz[a,h]anthracene	53-70-3	B14-020-SB-1	1.1		0.0037	0.13	61	81.97	2.1		no
Diethylphthalate	84-66-2	B14-032-SB-1	0.041	J	0.041	0.04	61	1.64		66,000	no
Di-n-butylphthalate	84-74-2	B14-013-SB-10	0.39	J	0.024	0.15	61	4.92		8,200	no
Di-n-ocytlphthalate	117-84-0	B14-012-SB-10	2.7	J	0.085	1.39	61	3.28		820	no
Ethylbenzene	100-41-4	B14-012-SB-10	1.1		0.0062	0.18	16	43.75	25	2,000	no
Fluoranthene	206-44-0	B14-002-SB-1	11.4		0.0025	1.18	61	100.00		3,000	no
Fluorene	86-73-7	B14-013-SB-9	4.7		0.00069	0.32	61	85.25		3,000	no
Hexachlorobenzene	118-74-1	B14-032-SB-1	0.041	J	0.041	0.04	61	1.64	0.96	93	no
Hexachlorobutadiene	87-68-3	B14-032-SB-1	0.028	J	0.028	0.03	61	1.64	5.3	120	no
Hexachlorocyclopentadiene	77-47-4	B14-032-SB-1	0.019	J	0.019	0.02	61	1.64		0.75	no
Hexachloroethane	67-72-1	B14-032-SB-1	0.026	J	0.026	0.03	61	1.64	8	46	no

Table 15 - Parcel B14
COPC Screen Analysis

Parameter	CAS#	Location of Max Result	Max Detection (mg/kg)	Final Flag	Min Detection (mg/kg)	Average Detection (mg/kg)	Total Samples	Frequency of Detection (%)	Cancer TR=1E-06 (mg/kg)	Non-Cancer HQ=0.1 (mg/kg)	COPC?
Indeno[1,2,3-c,d]pyrene	193-39-5	B14-020-SB-1	3.4		0.009	0.37	61	93.44	21		no
Iron	7439-89-6	B14-008-SB-9	527,000		16,100	195,200	57	100.00		82,000	YES (NC)
Isophorone	78-59-1	B14-032-SB-1	0.027	J	0.027	0.03	61	1.64	2,400	16,000	no
Isopropylbenzene	98-82-8	B14-012-SB-10	1.2		0.0041	0.21	16	37.50		990	no
Lead^	7439-92-1	B14-014-SB-5	3,550		6.7	578	64	100.00		800	YES (NC)
Manganese	7439-96-5	B14-031-SB-7	33,700		485	7,825	58	100.00		2,600	YES (NC)
Mercury	7439-97-6	B14-015-SB-5	2.9		0.0064	0.42	57	94.74		35	no
Methylene Chloride	75-09-2	B14-017-SB-4	0.013		0.0096	0.01	16	12.50	1,000	320	no
Naphthalene	91-20-3	B14-012-SB-10	5.9		0.0035	0.48	61	93.44	17	59	no
Nickel	7440-02-0	B14-011-SB-1	382	J	4.8	90.4	57	100.00	64,000	2,200	no
Nitrobenzene	98-95-3	B14-032-SB-1	0.026	J	0.026	0.03	61	1.64	22	130	no
N-Nitroso-di-n-propylamine	621-64-7	B14-032-SB-1	0.027	J	0.027	0.03	61	1.64	0.33		no
N-Nitrosodiphenylamine	86-30-6	B14-012-SB-10	2	J	0.029	0.71	61	4.92	470		no
PCBs (total)*	1336-36-3	B14-006-SB-1 & B14-011-SB-1	3.4		0.049	0.83	31	61.29	0.94		YES (C)
Pentachlorophenol	87-86-5	B14-032-SB-1	0.038	J	0.038	0.04	60	1.67	4	280	no
Phenanthrene	85-01-8	B14-013-SB-9	15.7		0.0039	1.16	61	100.00			no
Phenol	108-95-2	B14-008-SB-9	0.44		0.028	0.12	60	13.33		25,000	no
Pyrene	129-00-0	B14-018-SB-5	9.6		0.0026	1.29	61	100.00		2,300	no
Selenium	7782-49-2	B14-015-SB-1	6.7		1.8	3.42	57	22.81		580	no
Silver	7440-22-4	B14-031-SB-7	87.8	J	2.9	17.3	57	100.00		580	no
Styrene	100-42-5	B14-008-SB-9	0.0039	J	0.0039	0.004	16	6.25		3,500	no
Thallium	7440-28-0	B14-031-SB-7	6.2	J	6.2	6.20	57	1.75		1.2	YES (NC)
Toluene	108-88-3	B14-008-SB-9	5.6		0.0018	0.84	16	50.00		4,700	no
Vanadium	7440-62-2	B14-031-SB-7	3,450		4.8	394	57	100.00		580	YES (NC)
Xylenes	1330-20-7	B14-012-SB-10	4.4		0.026	0.73	16	43.75		250	no
Zinc	7440-66-6	B14-014-SB-1	46,500		14.9	6,389	57	100.00		35,000	YES (NC)

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

COPC = Compound of Potential Concern
TR = Target Risk
HQ = Hazard Quotient

C = Compound was identified as a cancer COPC
NC = Compound was identified as a non-cancer COPC

*PCBs (total) include the sum of all detected aroclor mixtures, including those without regional screening levels (e.g. Aroclor 1262, Aroclor 1268) which are not displayed.
^The COPC screening level for lead was not adjusted to the HQ=0.1 because lead is not assessed in the SLRA. The 800 mg/kg PAL is relevant to the Adult Lead Model prcedure.

Table 16 - Parcel B14
Assessment of Lead

Exposure Unit	Surface/Sub-Surface	Arithmetic Mean (mg/kg)
Site-Wide (60.3 ac.)	Surface	457
	Sub-Surface	692
	Pooled	578

Adult Lead Model (ALM) Risk Levels	
Soil Concentration (mg/kg)	Probability of Blood Concentration of 10 ug/dL
2,518 mg/kg	5%
3,216 mg/kg	10%

Table 17 - Parcel B14
Soil Exposure Point Concentrations

			Surface Soil EPCs		**Sub-Surface Soil EPCs**		**Pooled Soil EPCs**	
Parameter	Cancer COPC Screening Level (mg/kg)	Non-Cancer COPC Screening Level (mg/kg)	EPC Type Site-Wide Exposure Unit	EPC Site-Wide Exposure Unit (mg/kg)	EPC Type Site-Wide Exposure Unit	EPC Site-Wide Exposure Unit (mg/kg)	EPC Type Site-Wide Exposure Unit	EPC Site-Wide Exposure Unit (mg/kg)
Arsenic	3.00	48.0	95% KM (Chebyshev) UCL	**29.6**	95% H-UCL	**38.6**	95% KM (Chebyshev) UCL	**32.5**
Cadmium	9,300	98.0	99% KM (Chebyshev) UCL	57.6	99% KM (Chebyshev) UCL	**102**	97.5% KM (Chebyshev) UCL	45.1
Chromium VI	6.30	350	Maximum Value	2.00	Maximum Value	2.00	95% KM (t) UCL	0.96
Cobalt	1,900	35.0	95% KM (t) UCL	11.9	95% KM (Chebyshev) UCL	23.8	95% KM (Chebyshev) UCL	17.1
Iron		82,000	95% Adjusted Gamma UCL	**265,757**	95% Student's-t UCL	**252,433**	95% Chebyshev (Mean, Sd) UCL	**287,595**
Manganese		2,600	95% Adjusted Gamma UCL	**9,497**	95% KM (Chebyshev) UCL	**11,900**	95% Approximate Gamma UCL	**9,483**
Vanadium		580	95% Chebyshev (Mean, Sd) UCL	**762**	95% Adjusted Gamma UCL	**776**	95% H-UCL	**674**
Zinc		35,000	95% Adjusted Gamma UCL	10,308	97.5% Chebyshev (Mean, Sd) UCL	18,543	95% Chebyshev (Mean, Sd) UCL	11,879
PCBs (total)	0.94		99% KM (Chebyshev) UCL	**2.46**	NA	NA	99% KM (Chebyshev) UCL	**2.46**
Aroclor 1254	NE	1.50	95% KM (Percentile Bootstrap) UCL	0.40	NA	NA	95% KM (t) UCL	0.39
Benzo[a]pyrene	2.10	22.0	95% Chebyshev (Mean, Sd) UCL	2.00	99% KM (Chebyshev) UCL	**2.93**	97.5% KM (Chebyshev) UCL	1.85

Bold indicates EPC higher than lowest COPC Screening Level
COPC = Constituent of Potential Concern
NE = Not Evaluated
NA = Not Analyzed

Table 18 - Parcel B14
Surface Soils
Composite Worker Risk Ratios

		Site-Wide Exposure Unit (60.3 ac.)				
			Composite Worker			
			RSLs (mg/kg)		Risk Estimates	
Parameter	Target Organ	EPC (mg/kg)	Cancer	Non-Cancer	Risk	HQ
Arsenic	**Cardiovascular; Dermal**	29.6	3.00	480	9.9E-06	0.06
Cadmium	**Urinary**	57.6	9,300	980	6.2E-09	0.06
Chromium VI	**Respiratory**	**2.00**	6.30	3,500	3.2E-07	0.0006
Cobalt	**Thyroid**	11.9	1,900	350	6.3E-09	0.03
Iron	**Gastrointestinal**	265,757		820,000		0.3
Manganese	**Nervous**	9,497		26,000		0.4
Vanadium	**Dermal**	762		5,800		0.1
Zinc	**Hematologic; Immune**	10,308		350,000		0.03
PCBs (total)		2.46	0.94		2.6E-06	
Aroclor 1254	**Dermal; Immune; Ocular**	0.40	NE	15.0		0.03
Benzo[a]pyrene	**Developmental**	2.00	2.10	220	9.5E-07	0.009
					1E-05	↓

Bold indicates maximum value used

NE = Not Evaluated. Aroclor 1254 was included for non-cancer hazard only. The carcinogenic risk is evaluated with total PCBs.

RSLs were obtained from the EPA Regional Screening Levels at https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search

Total HI	Cardiovascular	0
	Dermal	0
	Urinary	0
	Respiratory	0
	Thyroid	0
	Gastrointestinal	0
	Nervous	0
	Hematologic	0
	Immune	0
	Ocular	0
	Developmental	0

Table 19 - Parcel B14
Sub-Surface Soils
Composite Worker Risk Ratios

		Site-Wide Exposure Unit (60.3 ac.)				
			Composite Worker			
			RSLs (mg/kg)		Risk Estimates	
Parameter	Target Organ	EPC (mg/kg)	Cancer	Non-Cancer	Risk	HQ
Arsenic	**Cardiovascular; Dermal**	38.6	3.00	480	1.3E-05	0.08
Cadmium	**Urinary**	102	9,300	980	1.1E-08	0.1
Chromium VI	**Respiratory**	**2.00**	6.30	3,500	3.2E-07	0.0006
Cobalt	**Thyroid**	23.8	1,900	350	1.3E-08	0.07
Iron	**Gastrointestinal**	252,433		820,000		0.3
Manganese	**Nervous**	11,900		26,000		0.5
Vanadium	**Dermal**	776		5,800		0.1
Zinc	**Hematologic; Immune**	18,543		350,000		0.05
Benzo[a]pyrene	**Developmental**	2.93	2.10	220	1.4E-06	0.01
					1E-05	↓

Bold indicates maximum value used
RSLs were obtained from the EPA Regional Screening Levels at
https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search

Total HI	Cardiovascular	0
	Dermal	0
	Urinary	0
	Respiratory	0
	Thyroid	0
	Gastrointestinal	0
	Nervous	0
	Hematologic	0
	Immune	0
	Developmental	0

Table 20 - Parcel B14
Pooled Soils
Composite Worker Risk Ratios

		Site-Wide Exposure Unit (60.3 ac.)				
			Composite Worker			
			RSLs (mg/kg)		Risk Estimates	
Parameter	Target Organ	EPC (mg/kg)	Cancer	Non-Cancer	Risk	HQ
Arsenic	Cardiovascular; Dermal	32.5	3.00	480	1.1E-05	0.07
Cadmium	Urinary	45.1	9,300	980	4.8E-09	0.05
Chromium VI	Respiratory	0.96	6.30	3,500	1.5E-07	0.0003
Cobalt	Thyroid	17.1	1,900	350	9.0E-09	0.05
Iron	Gastrointestinal	287,595		820,000		0.4
Manganese	Nervous	9,483		26,000		0.4
Vanadium	Dermal	674		5,800		0.1
Zinc	Hematologic; Immune	11,879		350,000		0.03
PCBs (total)		2.46	0.94		2.6E-06	
Aroclor 1254	Dermal; Immune; Ocular	0.39	NE	15.0		0.03
Benzo[a]pyrene	Developmental	1.85	2.10	220	8.8E-07	0.008
					1E-05	↓

NE = Not Evaluated. Aroclor 1254 was included for non-cancer hazard only. The carcinogenic risk is evaluated with total PCBs.

RSLs were obtained from the EPA Regional Screening Levels at https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search

Total HI	Cardiovascular	0
	Dermal	0
	Urinary	0
	Respiratory	0
	Thyroid	0
	Gastrointestinal	0
	Nervous	0
	Hematologic	0
	Immune	0
	Ocular	0
	Developmental	0

APPENDIX A

Parcel B14 Sampling Plan Summary
Former Sparrows Point Steel Mill
Sparrows Point, Maryland

Table 1 - Soil Sampling Summary

Source Area Description	REC & Finding/ SWMU/ AOC	Figure or Drawing of Reference	Rationale	Number of Locations	Sample Locations	Boring Depth*	Sample Depth*	Analytical Parameters: Soil Samples
Humphrey Impoundment (w/ general coverage)	REC 2A Finding 61 SWMU 190	DCC	Investigate potential impacts related to the Humphrey Impoundment. This area was used to receive wastewater from various steel processing areas, as a sludge dewatering area, and for storage of process slurry and other materials. These materials may have contained hazardous substances and/or petroleum products.	17	B14-002, B14-003, and B14-006 through B14-020 (correspond to former BERA samples)	Total depth of 20 feet or groundwater.	0-1', 4-5', 9-10' bgs. 4-5' interval may be adjusted in the field based on observations or field screening.	VOC^, SVOC, Metals, DRO/GRO, O&G, PCBs (0-1')
				14	B14-021 through B14-034			
			Total:	31				

Soil Borings Sampling Density Requirements (from **Worksheet 17 - Sampling Design and Rationale**)
No Engineered Barrier (41-70 acres): 1 boring per 2 acres with no less than 27.
No Engineered Barrier (60.4 acres) = **31 borings required, 31 proposed**

* If Geoprobe® access is restricted by standing water, soft surface conditions, or other encountered Site conditions, a hand auger will be used to complete the boring to a depth of 5 feet bgs or groundwater (thus excluding the 9-10' bgs sample).

VOC - Volatile Organic Compounds (Target Compound List)
SVOCs - Semivolatile Organic Compounds (Target Compound List)
Metals - (Target Analyte List plus Hexavalent Chromium and Cyanide)
DRO/GRO - Diesel Range Organics/Gasoline Range Organics
O&G - Oil and Grease
^VOCs are only collected if the PID reading exceeds 10 ppm
bgs - Below Ground Surface

Parcel B14 Sampling Plan Summary
Former Sparrows Point Steel Mill
Sparrows Point, Maryland

Table 2 - Groundwater Sampling Summary

Source Area Description	REC & Finding/ SWMU/ AOC	Figure or Drawing of Reference	Condition of Existing Well	Number of Locations	Sample Locations	Boring Depth	Screen Interval	Analytical Parameters: Groundwater Samples†
Permanent Groundwater Wells (Humphrey Impoundment)	REC 2A Finding 61 SWMU 190	DCC	Structural conditions are described in the Well Inspection Forms (**Appendix C**).	8	HI02-PZM006*, HI04-PZM006, HI07-PZM005*, TM02-PZM009, TM04-PZM006 TM06-PZM008, TM08-PZM007, and Well 2	Historical Boring Depths listed in Existing Well Construction Information Table (**Appendix D**).	Historical Screen Intervals listed in Existing Well Construction Information Table (**Appendix D**).	VOC, SVOC, Metals (total/dissolved), Cyanide (total/available), Oil & Grease, DRO/GRO
			Unknown	1^	HI05-PZM012^			
			Total:	8 - 9^				

Metals analysis will include dissolved hexavalent chromium

†Field measurements include pH, DO, ORP, conductivity, temperature.

*HI02-PZM006 and HI07-PZM005 have already been sampled during the Parcel B8 investigation, and will not be repeated.

^HI05-PZM012 could not be located during the initial well inspection prior to implementation of the Work Plan. Another effort will be made to locate this shallow permanent well (and the intermediate and lower zone wells in the HI05- well cluster) during the implementation of the Parcel B14 Work Plan. If possible, a groundwater sample will be collected from this location following the inspection. The results of the inspection will be provided to the MDE.

APPENDIX B

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-002-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/14/17
Weather	: Cloudy, 70s
Northing (US ft)	: 570756.78
Easting (US ft)	: 1459350.57

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	100	0.0	B14-002-SB-1	(0-1') SAND with some SILT and GRAVEL, very fine to medium grained, medium dense, brown, trace moist, non plastic, non cohesive	SW	Groundwater was observed at 1' bgs, thus there was no soil recovery in the sleeve Because soils could not be properly screened, a piezometer was installed to check for the potential presence of NAPL
				(1-10') No Recovery		
5						
10				End of boring		

Total Borehole Depth: 10' bgs.
Boring terminated at 10' bgs due to piezometer installation.
0-1' bgs interval was was completed via hand auger method.

12-14-2017 P:\EnviroAnalytics Group\150300M EAG_Sparrows Point Area B\Documents\Parcel B14\Boring Logs\2_bor\B14-002-SB.bor

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-003-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/13/17
Weather	: Cloudy, 70s
Northing (US ft)	: 570855.57
Easting (US ft)	: 1459561.37

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B14-003-SB-1	(0-0.5') SANDY SILT, soft, brown, dry, non plastic, non cohesive	ML	Light organic matter present
		0.4		(0.5-12') SLAG, SAND and GRAVEL-sized and some COBBLE-sized, brown with trace black and gray grading to reddish brown, dry, non plastic, non cohesive		
	72	0.6				
		0.2				
		0.1	B14-003-SB-5			
5		-			SW/GW	
		-				
	60	0.8				
		0.5				Wet at 9' bgs
		1.6				
10		-				
		-				
	8	-		(12-19.7') CLAYEY SILT with trace SAND, soft, black, low plasticity, cohesive		
		-				
		-				
15		-				Moderate odor No product sheen
		-			ML	
		-				
	40	-				
		-				
		-				
20				(19.7-20') SILTY CLAY, firm, light greenish gray, moist, low plasticity, cohesive	CL	
				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to water.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-006-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/13/17
Weather	: Rainy, 70s
Northing (US ft)	: 570478.47
Easting (US ft)	: 1459634.31

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	30	-	B14-006-SB-1	(0-2.5') CLAYEY SAND, medium dense, reddish brown, moist, non plastic, non cohesive	SC	Moderate organic matter present
		-				
		-				
		1.0		(2.5-6') CLAYEY SILT with trace SAND, very soft to soft, black and brown, very moist, low plasticity, cohesive	ML	
		0.1	B14-006-SB-5			
5		-				
		-		(6-9.5') GRAVEL with SILT and SAND, loose, black, wet, non plastic, non cohesive	GW-GM	Wet at 7.5' bgs Light product sheen from 7.5-9.5' bgs
	50	0.1				
		0.4				
		2.5		(9.5-10') CLAY, soft, grayish green with black streaks, very moist, low plasticity, cohesive	CL	
10				End of boring		

Total Borehole Depth: 10' bgs.
Boring terminated at 10' bgs due to water and piezometer installation.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-007-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: M. Replogle
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/7/17
Weather	: Sunny, 70s
Northing (US ft)	: 569875.57
Easting (US ft)	: 1458505.37

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
		-	B14-007-SB-1	(0-1') ORGANIC SILT, brown, wet	OL	
		-		(1-5') SILTY CLAY, soft with some firm lenses, black, very moist, low plasticity, cohesive		
	30	-			OL	
		-				
		0.0				
5		-		(5-15') CLAY, soft to very soft, dark gray with black staining, very moist, low plasticity, cohesive		Odor present in black stained soil
		-				
	20	47.7	B14-007-SB-8			No groundwater encountered
		-				
		11.0	B14-007-SB-10			
10		-			CL	
		-				
	20	-				
		3.0				
		7.4				
15				End of boring		

Total Borehole Depth: 15' bgs.
Boring terminated at 15' bgs due to rig stuck.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-008-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/12/17
Weather	: Cloudy, 70s
Northing (US ft)	: 569996.32
Easting (US ft)	: 1459083.74

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B14-008-SB-1	(0-0.6') ORGANIC SILT, soft, reddish brown, moist, non plastic, non cohesive	OL	
		-		(0.6-24') SILTY CLAY with SAND grading to CLAY with intermittent black and wet CLAYEY SAND lenses, firm to very firm, reddish brown and very dark gray, moist to very moist, low plasticity, cohesive		Moderate waste-like odor in CLAYEY SAND lenses
	50	0.0				
		0.1				
		0.0				
5		0.5				
		2.3				
	100	4.0				
		12.0	B14-008-SB-9			
		3.1	B14-008-SB-10			No water encountered
10		-				
		-				
	60	0.5			CL	
		2.6				
		1.7				
15		-				
		-				
	50	-				
		0.0				
		0.7				
20		-				
		-				
	60	-				
		-				
		-		(24-35') CLAY, firm, light greenish gray, moist, low plasticity, low cohesion		
25		-				
		-				
		-				
	60	-				
		-				
		-			CL	
30		-				
		-				
	60	-				
		-				
		-				
35				End of boring		

Total Borehole Depth: 35' bgs.
Boring terminated at 35' bgs due to attempt to install shallow groundwater piezometer.
No shallow water bearing zones present.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-009-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Hand Auger

Date	: 9/15/17
Weather	: Sunny, 70s
Northing (US ft)	: 570093.81
Easting (US ft)	: 1459210.00

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	100	9.1	B14-009-SB-1	(0-3.5') CLAYEY SAND and GRAVEL, soft, brownish red, wet, non plastic, non cohesive	SC/GC	Heavy organic matter Wet at 3" bgs- possible stormwater or groundwater
		-				
		-				
		-				
				(3.5-5') SILTY CLAY with some SAND and GRAVEL, firm, brownish red, wet, non plastic, non cohesive	CL	
		0.0	B14-009-SB-5			
5				End of boring		

Total Borehole Depth: 5' bgs.
Boring terminated at 5' bgs due to maximum hand auger depth.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-010-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/13/17
Weather	: Rainy, 70s
Northing (US ft)	: 570027.32
Easting (US ft)	: 1459753.99

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	68	-	B14-010-SB-1	(0-1.5') SILTY SAND, loose, brown, dry, non plastic, non cohesive	SM	Trace organic matter present
		1.0				
		1.0		(1.5-5.5') SLAG GRAVEL, fine to coarse, with SAND, medium dense to dense, gray and grayish brown, dry, non plasticity, non cohesive; with CLAY from 3.5-4' bgs	GW	Trace large metallic SLAG
		4.1				
		0.6	B14-010-SB-5			
5	60	-		(5.5-9.5') BRICK and SLAG GRAVEL with SILT, reddish brown, dry then wet at 7' bgs, non plastic, non cohesive	GW-GM	Wet at 7' bgs
		0.9				
		28.0				
		1.3				
10	40	-		(9.5-20') SLAG GRAVEL with some SILT, black, wet, non plastic, non cohesive	GP	Moderate sheen, no odor (9.5-20' bgs)
		-				
		-				
		-				
		-				
15	50	-				
		-				
		-				
		-				
20	0			(20-22') No recovery		
				End of boring		

Total Borehole Depth: 22' bgs.
Boring terminated at 22' bgs due to water and piezometer installation.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-011-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: M. Replogle
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/7/17
Weather	: Sunny, 60s
Northing (US ft)	: 569792.54
Easting (US ft)	: 1457396.68

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	60	-	B14-011-SB-1	(0-3') ORGANIC SILT, soft, reddish brown, moist, non plastic, non cohesive	ML	
		0.5				
		0.0				
		0.1		(3-4') ORGANIC SILTY SAND, loose, reddish brown, moist, non plastic, non cohesive	SM	
		0.1	B14-011-SB-5	(4-15') CLAY with some SAND from 4-7' bgs, dense grading to soft, gray then black from 14-15' bgs, moist, low plasticity, cohesive		
5	100	0.0				
		0.0				
		0.0				
		0.2				
		0.3	B14-011-SB-10		CL	
10	100	0.0				
		0.0				
		0.0				
		0.5				
		1.5				
15	100	-		(15-17') SILTY CLAY, very soft, brownish black, wet, low plasticity, cohesive	CL	Wet at 15' bgs Oily black water present from 15-17' bgs
		-				
		-		(17-20') CLAY, dense to soft, gray, moist, low plasticity, cohesive	CL	Petroleum-like odor in black water
		-				
		-				
20				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to water and piezometer installation.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-012-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/6/17
Weather	: Rainy, 60s
Northing (US ft)	: 569615.62
Easting (US ft)	: 1457923.32

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B14-012-SB-1	(0-1.1') ORGANIC SILT, soft, dark brown, moist to dry, non plastic, non cohesive	OL	
		0.0		(1.1-2') SANDY CLAY, dense, dark brownish red, dry, low plasticity, cohesive	CL	
	82	0.0		(2-2.7') SAND, fine grained, with CLAY, dense, dark reddish brown, dry, non plastic, non cohesive	SP	
		0.0		(2.7-9') SILTY CLAY, dense grading to soft, brownish red with trace dark grayish brown, dry then very moist at 6' bgs, low plasticity, cohesive		
		0.0				
5		-			CL	
		0.2				
	80	1.8				
		53.6	B14-012-SB-9			
		215.2	B14-012-SB-10	(9-10') SILTY CLAY, firm, dark brownish gray, very moist, low plasticity, cohesive	CL	Sludge-like odor 8-15' bgs
10		-				
		-		(11.5-17') SAND, fine to medium grained, medium dense, gray, wet, non plastic, non cohesive		Wet at 11.5' bgs
	60	-				
		22.8			SW	
		14.2				
15		-				
		-				
	20	-		(17-20') SILTY CLAY, soft, black, very moist, low plasticity, cohesive		
		-			CL	
		25.5				
20				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to water and piezometer installation.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-013-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: M. Replogle
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/7/17
Weather	: Sunny, 60s
Northing (US ft)	: 569629.46
Easting (US ft)	: 1458273.70

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B14-013-SB-1	(0-1') ORGANIC SILT, loose, brown, dry, non plastic, non cohesive	OL	
		1.0		(1-3') CLAYEY SILT with GRAVEL, firm, dark reddish grayish brown, moist, low plasticity	ML	
	70	0.2				
		0.3		(3-8') SILTY CLAY with trace GRAVEL, firm to soft, dark reddish grayish brown, moist to very moist, low plasticity, cohesive	CL	Clay breaks on flat planes into cubes
		0.0				
5		1.5				
		2.1				
	100	10.6				
		28.7	B14-013-SB-9	(8-10') CLAY, medium firm, dark gray, moist, medium plasticity, cohesive	CL	
		18.8	B14-013-SB-10			
10		-		(10-16.5') CLAY with some SAND, medium soft, dark grayish black, very moist, medium plasticty, cohesive	CL	
		-				
	60	3.3				
		2.3				
		0.8				
15		-				
		-		(16.5-17') SILTY SAND, loose, black, wet, non plastic, non cohesive	SM	Wet at 16.' bgs Black oily water present in black water
	70	1.9		(16.8-18') CLAY, soft, black, wet, low plasticity, cohesive	CL	
		1.7		(18-18.5') SAND, loose, black, wet, non plastic, non cohesive	SP	Petroleum-like odor in black water
		2.0		(18.5-20') CLAY, soft, black, wet, medium plasticity, cohesive	CL	
20				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to water.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-014-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Hand Auger

Date	: 9/29/17
Weather	: Sunny, 70s
Northing (US ft)	: 569667.79
Easting (US ft)	: 1458621.48

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	100	6.7	B14-0014-SB-1	(0-1') SAND with SILT, dense, medium brown, dry, non plastic, non cohesive	SW-SM	Moderate organic matter
		-		(1-2') CLAYEY SILT, firm, reddish brown, moist, low plasticity, cohesive	ML	
		-		(2-2.5') SILTY SAND, very fine to fine, medium dense, black, dry, non plastic, non cohesive	SM	Some metallic grains present from 2-2.5' bgs
		-		(2.5-5') SILTY CLAY with trace SAND, very firm, reddish brown, dry to moist, low plasticity, cohesive	CL	No water encountered
		6.5	B14-014-SB-5			
5				End of boring		

Total Borehole Depth: 5' bgs.
Boring terminated at 5' bgs due to maximum hand auger depth.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-015-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/12/17
Weather	: Cloudy, 70s
Northing (US ft)	: 569735.70
Easting (US ft)	: 1458868.76

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	62	-	B14-015-SB-1	(0-1.5') SLAG GRAVEL, fine, loose, reddish brown, moist, non plastic, non cohesive	GP	
		-		(1.5-8') CLAY with SILT, firm to very firm, reddish brown, moist, low plasticity, cohesive	CL	Clay breaks on flat planes into cubes
		0.0				
		0.0				
		0.0	B14-015-SB-5			
5	72	-				
		0.0				
		0.0				
		0.7				
		0.0	B14-015-SB-10	(8-14.5') CLAYEY SAND with large BRICK COBBLES, medium dense, reddish brown with yellow and gray, moist, non plastic, non cohesive	SC	
10	20	-				
		-				
		-				
		-				
		0.0				
15		-		(14.5-16') SILTY CLAY, soft, gray with black streaks, very moist, low plasticity, cohesive	CL	
		-		(16-24.2') SILTY SAND, medium dense, dark brown and very dark gray, wet, non plasticity, non cohesive		Moderate sheen with trace petroleum-like product with moderate odor
	4	-				
		-				
20		-			CL	Wet at 19.2' bgs
		-				
		-				
	40	-				
		-				
		-				
25		-		(24.2-28') CLAY, soft, dark gray, very moist, low plasticity, cohesive	CL	Possible saturated product present from 24.2-28' bgs
	60	-				
		-				
		-		(28-30') CLAY, firm, grayish green with black streaks, moist, low plasticity, cohesive	CL	
30				End of boring		

Total Borehole Depth: 30' bgs.
Boring terminated at 30' due to water and piezometer installation.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-016-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/12/17
Weather	: Cloudy, 70s
Northing (US ft)	: 569669.64
Easting (US ft)	: 1459341.40

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B14-016-SB-1	(0-2') SAND with SILT, medium dense, brown, dry, non plastic, non cohesive	SW-SM	Organic matter present
		-				
	28	-		(2-5.5') SAND, very fine to very coarse, with coarse BRICK GRAVEL, meidum dense, brown and yellow with trace gray, dry, non plastic, non cohesive	SW-SM	
		0.1				
		1.5				
5		-		(5-9') Non-native SAND, with some fine GRAVEL, and with large coarse GRAVEL from 6-7' bgs, medium dense, fine to coarse grained, brown and light brown with trace yellow, dry then moist at 8' bgs	SW	
		-	B14-016-SB-7.5			
	70	1.3				
		0.1				
		0.1	B14-016-SB-10	(9-11') SAND, medium to very coarse with fine to coarse GRAVEL with some fine metallic grains, medium dense to loose, moist, non plastic, non cohesive	SW/GW	
10		-				
		-		(11-14.8') SAND with fine BRICK GRAVEL and SILT, fine to medium grained, medium dense, brown, yellow, and grayish brown, wet, non plastic, non cohesive	SW/GW	Wet at 13' bgs
	40	-				
		0.0				
		0.0				
15				(14.8-15') SANDY CLAY, firm, reddish brown, very moist, low plasticity, cohesive	CL	
				End of boring		

Total Borehole Depth: 15' bgs.
Boring terminated at 15' bgs due to water.

12-05-2017 P:\EnviroAnalytics Group\150300M EAG_Sparrows Point Area B\Documents\Parcel B14\Boring Logs\2_bor\B14-016-SB.bor

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-017-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/13/17
Weather	: Cloudy, 70s
Northing (US ft)	: 569668.86
Easting (US ft)	: 1459715.98

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B14-017-SB-1	(0-1') SILTY SAND with some SLAG GRAVEL, loose, brown with gray, dry, non plastic, non cohesive	SM	
		0.3		(1-14.5') SLAG GRAVEL, fine to coarse, with SAND, medium dense to dense, gray and reddish brown, dry then moist from 4-9.5' bgs, moist at 9.5' bgs, wet at 14' bgs		
	74	0.9				
		13.9	B14-017-SB-4			
		1.6				
5		-				
		7.2				
	72	7.5			GW	
		0.7				
		1.3	B14-017-SB-10			
10		-				
		-				
	40	-				Wet at 14' bgs
		-				
		-				
15		-		(14.5-19.5') SLAG GRAVEL, fine, with SILT, loose, black and gray, wet, non plastic, non cohesive		Very small trace sheen, no odor from 14.5-15' bgs, light sheen 18-19.5' bgs
		-			GP	
	30	-				
		-				
		-				
20				(19.5-20') CLAY, soft, brownish gray and black, very moist, low plasticity, cohesive	CL	
				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to water and piezometer installation.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-018-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/14/17
Weather	: Sunny, 70s
Northing (US ft)	: 569256.96
Easting (US ft)	: 1457480.89

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
		-	B14-018-SB-1	(0-1') SILTY SAND with some GRAVEL, medium dense, brown, moist, non plastic, non cohesive	SM	Light organic matter present
		1.6		(1-2') CONCRETE, light gray, dry, non plastic, non cohesive	NA	
	90	1.5		(2-9.5') SAND and GRAVEL with some SILT, medium dense, brown, dry, then moist at 8' bgs, then wet at 9' bgs, non plastic, non cohesive		
		2.9				
		0.9	B14-018-SB-5			
5		0.7			SW/GW	
		2.9				
	94	2.9				
		3.1				
		2.9				Wet at 9.5' bgs
				(9.5-10') Non-native SAND with CLAY, medium dense, brown and greenish gray, wet, non plastic, non cohesive	SW/CL	
10				End of boring		

Total Borehole Depth: 10' bgs.
Boring terminated at 10' bgs due to water.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-019-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/6/17
Weather	: Cloudy, 70s
Northing (US ft)	: 569299.17
Easting (US ft)	: 1457895.77

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B14-019-SB-1	(0-1') SILTY SAND with SLAG GRAVEL, loose to medium dense, reddish brown, moist, non plastic, non cohesive	SM	
	78	1.3 63.7		(1-8') SLAG SAND and GRAVEL with trace SILT, medium dense, light brown, gray, and dark gray, dry to moist, non plastic, non cohesive	SW/GW	
		69.6	B14-019-SB-4			
		2.1				
5		37.0				No water encountered
	58	7.9				
		6.8				
				End of boring		
10						

Total Borehole Depth: 8' bgs.
Boring terminated at 8' bgs due to refusal.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-020-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: M. Replogle
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Hand Auger

Date	: 9/11/17
Weather	: Sunny, 60s
Northing (US ft)	: 569329.33
Easting (US ft)	: 1458300.45

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	100	0.0	B14-020-SB-1	(0-1') SANDY SILT TOPSOIL with some SILT and GRAVEL, loose, brown, dry, non plastic, non cohesive	ML	No water encountered
		0.0		(1-2') SLAG SAND and GRAVEL, loose, brown and gray, dry, non plastic, non cohesive	SW/GW	
				End of boring		
5						

Total Borehole Depth: 2' bgs.
Boring terminated at 2' bgs due to hand auger refusal.

12-20-2017 P:\EnviroAnalytics Group\150300M EAG_Sparrows Point Area B\Documents\Parcel B14\Boring Logs\2_bor\B14-020-SB.bor

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-021-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: M. Replogle
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/7/17
Weather	: Sunny, 60s
Northing (US ft)	: 569933.44
Easting (US ft)	: 1457689.82

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	50	-	B14-021-SB-1	(0-5') SANDY SILT, soft to firm, reddish brown to brownish black, moist, non plastic, non cohesive	ML	Organic matter present
		-				
		0.2				
		0.4				
		0.3				
5						
	60	-		(5-7') CLAY, soft, gray, very moist, low plasticity, cohesive	CL	
		-				
		8.0		(7-13') SAND, loose, black, very moist to wet, non plastic, non cohesive	SP	Wet at 9' bgs Black, oily water with petroleum-like odor
		1.2	B14-021-SB-9			
		1.3				Dark amber product from 9-10' bgs
10						
	100	-				
		7.4				
		11.7				
		2.3		(13-15') CLAY, medium firm, very moist, low plasticity, cohesive	CL	
		1.3				
15				End of boring		

Total Borehole Depth: 15' bgs.
Boring terminated at 15' bgs due to water and piezometer installation.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-022-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: M. Replogle
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/7/17
Weather	: Sunny, 60s
Northing (US ft)	: 569972.88
Easting (US ft)	: 1458033.97

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	40	-	B14-022-SB-1	(0-3') SILT with some SAND, firm, dark brown, moist, low plasticity, non cohesive	ML	
		-				
		0.0				
		0.0		(3-6') SAND with some SILT, loose, light brown, dry, non plastic non cohesive	SW	
		0.0				
5		-				
	70	-		(6-7.5') CLAY, very firm to soft, dark grayish brown, moist to very moist, low plasticity, cohesive	CL	
		-	B14-022-SB-7.5			
		-		(7.5-11') SAND, loose, black, wet, non plastic, non cohesive	SP	Wet at 7.5' bgs Black, oily water with petroleum-like odor
		-				
10		-				
		-		(11-15') CLAY, soft, black, wet, low plasticity, cohesive	CL	
	100	-				
		-				
		-				
15				End of boring		

Total Borehole Depth: 15' bgs.
Boring terminated at 15' bgs due to water and piezometer installation.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-023-SB

(page 1 of 1)

Client	: EnviroAnalytics Group	Date	: 9/15/17
ARM Project No.	: 150300M-17-3	Weather	: Sunny, 80s
Project Description	: Sparrows Point - Parcel B14		
Site Location	: Sparrows Point, MD		
ARM Representative	: L. Perrin		
Checked by	: L. Glumac	Northing (US ft)	: 570176.87
Drilling Company	: Allied Drilling Co.	Easting (US ft)	: 1458411.99
Driller	: Brad Toribio		
Drilling Equipment	: Hand auger		

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	100	0.0	B14-023-SB-1	(0-1.6') Non-native SAND with some SLAG GRAVEL and trace SILT, medium dense, brown, dry, non plastic, non cohesive	SW/GW	No water encountered
		0.0				
				End of boring		
5						

Total Borehole Depth: 1.6' bgs.
Boring terminated at 1.6' bgs due to hand auger refusal.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-024-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Hand auger

Date	: 9/15/17
Weather	: Sunny, 80s
Northing (US ft)	: 570315.85
Easting (US ft)	: 1458578.16

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	100	0.8 0.5	B14-024-SB-1	(0-1.5') SAND and SLAG GRAVEL, medium dense, brown and grayish brown, dry, non plastic non cohesive	SW/GW	No water encountered
				End of boring		
5						

Total Borehole Depth: 1.5' bgs.
Boring terminated at 1.5' bgs due to hand auger refusal.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-025-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/14/17
Weather	: Sunny, 70s
Northing (US ft)	: 570568.67
Easting (US ft)	: 1458728.25

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	60	-	B14-025-SB-1	(0-8.7') SLAG GRAVEL and SAND, gray and grayish brown, dry, non plastic, non cohesive	SW/GW	
		-				
		0.8				
		0.7				
		2.7	B14-025-SB-5			
5		-				
	42	-				
		0.9				
		1.0				
				(8.7-9.2') BRICK GRAVEL, medium dense, red, dry, non plastic, non cohesive	GP	Wet at 9.2' bgs
		0.2		(9.2-10') SAND, medium dense, brown and yellow, wet, non plastic, non cohesive	NA	Abundant WOOD fragments
10				End of boring		

Total Borehole Depth: 10' bgs.
Boring terminated at 10' bgs due to water.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-026-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/14/17
Weather	: Sunny, 70s
Northing (US ft)	: 570658.38
Easting (US ft)	: 1458807.40

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
		0.2	B14-026-SB-1	(0-0.6') ORGANIC SILT, soft, dry, brown, non plastic, non cohesive	OL	
		2.0		(0.6-3.5') SAND with SILT, fine to medium, medium dense to dense, light brown and brown, dry, non plastic, non cohesive	SW-SM	
	92	0.2				
		0.2		(3.5-4') CLAY, hard, reddish yellow and light brownish gray, dry, low plasticity, cohesive	CL	
		0.1		(4-8.5') SANDY SILT with trace BRICK GRAVEL from 4-5' bgs, very firm, black with trace red, moist, non plastic, non cohesive	ML	WOOD fragments with creosote-like odor present from 7-9.8' bgs
5		-				
		-				
	60	2.6	B14-026-SB-8.5			
		3.9		(8.5-9.8') CLAYEY SAND, dark brownish red, wet, non plastic, non cohesive	SC	Wet at 8.5' bgs
		3.6				
10				(9.8-10') CONCRETE GRAVEL, medium dense, very pale brown and brown, wet, non plastic, non cohesive	NA	
				End of boring		

Total Borehole Depth: 10' bgs.
Boring terminated at 10' bgs due to water.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-027-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/14/17
Weather	: Sunny, 80s
Northing (US ft)	: 570806.21
Easting (US ft)	: 1459120.62

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	80	-	B14-027-SB-1	(0-1') SAND, very fine to medium, with CLAY and fine GRAVEL, medium dense, reddish yellow and light brown, moist, non plastic, non cohesive,	SW-SC	
		0.2			CL	
		0.2		(1-2') SANDY CLAY with some GRAVEL, very firm to hard, dry to moist, light brown with trace gray and yellow, low plasticity, cohesive	SW/GW	
		2.9		(2-2.8') SAND with some GRAVEL, fine to coarse, medium dense, brown with gray, moist, non plastic, non cohesive	CL	
		0.1	B14-027-SB-5	(2.8-3.7') CLAY, hard, very pale brown, moist, low plasticity, cohesive	SW-SC	
5		-		(3.7-4.5') SAND with CLAY and GRAVEL, dense, very pale brown, very moist, non plastic, non cohesive		
		-		(4.5-7.5') CLAY, hard, very pale brown, moist, low plasticity, cohesive	CL	
	18	-				
		-		(7.5-9') SAND and BRICK GRAVEL with CLAY, medium dense, brown with trace yellow and red, very moist, non plastic, non cohesive	SW-SC	
		0.0	B14-027-SB-10	(9-14.3') SANDY CLAY with GRAVEL, firm, brown with trace red, very moist, low plasticity, cohesive		
10		-				No water encountered
		-			CL	
	0.4	-				
		-				
		2.7		(14.3-17.7') SILTY CLAY, soft, black, very moist, low plasticity, cohesive		
15		-			CL	
		-				
	50	0.2				
		0.0		(17.7-20') CLAY with trace SAND from 19.8-20' bgs, hard, very pale brown, dry to moist, low plasticity, cohesive	CL	
		0.0				
20				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to maximum allowable depth.

12-05-2017 P:\EnviroAnalytics Group\150300M EAG_Sparrows Point Area B\Documents\Parcel B14\Boring Logs\2_bor\B14-027-SB.bor

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-028-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: M. Replogle
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/11/17
Weather	: Sunny, 70s
Northing (US ft)	: 569759.83
Easting (US ft)	: 1459127.34

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	B14-028-SB-1	(0-3.8') SILTY SAND, brown, and SLAG SAND and GRAVEL, gray, loose, dry, non plastic, non cohesive	SM	
	80	1.7				
		5.1				
		6.0				
		1.8		(3.8-6') WEATHERED SANDSTONE, GRAVEL and COBBLE-sized, light yellowish brown to reddish yellow at 5.5' bgs, dry	GW	
5		3.1				
		7.6		(6-7') SLAG SAND and GRAVEL, loose, dark gray, dry, non plastic, non cohesive	SW/GW	
	100	20.5	B14-028-SB-8	(7-9.5') GRAVELLY CLAY with some SLAG GRAVEL, firm, gray and reddish yellow mottling, moist, medium plasticity, cohesive	CL	
		10.9				
		4.1	B14-028-SB-10	(9.5-15.5') SLAG SAND and GRAVEL, loose, dark gray, with some WEATHERED SANDSTONE pockets, SAND-sized, light yellowish brown, dry, non plastic, non cohesive	SW/GW	
10		-				
		7.3				
	90	11.1				
		2.1				
		4.2				
15		-		(15.5-17') SAND and GRAVEL with some SLAG, loose, dark gray, dry, non plastic, non cohesive	SW/GW	
		-				
	80	-		(17-18') SAND, loose, brown, moist then wet at 17.5' bgs, non plastic, non cohesive	SW/GW	Wet at 17.5' bgs
		-		(18-19') SLAG SAND and GRAVEL, medium dense, dark gray, wet, non plastic, non cohesive	SW/GW	
		-				
20		-		(19-21.5') SLAG GRAVEL with SAND, medium dense, black, wet, non plastic, non cohesive	SW/GW	Petroleum type odor, very oily feel, heavy sheen, black product from 19-28' bgs
		-				
	40	-		(21.5-23.5') SILTY SAND, medium dense, black, wet, non plastic, non cohesive	SM	
		-				
		-		(23.5-28') SANDY GRAVEL SLAG with BRICK GRAVEL chunk at 25' bgs, medium dense, black, wet, non plastic, non cohesive	SW/GW	
25	100					
				End of boring		
30						

Total Borehole Depth: 28' bgs.
Boring terminated at 28' bgs due to refusal and piezometer installation.

12-05-2017 P:\EnviroAnalytics Group\150300M EAG_Sparrows Point Area B\Documents\Parcel B14\Boring Logs\2_bor\B14-028-SB.bor

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-029-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: M. Replogle
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/11/17
Weather	: Sunny, 70s
Northing (US ft)	: 569543.96
Easting (US ft)	: 1459096.23

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	50	-	B14-029-SB-1	(0-1.5') SILTY SAND, loose, brown, dry, non plastic, non cohesive	SM	
		-		(1.5-12') GRAVELLY SAND with some shiny large GRAVEL, medium dense, alternating 1 to 3-inch layers of dark gray, yellowish brown, light gray, and brown, non plastic, non cohesive	SW/GW	
		0.8				
		7.3				
		2.4	B14-029-SB-5			
5		-				
	60	3.0				
		2.4				
		1.6				
		2.0	B14-029-SB-10			
10		-				
		-				
	10	-		(12-15') SAND, loose, dark grayish brown, wet, non plastic, non cohesive	SW	
		-				Wet at 14.5' bgs
		-				
15				End of boring		

Total Borehole Depth: 15' bgs.
Boring terminated at 15' bgs due to water.

12-05-2017 P:\EnviroAnalytics Group\150300M EAG_Sparrows Point Area B\Documents\Parcel B14\Boring Logs\2_bor\B14-029-SB.bor

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-030-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: M. Replogle
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/11/17
Weather	: Sunny, 60s
Northing (US ft)	: 569500.04
Easting (US ft)	: 1458693.62

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	100	16.0	B14-030-SB-1	(0-0.5') SILTY TOPSOIL, loose, brown, moist, non plastic, non cohesive	ML	
		30.3		(0.5-4.7') SLAG SAND and GRAVEL, loose, brownish gray then black at 2.2' bgs, dry, non plastic, non cohesive	SW/GW	
		76.0				
	50	15.4				
		-				
5		-	B14-030-SB-6	(4.7-9') SAND with trace GRAVEL, medium dense, light yellowish brown, dry, non plastic, non cohesive, with 6-inch black SANDY SLAG layer from 8-8.5' bgs	SW	Petroleum-like odor from 2.2-4' bgs, 8-8.5' bgs, 14-15' bgs
	70	24.2				
		5.3				
		6.7				
		34.3	B14-030-SB-10	(9-18') CLAY, very firm to medium firm at 14' bgs, yellow to gray at 10' bgs, moist, low plasticity, cohesive	CL	
10		-				
	80	-				
		-				
		-				
15		-				
		-				
	10	-				
		-				
		-		(18-20') CLAY with some SAND from 19.5-20' bgs, medium firm, gray CLAY and reddish yellow SAND, moist but wet at 19.5' bgs, low plasticity, cohesive	CL	Wet at 19.5' bgs
20				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to water.

12-05-2017 P:\EnviroAnalytics Group\150300M EAG_Sparrows Point Area B\Documents\Parcel B14\Boring Logs\2_bor\B14-030-SB.bor

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-031-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/6/17
Weather	: Cloudy, 70s
Northing (US ft)	: 569165.32
Easting (US ft)	: 1457788.99

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
		-	B14-031-SB-1	(0-1') SANDY SILT, firm, brown, moist, low plasticity, cohesive	ML	
		6.7		(1-8.5') SAND, fine to very coarse, and GRAVEL, fine to coarse, with yellow BRICK COBBLES from 7-7.5' bgs, and trace CLAY lenses, medium dense to dense, brown, dry then wet at 8' bgs, non plastic, non cohesive		
	80	29.8				
		0.6				
		3.4			SW/GW	
5						
		-				
		11.3	B14-031-SB-7			
	78	7.7				Wet at 8' bgs
		0.0		(8.5-10') SLAG, fine GRAVEL and medium to very coarse SAND-sized, medium dense to dense, light gray and light brownish gray, wet, non-plastic, non cohesive	GP/SW	
		0.0				
10				End of boring		

Total Borehole Depth: 10' bgs.
Boring terminated at 10' bgs due to water.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-032-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/6/17
Weather	: Cloudy, 70s
Northing (US ft)	: 569352.73
Easting (US ft)	: 1457276.14

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	62	-	B14-032-SB-1	(0-5.5') SAND, fine to medium, with some SLAG and BRICK GRAVEL with trace SILT, loose to medium dense, brown, dry, non plastic, non cohesive	SW	
		-				
		8.9				
		10.7				
		0.9				
5		0.0		(5.5-7.7') SLAG, SAND and fine GRAVEL, medium dense to dense, light brownish gray, dry to moist, non plastic, non cohesive	SW/GP	
		0.0				
	90	10.5	B14-032-SB-8.5	(7.7-8.5') CLAY, very firm, brown, moist, low plasticity, cohesive	CL	
		15.4		(8.5-8.7') BRICK GRAVEL, dense, yellow, dry to moist, non plastic, non cohesive	GP	Wet at 8.5' bgs
		3.7		(8.7-10') SLAG GRAVEL, fine, with SAND, medium dense, brown, wet, non plastic, non cohesive	GP	
10				End of boring		

Total Borehole Depth: 10' bgs.
Boring terminated at 10' bgs due to water.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-033-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Brad Toribio
Drilling Equipment	: hand auger

Date	: 9/15/17
Weather	: Sunny, 80s
Northing (US ft)	: 569615.97
Easting (US ft)	: 1457115.43

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	100	1.8	B14-033-SB-1	(0-1') SILTY SAND, medium dense, light brown grading to brown, dry, non plastic, non cohesive	SM	Light organic matter
		0.5		(1-2') SAND with SLAG GRAVEL, medium dense, dark grayish brown, dry to moist, non plastic, non cohesive	SW/GW	No water encountered
				End of boring		
5						

Total Borehole Depth: 2' bgs.
Boring terminated at 2' bgs due to hand auger refusal.

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ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-034-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: M. Replogle
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: Mike Garvine
Drilling Equipment	: Geoprobe 7822DT

Date	: 9/6/17
Weather	: Rainy, 70s
Northing (US ft)	: 569543.46
Easting (US ft)	: 1457406.41

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	49	-	B14-034-SB-1	(0-4') SILTY SAND, medium dense to dense, dark yellowish brown, dry, non plastic, non cohesive	SM	Moderate organics present
		-				
		0.0				
		0.0				
		0.0	B14-034-SB-5	(4-5.5') CLAY, hard, brownish gray, strong brown, and yellowish red, dry, low plasticity, cohesive	CL	
5	80	-		(5.5-8.5') SLAG and BRICK, fine GRAVEL to very coarse SAND-sized, dark brown, strong brown, and yellow, wet, non plastic, non cohesive	GW/SW	Wet at 6' bgs
		6.4				
		5.3				
		18.3				
		2.7		(8.5-14.5') CLAY, firm to soft, light gray, moist, low plasticity, cohesive	CL	
10	84	-				
		-				
		-				
		-				
		-				
15	70	-		(14.5-20') SLAG, SAND and GRAVEL, dense, very dark brown, wet, non plastic, non cohesive	SW/GW	
		-				
		-				
		-				
		-				
20				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to water.

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APPENDIX C

September 21, 2016

Mr. James Calenda
EnviroAnalytis Group, LLC
1650 Des Peres Road, Suite 303
St. Louis, MO 63131

Re: Sparrows Point Well Survey
Sparrows Point, MD
Triad Engineering Job No. 03-15-0343

Mr. Calenda:
Below are the specified surveyed wells, date of last field work completed on August 25, 2016. The coordinate values shown were derived from G.P.S. observations based on National Geodetic Surveys stations “GIS 1”, PID AC7684 and “GIS 2”, PID AC7685 which purport to be on NAD83(2011) Maryland Grid coordinate system with NAVD88 (AMSL) elevations.

DESCRIPTION	*NORTHING*	*EASTING*	*TOP CASING ELEVATION*	*GROUND AT WELL ELEVATION*
HI02-PZM0006	569966.88	1457454.45	10.11	10.42
HIO7-PZM005	570206.14	1458428.32	12.66	9.64

January 8, 2018

Mr. James Calenda
EnviroAnalytis Group, LLC
1650 Des Peres Road, Suite 303
St. Louis, MO 63131

Re: Sparrows Point Well Survey
Sparrows Point, MD
Triad Engineering Job No. 03-15-0343

Mr. Calenda:
Below are the specified surveyed wells, date of last field work completed on December 21, 2017. The coordinate values shown were derived from G.P.S. observations based on National Geodetic Surveys stations “GIS 1”, PID AC7684 and “GIS 2”, PID AC7685 which purport to be on NAD83(2011) Maryland Grid coordinate system with NAVD88 (AMSL) elevations.

DESCRIPTION	*NORTHING*	*EASTING*	*TOP CASING ELEVATION*	*GROUND AT WELL/PIEZOMETER ELEVATION*
HI04-PZM006	570781.563	1459049.225	12.39	10.37
TM02-PZM009	569243.074	1457353.966	10.46	8.26
TM04-PZM006	569438.132	1458568.050	11.55	9.83
TM06-PZM008	569582.162	1459391.719	13.57	11.13
TM08-PZM007	570380.720	1459731.912	9.72	7.11
WELL2	569217.214	1457999.768	12.27	9.96

APPENDIX D

PID CALIBRATION LOG

PROJECT NAME: Area B, Parcel B14 Phase II	SAMPLER NAME: L. Perrin and M. Replogle	
PROJECT NUMBER: 150300M-17-4	DATE: September 2017	PAGE 1 of 1

DATE/TIME	SAMPLER INITIALS	FRESH AIR CAL	PID SERIAL #	STANDARD	STANDARD CONCENTRATION	METER READING	COMMENTS
9/6/2017 8:00	LLP	0.0	592-913262	Isobutylene	100 ppm	100.0	-
9/7/2017 8:00	LLP	0.0	592-913262	Isobutylene	100 ppm	100.0	-
9/11/2017 8:00	MAR	0.0	592-913262	Isobutylene	100 ppm	100.0	-
9/12/2017 8:45	LLP	0.0	592-913262	Isobutylene	100 ppm	100.0	-
9/13/2017 8:45	LLP	0.0	592-913262	Isobutylene	100 ppm	100.0	-
9/14/2017 8:25	LLP	0.0	592-913262	Isobutylene	100 ppm	100.0	-
9/15/2017 9:45	LLP	0.0	592-913262	Isobutylene	100 ppm	100.0	-
9/29/2017 8:05	LLP	0.0	592-913262	Isobutylene	100 ppm	100.0	-
11/14/2017 9:00	LLP	0.0	592-919897	Isobutylene	100 ppm	99.9	-
11/15/2017 8:45	LLP	0.0	592-919897	Isobutylene	100 ppm	99.8	-
11/16/2017 9:30	MAR	0.0	592-919897	Isobutylene	100 ppm	100.4	-
11/21/2017 8:05	LLP	0.0	592-919897	Isobutylene	100 ppm	100.3	-
11/22/2017 8:20	LLP	0.0	592-919897	Isobutylene	100 ppm	100.2	-
				Isobutylene	100 ppm		
				Isobutylene	100 ppm		
				Isobutylene	100 ppm		
				Isobutylene	100 ppm		
				Isobutylene	100 ppm		
				Isobutylene	100 ppm		
				Isobutylene	100 ppm		
				Isobutylene	100 ppm		
				Isobutylene	100 ppm		

APPENDIX E

GROUNDWATER SAMPLING RECORD SHEET

Sheet Number 1 of 1

Job Name: Area B, Parcel BB Job Location: SPT

Job Number: 150300m Phase: II Task: GW sampling

Sample Location: H102-P210006 Name(s) of Sampler(s): Lisa Ferris

Description of Sample: Water X Soil ____ Other ____

PURGING

Time/Date Started: 1435 / 11-16-15

Air Temperature: 41 (°F/°C)

Weather Conditions: Sunny X Rain ____ Overcast ____ Other ____

Depth to Water: 7.54 ft

Total Well Depth: ____ ft

Height of Water Column: ____ ft

Well Diameter: 1-inch ____ 4-inch ____ 2-inch X 6-inch ____

Well Volume Calculation:

____ ft x ____ gal/ft = ____ gal

Purge Volume = ____ x ____ = ____ gal

Purging Method: Pump X Bailed ____ Other ____

Gallons Removed: 1.00 gal

Length of Time Purged 19 min

Yield at End of Purging: 0.0526 gpm

How was yield measured? ____

Color Clear Odor petroleum smell

Turbidity low

Was well cavitated? Yes ____ No ____

SAMPLING

Time/Date Started: 1500 / 11-16-15

Air Temperature: 41 (°F/°C)

Weather Conditions: Sunny X Rain ____ Overcast ____ Other ____

Depth to Water: ____ ft

Sampling Method: Bailer ____ Submersible Pump ____ Peristaltic Pump X Other ____

Number of Bottles Filled: 9

Date Sent To Lab: 11-16-15

Laboratory Name: PACE

Parameters to Analyze: See COC

Chain of Custody Number: ____

Other: ____

FIELD DATA

Time	1439	1444	1449	1454			
Volume of water purged	0.25	0.50	0.75	1.00			gal
pH ± 0.1	15.77	15.46	15.39	15.34			s.u.
Conductance	0.752	0.742	0.737	0.729			ms/cm
Temperature 3%	19.02	18.97	18.86	18.80			°C
DO 70.5, 10%	0.33	0.21	0.17	0.14			mg/l
Redox ± 10 mV	-282.6	-281.0	-279.4	-276.7			mV
Turbidity >5, 10%	9.47	8.47	4.71	6.47			NTU
SpC 3%	848	840	835	827			us/cm

Remarks: Well had oily odor, permanent well

Pipe Volume:

1" I.D. = 0.041 gal/ft
2" I.D. = 0.163 gal/ft
4" I.D. = 0.653 gal/ft
6" I.D. = 1.47 gal/ft

Low Flow Sampling

ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: Area B, Parcel B8	Project Number: 150300m
Well Number: 150300m	Date: 11-16-15
Well Diameter (in): 2	One Well Volume (gal):
Total Depth (ft):	QED Controller Settings:
Depth to Water (ft) 9.57	Flow Rate ~~(mL/min)~~ (gal/min) 0.0234
Height of Water Column (ft):	Length of time Purged (min) 42

WELL PURGING RECORD

Start 1313

Time	Volume Purged (gallons)	Temp (°C)	pH (s.u.)	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Comments
1315	0.25	19.67	15.07	1.304	0.79	-244.2	3.02	Clear
1320	0.50	19.97	15.50	1.346	0.63	-237.0	4.89	no odor
1325	0.75	19.94	15.75	1.356	0.50	-239.8	7.13	
1330	1.00	20.02	15.91	1.357	0.47	-248.6	4.53	
1335	1.25	20.29	16.04	1.361	0.36	-253.0	2.24	
1340	1.50	20.40	16.18	1.367	0.28	-259.2	1.11	
1345	1.75	20.51	16.31	1.373	0.24	-269.7	1.26	
1350	2.00	20.54	16.34	1.375	0.23	-273.4	1.95	
1355	2.40	20.67	16.40	1.381	0.23	-276.1	1.78	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter	Container	Perservative	Y/N
H107-PZM005	1400	TCL-VOCs	3 - 40 mL VOA	HCL	Y
		TCL-SVOCs	2- 1 L Amber	none	Y
		TAL-Metals	1 - 250 mL Plastic	HNO_3 ~~none~~	Y
		Oil and Grease	1 - 1L Amber	HCL	Y
		TPH-DRO	1 - 1 L Amber	none	N
		TPH-GRO	3 - 40 mL VOA	HCL	N
		Hexavalent Chromium	1 - 250 mL Plastic	none	Y
		Cyanide	1 - 250 mL Plastic	NaOH ~~none~~	Y
Matrix Spike present? NO					
Duplicate assessed? NO					

Sampled By: Lisa Perrin Comments: permanent well

Casing Volume: **1" I.D.** = 0.041 gal/ft - **2" I.D.** = 0.163 gal/ft - **4" I.D.** = 0.653 gal/ft - **6" I.D.** = 1.47 gal/ft

_____ft x _____gal/ft = _____(gal)

Low Flow Sampling
Permanent Wells

ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: B4 Phase II	Project Number: 150200M
Well Number: H104 - PZM006	Date: 10/16/17
Well Diameter (in): 2	One Well Volume (gal):
Depth to Product (ft): none	QED Controller Settings:
Depth to Water (ft): 11.33	Flow Rate (mL/min) 200
Product Thickness (ft): none	Length of time Purged (min)
Depth to Bottom (ft): 19.21	Condition of Pad/Cover: okay / good

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
0832	0	11.33	20.94	6.48	1.88	0.00	-141		
0837	0.15	11.33	20.01	6.50	1.88	0.00	-204		
0842	0.3	11.33	19.51	6.47	1.88	0.00	-213		
0847	0.45	11.33	19.07	6.46	1.88	0.00	-221		

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
H104-PZM006	0852	TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO	2 - 1 L Amber	none	
		TCL-SVOCs	2- 1 L Amber	none	
		Oil & Grease	2- 1 L Amber	HCl	
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	
		Total Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved) **Field Filtered**	→ 1 avail lab 1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	N
Matrix Spike					
Duplicate					

Sampled By: LMG

Comments: no turb (suspect)

Casing Volume: **1" I.D.** = 0.041 gal/ft - **2" I.D.** = 0.163 gal/ft - **4" I.D.** = 0.653 gal/ft - **6" I.D.** = 1.47 gal/ft

_____ft x _____gal/ft = _____(gal)

Low Flow Sampling Permanent Wells

ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: B14 Phase II	Project Number: 150300M-17-3
Well Number: TM02-PZM009	Date: 10/9/17
Well Diameter (in): 2	One Well Volume (gal):
Depth to Product (ft): n/a	QED Controller Settings:
Depth to Water (ft): 9.92	Flow Rate (mL/min) 200
Product Thickness (ft): n/a	Length of time Purged (min)
Depth to Bottom (ft): 19.51	Condition of Pad/Cover: none / good

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1144	0	9.92	23.50	11.64	1.72	2.51	-211	44.1	
1149	0.2	9.92	23.46	11.65	1.69	0.62	-215	20.0	
1154	0.4	9.92	23.38	11.70	1.67	1.62	-232	14.8	
1159	0.6	9.92	23.33	11.72	1.67	0.00	-243	5.0	
1204	0.8	9.92	23.31	11.75	1.67	0.00	-246	0.8	
1209	1.0	9.92	23.39	11.76	1.67	0.00	-238	0.0	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
TM02-PZM009	1214	TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO	2 - 1 L Amber (total)	none	
		TCL-SVOCs 3 3	2 - 1 L Amber	none	
		Oil & Grease	1 - 1 L Amber	HCl	
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	
		Total Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved) **Field Filtered**	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	N
		Matrix Spike			
		Duplicate			

Sampled By: LMG

Comments:

Casing Volume: **1" I.D.** = 0.041 gal/ft - **2" I.D.** = 0.163 gal/ft - **4" I.D.** = 0.653 gal/ft - **6" I.D.** = 1.47 gal/ft
_____ft x _____gal/ft = _____(gal)

Low Flow Sampling Permanent Wells

ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: B14 Phase II	Project Number: 150300-17
Well Number: TM04-PZM006	Date: 10/13/17
Well Diameter (in): 1	One Well Volume (gal):
Depth to Product (ft): none	QED Controller Settings:
Depth to Water (ft): 13.34	Flow Rate (mL/min) 200
Product Thickness (ft): none	Length of time Purged (min)
Depth to Bottom (ft): 20.03	Condition of Pad/Cover: none / good

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1140	0	13.34	17.94	9.91	0.787	0.00	40		
1145	0.2	13.34	18.01	9.95	0.773	0.00	5		
1150	0.4	13.34	18.10	9.92	0.772	0.00	-10		
1155	0.6	13.34	18.18	9.86	0.770	0.00	-36		
1200	0.8	13.34	18.26	9.81	0.769	0.00	-84		
1205	1.0	13.34	18.37	9.72	0.768	0.00	-129		
1210	1.2	13.34	18.40	9.64	0.767	0.00	-135		
1215	1.4	13.34	18.43	9.64	0.767	0.00	-138		

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
TM04-PZM006	1220	TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO	2 - 1 L Amber	none	
		TCL-SVOCs	2- 1 L Amber	none	
		Oil & Grease	2- 1 L Amber	HCl	
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	
		Total Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved) **Field Filtered**	1 - 250 mL Plastic (grand available)	HNO3	
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	N
		Matrix Spike			
		Duplicate			

Sampled By: UMH

Comments: turb suspect

Casing Volume: **1" I.D.** = 0.041 gal/ft - **2" I.D.** = 0.163 gal/ft - **4" I.D.** = 0.653 gal/ft - **6" I.D.** = 1.47 gal/ft

_____ ft x _____ gal/ft = _____ (gal)

Low Flow Sampling
Permanent Wells

ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: B14 Phase II	Project Number: 150300M-17
Well Number: TM06-PZM008	Date: 10/9/17
Well Diameter (in): 2	One Well Volume (gal):
Depth to Product (ft): n/a	QED Controller Settings:
Depth to Water (ft): 13.16	Flow Rate (mL/min) 200
Product Thickness (ft): n/a	Length of time Purged (min)
Depth to Bottom (ft): 21.92	Condition of Pad/Cover: none / good

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1307	0	13.16	26.58	9.12	4.43	0.94	-196	105	
1312	0.2	13.30	26.37	9.06	4.05	0.00	-226	86.5	
1317	0.4	13.33	26.14	8.79	3.08	0.00	-226	52.6	
1322	0.6	13.37	25.88	8.69	2.18	0.00	-232	33.1	
1327	0.8	13.41	25.75	8.67	1.80	0.00	-238	14.9	
1332	1.0	13.44	25.72	8.67	1.69	0.00	-240	3.7	
1337	1.2	13.48	25.66	8.66	1.55	0.00	-249	0.0	
1342	1.4	13.51	25.63	8.69	1.43	0.00	-252	0.0	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
TM06-PZM008	1347	TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO 3 2	2 - 1 L Amber	none	
		TCL-SVOCs 3 2	2 - 1 L Amber	none	
		Oil & Grease	2 - 1 L Amber	HCl	
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	
		Total Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved) **Field Filtered**	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	N
Matrix Spike					
Duplicate					

Sampled By: LMG

Comments:
Conductivity did stabilize.

Casing Volume: **1" I.D.** = 0.041 gal/ft - **2" I.D.** = 0.163 gal/ft - **4" I.D.** = 0.653 gal/ft - **6" I.D.** = 1.47 gal/ft
_____ ft x _____ gal/ft = _____ (gal)

Low Flow Sampling
Permanent Wells

ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: B14 Phase II	Project Number: 150230M-17
Well Number: TM08-PZM007	Date: 10/9/17
Well Diameter (in): 2	One Well Volume (gal):
Depth to Product (ft): n/a	QED Controller Settings:
Depth to Water (ft): 9.12	Flow Rate (mL/min) 200
Product Thickness (ft): n/a	Length of time Purged (min)
Depth to Bottom (ft): 16.71	Condition of Pad/Cover: none / good

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
1425	0	9.12	26.40	8.21	0.893	3.53	-104	0.0	cloudy
1430	0.2	9.12	25.66	8.15	0.816	0.00	-133	0.00	
1435	0.4	9.12	25.44	8.14	0.812	0.00	-160	1000	
1440	0.6	9.12	25.45	8.12	0.811	0.00	-141	609	
1445	0.8	9.12	25.41	8.12	0.811	0.00	-129	589	
1450	1.0	9.12	25.77	8.12	0.805	0.00	-122	545	
1455	1.2	9.12	25.54	8.11	0.802	0.00	-116	332	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
TM08-PZM007	1500	TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO 33	~~2~~ - 1 L Amber total	none	
		TCL-SVOCs 33	~~2~~ - 1 L Amber	none	
		Oil & Grease	~~2~~ 1 L Amber	HCl	
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	
		Total Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved) **Field Filtered**	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	N
Matrix Spike					
Duplicate					

Sampled By: CMG

Comments:

Casing Volume: **1" I.D.** = 0.041 gal/ft - **2" I.D.** = 0.163 gal/ft - **4" I.D.** = 0.653 gal/ft - **6" I.D.** = 1.47 gal/ft

_____ ft x _____ gal/ft = _____ (gal)

Low Flow Sampling
Permanent Wells

ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: BP Phase II	Project Number: 150300M-17
Well Number: WELL 2	Date: 10/13/17
Well Diameter (in): 2	One Well Volume (gal):
Depth to Product (ft): none	QED Controller Settings:
Depth to Water (ft): 11.84	Flow Rate (mL/min) 200
Product Thickness (ft): none	Length of time Purged (min)
Depth to Bottom (ft): 22.91	Condition of Pad/Cover: none / good

PURGING RECORD

Time	Volume Purged (gallons)	DTW (feet)	Temp (°C)	pH (s.u.) ± 0.1	Specific Conductance (ms/cm) ± 3%	Dissolved Oxygen (mg/L) ± 0.3	ORP (mV) ± 10	Turbidity (NTU) ± 10% or < 5	Comments
0845	0	11.84	18.77	10.41	0.799	11.13	-37		
0850	0.2	11.87	18.45	10.92	0.802	7.09	-123		
0855	0.4	11.92	18.18	10.94	0.810	~~5.65~~	-117		
0900	0.6	11.94	17.98	10.95	0.814	4.89	-120		
0905	0.8	11.97	17.85	10.97	0.817	4.59	-121		
0910	1.0	11.99	17.72	11.01	0.821	4.34	-131		

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
WELL 2	0920	TCL-VOCs	3 - 40 mL VOA	HCl	✓ x3
		TPH-GRO	3 - 40 mL VOA	HCl	
		TPH-DRO	2 - 1 L Amber	none	
		TCL-SVOCs	2- 1 L Amber	none	
		Oil & Grease	2- 1 L Amber	HCl	
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (total)	1 - 250 mL Plastic	none	
		Total Cyanide	1 - 250 mL Plastic	NaOH	
		TAL-Metals & Mercury (Dissolved) **Field Filtered**	NA if available 1 - 250 mL Plastic	HNO3	
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	N
		Matrix Spike			
		Duplicate			

Sampled By: Unk

Comments: turb suspect

Casing Volume: **1" I.D.** = 0.041 gal/ft - **2" I.D.** = 0.163 gal/ft - **4" I.D.** = 0.653 gal/ft - **6" I.D.** = 1.47 gal/ft

_____ ft x _____ gal/ft = _____ (gal)

TABLE 1
MULTIPARAMETER CALIBRATION LOG

Project Name Parcel B8 Date 11/16/15
Weather Sunny 60s
Calibrated by N. Kurtz & L. Perrin Instrument YSI Meter
Serial Number NA

Parameters	Morning Calibration	Morning Temperature	End of Day Calibration Check	End of Day Temperature
Specific Conductance Standard #1	1.451	50 ℉ (est.)	1.363¥	60 ℉ (est.)
Specific Conductance Standard #2	NA	NA	NA	NA
pH (7)	7.01	50 ℉ (est.)	6.89	60 ℉ (est.)
pH (4)	3.99	50 ℉ (est.)	2.89¥	60 ℉ (est.)
pH(10)	10.03	50 ℉ (est.)	10.62	60 ℉ (est.)
ORP Zobel Solution	240.0	50 ℉ (est.)	216.2¥	60 ℉ (est.)
Dissolved Oxygen 100% water saturated air mg/L	100.3%	50 ℉ (est.)	91.1%¥	60 ℉ (est.)
Dissolved Oxygen Zero Dissolved Oxygen Solution mg/L	NA	50 ℉ (est.)	NA	60 ℉ (est.)
Barometric Pressure mm Hg	NA	NA	NA	NA
Turbidity #1 (10 NTU)	NA	NA	NA	NA
Turbidity #2 (0.0 NTU)	NA	NA	NA	NA
Turbidity Standard #3	NA	NA	NA	NA

¥ORP, DO and pH = 4 are outside of the post-calibration acceptance criteria. Values displayed on field purge logs may be inaccurate.

TABLE 1
MULTIPARAMETER CALIBRATION LOG

Project Name Parcel B14 Date 10/9/17
Weather Overcast, windy, 70s
Calibrated by L. Glumac Instrument Horiba (Auto-calibration)
Serial Number 2BOMSAX4

Parameters	Morning Calibration	Morning Temperature	End of Day Calibration Check	End of Day Temperature
Specific Conductance Standard (4.49 mS/cm)	4.49	69℉	4.35	81℉
Specific Conductance Standard #2	NA	NA	NA	NA
pH (7)	NA	NA	NA	NA
pH (4)	4.00	69℉	3.95	81℉
pH(10)	NA	NA	NA	NA
ORP Zobel Solution (240mV)	NA	NA	NA	NA
Dissolved Oxygen 100% water saturated air mg/L	NA	NA	NA	NA
Dissolved Oxygen Zero Dissolved Oxygen Solution mg/L	9.81¥	69℉	9.62¥	81℉
Barometric Pressure mm Hg	758.19 (Est.)	69℉	758.19 (Est.)	81℉
Turbidity #1 (0 NTU)	0	69℉	0	81℉
Turbidity Standard #2	NA	NA	NA	NA
Turbidity Standard #3	NA	NA	NA	NA

¥ DO is outside of the morning and post-calibration acceptance criteria. Values displayed on field purge logs may be inaccurate.

TABLE 1
MULTIPARAMETER CALIBRATION LOG

Project Name Parcel B14 Date 10/13/17
Weather Overcast, rain, 60s
Calibrated by L. Glumac Instrument Horiba (Auto-calibration)
Serial Number 2BOMSAX4

Parameters	Morning Calibration	Morning Temperature	End of Day Calibration Check	End of Day Temperature
Specific Conductance Standard (4.49 mS/cm)	4.52	61℉	4.35	62℉
Specific Conductance Standard #2	NA	NA	NA	NA
pH (7)	NA	NA	NA	NA
pH (4)	4.00	61℉	3.99	62℉
pH(10)	NA	NA	NA	NA
ORP Zobel Solution (240mV)	NA	NA	NA	NA
Dissolved Oxygen 100% water saturated air mg/L	NA	NA	NA	NA
Dissolved Oxygen Zero Dissolved Oxygen Solution mg/L	9.39¥	61℉	7.18¥	62℉
Barometric Pressure mm Hg	771.65	61℉	771.14	62℉
Turbidity #1 (0 NTU)	NA	NA	NA	NA
Turbidity Standard #2	NA	NA	NA	NA
Turbidity Standard #3	NA	NA	NA	NA

¥ DO is outside of the morning and post-calibration acceptance criteria. Values displayed on field purge logs may be inaccurate.

TABLE 1
MULTIPARAMETER CALIBRATION LOG

Project Name Parcel B14/A5 Date 10/16/17
Weather Rainy, 60s
Calibrated by L. Glumac Instrument Horiba (Auto-calibration)
Serial Number 2BOMSAX4

Parameters	Morning Calibration	Morning Temperature	End of Day Calibration Check	End of Day Temperature
Specific Conductance Standard (4.49 mS/cm)	4.49	62℉	4.65	61℉
Specific Conductance Standard #2	NA	NA	NA	NA
pH (7)	NA	NA	NA	NA
pH (4)	4.00	62℉	3.99	61℉
pH(10)	NA	NA	NA	NA
ORP Zobel Solution (240mV)	NA	NA	NA	NA
Dissolved Oxygen 100% water saturated air mg/L	NA	NA	NA	NA
Dissolved Oxygen Zero Dissolved Oxygen Solution mg/L	9.06	62℉	6.64¥	61℉
Barometric Pressure mm Hg	761.24	62℉	764.54	61℉
Turbidity #1 (0 NTU)	NA	NA	NA	NA
Turbidity Standard #2	NA	NA	NA	NA
Turbidity Standard #3	NA	NA	NA	NA

¥ DO is outside of the post-calibration acceptance criteria. Values displayed on field purge logs may be inaccurate.

APPENDIX F

Parcel B14 - IDW Drum Log

Drum Identification Number	Designation	Activity/Phase	Parcel	Contents	Open Date
936-PPE-9/6/17-B14	Non-haz.	Parcel B14 Phase II	Parcel B14	PPE	9/6/2017
937-Soil-9/6/17-B14	Non-haz.	Parcel B14 Phase II	Parcel B14	Soil	9/6/2017
938-Decon Water-9/6/17-B14	Non-haz.	Parcel B14 Phase II	Parcel B14	Decon Water	9/6/2017
942-Liners-9/6/17-B14	Non-haz.	Parcel B14 Phase II	Parcel B14	Liners	9/6/2017
943-Soil-9/14/17-B14	Non-haz.	Parcel B14 Phase II	Parcel B14	Soil	9/14/2017
959-Purge Water-10/6/17-B14	Non-haz.	Parcel B14 Phase II	Parcel B14	Purge Water	10/6/2017
960-Purge Water-10/6/17-B14	Non-haz.	Parcel B14 Phase II	Parcel B14	Purge Water	10/6/2017
961-PPE-10/6/17-B14	Non-haz.	Parcel B14 Phase II	Parcel B14	PPE	10/6/2017
964-Purge Water-10/9/17-B14/A7/A5	Non-haz.	Parcels B14/A7/A5 Phase II's	Parcels B14/A7/A5	Purge Water	10/9/2017
965-Purge Water-10/9/17-B14/A7/A5	Non-haz.	Parcels B14/A7/A5 Phase II's	Parcels B14/A7/A6	Purge Water	10/9/2017
966-PPE-10/9/17-B14/A7/A5	Non-haz.	Parcels B14/A7/A5 Phase II's	Parcels B14/A7/A7	PPE	10/9/2017
967-Purge Water-10/11/17-B14/A5	Non-haz.	Parcels B14/A5 Phase II's	Parcel B14/A5	Purge Water	10/11/2017
968-Purge Water-10/11/17-B14/A7/A5	Non-haz.	Parcels B14/A7/A5 Phase II	Parcels B14/A7/A7	Purge Water	10/11/2017
969-PPE-10/11/17-B14/A5/GRY	Non-haz.	Parcels B14/A5/GRY Phase II's	Parcels B14/A5/GRY	PPE	10/11/2017
983-Decon Water-11/16/17-B14	Non-haz.	Parcel B14 Phase II	Parcel B14	Decon Water	11/16/2017
984-Nitric Acid-11/16/17-B14	Non-haz.	Parcel B14 Phase II	Parcel B14	Nitric Acid	11/16/2017

APPENDIX G

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-035-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: M. Replogle, E.I.T.
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: R. Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 11/15/17
Weather	: Sunny, 40s
Northing (US ft)	: 570777.84
Easting (US ft)	: 1459711.44

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	34	-	No Samples Collected	(0-4') SAND with some GRAVEL, loose, brown, dry, no plasticity, no cohesion	SW	
		-				
		-				
		11.4				
		4.7		(4-18.5') SLAG GRAVEL with some SAND-sized, medium dense, dark grey and brown but black at 9.5' bgs, wet at 7.5' bgs, no plasticity, no cohesion	GW/SW	Wet at 7.5' bgs
5	44	-				
		-				
		-				
		-				Slight petroleum-like odor and slight sheen from 9.5-19' bgs
		0.4				
10	40	-				
		-				
		-				
		-				
15	70	-				
		-				
		-				
		-				
		-		(18.5-20') CLAY, soft, moist, medium plasticity, cohesive	CL	
20				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to water and piezometer installation.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-036-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: R. Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 11/22/17
Weather	: Cloudy, 40s
Northing (US ft)	: 569767.58
Easting (US ft)	: 1457678.02

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	20	- - - 0.0	No Samples Collected	(0-1') SILTY SAND, medium dense, reddish brown, moist, no plasticity, no cohesion	SM	No water encountered
				(1-15') CLAY, soft, greenish gray, moist to very moist, low plasticity, cohesive		
5	20	- - - 0.0			CL	
10	40	- - - 0.0 0.0				
15	60	- - 0.0 0.0 0.0		(15-20') Soils not logged	CL	
20				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to piezometer installation.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-037-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: R. Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 11/14/17
Weather	: Cloudy, 40s
Northing (US ft)	: 569480.98
Easting (US ft)	: 1457196.68

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	50	-	No Samples Collected	(0-4.5') Non-native SAND with fine GRAVEL and SILT, medium dense, brown with trace yellow, dry, no plasticity, no cohesion	SW/GP	
		-				
		-				
		14.0				
		1.2				
5	22	-		(4.5-15') BRICK and SLAG GRAVEL with SILT, medium dense to dense at 9.8' bgs, red to dark reddish brown at 9.8' bgs, dry but wet at 9.8' bgs, no plasticity, no cohesion	GW-GM	Wet at 9.5' bgs Trace sheen from 9.8-15' bgs
		-				
		-				
		0.5				
		3.3				
10	44	-				
		-				
		0.0				
		4.3				
		0.0				
15	100	-		(15-19') CLAYEY SILT, soft, black, wet, low plasticity, cohesive	ML	Strong petroleum-like odor with light sheen from 15-19' bgs, no visible product
		-				
		-				
		5.6				
		1.2		(19-19.5') SILTY CLAY, firm to soft, greenish gray and black mottling, very moist to moist, low plasticity, cohesive	CL	
20				(19.5-20') SAND, fine to medium, with CLAY, medium dense, brownish gray with some black mottling, wet, no plasticity, no cohesion	SW-SC	
				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to piezometer installation.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-038-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: R. Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 11/14/17
Weather	: Cloudy, 40s
Northing (US ft)	: 569414.22
Easting (US ft)	: 1458151.98

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	20	-	No Samples Collected	(0-13.5') SILTY CLAY with some SAND, firm to very firm, brownish red with trace black streaks from 12.5-13' bgs, moist, low plasticity, cohesive	CL	
		-				
		-				
		0.6				
5		-				
	24	-				
		-				
		0.2				
10		-				
	50	-				
		24.7		(13.5-14.2') SAND, fine to medium, greenish gray and black, wet, no plasticity, no cohesion	SW	Wet at 13.5' bgs
		4.1		(14.2-17.5') SILTY CLAY, firm, black, very moist, low plasticity, cohesive	CL	Moderate petroleum-like odor from 13.5-17.5' bgs Trace visible product at 14' bgs
15		-				
	52	0.0		(17.5-20') CLAY, firm to very firm, greenish gray with some black streaks, moist, low plasticity, cohesive	CL	
		0.6				
		1.2				
20				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to water and piezometer installation.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-039-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: R. Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 11/14/17
Weather	: Cloudy, 40s
Northing (US ft)	: 569623.49
Easting (US ft)	: 1458112.05

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	10	-	No Samples Collected	(0-11') SILTY CLAY, firm, brownish red, moist, low plasticity, cohesive	CL	
		-				
		-				
		0.0				
5		-				
	14	-				
		-				
		1.2				
10		-				
	50	-		(11-16') CLAYEY SILT with trace SAND, black, very moist, low plasticity, cohesive	ML	Moderate petroleum-like odor from 12.5-19.5' bgs, no visible product
		3.3				
		5.5				
		26.0				
15		-				
	40	-		(16-19.5') SAND, fine to medium, black and brownish gray, wet, no plasticity, no cohesion	SW	Wet at 18' bgs
		-				
		0.2				
		0.4				
20				(19.5-20') CLAY, soft, black, very moist, low plasticity, cohesive	CL	
				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to water and piezometer installation.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-040-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: R. Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 11/22/17
Weather	: Cloudy, 40s
Northing (US ft)	: 569788.42
Easting (US ft)	: 1458075.59

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	16	-	No Samples Collected	(0-8.7') SANDY SILT grading to SAND with SILT, fine to medium, firm to soft then medium dense, reddish brown from 0-7.6' bgs, black from 7.6-8.7' bgs, moist to wet at 7.6' bgs, low plasticity and cohesive grading to no plasticity and no cohesion	ML-SW	
		-				
		-				
		0.0				
5		-				
		2.6				
	70	3.8				Wet at 7.6' bgs
		7.4				
		2.1		(8.7-15') SILTY CLAY, soft, black to gray with trace black streaks at 13.7' bgs, very moist, low plasticity, cohesive		Moderate petroleum-like odor from 7.8-13' bgs, no visible product
10		-				
		0.9			CL	
	72	0.2				
		0.2				
		0.1				
15				End of boring		

Total Borehole Depth: 15' bgs.
Boring terminated at 15' bgs due to water and piezometer installation.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-041-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: R. Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 11/14/17
Weather	: Cloudy, 40s
Northing (US ft)	: 569378.69
Easting (US ft)	: 1457655.45

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	40	-	No Samples Collected	(0-9.8') SILT with some SAND, medium dense, brownish red, moist, low plasticity, cohesive	ML	
		-				
		-				
		0.7				
		0.5				
5		-				
	10	-				
		-				
		-				
		13.1				Wet at 9.8' bgs
10		-		(9.8-18.3') SILT with trace SAND, soft, black, wet, low plasticity, cohesive	ML	Strong petroleum-like odor from 9.8-18' bgs
	20	-				
		-				
		-				
		2.8				
15		-				Light sheen from 16-18' bgs
		0.6				
	76	0.4				
		0.0		(18.3-20') CLAY, soft, greenish gray with trace black streaks, low plasticity, cohesive	CL	
		0.0				
20				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to water and piezometer installation.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-042-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: R. Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 11/21/17
Weather	: Sunny, 40s
Northing (US ft)	: 569587.03
Easting (US ft)	: 1457662.39

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	30	-	No Samples Collected	(0-4') CLAYEY SILT with SAND, firm, reddish brown, dry to very moist, low plasticity, cohesive	ML	
		0.3				
		5.4		(4-15') CLAY, soft, greenish gray, very moist, low plasticity, cohesive		
5		-				No water encountered
	40	-				
		0.0				
		0.0			CL	Pungent sewage-like odor from 8-10' bgs
10		-				
		-				
	60	0.0				
		0.0				
		0.0				
15				End of boring		

Total Borehole Depth: 15' bgs.
Boring terminated at 15' bgs due to piezometer installation.

ARM Group Inc.
Earth Resource Engineers and Consultants

Boring ID: B14-043-SB

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-17-3
Project Description	: Sparrows Point - Parcel B14
Site Location	: Sparrows Point, MD
ARM Representative	: M. Replogle, E.I.T.
Checked by	: L. Glumac
Drilling Company	: Allied Drilling Co.
Driller	: R. Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 11/16/17
Weather	: Sunny, 50s
Northing (US ft)	: 569649.38
Easting (US ft)	: 1458584.70

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	No Samples Collected	(0-5') SILT, reddish brown, soft, dry to moist, no plasticity, no cohesion		
		-				Some organic material present
	6	-			ML	
		0.0				
5		-		(5-15') No recovery		
		-				
	0	-				
		-				
		-				No water encountered
10		-				
		-				
	2	-				
		-				
		-				
15		-		(15-20') CLAY, soft, olive gray, moist, medium plasticity, cohesive		
		-				
	28	-			ML	
		0.0				
		0.0				
20				End of boring		

Total Borehole Depth: 20' bgs.
Boring terminated at 20' bgs due to piezometer installation.

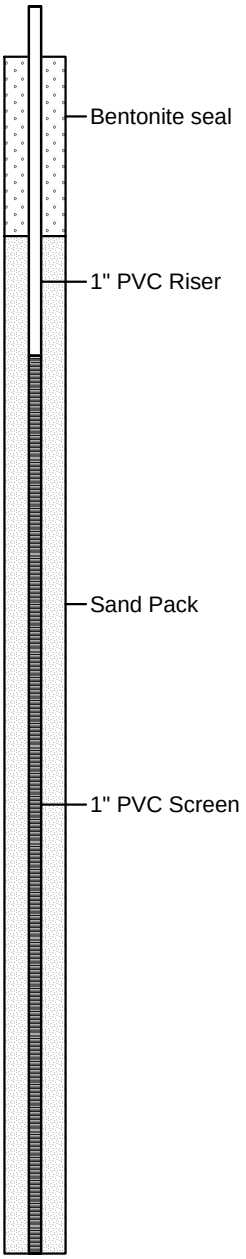
ARM Group Inc.
Earth Resource Engineers and Consultants

TYPICAL LOG OF TEMPORARY NAPL SCREENING PIEZOMETER

Installed in Parcel B14

Client: EnviroAnalytics Group
Site: Sparrows Point - Area B Parcel B14
Sparrows Point, MD
ARM Project No.: 150300M-17-3

Depth in Feet	Surf. Elev.	DESCRIPTION
0–4		Riser Type: PVC Riser Diameter: 1" Riser Stickup: 3.0' Riser Amount: 5'
4–8		Screen Type: PVC Screen Diameter: 1" Screen Amount: 15' Slot Size: 0.010"
8–12		Sand Pack: Top: 3' bgs Bottom: 20' bgs Grain Size: WG #2
12–20		Bentonite Seal: Top: 0' (surface) Bottom: 3' bgs Grain Size: 3/8" chips



Total Depth: 20'
Borehole Diameter: 2.25"
Driller: Allied Drilling Co.
Drilling Method: 7822DT Geoprobe

APPENDIX H

NAPL Gauging Activities
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Sample ID	Installation Date	Well Total Depth (Feet bgs)	Screen Interval (Feet bgs)	Riser Stick-Up (Feet)	9/7/2017			9/11/2017			9/12/2017		
					Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)
B14-002-PZ	9/14/2017	10	5-10	2.80	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-006-PZ	9/13/2017	10	5-10	2.95	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-007-PZ	11/16/2017	15	5-15	2.70	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-008-PZ	11/15/2017	22	7-22	2.50	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-010-PZ	9/13/2017	20.58	5.58-20.58	3.52	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-011-PZ	9/7/2017	20	10-20	1.00	-	5.10	-	-	5.69	-	NM	NM	NM
B14-012-PZ	9/15/2017	20	10-20	3.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-013-PZ	11/21/2017	20	5-20	2.90	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-015-PZ	9/12/2017	25	5-25	2.25	NA	NA	NA	NA	NA	NA	-	14.18	-
B14-017-PZ	9/13/2017	17.68	7.68-17.68	2.25	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-021-PZ	9/7/2017	15	5-15	0.97	-	3.80	-	-	4.01	-	NM	NM	NM
B14-022-PZ	9/7/2017	15	5-15	0.80	**trace**	**5.67**	**trace**	-	5.74	-	NM	NM	NM
B14-028-PZ	9/11/2017	28	13-28	3.20	NA	NA	NA	-	16.30	-	NM	NM	NM
B14-034-PZ	11/21/2017	15	5-15	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-035-PZ	11/16/2017	20	5-20	2.90	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-036-PZ	11/22/2017	20	5-20	2.76	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-037-PZ	11/14/2017	20	5-20	2.96	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-038-PZ	11/14/2017	20	10-20	2.69	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-039-PZ	11/14/2017	20	10-20	2.70	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-040-PZ	11/22/2017	15	5-15	2.65	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-041-PZ	11/14/2017	20	5-20	2.72	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-042-PZ	11/21/2017	15	5-15	2.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-043-PZ	11/16/2017	20	5-20	2.98	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Applicable
NM = Not Measured
SHADED = NAPL Detection
bgs = below ground surface
TOC = Top of Casing

NAPL Gauging Activities
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Sample ID	Installation Date	Well Total Depth (Feet bgs)	Screen Interval (Feet bgs)	Riser Stick-Up (Feet)	9/13/2017			9/14/2017			9/15/2017		
					Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)
B14-002-PZ	9/14/2017	10	5-10	2.80	NA	NA	NA	-	11.88	-	NM	NM	NM
B14-006-PZ	9/13/2017	10	5-10	2.95	-	3.61	-	NM	NM	NM	-	4.12	-
B14-007-PZ	11/16/2017	15	5-15	2.70	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-008-PZ	11/15/2017	22	7-22	2.50	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-010-PZ	9/13/2017	20.58	5.58-20.58	3.52	-	11.02	-	NM	NM	NM	-	11.14	-
B14-011-PZ	9/7/2017	20	10-20	1.00	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-012-PZ	9/15/2017	20	10-20	3.05	NA	NA	NA	NA	NA	NA	-	9.26	-
B14-013-PZ	11/21/2017	20	5-20	2.90	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-015-PZ	9/12/2017	25	5-25	2.25	NM	NM	NM	-	14.06	-	NM	NM	NM
B14-017-PZ	9/13/2017	17.68	7.68-17.68	2.25	-	12.63	-	NM	NM	NM	-	12.76	-
B14-021-PZ	9/7/2017	15	5-15	0.97	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-022-PZ	9/7/2017	15	5-15	0.80	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-028-PZ	9/11/2017	28	13-28	3.20	-	16.29	-	NM	NM	NM	NM	NM	NM
B14-034-PZ	11/21/2017	15	5-15	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-035-PZ	11/16/2017	20	5-20	2.90	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-036-PZ	11/22/2017	20	5-20	2.76	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-037-PZ	11/14/2017	20	5-20	2.96	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-038-PZ	11/14/2017	20	10-20	2.69	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-039-PZ	11/14/2017	20	10-20	2.70	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-040-PZ	11/22/2017	15	5-15	2.65	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-041-PZ	11/14/2017	20	5-20	2.72	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-042-PZ	11/21/2017	15	5-15	2.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-043-PZ	11/16/2017	20	5-20	2.98	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Applicable
NM = Not Measured
SHADED = NAPL Detection
bgs = below ground surface
TOC = Top of Casing

NAPL Gauging Activities
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Sample ID	Installation Date	Well Total Depth (Feet bgs)	Screen Interval (Feet bgs)	Riser Stick-Up (Feet)	9/18/2017			10/10/2017			10/11/2017		
					Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)
B14-002-PZ	9/14/2017	10	5-10	2.80	-	4.45	-	NM	NM	NM	NM	NM	NM
B14-006-PZ	9/13/2017	10	5-10	2.95	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-007-PZ	11/16/2017	15	5-15	2.70	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-008-PZ	11/15/2017	22	7-22	2.50	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-010-PZ	9/13/2017	20.58	5.58-20.58	3.52	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-011-PZ	9/7/2017	20	10-20	1.00	NM	NM	NM	NM	NM	NM	**6.85**	**7.03**	**0.18**
B14-012-PZ	9/15/2017	20	10-20	3.05	-	9.16	-	**10.11**	**10.17**	**0.06**	**trace**	**10.10**	**trace**
B14-013-PZ	11/21/2017	20	5-20	2.90	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-015-PZ	9/12/2017	25	5-25	2.25	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-017-PZ	9/13/2017	17.68	7.68-17.68	2.25	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-021-PZ	9/7/2017	15	5-15	0.97	NM	NM	NM	NM	NM	NM	**4.65**	**5.24**	**0.59**
B14-022-PZ	9/7/2017	15	5-15	0.80	NM	NM	NM	NM	NM	NM	-	6.82	-
B14-028-PZ	9/11/2017	28	13-28	3.20	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-034-PZ	11/21/2017	15	5-15	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-035-PZ	11/16/2017	20	5-20	2.90	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-036-PZ	11/22/2017	20	5-20	2.76	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-037-PZ	11/14/2017	20	5-20	2.96	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-038-PZ	11/14/2017	20	10-20	2.69	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-039-PZ	11/14/2017	20	10-20	2.70	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-040-PZ	11/22/2017	15	5-15	2.65	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-041-PZ	11/14/2017	20	5-20	2.72	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-042-PZ	11/21/2017	15	5-15	2.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-043-PZ	11/16/2017	20	5-20	2.98	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Applicable
NM = Not Measured
SHADED = NAPL Detection
bgs = below ground surface
TOC = Top of Casing

NAPL Gauging Activities
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Sample ID	Installation Date	Well Total Depth (Feet bgs)	Screen Interval (Feet bgs)	Riser Stick-Up (Feet)	10/16/2017			11/14/2017			11/15/2017		
					Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)
B14-002-PZ	9/14/2017	10	5-10	2.80	**4.71**	**4.72**	**0.01**	NM	NM	NM	NM	NM	NM
B14-006-PZ	9/13/2017	10	5-10	2.95	**4.58**	**4.60**	**0.02**	NM	NM	NM	NM	NM	NM
B14-007-PZ	11/16/2017	15	5-15	2.70	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-008-PZ	11/15/2017	22	7-22	2.50	NA	NA	NA	NA	NA	NA	-	6.85	-
B14-010-PZ	9/13/2017	20.58	5.58-20.58	3.52	-	11.20	-	NM	NM	NM	NM	NM	NM
B14-011-PZ	9/7/2017	20	10-20	1.00	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-012-PZ	9/15/2017	20	10-20	3.05	**trace**	**10.12**	**trace**	NM	NM	NM	NM	NM	NM
B14-013-PZ	11/21/2017	20	5-20	2.90	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-015-PZ	9/12/2017	25	5-25	2.25	-	14.23	-	NM	NM	NM	NM	NM	NM
B14-017-PZ	9/13/2017	17.68	7.68-17.68	2.25	-	12.79	-	NM	NM	NM	NM	NM	NM
B14-021-PZ	9/7/2017	15	5-15	0.97	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-022-PZ	9/7/2017	15	5-15	0.80	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-028-PZ	9/11/2017	28	13-28	3.20	-	16.40	-	NM	NM	NM	NM	NM	NM
B14-034-PZ	11/21/2017	15	5-15	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-035-PZ	11/16/2017	20	5-20	2.90	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-036-PZ	11/22/2017	20	5-20	2.76	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-037-PZ	11/14/2017	20	5-20	2.96	NA	NA	NA	-	11.11	-	NM	NM	NM
B14-038-PZ	11/14/2017	20	10-20	2.69	NA	NA	NA	-	18.99	-	NM	NM	NM
B14-039-PZ	11/14/2017	20	10-20	2.70	NA	NA	NA	-	9.75	-	NM	NM	NM
B14-040-PZ	11/22/2017	15	5-15	2.65	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-041-PZ	11/14/2017	20	5-20	2.72	NA	NA	NA	-	8.08	-	NM	NM	NM
B14-042-PZ	11/21/2017	15	5-15	2.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-043-PZ	11/16/2017	20	5-20	2.98	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Applicable
NM = Not Measured
SHADED = NAPL Detection
bgs = below ground surface
TOC = Top of Casing

NAPL Gauging Activities
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Sample ID	Installation Date	Well Total Depth (Feet bgs)	Screen Interval (Feet bgs)	Riser Stick-Up (Feet)	11/16/2017			11/17/2017			11/20/2017		
					Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)
B14-002-PZ	9/14/2017	10	5-10	2.80	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-006-PZ	9/13/2017	10	5-10	2.95	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-007-PZ	11/16/2017	15	5-15	2.70	-	5.84	-	NM	NM	NM	-	5.90	-
B14-008-PZ	11/15/2017	22	7-22	2.50	NM	NM	NM	-	3.48	-	NM	NM	NM
B14-010-PZ	9/13/2017	20.58	5.58-20.58	3.52	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-011-PZ	9/7/2017	20	10-20	1.00	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-012-PZ	9/15/2017	20	10-20	3.05	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-013-PZ	11/21/2017	20	5-20	2.90	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-015-PZ	9/12/2017	25	5-25	2.25	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-017-PZ	9/13/2017	17.68	7.68-17.68	2.25	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-021-PZ	9/7/2017	15	5-15	0.97	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-022-PZ	9/7/2017	15	5-15	0.80	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-028-PZ	9/11/2017	28	13-28	3.20	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-034-PZ	11/21/2017	15	5-15	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-035-PZ	11/16/2017	20	5-20	2.90	-	8.75	-	NM	NM	NM	-	8.68	-
B14-036-PZ	11/22/2017	20	5-20	2.76	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-037-PZ	11/14/2017	20	5-20	2.96	-	10.90	-	NM	NM	NM	NM	NM	NM
B14-038-PZ	11/14/2017	20	10-20	2.69	**9.25**	**13.25**	**4.00**	NM	NM	NM	NM	NM	NM
B14-039-PZ	11/14/2017	20	10-20	2.70	-	9.28	-	NM	NM	NM	NM	NM	NM
B14-040-PZ	11/22/2017	15	5-15	2.65	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-041-PZ	11/14/2017	20	5-20	2.72	**6.71**	**6.92**	**0.21**	NM	NM	NM	NM	NM	NM
B14-042-PZ	11/21/2017	15	5-15	2.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-043-PZ	11/16/2017	20	5-20	2.98	-	6.53	-	NM	NM	NM	-	6.55	-

NA = Not Applicable
NM = Not Measured
SHADED = NAPL Detection
bgs = below ground surface
TOC = Top of Casing

NAPL Gauging Activities
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Sample ID	Installation Date	Well Total Depth (Feet bgs)	Screen Interval (Feet bgs)	Riser Stick-Up (Feet)	11/21/2017			11/22/2017			11/28/2017		
					Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)
B14-002-PZ	9/14/2017	10	5-10	2.80	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-006-PZ	9/13/2017	10	5-10	2.95	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-007-PZ	11/16/2017	15	5-15	2.70	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-008-PZ	11/15/2017	22	7-22	2.50	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-010-PZ	9/13/2017	20.58	5.58-20.58	3.52	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-011-PZ	9/7/2017	20	10-20	1.00	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-012-PZ	9/15/2017	20	10-20	3.05	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-013-PZ	11/21/2017	20	5-20	2.90	-	7.60	-	NM	NM	NM	**7.85**	**8.01**	**0.16**
B14-015-PZ	9/12/2017	25	5-25	2.25	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-017-PZ	9/13/2017	17.68	7.68-17.68	2.25	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-021-PZ	9/7/2017	15	5-15	0.97	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-022-PZ	9/7/2017	15	5-15	0.80	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-028-PZ	9/11/2017	28	13-28	3.20	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-034-PZ	11/21/2017	15	5-15	2.83	-	13.08	-	NM	NM	NM	-	10.74	-
B14-035-PZ	11/16/2017	20	5-20	2.90	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-036-PZ	11/22/2017	20	5-20	2.76	NA	NA	NA	-	5.43	-	NM	NM	NM
B14-037-PZ	11/14/2017	20	5-20	2.96	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-038-PZ	11/14/2017	20	10-20	2.69	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-039-PZ	11/14/2017	20	10-20	2.70	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-040-PZ	11/22/2017	15	5-15	2.65	NA	NA	NA	-	8.68	-	NM	NM	NM
B14-041-PZ	11/14/2017	20	5-20	2.72	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-042-PZ	11/21/2017	15	5-15	2.86	-	15.05	-	NM	NM	NM	-	7.01	-
B14-043-PZ	11/16/2017	20	5-20	2.98	NM	NM	NM	NM	NM	NM	NM	NM	NM

NA = Not Applicable
NM = Not Measured
SHADED = NAPL Detection
bgs = below ground surface
TOC = Top of Casing

NAPL Gauging Activities
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Sample ID	Installation Date	Well Total Depth (Feet bgs)	Screen Interval (Feet bgs)	Riser Stick-Up (Feet)	11/29/2017			12/21/2017			1/4/2018		
					Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)	Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)
B14-002-PZ	9/14/2017	10	5-10	2.80	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-006-PZ	9/13/2017	10	5-10	2.95	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-007-PZ	11/16/2017	15	5-15	2.70	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-008-PZ	11/15/2017	22	7-22	2.50	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-010-PZ	9/13/2017	20.58	5.58-20.58	3.52	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-011-PZ	9/7/2017	20	10-20	1.00	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-012-PZ	9/15/2017	20	10-20	3.05	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-013-PZ	11/21/2017	20	5-20	2.90	NM	NM	NM	**7.45**	**7.76**	**0.31**	NM	NM	NM
B14-015-PZ	9/12/2017	25	5-25	2.25	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-017-PZ	9/13/2017	17.68	7.68-17.68	2.25	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-021-PZ	9/7/2017	15	5-15	0.97	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-022-PZ	9/7/2017	15	5-15	0.80	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-028-PZ	9/11/2017	28	13-28	3.20	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-034-PZ	11/21/2017	15	5-15	2.83	NM	NM	NM	-	11.11	-	NM	NM	NM
B14-035-PZ	11/16/2017	20	5-20	2.90	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-036-PZ	11/22/2017	20	5-20	2.76	-	5.60	-	NM	NM	NM	-	5.22	-
B14-037-PZ	11/14/2017	20	5-20	2.96	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-038-PZ	11/14/2017	20	10-20	2.69	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-039-PZ	11/14/2017	20	10-20	2.70	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-040-PZ	11/22/2017	15	5-15	2.65	-	8.73	-	NM	NM	NM	-	8.84	-
B14-041-PZ	11/14/2017	20	5-20	2.72	NM	NM	NM	NM	NM	NM	NM	NM	NM
B14-042-PZ	11/21/2017	15	5-15	2.86	NM	NM	NM	-	7.03	-	NM	NM	NM
B14-043-PZ	11/16/2017	20	5-20	2.98	NM	NM	NM	-	6.75	-	NM	NM	NM

NA = Not Applicable
NM = Not Measured
SHADED = NAPL Detection
bgs = below ground surface
TOC = Top of Casing

NAPL Gauging Activities
Parcel B14
Tradepoint Atlantic
Sparrows Point, Maryland

Sample ID	Installation Date	Well Total Depth (Feet bgs)	Screen Interval (Feet bgs)	Riser Stick-Up (Feet)	2/1/2018		
					Depth to NAPL (Feet TOC)	Depth to Water (Feet TOC)	NAPL Thickness (Feet)
B14-002-PZ	9/14/2017	10	5-10	2.80	NM	NM	NM
B14-006-PZ	9/13/2017	10	5-10	2.95	NM	NM	NM
B14-007-PZ	11/16/2017	15	5-15	2.70	**6.00**	**6.32**	**0.32**
B14-008-PZ	11/15/2017	22	7-22	2.50	**trace**	**2.24**	**trace**
B14-010-PZ	9/13/2017	20.58	5.58-20.58	3.52	NM	NM	NM
B14-011-PZ	9/7/2017	20	10-20	1.00	NM	NM	NM
B14-012-PZ	9/15/2017	20	10-20	3.05	NM	NM	NM
B14-013-PZ	11/21/2017	20	5-20	2.90	NM	NM	NM
B14-015-PZ	9/12/2017	25	5-25	2.25	NM	NM	NM
B14-017-PZ	9/13/2017	17.68	7.68-17.68	2.25	NM	NM	NM
B14-021-PZ	9/7/2017	15	5-15	0.97	NM	NM	NM
B14-022-PZ	9/7/2017	15	5-15	0.80	NM	NM	NM
B14-028-PZ	9/11/2017	28	13-28	3.20	NM	NM	NM
B14-034-PZ	11/21/2017	15	5-15	2.83	NM	NM	NM
B14-035-PZ	11/16/2017	20	5-20	2.90	-	9.02	-
B14-036-PZ	11/22/2017	20	5-20	2.76	NM	NM	NM
B14-037-PZ	11/14/2017	20	5-20	2.96	**11.90**	**12.02**	**0.12**
B14-038-PZ	11/14/2017	20	10-20	2.69	**12.80**	**17.70**	**4.90**
B14-039-PZ	11/14/2017	20	10-20	2.70	**9.02**	**10.32**	**1.30**
B14-040-PZ	11/22/2017	15	5-15	2.65	NM	NM	NM
B14-041-PZ	11/14/2017	20	5-20	2.72	**6.60**	**9.10**	**2.50**
B14-042-PZ	11/21/2017	15	5-15	2.86	NM	NM	NM
B14-043-PZ	11/16/2017	20	5-20	2.98	NM	NM	NM

NA = Not Applicable
NM = Not Measured
SHADED = NAPL Detection
bgs = below ground surface
TOC = Top of Casing

APPENDIX I

WELL INSPECTION FORM

Site: Sparrows Point: Area B Location of Well: Parcel B8 (Middle)

Project Number: 150300M-10-3 Date: 8/20/15

WELL INFORMATION

Well ID: HI02-PZM006 Well Permit No.: _____

Coordinates:

Latitude/**Northing** 569967.1 ft. Longitude/**Easting** 1457454.2 ft.

Condition of pad and/or cover: Fair (vegetation) Flush Mount or Stick-Up? Flush Mount

Well ID Marked? No If yes, where? _____

Locking cap? No Lock? No Diameter of Well: 2”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	**Historic Reported**
Depth to Water (feet BGS/TOC)	6.22’ TOC / 6.55’ BGS	
Depth to Bottom (feet BGS/TOC)	16.89’ TOC / 17.22’ BGS	17’ BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: Location of the well was difficult due to the amount of vegetative cover. Housing was filled with water which needed to be bailed out before gauging could be completed.

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B8

Project Number: 150300 Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: HI02-PZM032 Well Permit No.: _____

Coordinates:

Latitude/Northing 1457459.5 ft. Longitude/Easting 569963.7 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Flush Mount

Well ID Marked? Yes If yes, where? Exterior Flush Mount Lid

Locking cap? No Lock? No Diameter of Well: 0.5”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	6.02’ TOC / 6.32’ BGS	
Depth to Bottom (feet BGS/TOC)	28.26’ TOC / 28.56’ BGS	43’ BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: _____

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: HI04-PZM006 Well Permit No.: _____

Coordinates:

Latitude/Northing 1459049.3 ft. Longitude/Easting 570781.9 ft.

Condition of pad and/or cover: N/A Flush Mount or Stick-Up? Stick-up

Well ID Marked? No If yes, where? _____

Locking cap? Yes Lock? Yes, cut Diameter of Well: 2”

Structural integrity of well: Poor, PVC bent at grade

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	9.98’ TOC	
Depth to Bottom (feet BGS/TOC)	18.90’ TOC	17’ BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: Gauged well with micro probe.

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: HI04-PZM034 Well Permit No.: _____

Coordinates:

Latitude/Northing 1459048.3 ft. Longitude/Easting 570791.7 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? No If yes, where? _____

Locking cap? No Lock? Yes, cut Diameter of Well: 0.5”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	12.98’ TOC / 9.73’ BGS	
Depth to Bottom (feet BGS/TOC)	47.88’ TOC / 44.63’ BGS	45’ BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: _____

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point: Area B Location of Well: Parcel B8 (East)

Project Number: 150300M-10-3 Date: 8/20/15

WELL INFORMATION

Well ID: HI07-PZM005 Well Permit No.: _____

Coordinates:

Latitude/**Northing** 570209.3 ft. Longitude/**Easting** 1458426.3 ft.

Condition of pad and/or cover: Fair (rusted) Flush Mount or Stick-Up? Stick up

Well ID Marked? Yes If yes, where? Vertical on casing (faded)

Locking cap? Yes Lock? Broken Diameter of Well: 2”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	9.04’ TOC / 6.00’ BGS	
Depth to Bottom (feet BGS/TOC)	17.24’ TOC / 14.20’ BGS	14’ BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: Included in a set of 3 wells located on eastern edge of Parcel B8. Lock was broken to gain access for gauging.

PICTURE OF WELL DURING INSPECTION



WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B8

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: HI07-PZM032 Well Permit No.: _____

Coordinates:

Latitude/Northing 570202.4 ft. Longitude/Easting 1458418.3 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? No If yes, where? _____

Locking cap? No Lock? No Diameter of Well: 0.5”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	7.80’ TOC / 5.00’ BGS	
Depth to Bottom (feet BGS/TOC)	35.25’ TOC /32.45’ BGS	42’ BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: _____

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B8

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: HI07-PZM094 Well Permit No.: _____

Coordinates:

Latitude/Northing 570207.2 ft. Longitude/Easting 1458421.6 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? No If yes, where? _____

Locking cap? Yes Lock? No Diameter of Well: 2”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	11.88’ TOC / 9.38’ BGS	
Depth to Bottom (feet BGS/TOC)	> 100’ TOC / > 100’ BGS	N/A

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: Water probe had only 100 feet of tape, depth to bottom was greater than 100 feet deep.

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: TM02-PZM009 Well Permit No.: BA-81-1442

Coordinates:

Latitude/Northing 569243.2 ft. Longitude/Easting 1457354.1 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? Yes If yes, where? Outside metal casing

Locking cap? No Lock? Yes, cut Diameter of Well: 2”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	10.05’ TOC / 6.60’ BGS	
Depth to Bottom (feet BGS/TOC)	19.48’ TOC / 16.13’ BGS	21’ BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments:

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

ARM Representative: NSK Date: 4/13/16 Project Number: 150300M

WELL INFORMATION

Well ID: TM02-PZM028 Well Permit No.: BA-81-1443

Coordinates:

Latitude/Northing 1457350.9 ft. Longitude/Easting 569236.3 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? Yes If yes, where? Outside metal casing

Locking cap? No Lock? Yes, cut Diameter of Well: 2”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	7.02’ BGS / 9.97’ TOC	
Depth to Bottom (feet BGS/TOC)	36.47’ BGS / 39.42’ TOC	41’ BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments:

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: TM02-PZM062 Well Permit No.: _____

Coordinates:

Latitude/Northing 1457346.9 ft. Longitude/Easting 569231.9 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? No If yes, where? _____

Locking cap? No Lock? Yes, cut Diameter of Well: 0.5”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	10.84’ TOC / 7.89’ BGS	
Depth to Bottom (feet BGS/TOC)	74.91’ TOC / 72.96’ BGS	70’ BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: _____

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: TM04-PZM006 Well Permit No.: BA-81-1440

Coordinates:

Latitude/Northing 1458568.1 ft. Longitude/Easting 569438.3 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? Yes If yes, where? Outside metal casing

Locking cap? No Lock? Yes Diameter of Well: 2”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	12.52’ TOC / 9.48’ BGS	
Depth to Bottom (feet BGS/TOC)	21.12’ TOC / 18.08’ BGS	21’ BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments:

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: TM04-PZM028 Well Permit No.: BA-81-1447

Coordinates:

Latitude/Northing 1458581.1 ft. Longitude/Easting 569442.0 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? Yes If yes, where? Outside metal casing

Locking cap? No Lock? Yes Diameter of Well: 2”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	11.53’ TOC / 8.51’ BGS	
Depth to Bottom (feet BGS/TOC)	40.61’ TOC / 37.59’ BGS	45.5’ BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments:

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: TM04-PZM056 Well Permit No.: _____

Coordinates:

Latitude/Northing 1458592.8 ft. Longitude/Easting 569445.5 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? No If yes, where? _____

Locking cap? No Lock? Yes, cut Diameter of Well: 0.5”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	13.65’ TOC / 10.65’ BGS	
Depth to Bottom (feet BGS/TOC)	69.95’ TOC / 66.95’ BGS	67’ BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: _____

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: TM04-PZM082 Well Permit No.: _____

Coordinates:

Latitude/Northing 1458554.3 ft. Longitude/Easting 569432.9 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? Yes If yes, where? Under well casing lid

Locking cap? Yes Lock? Yes, cut Diameter of Well: 2”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	12.02’ TOC/9.07’ BGS	
Depth to Bottom (feet BGS/TOC)	94.75’ TOC / 91.80’ BGS	N/A

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: _____

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point: Area B Location of Well: Tin Mill B16/Humphrey Impoundment B14

Project Number: 150300 M Date: 11/23/15

WELL INFORMATION

Well ID: TM06-PZM008 Well Permit No.: _____

Coordinates:

Latitude/Northing 569583.6 ft Longitude/Easting 1459391.8 ft

Condition of pad and/or cover: Fair (Vegetation) Flush Mount or Stick-Up? Stick-up

Well ID Marked? No If yes, where? _____

Locking cap? Yes Lock? Cut. Yes Diameter of Well: 2''

Structural integrity of well: Good, slightly tilted.

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	13.35' TOC/10.14 BGS	
Depth to Bottom (feet BGS/TOC)	21.58' TOC/18.32 BGS	19' BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: Tag on riser cap "TM06"

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point: Area B Location of Well: Tin Mill B16/Humphrey Impoundment B14

Project Number: 150300 M Date: 11/20/15

WELL INFORMATION

Well ID: TM06-PZM034 Well Permit No.: _____

Coordinates:

Latitude/Northing 569574.0 ft Longitude/Easting 1459387.6 ft

Condition of pad and/or cover: Fair (Vegetation) Flush Mount or Stick-Up? Stick-up

Well ID Marked? No If yes, where? _____

Locking cap? Yes Lock? Cut. Yes Diameter of Well: 0.75''

Structural integrity of well: Good.

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	13.70' TOC/10.95 BGS	
Depth to Bottom (feet BGS/TOC)	47.75' TOC/44.96 BGS	45' BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: _____

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point: Area B Location of Well: Tin Mill B16 / Humphrey Impoundment B14

Project Number: 150300 M Date: 11/23/15

WELL INFORMATION

Well ID: TM08-PZM007 Well Permit No.: _____

Coordinates:

Latitude/Northing 570378.3 ft. Longitude/Easting 1459724.5 ft.

Condition of pad and/or cover: Fair (Good amount of vegetation)

Flush Mount or Stick-Up? Stick-up

Well ID Marked? Yes-partial If yes, where? "7" at bottom of casing

Locking cap? Yes Lock? Cut. Yes Diameter of Well: 2''

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	9.12' TOC/6.43' BGS	
Depth to Bottom (feet BGS/TOC)	15.09' TOC/12.41' BGS	14' BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: Has a "7" on lower part of casing.

PICTURE OF WELL DURING INSPECTION

ARM Group Inc.

WELL INSPECTION FORM

Site: Sparrows Point: Area B Location of Well: Tin Mill B16/Humphrey Impoundment B14

Project Number: 150300 M Date: 11/20/15

WELL INFORMATION

Well ID: TM08-PZM038 Well Permit No.: _____

Coordinates:

Latitude/Northing 570381.0 ft. Longitude/Easting 1459731.8 ft.

Condition of pad and/or cover: Fair (Good amount of vegetation)

Flush Mount or Stick-Up? Stick-up

Well ID Marked? Yes-partial If yes, where? 8 at bottom of casing

Locking cap? Yes Lock? Cut. Yes Diameter of Well: 0.75''

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	8.67' TOC/6.77' BGS	
Depth to Bottom (feet BGS/TOC)	41.20' TOC/39.33' BGS	45' BGS

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: Has an "8" on lower part of casing.

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: Well 1 Well Permit No.: BA-81-4615

Coordinates:

Latitude/Northing 569230.0 ft. Longitude/Easting 1458013.4 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? No If yes, where? _____

Locking cap? No Lock? Yes, cut Diameter of Well: 2”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	12.15’ TOC / 9.07’ BGS	
Depth to Bottom (feet BGS/TOC)	58.33’ TOC / 55.25’ BGS	N/A

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: _____

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: Well 2 Well Permit No.: _____

Coordinates:

Latitude/Northing 569218.7 ft. Longitude/Easting 1458000.2 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? No If yes, where? _____

Locking cap? No Lock? Yes, cut Diameter of Well: 2”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	12.15’ TOC / 9.07’ BGS	
Depth to Bottom (feet BGS/TOC)	22.79’ TOC / 19.51’ BGS	N/A

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: _____

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: Well 3 Well Permit No.: _____

Coordinates:

Latitude/Northing 569230.5 ft. Longitude/Easting 1458012.6 ft.

Condition of pad and/or cover: Destroyed Flush Mount or Stick-Up? N/A

Well ID Marked? No If yes, where? _____

Locking cap? N/A Lock? N/A Diameter of Well: 0.5”

Structural integrity of well: Destroyed, PVC found on the ground

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	N/A	
Depth to Bottom (feet BGS/TOC)	N/A	N/A

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: 0.5” well PVC observed during well inspection

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B14

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: Well 4 Well Permit No.: BA-81-1444

Coordinates:

Latitude/Northing 5699970.3 ft. Longitude/Easting 1457515.3 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? No If yes, where? _____

Locking cap? No Lock? Yes Diameter of Well: 2”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	7.86’ TOC / 5.90’ BGS	
Depth to Bottom (feet BGS/TOC)	27.22’ TOC / 25.26’ BGS	N/A

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: _____

PICTURE OF WELL DURING INSPECTION

WELL INSPECTION FORM

Site: Sparrows Point Area B Location of Well: Parcel B8

Project Number: 150300M Date: 4/13/16 ARM Representative: NSK

WELL INFORMATION

Well ID: Well 5 Well Permit No.: BA-81-1445

Coordinates:

Latitude/Northing 570149.0 ft. Longitude/Easting 1458360.3 ft.

Condition of pad and/or cover: Good Flush Mount or Stick-Up? Stick-up

Well ID Marked? No If yes, where? _____

Locking cap? No Lock? Yes Diameter of Well: 2”

Structural integrity of well: Good

WELL MEASUREMENTS

	Measured (Current)	Historic Reported
Depth to Water (feet BGS/TOC)	7.53’ TOC / 5.23’ BGS	
Depth to Bottom (feet BGS/TOC)	25.89’ TOC / 23.59’ BGS	N/A

Notes: BGS = below ground surface, TOC = top of casing

Additional Comments: _____

PICTURE OF WELL DURING INSPECTION

APPENDIX J

Photograph Log of Oil Baffle and Oil Staining
Sparrows Point, Maryland

0917-1: Picture from the north facing south. Oil baffle located in the Tin Mill Canal; south of soil boring B14-016-SB.

0917-2: Picture from the north facing south. Observed oil stained ground located approximately 100 feet south east of soil boring B14-016-SB; north of the oil baffle in the Tin Mill Canal (shown above).

APPENDIX K

QA/QC Tracking Log

VOC Samples:	Date:	Sample IDs	
No	9/6/2017	1) B14-032-SB-1	
Yes		2) B14-032-SB-8.5	
No		3) B14-031-SB-1	
Yes		4) B14-031-SB-7	
No		5) B14-019-SB-1	
Yes		6) B14-019-SB-4	
No		7) B14-012-SB-1	Duplicate: B14-012-SB-9
Yes		8) B14-012-SB-9	Date: 9/6/2017
Yes		9) B14-012-SB-10	MS/MSD: B14-021-SB-1
No		10) B14-034-SB-1	Date: 9/7/2017
No		11) B14-034-SB-5	Field Blank:
No	9/7/2017	12) B14-011-SB-1	Date: 9/7/2017
No		13) B14-011-SB-5	Eq. Blank:
No		14) B14-021-SB-1	Date: 9/7/2017
Yes		15) B14-021-SB-9	
No		16) B14-022-SB-1	
No		17) B14-022-SB-7.5	
No		18) B14-013-SB-1	
Yes		19) B14-013-SB-9	
Yes		20) B14-013-SB-10	

VOC Samples:	Date:	Sample IDs	
No	9/12/2017	1) B14-016-SB-7.5	
No		2) B14-016-SB-10	
No	9/13/2017	3) B14-017-SB-1	
Yes		4) B14-017-SB-4	
No		5) B14-017-SB-10	
No		6) B14-010-SB-1	
No		7) B14-010-SB-5	Duplicate: B14-025-SB-5
No		8) B14-006-SB-1	Date: 9/14/2017
No		9) B14-006-SB-5	MS/MSD: B14-027-SB-5
No		10) B14-003-SB-1	Date: 9/14/2017
No		11) B14-003-SB-5	Field Blank:
No	9/14/2017	12) B14-002-SB-1	Date: 9/14/2017
No		13) B14-027-SB-1	Eq. Blank:
No		14) B14-027-SB-5	Date: 9/14/2017
No		15) B14-027-SB-10	
No		16) B14-026-SB-1	
No		17) B14-026-SB-8.5	
No		18) B14-025-SB-1	
No		19) B14-025-SB-5	
No		20) B14-018-SB-1	

No	9/7/2017	1) B14-007-SB-1	
Yes		2) B14-007-SB-8	
Yes		3) B14-007-SB-10	
No	9/11/2017	4) B14-020-SB-1	
Yes		5) B14-030-SB-1	
Yes		6) B14-030-SB-6	
Yes		7) B14-030-SB-10	Duplicate: B14-028-SB-8
No		8) B14-029-SB-1	Date: 9/11/2017
No		9) B14-029-SB-5	MS/MSD: B14-015-SB-5
No		10) B14-029-SB-10	Date: 9/12/2017
No		11) B14-028-SB-1	Field Blank:
Yes		12) B14-028-SB-8	Date: 9/11/2017
No		13) B14-028-SB-10	Eq. Blank:
No	9/12/2017	14) B14-015-SB-1	Date: 9/11/2017
No		15) B14-015-SB-5	
No		16) B14-015-SB-10	
No		17) B14-008-SB-1	
Yes		18) B14-008-SB-9	
No		19) B14-008-SB-10	
No		20) B14-016-SB-1	

No	9/14/2017	1) B14-018-SB-5	
No	9/15/2017	2) B14-033-SB-1	
No		3) B14-024-SB-1	
No		4) B14-023-SB-1	
No		5) B14-009-SB-1	
No		6) B14-009-SB-5	
No	9/29/2017	7) B14-014-SB-1	Duplicate 2: B14-018-SB-1
No		8) B14-014-SB-5	Date: 9/14/2017
		9)	MS/MSD: B14-018-SB-5
		10)	Date: 9/14/2017
		11)	Field Blank:
		12)	Date: 9/15/2017
		13)	Eq. Blank:
		14)	Date: 9/15/2017
		15)	
		16)	
		17)	
		18)	
		19)	
		20)	

Soil samples with a sustained PID reading of 10 ppm or greater were collected for VOCs.
VOC samples were placed in a cooler with a trip blank.

QA/QC Tracking Log

Date:	Sample IDs	
10/9/2017	1) TM02-PZM009	
	2) TM06-PZM008	
	3) TM08-PZM007	
10/13/2017	4) Well 2	
	5) TM04-PZM006	
10/16/2017	6) HI04-PZM006	
	7)	Duplicate: TM04-PZM006
	8)	Date: 10/13/2017
	9)	MS/MSD: Well 2
	10)	Date: 10/13/2017
	11)	Field Blank:
	12)	Date: 10/13/2017
	13)	Eq. Blank:
	14)	Date:
	15)	
	16)	
	17)	
	18)	
	19)	
	20)	

Date:	Sample IDs	
	1)	
	2)	
	3)	
	4)	
	5)	
	6)	
	7)	Duplicate:
	8)	Date:
	9)	MS/MSD:
	10)	Date:
	11)	Field Blank:
	12)	Date:
	13)	Eq. Blank:
	14)	Date:
	15)	
	16)	
	17)	
	18)	
	19)	
	20)	

	1)	
	2)	
	3)	
	4)	
	5)	
	6)	
	7)	Duplicate:
	8)	Date:
	9)	MS/MSD:
	10)	Date:
	11)	Field Blank:
	12)	Date:
	13)	Eq. Blank:
	14)	Date:
	15)	
	16)	
	17)	
	18)	
	19)	
	20)	

	1)	
	2)	
	3)	
	4)	
	5)	
	6)	
	7)	Duplicate:
	8)	Date:
	9)	MS/MSD:
	10)	Date:
	11)	Field Blank:
	12)	Date:
	13)	Eq. Blank:
	14)	Date:
	15)	
	16)	
	17)	
	18)	
	19)	
	20)	

APPENDIX L

EVALUATION OF DATA COMPLETENESS
Percentage of Non-Rejected Results vs. Total Results
(Only data which underwent validation are included)

Parameter	Parameter Group	Matrix	Unit	Number of Validated Results	Detections	Number of Rejected Results	Number of Non-rejected Results	Completeness
Total Cyanide	CN	Soil	mg/kg	37	33	0	37	100.00%
Aluminum	Metal	Soil	mg/kg	37	37	0	37	100.00%
Antimony	Metal	Soil	mg/kg	37	9	0	37	100.00%
Arsenic	Metal	Soil	mg/kg	43	41	0	43	100.00%
Barium	Metal	Soil	mg/kg	37	37	0	37	100.00%
Beryllium	Metal	Soil	mg/kg	37	24	0	37	100.00%
Cadmium	Metal	Soil	mg/kg	37	32	0	37	100.00%
Chromium	Metal	Soil	mg/kg	37	37	0	37	100.00%
Chromium VI	Metal	Soil	mg/kg	37	2	0	37	100.00%
Cobalt	Metal	Soil	mg/kg	37	35	0	37	100.00%
Copper	Metal	Soil	mg/kg	37	37	0	37	100.00%
Iron	Metal	Soil	mg/kg	37	37	0	37	100.00%
Lead	Metal	Soil	mg/kg	41	41	0	41	100.00%
Manganese	Metal	Soil	mg/kg	38	38	0	38	100.00%
Mercury	Metal	Soil	mg/kg	37	34	0	37	100.00%
Nickel	Metal	Soil	mg/kg	37	37	0	37	100.00%
Selenium	Metal	Soil	mg/kg	37	8	0	37	100.00%
Silver	Metal	Soil	mg/kg	37	37	0	37	100.00%
Thallium	Metal	Soil	mg/kg	37	1	0	37	100.00%
Vanadium	Metal	Soil	mg/kg	37	37	0	37	100.00%
Zinc	Metal	Soil	mg/kg	37	37	0	37	100.00%
Aroclor 1016	PCB	Soil	mg/kg	19	0	0	19	100.00%
Aroclor 1221	PCB	Soil	mg/kg	19	0	0	19	100.00%
Aroclor 1232	PCB	Soil	mg/kg	19	0	0	19	100.00%
Aroclor 1242	PCB	Soil	mg/kg	19	0	0	19	100.00%
Aroclor 1248	PCB	Soil	mg/kg	19	0	0	19	100.00%
Aroclor 1254	PCB	Soil	mg/kg	19	4	0	19	100.00%
Aroclor 1260	PCB	Soil	mg/kg	19	12	0	19	100.00%
Aroclor 1262	PCB	Soil	mg/kg	19	0	0	19	100.00%
Aroclor 1268	PCB	Soil	mg/kg	19	0	0	19	100.00%
PCBs (total)	PCB	Soil	mg/kg	19	13	0	19	100.00%
1,1-Biphenyl	SVOC	Soil	mg/kg	40	8	0	40	100.00%
1,2,4,5-Tetrachlorobenzene	SVOC	Soil	mg/kg	40	1	0	40	100.00%
2,3,4,6-Tetrachlorophenol	SVOC	Soil	mg/kg	40	1	1	39	97.50%
2,4,5-Trichlorophenol	SVOC	Soil	mg/kg	40	1	1	39	97.50%
2,4,6-Trichlorophenol	SVOC	Soil	mg/kg	40	1	1	39	97.50%
2,4-Dichlorophenol	SVOC	Soil	mg/kg	40	1	1	39	97.50%
2,4-Dimethylphenol	SVOC	Soil	mg/kg	40	4	1	39	97.50%
2,4-Dinitrophenol	SVOC	Soil	mg/kg	40	1	11	29	72.50%
2,4-Dinitrotoluene	SVOC	Soil	mg/kg	40	2	0	40	100.00%
2,6-Dinitrotoluene	SVOC	Soil	mg/kg	40	2	0	40	100.00%
2-Chloronaphthalene	SVOC	Soil	mg/kg	40	2	0	40	100.00%
2-Chlorophenol	SVOC	Soil	mg/kg	40	1	1	39	97.50%
2-Methylnaphthalene	SVOC	Soil	mg/kg	40	35	0	40	100.00%
2-Methylphenol	SVOC	Soil	mg/kg	40	1	1	39	97.50%
2-Nitroaniline	SVOC	Soil	mg/kg	40	1	0	40	100.00%
3&4-Methylphenol(m&p Cresol)	SVOC	Soil	mg/kg	40	7	1	39	97.50%
3,3'-Dichlorobenzidine	SVOC	Soil	mg/kg	40	0	0	40	100.00%
4-Chloroaniline	SVOC	Soil	mg/kg	40	7	0	40	100.00%
4-Nitroaniline	SVOC	Soil	mg/kg	40	0	0	40	100.00%
Acenaphthene	SVOC	Soil	mg/kg	40	32	0	40	100.00%
Acenaphthylene	SVOC	Soil	mg/kg	40	40	0	40	100.00%
Acetophenone	SVOC	Soil	mg/kg	40	1	0	40	100.00%
Anthracene	SVOC	Soil	mg/kg	40	40	0	40	100.00%
Benz[a]anthracene	SVOC	Soil	mg/kg	40	39	0	40	100.00%
Benzaldehyde	SVOC	Soil	mg/kg	40	7	33	7	17.50%
Benzo[a]pyrene	SVOC	Soil	mg/kg	40	39	0	40	100.00%
Benzo[b]fluoranthene	SVOC	Soil	mg/kg	40	39	0	40	100.00%

EVALUATION OF DATA COMPLETENESS
Percentage of Non-Rejected Results vs. Total Results
(Only data which underwent validation are included)

Parameter	Parameter Group	Matrix	Unit	Number of Validated Results	Detections	Number of Rejected Results	Number of Non-rejected Results	Completeness
Benzo[g,h,i]perylene	SVOC	Soil	mg/kg	40	40	0	40	100.00%
Benzo[k]fluoranthene	SVOC	Soil	mg/kg	40	39	0	40	100.00%
bis(2-chloroethoxy)methane	SVOC	Soil	mg/kg	40	1	0	40	100.00%
bis(2-Chloroethyl)ether	SVOC	Soil	mg/kg	40	1	0	40	100.00%
bis(2-Chloroisopropyl)ether	SVOC	Soil	mg/kg	40	1	0	40	100.00%
bis(2-Ethylhexyl)phthalate	SVOC	Soil	mg/kg	40	9	0	40	100.00%
Caprolactam	SVOC	Soil	mg/kg	40	2	0	40	100.00%
Carbazole	SVOC	Soil	mg/kg	40	3	0	40	100.00%
Chrysene	SVOC	Soil	mg/kg	40	39	0	40	100.00%
Dibenz[a,h]anthracene	SVOC	Soil	mg/kg	40	29	0	40	100.00%
Diethylphthalate	SVOC	Soil	mg/kg	40	1	0	40	100.00%
Di-n-butylphthalate	SVOC	Soil	mg/kg	40	2	0	40	100.00%
Di-n-ocytlphthalate	SVOC	Soil	mg/kg	40	2	0	40	100.00%
Fluoranthene	SVOC	Soil	mg/kg	40	40	0	40	100.00%
Fluorene	SVOC	Soil	mg/kg	40	34	0	40	100.00%
Hexachlorobenzene	SVOC	Soil	mg/kg	40	1	0	40	100.00%
Hexachlorobutadiene	SVOC	Soil	mg/kg	40	1	0	40	100.00%
Hexachlorocyclopentadiene	SVOC	Soil	mg/kg	40	1	0	40	100.00%
Hexachloroethane	SVOC	Soil	mg/kg	40	1	0	40	100.00%
Indeno[1,2,3-c,d]pyrene	SVOC	Soil	mg/kg	40	36	0	40	100.00%
Isophorone	SVOC	Soil	mg/kg	40	1	0	40	100.00%
Naphthalene	SVOC	Soil	mg/kg	40	38	0	40	100.00%
Nitrobenzene	SVOC	Soil	mg/kg	40	1	0	40	100.00%
N-Nitroso-di-n-propylamine	SVOC	Soil	mg/kg	40	1	0	40	100.00%
N-Nitrosodiphenylamine	SVOC	Soil	mg/kg	40	2	0	40	100.00%
Pentachlorophenol	SVOC	Soil	mg/kg	40	1	1	39	97.50%
Phenanthrene	SVOC	Soil	mg/kg	40	40	0	40	100.00%
Phenol	SVOC	Soil	mg/kg	40	6	1	39	97.50%
Pyrene	SVOC	Soil	mg/kg	40	40	0	40	100.00%
Diesel Range Organics	TPH	Soil	mg/kg	40	40	0	40	100.00%
Gasoline Range Organics	TPH	Soil	mg/kg	40	6	0	40	100.00%
Oil and Grease	TPH	Soil	mg/kg	40	40	0	40	100.00%
1,1,1-Trichloroethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
1,1,2,2-Tetrachloroethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
1,1,2-Trichloro-1,2,2-Trifluoroethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
1,1,2-Trichloroethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
1,1-Dichloroethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
1,1-Dichloroethene	VOC	Soil	mg/kg	11	0	0	11	100.00%
1,2,3-Trichlorobenzene	VOC	Soil	mg/kg	11	1	0	11	100.00%
1,2,4-Trichlorobenzene	VOC	Soil	mg/kg	11	1	0	11	100.00%
1,2-Dibromo-3-chloropropane	VOC	Soil	mg/kg	11	0	0	11	100.00%
1,2-Dibromoethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
1,2-Dichlorobenzene	VOC	Soil	mg/kg	11	5	0	11	100.00%
1,2-Dichloroethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
1,2-Dichloroethene (Total)	VOC	Soil	mg/kg	11	0	0	11	100.00%
1,2-Dichloropropane	VOC	Soil	mg/kg	11	0	0	11	100.00%
1,3-Dichlorobenzene	VOC	Soil	mg/kg	11	2	0	11	100.00%
1,4-Dichlorobenzene	VOC	Soil	mg/kg	11	5	0	11	100.00%
2-Butanone (MEK)	VOC	Soil	mg/kg	11	6	0	11	100.00%
2-Hexanone	VOC	Soil	mg/kg	11	0	0	11	100.00%
4-Methyl-2-pentanone (MIBK)	VOC	Soil	mg/kg	11	0	0	11	100.00%
Acetone	VOC	Soil	mg/kg	11	9	0	11	100.00%
Benzene	VOC	Soil	mg/kg	11	5	0	11	100.00%
Bromodichloromethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
Bromoform	VOC	Soil	mg/kg	11	0	0	11	100.00%
Bromomethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
Carbon disulfide	VOC	Soil	mg/kg	11	2	0	11	100.00%
Carbon tetrachloride	VOC	Soil	mg/kg	11	0	0	11	100.00%

EVALUATION OF DATA COMPLETENESS
Percentage of Non-Rejected Results vs. Total Results
(Only data which underwent validation are included)

Parameter	Parameter Group	Matrix	Unit	Number of Validated Results	Detections	Number of Rejected Results	Number of Non-rejected Results	Completeness
Chlorobenzene	VOC	Soil	mg/kg	11	0	0	11	100.00%
Chloroethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
Chloroform	VOC	Soil	mg/kg	11	0	0	11	100.00%
Chloromethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
cis-1,2-Dichloroethene	VOC	Soil	mg/kg	11	0	0	11	100.00%
cis-1,3-Dichloropropene	VOC	Soil	mg/kg	11	0	0	11	100.00%
Cyclohexane	VOC	Soil	mg/kg	11	3	0	11	100.00%
Dibromochloromethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
Dichlorodifluoromethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
Ethylbenzene	VOC	Soil	mg/kg	11	6	0	11	100.00%
Isopropylbenzene	VOC	Soil	mg/kg	11	5	0	11	100.00%
Methyl Acetate	VOC	Soil	mg/kg	11	0	0	11	100.00%
Methyl tert-butyl ether (MTBE)	VOC	Soil	mg/kg	11	0	0	11	100.00%
Methylene Chloride	VOC	Soil	mg/kg	11	1	0	11	100.00%
Styrene	VOC	Soil	mg/kg	11	0	0	11	100.00%
Tetrachloroethene	VOC	Soil	mg/kg	11	0	0	11	100.00%
Toluene	VOC	Soil	mg/kg	11	6	0	11	100.00%
trans-1,2-Dichloroethene	VOC	Soil	mg/kg	11	0	0	11	100.00%
trans-1,3-Dichloropropene	VOC	Soil	mg/kg	11	0	0	11	100.00%
Trichloroethene	VOC	Soil	mg/kg	11	0	0	11	100.00%
Trichlorofluoromethane	VOC	Soil	mg/kg	11	0	0	11	100.00%
Vinyl chloride	VOC	Soil	mg/kg	11	0	0	11	100.00%
Xylenes	VOC	Soil	mg/kg	11	6	0	11	100.00%
1,4-Dioxane	VOC/SVOC	Soil	mg/kg	11	0	11	0	0.00%
Available Cyanide	CN	Water	ug/L	3	3	0	3	100.00%
Total Cyanide	CN	Water	ug/L	5	3	0	5	100.00%
Aluminum	Metal	Water	ug/L	8	7	0	8	100.00%
Antimony	Metal	Water	ug/L	8	0	0	8	100.00%
Arsenic	Metal	Water	ug/L	8	1	0	8	100.00%
Barium	Metal	Water	ug/L	8	8	0	8	100.00%
Beryllium	Metal	Water	ug/L	8	2	0	8	100.00%
Cadmium	Metal	Water	ug/L	8	2	0	8	100.00%
Chromium	Metal	Water	ug/L	8	5	0	8	100.00%
Chromium VI	Metal	Water	ug/L	8	0	0	8	100.00%
Cobalt	Metal	Water	ug/L	8	1	0	8	100.00%
Copper	Metal	Water	ug/L	8	1	0	8	100.00%
Iron	Metal	Water	ug/L	8	4	0	8	100.00%
Lead	Metal	Water	ug/L	8	1	0	8	100.00%
Manganese	Metal	Water	ug/L	8	5	0	8	100.00%
Mercury	Metal	Water	ug/L	8	1	0	8	100.00%
Nickel	Metal	Water	ug/L	8	4	0	8	100.00%
Selenium	Metal	Water	ug/L	8	0	0	8	100.00%
Silver	Metal	Water	ug/L	8	1	0	8	100.00%
Thallium	Metal	Water	ug/L	8	0	0	8	100.00%
Vanadium	Metal	Water	ug/L	8	8	0	8	100.00%
Zinc	Metal	Water	ug/L	8	3	0	8	100.00%
1,1-Biphenyl	SVOC	Water	ug/L	5	2	0	5	100.00%
1,2,4,5-Tetrachlorobenzene	SVOC	Water	ug/L	5	0	0	5	100.00%
2,3,4,6-Tetrachlorophenol	SVOC	Water	ug/L	5	0	0	5	100.00%
2,4,5-Trichlorophenol	SVOC	Water	ug/L	5	0	0	5	100.00%
2,4,6-Trichlorophenol	SVOC	Water	ug/L	5	0	0	5	100.00%
2,4-Dichlorophenol	SVOC	Water	ug/L	5	0	0	5	100.00%
2,4-Dimethylphenol	SVOC	Water	ug/L	5	5	0	5	100.00%
2,4-Dinitrophenol	SVOC	Water	ug/L	5	0	0	5	100.00%
2,4-Dinitrotoluene	SVOC	Water	ug/L	5	0	0	5	100.00%
2,6-Dinitrotoluene	SVOC	Water	ug/L	5	0	0	5	100.00%
2-Chloronaphthalene	SVOC	Water	ug/L	5	0	0	5	100.00%
2-Chlorophenol	SVOC	Water	ug/L	5	0	0	5	100.00%

EVALUATION OF DATA COMPLETENESS
Percentage of Non-Rejected Results vs. Total Results
(Only data which underwent validation are included)

Parameter	Parameter Group	Matrix	Unit	Number of Validated Results	Detections	Number of Rejected Results	Number of Non-rejected Results	Completeness
2-Methylnaphthalene	SVOC	Water	ug/L	5	3	0	5	100.00%
2-Methylphenol	SVOC	Water	ug/L	5	3	0	5	100.00%
2-Nitroaniline	SVOC	Water	ug/L	5	0	0	5	100.00%
3&4-Methylphenol(m&p Cresol)	SVOC	Water	ug/L	5	3	0	5	100.00%
3,3'-Dichlorobenzidine	SVOC	Water	ug/L	5	0	2	3	60.00%
4-Chloroaniline	SVOC	Water	ug/L	5	0	0	5	100.00%
4-Nitroaniline	SVOC	Water	ug/L	5	0	0	5	100.00%
Acenaphthene	SVOC	Water	ug/L	5	5	0	5	100.00%
Acenaphthylene	SVOC	Water	ug/L	5	3	0	5	100.00%
Acetophenone	SVOC	Water	ug/L	5	2	0	5	100.00%
Anthracene	SVOC	Water	ug/L	5	5	0	5	100.00%
Benz[a]anthracene	SVOC	Water	ug/L	5	3	0	5	100.00%
Benzaldehyde	SVOC	Water	ug/L	5	0	0	5	100.00%
Benzo[a]pyrene	SVOC	Water	ug/L	5	0	0	5	100.00%
Benzo[b]fluoranthene	SVOC	Water	ug/L	5	0	0	5	100.00%
Benzo[g,h,i]perylene	SVOC	Water	ug/L	5	0	0	5	100.00%
Benzo[k]fluoranthene	SVOC	Water	ug/L	5	0	0	5	100.00%
bis(2-chloroethoxy)methane	SVOC	Water	ug/L	5	0	0	5	100.00%
bis(2-Chloroethyl)ether	SVOC	Water	ug/L	5	0	0	5	100.00%
bis(2-Chloroisopropyl)ether	SVOC	Water	ug/L	5	0	0	5	100.00%
bis(2-Ethylhexyl)phthalate	SVOC	Water	ug/L	5	1	0	5	100.00%
Caprolactam	SVOC	Water	ug/L	5	0	0	5	100.00%
Carbazole	SVOC	Water	ug/L	5	3	0	5	100.00%
Chrysene	SVOC	Water	ug/L	5	3	0	5	100.00%
Dibenz[a,h]anthracene	SVOC	Water	ug/L	5	0	0	5	100.00%
Diethylphthalate	SVOC	Water	ug/L	5	0	0	5	100.00%
Di-n-butylphthalate	SVOC	Water	ug/L	5	0	0	5	100.00%
Di-n-ocytlphthalate	SVOC	Water	ug/L	5	1	0	5	100.00%
Fluoranthene	SVOC	Water	ug/L	5	4	0	5	100.00%
Fluorene	SVOC	Water	ug/L	5	5	0	5	100.00%
Hexachlorobenzene	SVOC	Water	ug/L	5	0	0	5	100.00%
Hexachlorobutadiene	SVOC	Water	ug/L	5	0	0	5	100.00%
Hexachlorocyclopentadiene	SVOC	Water	ug/L	5	0	0	5	100.00%
Hexachloroethane	SVOC	Water	ug/L	5	0	0	5	100.00%
Indeno[1,2,3-c,d]pyrene	SVOC	Water	ug/L	5	0	0	5	100.00%
Isophorone	SVOC	Water	ug/L	5	0	0	5	100.00%
Naphthalene	SVOC	Water	ug/L	5	5	0	5	100.00%
Nitrobenzene	SVOC	Water	ug/L	5	0	0	5	100.00%
N-Nitroso-di-n-propylamine	SVOC	Water	ug/L	5	0	0	5	100.00%
N-Nitrosodiphenylamine	SVOC	Water	ug/L	5	0	0	5	100.00%
Pentachlorophenol	SVOC	Water	ug/L	5	1	0	5	100.00%
Phenanthrene	SVOC	Water	ug/L	5	5	0	5	100.00%
Phenol	SVOC	Water	ug/L	5	1	0	5	100.00%
Pyrene	SVOC	Water	ug/L	5	4	0	5	100.00%
Diesel Range Organics	TPH	Water	ug/L	3	3	0	3	100.00%
Gasoline Range Organics	TPH	Water	ug/L	3	1	0	3	100.00%
Oil and Grease	TPH	Water	ug/L	5	1	0	5	100.00%
1,1,1-Trichloroethane	VOC	Water	ug/L	5	0	0	5	100.00%
1,1,2,2-Tetrachloroethane	VOC	Water	ug/L	5	0	0	5	100.00%
1,1,2-Trichloro-1,2,2-Trifluoroethane	VOC	Water	ug/L	5	0	0	5	100.00%
1,1,2-Trichloroethane	VOC	Water	ug/L	5	0	0	5	100.00%
1,1-Dichloroethane	VOC	Water	ug/L	5	0	0	5	100.00%
1,1-Dichloroethene	VOC	Water	ug/L	5	0	0	5	100.00%
1,2,3-Trichlorobenzene	VOC	Water	ug/L	5	0	0	5	100.00%
1,2,4-Trichlorobenzene	VOC	Water	ug/L	5	0	0	5	100.00%
1,2-Dibromo-3-chloropropane	VOC	Water	ug/L	5	0	0	5	100.00%
1,2-Dibromoethane	VOC	Water	ug/L	5	0	0	5	100.00%
1,2-Dichlorobenzene	VOC	Water	ug/L	5	0	0	5	100.00%

EVALUATION OF DATA COMPLETENESS
Percentage of Non-Rejected Results vs. Total Results
(Only data which underwent validation are included)

Parameter	Parameter Group	Matrix	Unit	Number of Validated Results	Detections	Number of Rejected Results	Number of Non-rejected Results	Completeness
1,2-Dichloroethane	VOC	Water	ug/L	5	0	0	5	100.00%
1,2-Dichloroethene (Total)	VOC	Water	ug/L	5	0	0	5	100.00%
1,2-Dichloropropane	VOC	Water	ug/L	5	0	0	5	100.00%
1,3-Dichlorobenzene	VOC	Water	ug/L	5	0	0	5	100.00%
1,4-Dichlorobenzene	VOC	Water	ug/L	5	0	0	5	100.00%
2-Butanone (MEK)	VOC	Water	ug/L	5	1	0	5	100.00%
2-Hexanone	VOC	Water	ug/L	5	0	0	5	100.00%
4-Methyl-2-pentanone (MIBK)	VOC	Water	ug/L	5	0	0	5	100.00%
Acetone	VOC	Water	ug/L	5	1	0	5	100.00%
Benzene	VOC	Water	ug/L	5	3	0	5	100.00%
Bromodichloromethane	VOC	Water	ug/L	5	0	0	5	100.00%
Bromoform	VOC	Water	ug/L	5	0	0	5	100.00%
Bromomethane	VOC	Water	ug/L	5	0	0	5	100.00%
Carbon disulfide	VOC	Water	ug/L	5	0	0	5	100.00%
Carbon tetrachloride	VOC	Water	ug/L	5	0	0	5	100.00%
Chlorobenzene	VOC	Water	ug/L	5	0	0	5	100.00%
Chloroethane	VOC	Water	ug/L	5	0	0	5	100.00%
Chloroform	VOC	Water	ug/L	5	0	0	5	100.00%
Chloromethane	VOC	Water	ug/L	5	0	0	5	100.00%
cis-1,2-Dichloroethene	VOC	Water	ug/L	5	0	0	5	100.00%
cis-1,3-Dichloropropene	VOC	Water	ug/L	5	0	0	5	100.00%
Cyclohexane	VOC	Water	ug/L	5	0	0	5	100.00%
Dibromochloromethane	VOC	Water	ug/L	5	0	0	5	100.00%
Dichlorodifluoromethane	VOC	Water	ug/L	5	0	0	5	100.00%
Ethylbenzene	VOC	Water	ug/L	5	2	0	5	100.00%
Isopropylbenzene	VOC	Water	ug/L	5	1	0	5	100.00%
Methyl Acetate	VOC	Water	ug/L	5	0	2	3	60.00%
Methyl tert-butyl ether (MTBE)	VOC	Water	ug/L	5	0	0	5	100.00%
Methylene Chloride	VOC	Water	ug/L	5	0	0	5	100.00%
Styrene	VOC	Water	ug/L	5	1	0	5	100.00%
Tetrachloroethene	VOC	Water	ug/L	5	0	0	5	100.00%
Toluene	VOC	Water	ug/L	5	3	0	5	100.00%
trans-1,2-Dichloroethene	VOC	Water	ug/L	5	0	0	5	100.00%
trans-1,3-Dichloropropene	VOC	Water	ug/L	5	0	0	5	100.00%
Trichloroethene	VOC	Water	ug/L	5	1	0	5	100.00%
Trichlorofluoromethane	VOC	Water	ug/L	5	0	0	5	100.00%
Vinyl chloride	VOC	Water	ug/L	5	0	0	5	100.00%
Xylenes	VOC	Water	ug/L	5	2	0	5	100.00%
1,4-Dioxane	VOC/SVOC	Water	ug/L	5	2	0	5	100.00%

Data validation has been completed for a representative 50% of all samples