ARM Group LLC
Engineers and Scientists

September 1, 2020

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

Re: PORI Lagoon Characterization Report
Area B: Parcel B22
Tradepoint Atlantic
Sparrows Point, MD 21219

Dear Ms. Brown,

ARM Group LLC (ARM), on behalf of EnviroAnalytics Group, LLC (EAG), has prepared this Palm Oil Recovery, Inc. (PORI) Lagoon Characterization Report for soil and groundwater investigation activities completed within the PORI Lagoon area in Parcel B22 (the Site) on the Tradepoint Atlantic (TPA) property located in Sparrows Point, Maryland. The location of the PORI Lagoon within the larger TPA property is indicated on **Figure 1**.

Parcel B22 Phase II Investigation

Following the completion of the Phase II Investigation activities on Parcel B22 in June 2016, a Phase II Investigation Preliminary Report (Revision 0), dated July 15, 2016, was submitted to the Maryland Department of the Environment (MDE) and the United States Environmental Protection Agency (USEPA) (collectively, the Agencies). This preliminary report was later superseded by the Phase II Investigation Report (Revision 1) dated August 8, 2019.

The investigation identified elevated concentrations of naphthalene and benzo[a]pyrene in the subsurface soil samples collected from soil boring B22-119-SB, which was installed at a location adjacent to the PORI Lagoon in the northern section of Parcel B22. The highest concentrations of these organic constituents were in samples collected in the interval from 9 to 10 feet below ground surface (bgs). At 10 feet bgs, naphthalene was detected at a concentration of 2,040 mg/kg and benzo[a]pyrene was detected at a concentration of 84.9 mg/kg. In the overlying sample collected at 9 feet bgs, the naphthalene and benzo[a]pyrene concentrations were significantly lower (with concentrations of 32.8 mg/kg and 0.26 mg/kg, respectively). A black and viscous product was observed in soil boring B22-119-SB within the soil core from 9 to 10 feet bgs, corresponding to the elevated analytical results.

The PORI Lagoon had also been targeted by soil borings B22-120-SB, B22-121-SB, and B22-174-SB, which were located to the southeast of B22-119-SB. None of these additional soil borings had elevated naphthalene or benzo[a]pyrene detections. It should be noted that soil boring B22-119-SB was located in the suspected downgradient groundwater flow direction from the lagoon.

A temporary groundwater piezometer was installed at B22-119-SB to determine the presence or absence and potential mobility of non-aqueous phase liquid (NAPL) in groundwater. There was no measurable light or dense NAPL present in the screening piezometer (B22-119-PZ) during the 0-hour, 48-hour, or 30-day gauging events. The screening piezometer was later abandoned on October 11, 2016.

After reviewing the data presented in the Phase II Investigation Preliminary Report, the Agencies determined that additional characterization would be needed in the vicinity of the PORI Lagoon to verify that the elevated organic detections were isolated in nature and to determine what, if any, remedial response actions could ultimately be required. Three subsequent rounds of investigation have been completed in the vicinity of the PORI Lagoon, each of which is described below in further detail.

Initial Characterization Investigation (Soil, Test Pits, and Groundwater)

A Work Plan for the Characterization of Naphthalene and Benzo[a]pyrene Impacts at the PORI Lagoon was submitted to the Agencies on April 19, 2018. Following review of the Work Plan, the proposed sampling approach was approved via email on April 30, 2018. A total of 12 soil borings, two test pit locations, and four groundwater sample locations were utilized to collect samples in the vicinity of the lagoon.

The 12 soil borings were completed from May 7 to 9, 2018. At each boring location, soil samples were collected from the intervals of 4 to 5, 9 to 10, and 14 to 15 feet bgs (subject to minor field adjustment) using a Geoprobe® direct push rig. The samples were biased to target intervals with evidence of contamination based on field screening observations including odors, staining, elevated photoionization detector (PID) readings, etc. Temporary piezometers were also installed at four of the soil boring locations (B22-119-SB, B22-119I-SB, B22-119J-SB, and B22-119K-SB) to further characterize groundwater impacts downgradient from the PORI Lagoon. Soil boring observation logs and piezometer construction logs for each location are provided in **Attachment 1**. On May 31 and June 1, 2018, the four piezometers that were present at that time (B22-119-PZ, B22-119I-PZ, B22-119J-PZ, and B22-119K-PZ) were purged to facilitate sample collection. The groundwater purge logs are included as **Attachment 2**.

Two test pits (B22 TP 1 and B22 TP 2) were completed on June 5, 2018 approximately 20 feet to the southeast and approximately 45 feet to the east, respectively, from B22-119-SB. The eastern test pit targeted the outflow pipe that runs from the PORI Lagoon to the north toward the Tin

Mill Canal. A soil sample was collected from each test pit along the sidewall above the water table, at approximately 12 feet bgs relative to the surrounding ground surface at the top of the PORI Lagoon. A photograph log with representative photos from the test pitting is provided in **Attachment 3**. As shown in the photograph log, a length of sheet piling was observed at the northwestern edge of the PORI Lagoon.

Soil samples collected from the continuous core soil borings and test pits, and groundwater samples collected from temporary groundwater locations were submitted to Pace Analytical Services, Inc. (PACE) and analyzed for polynuclear aromatic hydrocarbons (PAHs) via USEPA Method 8270 SIM, volatile organic compounds (VOCs) via USEPA Method 8260, total petroleum hydrocarbons (TPH) diesel range organics (DRO) and gasoline range organics (GRO) via USEPA Method 8015, and Oil & Grease via USEPA Method 9071. The laboratory reports are included as electronic attachments.

Table 1 shows that seven out of 12 soil borings (B22-119-SB, B22-119B-SB, B22-119E-SB, B22-119F-SB, B22-119G-SB, B22-119H-SB, B22-119I-SB) had concentrations of naphthalene and/or benzo[a]pyrene detected in one or more soil samples above their respective Project Action Limits (PALs). Several other PAHs were identified above their respective PALs in sample B22-119H-SB-11 only. Oil & Grease exceeded its PAL of 6,200 mg/kg in sample B22-119B-SB-15 with a detected concentration of 35,800 mg/kg. The soil boring PAL exceedance locations and results are shown on **Figure 2**. During the original Phase II Investigation in 2016, there were elevated concentrations of naphthalene and benzo[a]pyrene in sample B22-119-SB-10 (corresponding with observations of NAPL). B22-119-SB was re-installed during this supplemental investigation, and NAPL was again observed in the soil core (7 to 10 feet bgs). NAPL was not observed in any other borings although odors were noted at several locations. The soil borings with the highest naphthalene and benzo[a]pyrene concentrations identified during this supplemental phase of investigation (B22-119E-SB and B22-119H-SB) were the two borings completed closest to the original boring B22-119-SB.

Two additional soil samples were collected from a depth of approximately 12 feet bgs (measured relative to the surrounding ground surface at the top of the PORI Lagoon) from the two test pit locations (B22 TP 1 and B22 TP 2). The results from these test pit soil samples are provided on **Table 2**. These test pit samples had naphthalene detections of 0.31 mg/kg and 0.26 mg/kg and benzo[a]pyrene detections of 0.62 mg/kg and 0.71 mg/kg, respectively. These detections were below the PALs for naphthalene and benzo[a]pyrene; however, TPH-DRO and Oil & Grease were both detected above the PAL of 6,200 mg/kg. The test pit PAL exceedance locations and results are shown on **Figure 3**.

The results from the groundwater sampling event utilizing the first four piezometers installed at the PORI Lagoon (B22-119-PZ, B22-119I-PZ, B22-119J-PZ, and B22-119K-PZ) are provided on **Table 3**. A groundwater sample was not successfully collected from B22-119K-PZ due to

observations of NAPL and heavy silt within the piezometer (as indicated on the purge log). The groundwater sample collected from B22-119-PZ, corresponding to the soil boring with observed NAPL and the highest concentrations of naphthalene and benzo[a]pyrene during the original Phase II Investigation, had aqueous PAL exceedances including TPH/Oil & Grease, various PAHs including naphthalene (2,550 µg/L) and benzo[a]pyrene (57.3 µg/L), and benzene (859 µg/L). The groundwater PAL exceedance locations and results are shown on **Figure 4**.

Secondary Characterization Investigation (Groundwater)

Following review of the initial characterization findings, and as described in the PORI Lagoon Interim Submittal Comment Response Letter dated January 14, 2020, MDE requested additional groundwater sampling to determine the extent of SVOCs, Oil & Grease, TPH-DRO/GRO, benzene, and NAPL contamination in the vicinity of the PORI Lagoon.

The MDE selected three locations to provide additional groundwater coverage, including a groundwater sample from NAPL screening piezometer B22-119N-PZ (which was installed as part of a related investigation discussed in the NAPL Delineation Investigation section below), and two new piezometers at locations as close as possible to the eastern and western sides of the PORI Lagoon, which were later designated as B22-119R-PZ and B22-119S-PZ. The two new piezometers were installed at the requested locations on May 21, 2020. A slight sheen was observed in the soil from approximately 11 to 12 feet bgs at B22-119S-PZ. On May 27, 2020, the sampling scope was expanded to include a resample of B22-119-PZ, as well as sampling B22-119M-PZ and B22-119Q-PZ. Soil boring observation and piezometer construction logs for each piezometer are provided in **Attachment 1**. The six groundwater samples were collected from the designated locations on May 27 and 28, 2020. The groundwater purge logs are included as **Attachment 2**. Samples were submitted to PACE to be analyzed for VOCs, PAHs, TPH-DRO/GRO, and Oil & Grease via the same methods listed above. The laboratory reports are included as electronic attachments.

The results from the supplemental groundwater sampling event utilizing the six designated piezometers are provided on **Table 3** (along with the results from the groundwater samples collected in 2018). The only VOC that was detected above the PAL during the May 2020 groundwater sampling event was benzene with exceedances at B22-119-PZ (with a concentration of 835 µg/L) and B22-119S-PZ (with a concentration of 50.5 µg/L). The highest concentration of naphthalene that was detected in groundwater during the May 2020 sampling event was 886 µg/L in B22-119-PZ. This concentration is significantly lower than the original groundwater sample at B22-119-PZ collected on May 31, 2018 (2,550 µg/L). The next highest naphthalene concentration that was detected in groundwater during the May 2020 event was at B22-119S-PZ (120 µg/L). TPH-DRO was detected above its PAL (47 µg/L) in all six groundwater samples collected in May 2020, with the highest detection of 19,700 µg/L in B22-119-PZ. Oil & Grease and TPH-GRO were detected above their PALs (47 µg/L) in five samples and two samples,

respectively. The groundwater PAL exceedance locations and results from both investigation phases (2018 and 2020) are shown on **Figure 4**.

Tertiary Characterization Investigation (Test Pits)

A number of test pits were completed to further characterize the sediments in the bottom of the PORI Lagoon. These test pits were completed using an excavator at six locations (B22-TP-1 through B22-TP-6) on June 17, 2020. Three excavator buckets of soil were removed from each test pit. Material from each test pit was screened with a PID and soil samples were collected for analysis at three distinct 1-foot depth intervals (0 to 1 foot, 2 to 3 feet, and 4 to 5 feet). A sample could not be collected at a depth of 5 feet from B22-TP-4 due to equipment refusal. A photograph log with representative photos from the test pitting is included as **Attachment 3**. All PID readings collected from each test pit interval were below 10 ppm; the PID results are provided on **Table 4**. Soil samples collected from the test pits were submitted to PACE to be analyzed for VOCs, TPH-DRO/GRO, and Oil & Grease (via the same methods listed above), and were submitted to Alpha Analytical to be analyzed for PAHs via USEPA Method 8270 SIM. The laboratory reports are included as electronic attachments.

The analytical soil results from the supplemental test pit samples are provided on **Table 2** (along with the results from the test pits completed in 2018). Each test pit sample collected on June 17, 2020 had an exceedance of TPH-DRO and/or Oil & Grease. Several elevated concentrations were identified among the test pit samples above the PAL of 6,200 mg/kg. The highest detected concentrations of TPH-DRO and Oil & Grease among all the test pit samples were 46,900 mg/kg and 198,000 mg/kg, respectively, both detected at B22-TP-4-3. A visible sheen was also observed in the excavator bucket (on the water) by the ARM field personnel providing oversight during the completion of B22-TP-4. Despite the elevated concentrations of TPH-DRO and Oil & Grease, the concentrations of VOCs and PAHs detected in the test pit soil samples were comparatively low. There were five PAL exceedances of benzo[a]pyrene among the test pits samples, with a maximum detected concentration of only 11 mg/kg in B22-TP-4-3. The test pit PAL exceedance locations and results from both investigation phases (2018 and 2020) are shown on **Figure 3**.

Vapor Intrusion Assessment

Groundwater data from both sample collection events (2018 and 2020) were screened to determine whether the individual sample results exceeded the USEPA Vapor Intrusion (VI) Screening Levels (set to a Target Cancer Risk (TCR) of 1E-5 and Target Hazard Quotient (THQ) of 1) as determined by the online Vapor Intrusion Screening Level (VISL) Calculator (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.

Two aqueous results exceeded the individual VI TCR or THQ criteria specified by the VISL Calculator during both the 2018 and 2020 groundwater sampling events. Each exceedance was identified at B22-119-PZ. In 2018, the maximum naphthalene and benzene detections of 2,550 µg/L and 859 µg/L, respectively, at B22-119-PZ exceeded the corresponding TCR VISLs of 200 µg/L and 69 µg/L. Similarly, in May 2020 the maximum naphthalene and benzene detections of 886 µg/L and 835 µg/L, respectively, exceeded the same VISLs.

Following the initial screening, a cumulative VI risk assessment was also performed for each individual sample location, with the results separated by cancer risk versus non-cancer hazard. 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. One location (B22-119-PZ) exceeded a cumulative VI cancer risk of 1E-5 during both sampling events, due to the elevated detections of naphthalene and benzene at this sample location. There were no exceedances of the acceptable VI non-cancer hazard identified during the cumulative evaluation. The results of the cumulative VI comparisons are provided in **Table 5**.

The presence and absence of groundwater impacts in the vicinity of the PORI Lagoon have been adequately described. Groundwater is not used on the TPA property (and is not proposed to be utilized). Location B22-119-PZ exhibited concentrations of benzene and naphthalene which could present a potential VI risk if a structure were to be proposed in this area. The groundwater impacts at B22-119-PZ have been adequately delineated, and the elevated VI risk does not appear to be widespread beyond this isolated location. It should be noted that a groundwater sample was not collected from B22-119K-PZ due to the presence of NAPL at this location, but groundwater samples were collected to the north and south (at locations B22-119N-PZ and B22-119M-PZ, respectively) and neither location exhibited an elevated VI risk. The NAPL impacts at B22-119K-PZ have also been adequately delineated as described in the following section.

NAPL Delineation Investigation

As described above, four piezometers (B22-119-PZ, B22-119I-PZ, B22-119J-PZ, and B22-119K-PZ) were installed in May 2018 during the initial phase of the PORI Lagoon characterization investigation. Approximately 48-hours after its installation, B22-119K-PZ (screened from 4.5 to 24.5 feet bgs) had accumulated 0.14 feet of NAPL in the piezometer screen. As a result of the measurable NAPL detection, and to further delineate the extent of NAPL in groundwater, six additional piezometers (B22-119L-PZ, B22-119M-PZ, B22-119N-PZ, B22-119O-PZ, B22-119P-PZ, and B22-119Q-PZ) were installed on October 12, 2018. None of the six additional delineation piezometers had measurable NAPL during the 0-hour, 48-hour, or 30-day gauging events. The locations of the piezometers are shown on **Figure 5a/b**. The dates of gauging activities, as well as NAPL thickness measurements and water level measurements, have been included in **Table 6**. This table also includes the installation date of each piezometer,

as well as relevant construction details (total depths, screen intervals, etc.). Soil boring observation and piezometer construction logs were completed for all delineation piezometers installed around B22-119-PZ and are provided in **Attachment 1**.

Following conclusion of the required gauging events, a NAPL Delineation Completion Report and Permanent Well Installation Work Plan was submitted to the Agencies dated December 4, 2019. The Delineation Completion Report requested the abandonment of the NAPL delineation network and recommended a future monitoring and recovery program for the NAPL identified at B22-119K-PZ via the installation of a permanent 2-inch diameter groundwater well. At the time that the Delineation Completion Report was submitted to the Agencies, B22-119K-PZ was the only temporary piezometer that had any detections of NAPL.

During the expansion of the groundwater investigation in May 2020, two additional temporary piezometers were installed as B22-119R-PZ and B22-119S-PZ, and a total of six supplemental groundwater samples were collected (B22-119-PZ, B22-119M-PZ, B22-119N-PZ, B22-119Q-PZ, B22-119R-PZ and B22-119S-PZ). During the groundwater sampling, an oil-water interface probe was used to gauge all six temporary piezometers. The oil-water interface probe made no indication that NAPL was encountered. During the initial groundwater purge, the field personnel developed each temporary piezometer. This was completed using dedicated tubing to remove any settled sediment at the bottom of the piezometer prior to initiating a purging record to monitor parameter stabilization. During this temporary piezometer development, a viscous milky-colored product appearing to be a dense NAPL was observed in the purge water at B22-119M-PZ and B22-119-Q-PZ. The two piezometers are located south and southwest of the temporary piezometer where NAPL was originally detected (B22-119K-PZ); however, the product did not appear to be the same type of NAPL based on its color, lack of odors, lack of reactivity to the oil-water interface probe, and density.

The field personnel removed as much of the unknown product from the two temporary piezometers prior to initiating the groundwater sampling. Based on the gauging measurements, approximately 2.6 feet of the milky-colored product was present in B22-119M-PZ, and approximately 3.1 feet of the product was present in B22-119Q-PZ during the development. No other temporary piezometer had any observations of NAPL during the May 2020 groundwater sampling activities. Based on the analytical results returned for locations B22-119M-PZ and B22-119-Q-PZ, the milky-colored product does not appear to represent a significant continuing source of PAHs or VOCs which could present a potential VI concern. The product appears to be relatively benign.

It should also be noted that approximately two weeks after concluding the May 2020 groundwater sampling, the piezometers were abandoned (as discussed in the following section). On the abandonment date approximately 0.17 feet of NAPL was detected with the oil-water interface probe in B22-119K-PZ, which was already known to be impacted. Additionally, a

small amount of NAPL (0.02 feet) was identified with the interface probe in B22-119M-PZ immediately prior to abandonment. The NAPL detected on this date appeared to be the same as the NAPL in B22-119K-PZ. The new NAPL detection is located directly between the PORI Lagoon and the known impacts at B22-119K-PZ. Based on the recent piezometer development and sampling, it is suspected that the groundwater purging allowed the small amount of NAPL to mobilize into the casing of B22-119M-PZ.

Piezometer Abandonments

The piezometers in the vicinity of the PORI Lagoon were properly abandoned on June 8, 2020, by a licensed driller and in accordance with Maryland abandonment standards as stated in COMAR 26.04.04.34 through 36. B22-119I-PZ was previously found to be destroyed on September 3, 2019, and therefore was unable to be abandoned. Each piezometer was abandoned using standard methods (i.e., PVC pulled and borehole filled with grout from the bottom up using a tremie pipe). Abandonment forms are included as **Attachment 4**.

Summary & Recommendations

Naphthalene and other PAHs were detected at elevated levels in the soil samples collected from B22-119-SB and the immediately surrounding borings B22-119E-SB and B22-119H-SB. NAPL was observed at B22-119-SB within the soil core from 9 to 10 feet bgs during the original Phase II Investigation in 2016 (corresponding to the elevated analytical results) and from 7 to 10 feet bgs during the supplemental investigation in 2018 (without soil samples collected from the corresponding soil interval). The test pit samples collected from the PORI Lagoon sediments contained elevated TPH-DRO and Oil & Grease within the lagoon footprint. One soil boring sample (B22-119B-SB-15) collected at the northeastern perimeter of the lagoon contained an elevated concentration of Oil & Grease comparable to the test pit sediment results. Although the sediments in the PORI Lagoon are impacted with TPH-DRO and Oil & Grease, the concentrations of VOCs and PAHs in the test pit samples were low, indicating the sediments are not likely to present a VI concern.

Soil boring B22-119-SB to the north of the PORI lagoon was the only soil boring with significant NAPL contamination observed in the core. One other boring (B22-119S-SB) had a slight sheen observed in the soil. The piezometers installed at both of these locations did not accumulate NAPL; however, the most significant dissolved contamination in groundwater was observed at these two locations. B22-119-PZ exhibited the highest groundwater concentrations of numerous organic contaminants. It should be noted that B22-119K-PZ was not sampled due to the presence of NAPL, which has since been delineated. An unknown milky-colored product was observed at locations B22-119M-PZ and B22-119Q-PZ during groundwater purging but did not appear to be the same type of NAPL that was identified at B22-119K-PZ. The unknown product appears to be benign based on the groundwater results obtained at these two locations.

Location B22-119-PZ exhibited concentrations of benzene and naphthalene which could present a potential VI risk if a structure were to be proposed in this area. The groundwater impacts at B22-119-PZ have been adequately delineated, and the elevated VI risk does not appear to be widespread beyond this isolated location. A groundwater sample was not collected from B22-119K-PZ (containing NAPL), but groundwater samples were collected to the north and south (at locations B22-119N-PZ and B22-119M-PZ, respectively) and neither location exhibited an elevated VI risk.

The recommended remedy for the PORI Lagoon is to cap the sediments in place using a low-permeability cap to provide a protective barrier for future exposures. This remedy is proposed contingent on no building or occupied structure being built above the PORI Lagoon area. If an occupied structure is proposed above the PORI Lagoon, additional remedial actions may be considered. The migration of NAPL appears to be limited, and a NAPL recovery well shall be installed at the former location of B22-119K-PZ. Based on the limited accumulation of NAPL, a passive recovery method such as an absorbent down-well sock will be used.

If you have questions regarding any information covered in this document, please feel free to contact ARM Group LLC at (410) 290-7775.

Respectfully Submitted,
ARM Group LLC

Leandra Glumac
Project Geologist

Eric S. Magdar, P.G.
Vice President

FIGURES

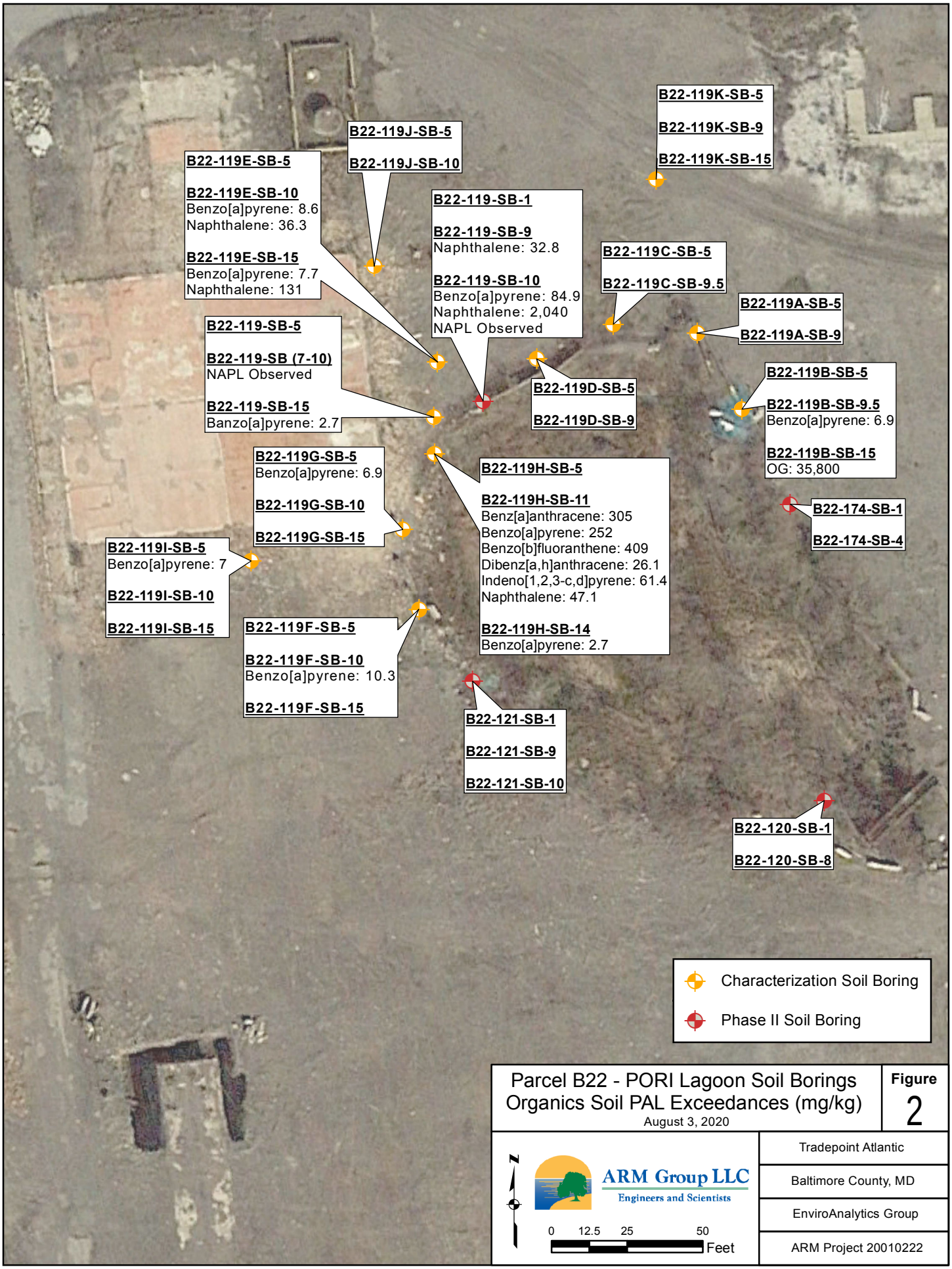
Parcel B22 - PORI Lagoon Location
Aerial View
July 23, 2020

Figure
1

ARM Group LLC
Engineers and Scientists

0 125 250 500
Feet

Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 20010222



Parcel B22 - PORI Lagoon Soil Borings
Organics Soil PAL Exceedances (mg/kg)

August 3, 2020

Figure 2

ARM Group LLC
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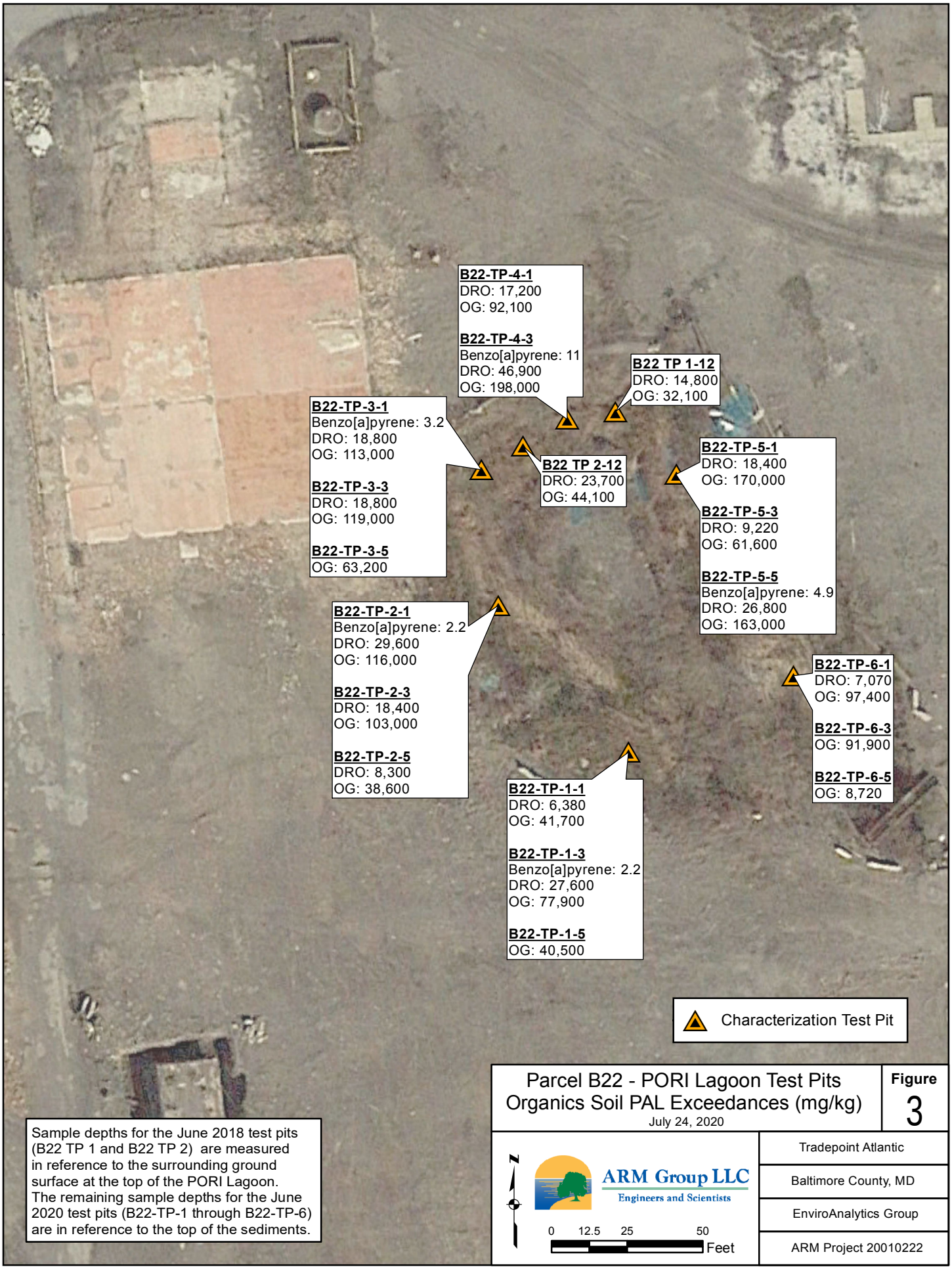
0 12.5 25 50 Feet

Tradepoint Atlantic

Baltimore County, MD

EnviroAnalytics Group

ARM Project 20010222



Sample depths for the June 2018 test pits (B22 TP 1 and B22 TP 2) are measured in reference to the surrounding ground surface at the top of the PORI Lagoon. The remaining sample depths for the June 2020 test pits (B22-TP-1 through B22-TP-6) are in reference to the top of the sediments.

Parcel B22 - PORI Lagoon Test Pits
Organics Soil PAL Exceedances (mg/kg)

July 24, 2020

Figure 3

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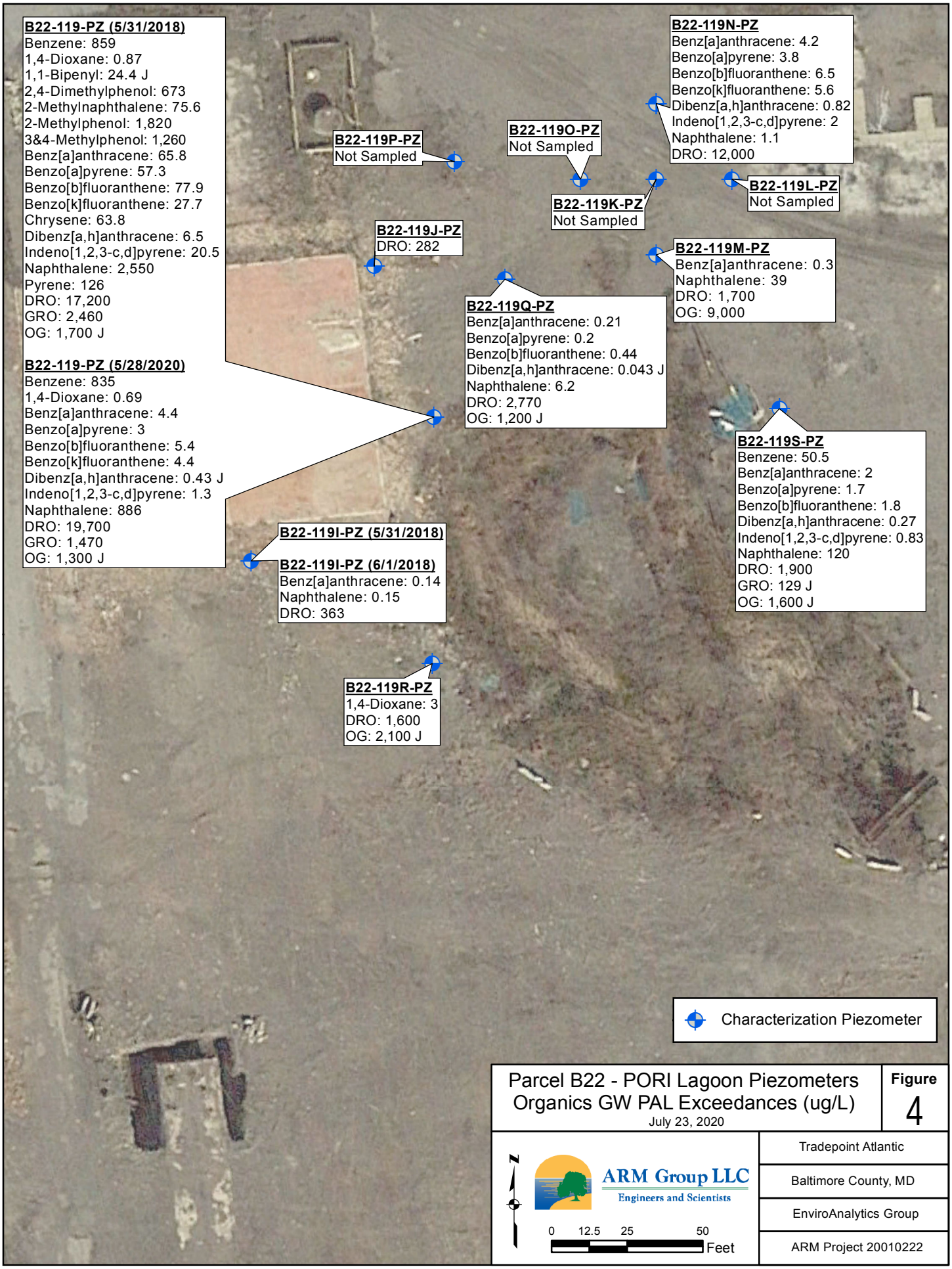
0 12.5 25 50 Feet

Tradepoint Atlantic

Baltimore County, MD

EnviroAnalytics Group

ARM Project 20010222



Parcel B22 - PORI Lagoon Piezometers Organics GW PAL Exceedances (ug/L)

July 23, 2020

Figure 4

ARM Group LLC
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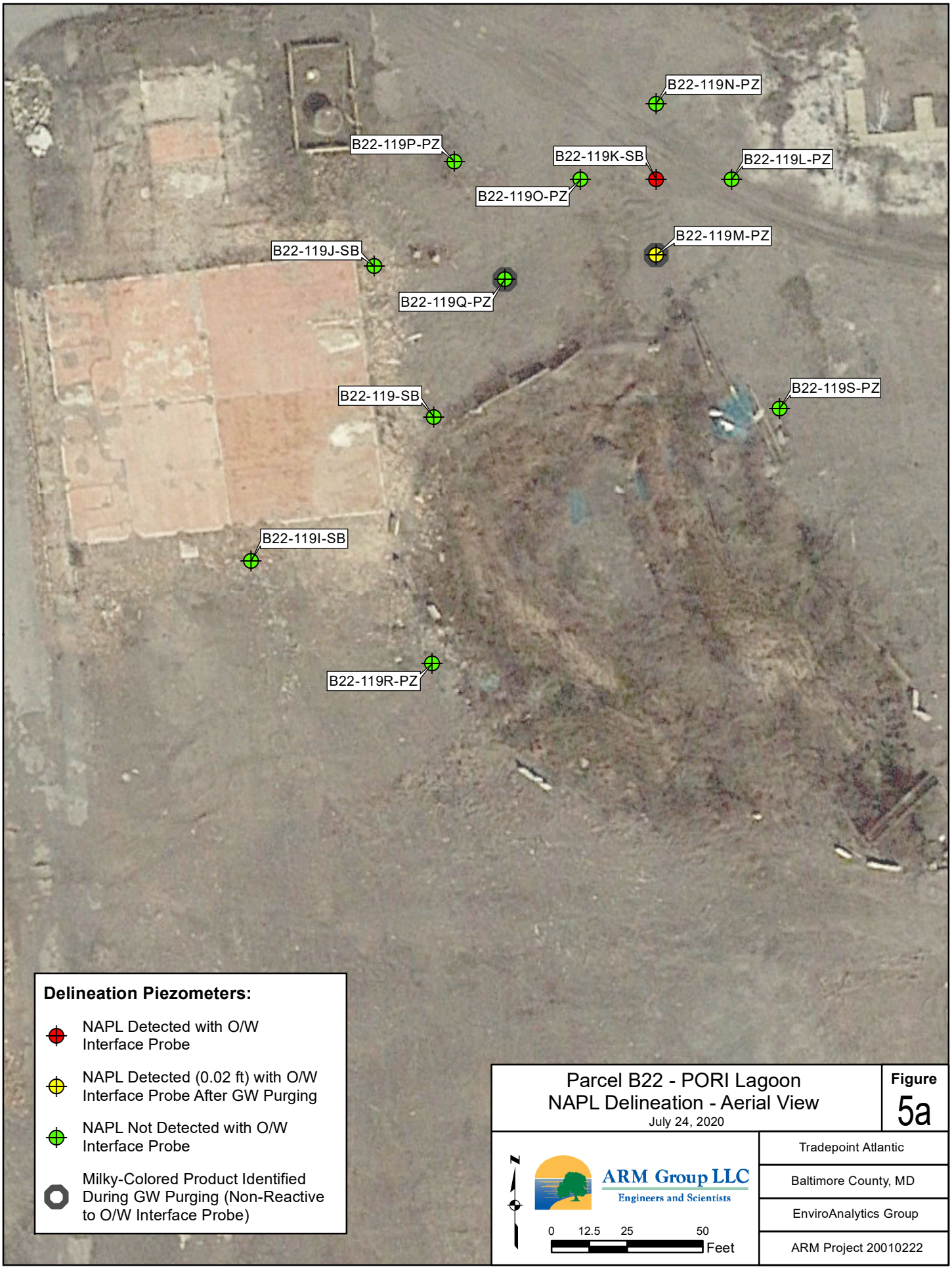
0 12.5 25 50 Feet

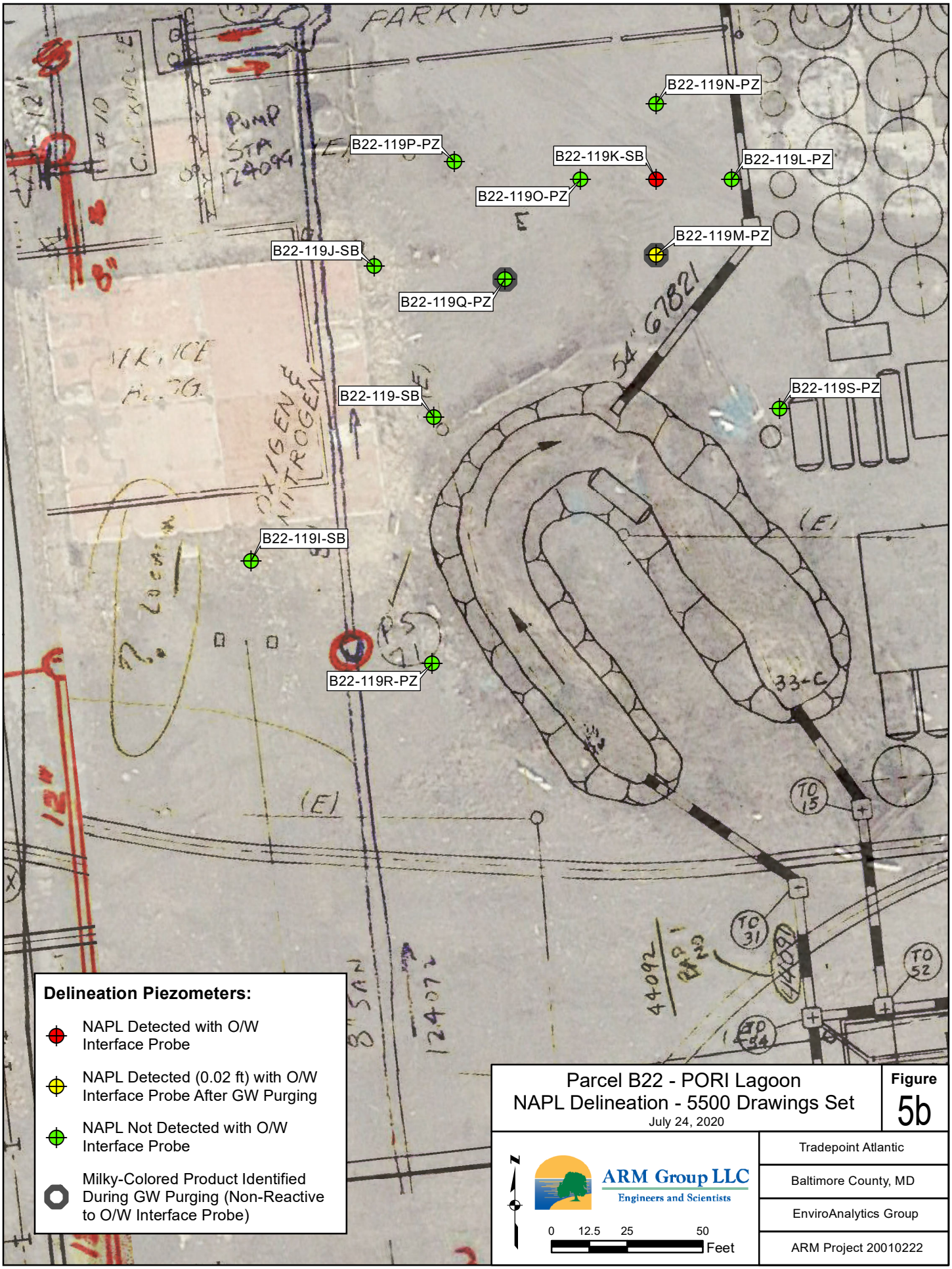
Tradepoint Atlantic

Baltimore County, MD

EnviroAnalytics Group

ARM Project 20010222


B22-119N-PZ
B22-119P-PZ
B22-119K-SB
B22-119L-PZ
B22-119O-PZ
B22-119M-PZ
B22-119J-SB
B22-119Q-PZ
B22-119-SB
B22-119S-PZ
B22-119I-SB
B22-119R-PZ
Delineation Piezometers:
NAPL Detected with O/W Interface Probe
NAPL Detected (0.02 ft) with O/W Interface Probe After GW Purging
NAPL Not Detected with O/W Interface Probe
Milky-Colored Product Identified During GW Purging (Non-Reactive to O/W Interface Probe)
Parcel B22 - PORI Lagoon
NAPL Delineation - Aerial View
July 24, 2020
Figure
5a
ARM Group LLC
Engineers and Scientists
0 12.5 25 50
Feet
Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 20010222


B22-119N-PZ
B22-119P-PZ
B22-119K-SB
B22-119L-PZ
B22-119O-PZ
B22-119M-PZ
B22-119J-SB
B22-119Q-PZ
B22-119-SB
B22-119S-PZ
B22-119I-SB
B22-119R-PZ
PUMP STA 12404
OXIGEN
NITROGEN
(E)
TO 15
TO 31
TO 52
TO 84
Delineation Piezometers:
NAPL Detected with O/W Interface Probe
NAPL Detected (0.02 ft) with O/W Interface Probe After GW Purging
NAPL Not Detected with O/W Interface Probe
Milky-Colored Product Identified During GW Purging (Non-Reactive to O/W Interface Probe)
Parcel B22 - PORI Lagoon
NAPL Delineation - 5500 Drawings Set
July 24, 2020
Figure
5b
ARM Group LLC
Engineers and Scientists
0 12.5 25 50
Feet
Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 20010222

TABLES

Table 1 - Parcel B22 PORI Lagoon Characterization
Summary of Organics Detected in Soil (Soil Borings)

Parameter	Units	PAL	B22-119-SB-1 5/19/2016	B22-119-SB-9 5/19/2016	B22-119-SB-10* 5/19/2016	B22-119-SB-5* 5/8/2018	B22-119-SB-15* 5/8/2018	B22-119A-SB-5* 5/7/2018	B22-119A-SB-9* 5/7/2018	B22-119B-SB-5* 5/7/2018	B22-119B-SB-9.5* 5/7/2018	B22-119B-SB-15* 5/7/2018	B22-119C-SB-5* 5/7/2018
Volatile Organic Compounds													
2-Butanone (MEK)	mg/kg	190,000	0.011 U	**0.0061 J**	N/A	0.0097 U	0.0098 U	**0.013**	0.0096 U	0.012 U	0.012 U	0.0098 U	0.011 U
Acetone	mg/kg	670,000	0.011 U	**0.023 J**	N/A	0.0097 U	**0.02**	**0.33**	**0.072**	**0.039**	**0.049**	**0.23**	**0.038**
Benzene	mg/kg	5.1	0.0056 U	**3.9 J**	N/A	0.0049 U	**0.14**	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0049 U	0.0056 U
Carbon disulfide	mg/kg	3,500	0.0056 U	0.007 U	N/A	0.0049 U	**0.0053**	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0049 U	0.0056 U
Ethylbenzene	mg/kg	25	0.0056 U	**0.096 J**	N/A	0.0049 U	0.0049 U	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0049 U	0.0056 U
Isopropylbenzene	mg/kg	9,900	0.0056 U	**0.018**	N/A	0.0049 U	0.0049 U	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0049 U	0.0056 U
Methyl Acetate	mg/kg	1,200,000	0.056 U	0.07 U	N/A	0.049 U	0.049 U	**0.073**	**0.023 J**	**0.0025 J**	**0.23**	**0.079**	**0.012 J**
Methyl tert-butyl ether (MTBE)	mg/kg	210	0.0056 U	0.007 U	N/A	0.0049 U	0.0049 U	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0049 U	0.0056 U
Styrene	mg/kg	35,000	0.0056 U	**0.032 J**	N/A	0.0049 U	0.0049 U	0.0056 U	0.0048 U	0.0059 U	0.0062 U	0.0049 U	0.0056 U
Toluene	mg/kg	47,000	0.0056 U	**1.4 J**	N/A	0.0049 U	**0.0062**	0.0056 U	0.0048 U	0.0059 U	0.0062 U	**0.0016 J**	0.0056 U
Xylenes	mg/kg	2,800	0.017 U	**0.75 J**	N/A	0.015 U	**0.0078 J**	0.017 U	0.014 U	0.018 U	0.019 U	0.015 U	0.017 U
Semi-Volatile Organic Comounds^													
1,1-Biphenyl	mg/kg	200	0.07 U	**0.18 J**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dimethylphenol	mg/kg	16,000	0.07 U	**0.96**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	mg/kg	3,000	0.072 U	**1.7**	N/A	**0.067**	**0.79**	**0.15**	**0.013**	**0.36**	**0.013**	**2.7**	**0.086**
2-Methylphenol	mg/kg	41,000	0.07 U	**1.5**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	0.14 U	**1.4 J**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	45,000	0.072 U	**0.38 J**	N/A	**0.012**	**0.89**	**0.024**	**0.0031 J**	**0.053**	**0.00095 J**	**2.1**	**0.018**
Acenaphthylene	mg/kg	45,000	**0.011 J**	**0.72 J**	N/A	**0.019**	**0.14**	**0.035**	**0.035**	**0.092**	**0.0039 J**	**0.31**	**0.054**
Anthracene	mg/kg	230,000	**0.025 J**	**0.42 J**	N/A	**0.07**	**1.3**	**0.2**	**0.034**	**0.78**	**0.011**	**3.1**	**0.13**
Benz[a]anthracene	mg/kg	21	**0.2**	**0.35 J**	N/A	**0.28**	**2.9**	**0.86**	**0.28**	**8.2**	**0.14**	**3.2**	**0.84**
Benzaldehyde	mg/kg	120,000	0.07 R	0.099 R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[a]pyrene	mg/kg	2.1	**0.16**	**0.26 J**	**84.9**	**0.26**	**2.7**	**0.84**	**0.28**	**6.9**	**0.17**	**1.7**	**0.8**
Benzo[b]fluoranthene	mg/kg	21	**0.4**	**0.57 J**	N/A	**0.55**	**4.3**	**1.1**	**0.43**	**12.8**	**0.28**	**2.6**	**1.3**
Benzo[g,h,i]perylene	mg/kg		**0.058 J**	**0.082 J**	N/A	**0.087**	**0.54**	**0.43**	**0.14**	**1.2**	**0.098**	**0.63**	**0.28**
Benzo[k]fluoranthene	mg/kg	210	**0.33**	**0.47 J**	N/A	**0.43**	**3.3**	**0.41**	**0.12**	**3.1**	**0.095**	**2.1**	**0.34**
bis(2-Ethylhexyl)phthalate	mg/kg	160	0.028 B	0.099 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	mg/kg		0.07 U	**1.8**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	mg/kg	2,100	**0.21**	**0.27 J**	N/A	**0.26**	**2.2**	**0.66**	**0.21**	**6.4**	**0.12**	**2.7**	**0.64**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.018 J**	**0.03 J**	N/A	**0.039**	**0.24**	**0.2**	**0.06**	**0.94**	**0.04**	**0.21**	**0.15**
Diethylphthalate	mg/kg	660,000	0.07 U	0.099 U	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	mg/kg	30,000	**0.27**	**1.5 J**	N/A	**0.45**	**5.9**	**1.1**	**0.33**	**9.2**	**0.097**	**9.5**	**1.1**
Fluorene	mg/kg	30,000	0.072 U	**1.2**	N/A	**0.0091**	**1.3**	**0.031**	**0.0051 J**	**0.078**	**0.0017 J**	**4.2**	**0.017**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.049 J**	**0.086 J**	N/A	**0.091**	**0.59**	**0.46**	**0.15**	**3.2**	**0.1**	**0.68**	**0.34**
Naphthalene	mg/kg	8.6	0.072 U	**32.8**	**2,040**	**0.064**	**2.8**	**0.084**	**0.018**	**0.23**	**0.026**	**0.48**	**0.082**
Phenanthrene	mg/kg		**0.046 J**	**2.5**	N/A	**0.31**	**6.5**	**0.93**	**0.12**	**4.9**	**0.081**	**13.8**	**0.45**
Phenol	mg/kg	250,000	0.07 U	**1.1**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	mg/kg	23,000	**0.25**	**1 J**	N/A	**0.45**	**4.7**	**0.93**	**0.29**	**7.7**	**0.091**	**7.3**	**0.96**
TPH/Oil and Grease													
Diesel Range Organics	mg/kg	6,200	**20.5 J**	**124 J**	N/A	**71**	**287**	**46.9**	**32.1**	**498**	**22.2**	**4,090**	**75.5**
Gasoline Range Organics	mg/kg	6,200	13 U	**11.1 J**	N/A	10 U	11 U	10.6 U	10.2 U	18.3 U	9.8 U	10.8 U	12.2 U
Oil and Grease	mg/kg	6,200	N/A	N/A	N/A	**302**	**1,200**	**224**	**186**	**644**	**218**	**35,800**	**242**

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

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
B: This analyte was not detected substantially above the level of the associate method blank or field blank.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte in the sample.
J: The positive result reported for this analyte is a quantitative estimate.

Table 1 - Parcel B22 PORI Lagoon Characterization
Summary of Organics Detected in Soil (Soil Borings)

Parameter	Units	PAL	B22-119C-SB-9.5* 5/7/2018	B22-119D-SB-5* 5/7/2018	B22-119D-SB-9* 5/7/2018	B22-119E-SB-5* 5/7/2018	B22-119E-SB-10* 5/7/2018	B22-119E-SB-15* 5/7/2018	B22-119F-SB-5* 5/8/2018	B22-119F-SB-10* 5/8/2018	B22-119F-SB-15* 5/8/2018	B22-119G-SB-5* 5/8/2018	B22-119G-SB-10* 5/8/2018
Volatile Organic Compounds													
2-Butanone (MEK)	mg/kg	190,000	0.01 U	0.012 U	0.0088 U	0.011 U	0.0094 U	0.0091 U	0.011 U	0.0092 U	0.0093 U	0.0086 U	0.0097 U
Acetone	mg/kg	670,000	**0.06**	**0.15**	**0.067**	**0.11**	**0.051**	**0.051**	**0.059**	0.0092 U	**0.012**	**0.056**	**0.19**
Benzene	mg/kg	5.1	0.0052 U	0.006 U	0.0044 U	0.0053 U	**0.14**	**0.43**	0.0054 U	0.0046 U	0.0046 U	0.0043 U	0.0049 U
Carbon disulfide	mg/kg	3,500	0.0052 U	0.006 U	0.0044 U	0.0053 U	**0.0063**	**0.0022 J**	0.0054 U	0.0046 U	0.0046 U	0.0043 U	**0.0044 J**
Ethylbenzene	mg/kg	25	0.0052 U	0.006 U	0.0044 U	0.0053 U	**0.007**	**0.014**	0.0054 U	0.0046 U	0.0046 U	0.0043 U	0.0049 U
Isopropylbenzene	mg/kg	9,900	0.0052 U	0.006 U	0.0044 U	0.0053 U	**0.0019 J**	**0.002 J**	0.0054 U	0.0046 U	0.0046 U	0.0043 U	0.0049 U
Methyl Acetate	mg/kg	1,200,000	**0.12**	**0.019 J**	**0.038 J**	0.053 U	**0.021 J**	**0.21**	**0.0084 J**	0.046 U	0.046 U	**0.013 J**	0.049 U
Methyl tert-butyl ether (MTBE)	mg/kg	210	0.0052 U	0.006 U	0.0044 U	0.0053 U	0.0047 U	0.0045 U	0.0054 U	0.0046 U	0.0046 U	0.0043 U	**0.0013 J**
Styrene	mg/kg	35,000	0.0052 U	0.006 U	0.0044 U	0.0053 U	**0.0013 J**	**0.002 J**	0.0054 U	0.0046 U	0.0046 U	0.0043 U	0.0049 U
Toluene	mg/kg	47,000	0.0052 U	**0.002 J**	0.0044 U	0.0053 U	**0.041**	**0.13**	0.0054 U	0.0046 U	0.0046 U	0.0043 U	0.0049 U
Xylenes	mg/kg	2,800	0.016 U	0.018 U	0.013 U	0.016 U	**0.067**	**0.12**	0.016 U	0.014 U	0.014 U	0.013 U	0.015 U
Semi-Volatile Organic Comounds^													
1,1-Biphenyl	mg/kg	200	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dimethylphenol	mg/kg	16,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	mg/kg	3,000	**0.036**	**0.028**	**0.031**	**0.034**	**5.3**	**13.7**	**0.066**	**0.8**	**0.0035 J**	**0.028**	**0.12**
2-Methylphenol	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	45,000	**0.019**	**0.003 J**	**0.022**	**0.013**	**1.1**	**3.4**	**0.073**	**3.7**	**0.0014 J**	**0.31**	**0.25**
Acenaphthylene	mg/kg	45,000	**0.013**	**0.0082**	**0.022**	**0.053**	**2.6**	**5.7**	**0.054**	**0.55**	0.0086 U	**0.092**	**0.027**
Anthracene	mg/kg	230,000	**0.067**	**0.024**	**0.11**	**0.13**	**6.4**	**7.6**	**0.4**	**9.9**	**0.001 J**	**1.5**	**0.21**
Benz[a]anthracene	mg/kg	21	**0.2**	**0.091**	**0.41**	**0.45**	**9.7**	**8.7**	**1.3**	**13.4**	**0.0027 J**	**10.3**	**0.48**
Benzaldehyde	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[a]pyrene	mg/kg	2.1	**0.17**	**0.079**	**0.34**	**0.36**	**8.6**	**7.7**	**1.3**	**10.3**	**0.0011 J**	**6.9**	**0.48**
Benzo[b]fluoranthene	mg/kg	21	**0.35**	**0.19**	**0.68**	**0.85**	**11.5**	**10.7**	**2.3**	**18.3**	**0.0014 J**	**10**	**0.83**
Benzo[g,h,i]perylene	mg/kg		**0.056**	**0.034**	**0.11**	**0.097**	**1.6**	**1.2**	**0.48**	**2**	0.0086 U	**2.8**	**0.15**
Benzo[k]fluoranthene	mg/kg	210	**0.25**	**0.14**	**0.5**	**0.63**	**3.5**	**3.4**	**1.8**	**16**	0.0086 U	**4.2**	**0.65**
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	mg/kg		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	mg/kg	2,100	**0.16**	**0.09**	**0.3**	**0.35**	**6.2**	**5.2**	**0.99**	**7.9**	**0.0012 J**	**7.6**	**0.45**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.028**	**0.015**	**0.054**	**0.057**	**1.1**	**0.69**	**0.2**	**0.89**	0.0086 U	**1.4**	**0.065**
Diethylphthalate	mg/kg	660,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	mg/kg	30,000	**0.35**	**0.18**	**0.67**	**0.74**	**24.9**	**25.7**	**3**	**23.4**	**0.0047 J**	**17**	**0.78**
Fluorene	mg/kg	30,000	**0.026**	**0.0032 J**	**0.028**	**0.021**	**8.5**	**15.5**	**0.064**	**5.3**	**0.0017 J**	**0.1**	**0.24**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.064**	**0.036**	**0.13**	**0.13**	**2.5**	**1.6**	**0.53**	**2.2**	0.0086 U	**3.4**	**0.16**
Naphthalene	mg/kg	8.6	**0.055**	**0.043**	**0.039**	**0.047**	**36.3**	**131**	**0.15**	**1.3**	**0.013**	**0.025**	**0.43**
Phenanthrene	mg/kg		**0.32**	**0.1**	**0.44**	**0.47**	**33.1**	**42.9**	**1.4**	**29.6**	**0.0052 J**	**8.9**	**1.2**
Phenol	mg/kg	250,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	mg/kg	23,000	**0.27**	**0.16**	**0.53**	**0.69**	**14**	**14.8**	**2.5**	**17.8**	**0.0036 J**	**12.9**	**0.72**
TPH/Oil and Grease													
Diesel Range Organics	mg/kg	6,200	**49.3**	**59.2**	**37.6**	**229**	**395**	**246**	**177**	**370**	**8.7**	**38.4**	**275**
Gasoline Range Organics	mg/kg	6,200	14.2 U	9.9 U	15.7 U	11.5 U	11.5 U	12 U	22.9 U	10.8 U	10.3 U	14 U	11.4 U
Oil and Grease	mg/kg	6,200	**253**	**130**	**230 J**	**847**	**1,790**	**1,710**	**1,150**	**2,840**	**207 J**	**316**	**2,540**

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

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
B: This analyte was not detected substantially above the level of the associate method blank or field blank.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte in the sample.
J: The positive result reported for this analyte is a quantitative estimate.

Table 1 - Parcel B22 PORI Lagoon Characterization
Summary of Organics Detected in Soil (Soil Borings)

Parameter	Units	PAL	B22-119G-SB-15* 5/8/2018	B22-119H-SB-5* 5/8/2018	B22-119H-SB-11* 5/8/2018	B22-119H-SB-14* 5/8/2018	B22-119I-SB-5* 5/8/2018	B22-119I-SB-10* 5/8/2018	B22-119I-SB-15* 5/8/2018	B22-119J-SB-5* 5/9/2018	B22-119J-SB-10* 5/9/2018	B22-119K-SB-5* 5/9/2018	B22-119K-SB-9* 5/9/2018
Volatile Organic Compounds													
2-Butanone (MEK)	mg/kg	190,000	0.009 U	0.01 U	0.013 U	0.0095 U	0.0094 U	0.0089 U	0.011 U	0.0096 U	0.01 U	0.011 U	0.0076 U
Acetone	mg/kg	670,000	**0.031**	**0.018**	**0.047**	0.0095 U	**0.022**	**0.011**	**0.011**	**0.015**	**0.025**	**0.023**	0.0076 U
Benzene	mg/kg	5.1	0.0045 U	0.0052 U	**0.0063 J**	**0.004 J**	0.0047 U	0.0044 U	**0.0029 J**	0.0048 U	0.005 U	0.0057 U	0.0038 U
Carbon disulfide	mg/kg	3,500	**0.0053**	0.0052 U	**0.0065 J**	**0.0056**	**0.008**	**0.0027 J**	**0.013**	0.0048 U	0.005 U	0.0057 U	0.0038 U
Ethylbenzene	mg/kg	25	0.0045 U	0.0052 U	**0.0031 J**	0.0048 U	0.0047 U	0.0044 U	0.0053 U	0.0048 U	0.005 U	0.0057 U	0.0038 U
Isopropylbenzene	mg/kg	9,900	0.0045 U	0.0052 U	0.0065 U	0.0048 U	0.0047 U	0.0044 U	0.0053 U	0.0048 U	0.005 U	0.0057 U	0.0038 U
Methyl Acetate	mg/kg	1,200,000	**0.0014 J**	**0.0016 J**	**0.021 J**	0.048 U	**0.0034 J**	0.044 U	0.053 U	0.048 U	0.05 U	0.057 U	0.038 U
Methyl tert-butyl ether (MTBE)	mg/kg	210	0.0045 U	0.0052 U	0.0065 U	0.0048 U	0.0047 U	0.0044 U	0.0053 U	0.0048 U	0.005 U	0.0057 U	0.0038 U
Styrene	mg/kg	35,000	0.0045 U	0.0052 U	0.0065 U	0.0048 U	0.0047 U	0.0044 U	0.0053 U	0.0048 U	0.005 U	0.0057 U	0.0038 U
Toluene	mg/kg	47,000	0.0045 U	0.0052 U	0.0065 U	**0.0016 J**	**0.0015 J**	0.0044 U	**0.0023 J**	0.0048 U	0.005 U	0.0057 U	0.0038 U
Xylenes	mg/kg	2,800	0.014 U	0.016 U	0.019 U	**0.0067 J**	**0.0081 J**	0.013 U	**0.0086 J**	0.014 U	0.015 U	0.017 U	0.011 U
Semi-Volatile Organic Comounds^													
1,1-Biphenyl	mg/kg	200	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dimethylphenol	mg/kg	16,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	mg/kg	3,000	**0.02**	**0.096**	**12.3**	**0.28**	**5.3**	**0.0084 J**	**0.16**	**0.026**	**0.023**	**0.022**	**0.044**
2-Methylphenol	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	45,000	**0.035**	**0.0098**	**63.1**	**0.5**	**7.3**	**0.013**	**0.17**	**0.0031 J**	**0.0019 J**	**0.005 J**	**0.0065 J**
Acenaphthylene	mg/kg	45,000	**0.011**	**0.018**	**1.1 J**	**0.048 J**	**0.63**	**0.0017 J**	**0.031**	**0.0058 J**	**0.0047 J**	**0.017**	**0.019**
Anthracene	mg/kg	230,000	**0.048**	**0.087**	**232**	**1.5**	**6.7**	**0.016**	**0.3**	**0.023**	**0.019**	**0.058**	**0.049**
Benz[a]anthracene	mg/kg	21	**0.25**	**0.37**	**305**	**3.1**	**7.9**	**0.03**	**0.51**	**0.082**	**0.071**	**0.37**	**0.2**
Benzaldehyde	mg/kg	120,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo[a]pyrene	mg/kg	2.1	**0.26**	**0.34**	**252**	**2.7**	**7**	**0.026**	**0.48**	**0.077**	**0.054**	**0.35**	**0.18**
Benzo[b]fluoranthene	mg/kg	21	**0.45**	**0.71**	**409**	**4.5**	**12.3**	**0.046**	**0.84**	**0.19**	**0.16**	**0.71**	**0.37**
Benzo[g,h,i]perylene	mg/kg		**0.083**	**0.081**	**54**	**0.74**	**1.6**	**0.0098**	**0.12**	**0.025**	**0.019**	**0.094**	**0.042**
Benzo[k]fluoranthene	mg/kg	210	**0.35**	**0.56**	**109**	**3.5**	**9.7**	**0.036**	**0.66**	**0.15**	**0.12**	**0.55**	**0.29**
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	mg/kg		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	mg/kg	2,100	**0.23**	**0.31**	**230**	**2.2**	**5.5**	**0.023**	**0.39**	**0.099**	**0.083**	**0.32**	**0.14**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.033**	**0.043**	**26.1**	**0.3**	**0.63**	**0.0029 J**	**0.05**	**0.011**	**0.0076**	**0.043**	**0.019**
Diethylphthalate	mg/kg	660,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	mg/kg	30,000	**0.56**	**0.49**	**1,490**	**5.1**	**20.6**	**0.059**	**0.96**	**0.15**	**0.14**	**0.57**	**0.25**
Fluorene	mg/kg	30,000	**0.032**	**0.0072**	**140**	**0.78**	**9.6**	**0.01**	**0.37**	**0.0035 J**	**0.0019 J**	**0.0036 J**	**0.0082**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.084**	**0.094**	**61.4**	**0.77**	**1.7**	**0.0091**	**0.13**	**0.026**	**0.02**	**0.11**	**0.046**
Naphthalene	mg/kg	8.6	**0.033**	**0.076**	**47.1**	**1.1**	**6.2**	**0.058**	**0.82**	**0.027**	**0.026**	**0.034**	**0.06**
Phenanthrene	mg/kg		**0.31**	**0.33**	**1,890**	**5**	**34.8**	**0.054**	**1.6**	**0.1**	**0.088**	**0.23**	**0.18**
Phenol	mg/kg	250,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	mg/kg	23,000	**0.51**	**0.41**	**1,090**	**4**	**13.8**	**0.048**	**0.74**	**0.14**	**0.12**	**0.48**	**0.24**
TPH/Oil and Grease													
Diesel Range Organics	mg/kg	6,200	**5.3 J**	**64.5**	**3,120**	**276**	**247**	**25.2**	**95.7**	**44.1**	**120**	**78.6**	**60.4**
Gasoline Range Organics	mg/kg	6,200	9.2 U	12.7 U	14.4 U	11.4 U	10.8 U	9.9 U	11.8 U	10.5 U	12 U	11.6 U	10.1 U
Oil and Grease	mg/kg	6,200	**284**	**205**	**5,930**	**1,600**	**446**	**380**	**1,370**	**198**	**370**	**308**	**279**

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

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
B: This analyte was not detected substantially above the level of the associate method blank or field blank.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte in the sample.
J: The positive result reported for this analyte is a quantitative estimate.

Table 1 - Parcel B22 PORI Lagoon Characterization
Summary of Organics Detected in Soil (Soil Borings)

Parameter	Units	PAL	B22-119K-SB-15* 5/9/2018	B22-120-SB-1* 5/19/2016	B22-120-SB-8* 5/19/2016	B22-121-SB-1* 5/19/2016	B22-121-SB-9* 5/19/2016	B22-121-SB-10* 5/19/2016	B22-174-SB-1* 6/3/2016	B22-174-SB-4* 6/3/2016
Volatile Organic Compounds										
2-Butanone (MEK)	mg/kg	190,000	0.009 U	0.011 U	0.011 U	0.0097 U	**0.0056 J**	N/A	0.013 U	0.011 U
Acetone	mg/kg	670,000	**0.016**	0.011 U	0.011 U	0.0097 U	**0.022**	N/A	**0.013 J**	**0.0063 J**
Benzene	mg/kg	5.1	0.0045 U	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Carbon disulfide	mg/kg	3,500	**0.006**	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Ethylbenzene	mg/kg	25	0.0045 U	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Isopropylbenzene	mg/kg	9,900	0.0045 U	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Methyl Acetate	mg/kg	1,200,000	0.045 U	0.053 U	0.056 U	0.049 U	0.061 U	N/A	0.065 U	0.053 U
Methyl tert-butyl ether (MTBE)	mg/kg	210	0.0045 U	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Styrene	mg/kg	35,000	0.0045 U	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Toluene	mg/kg	47,000	0.0045 U	0.0053 U	0.0056 U	0.0049 U	0.0061 U	N/A	0.0065 U	0.0053 U
Xylenes	mg/kg	2,800	0.014 U	0.016 U	0.017 U	0.015 U	0.018 U	N/A	0.019 U	0.016 U
Semi-Volatile Organic Comounds^										
1,1-Biphenyl	mg/kg	200	N/A	**0.055 J**	**0.023 J**	**0.017 J**	**0.025 J**	N/A	**0.16**	**0.019 J**
2,4-Dimethylphenol	mg/kg	16,000	N/A	0.07 U	0.08 U	0.07 U	0.081 U	N/A	0.076 U	0.082 U
2-Methylnaphthalene	mg/kg	3,000	**0.021**	**0.069 J**	0.081 U	**0.11**	**0.061 J**	N/A	**0.024 J**	0.081 U
2-Methylphenol	mg/kg	41,000	N/A	0.07 U	0.08 U	0.07 U	0.081 U	N/A	0.076 U	0.082 U
3&4-Methylphenol(m&p Cresol)	mg/kg	41,000	N/A	0.14 U	0.16 U	0.14 U	**0.057 J**	N/A	0.15 U	0.16 U
Acenaphthene	mg/kg	45,000	**0.017**	**0.015 J**	**0.11**	**0.027**	**0.1**	N/A	0.077 U	**0.0082 J**
Acenaphthylene	mg/kg	45,000	**0.0049 J**	**0.58**	**0.026 J**	**0.052**	**0.054 J**	N/A	**0.02 J**	**0.031 J**
Anthracene	mg/kg	230,000	**0.031**	**0.21**	**0.68**	**0.13**	**0.21**	N/A	**0.051 J**	**0.058 J**
Benz[a]anthracene	mg/kg	21	**0.087**	**0.51**	**1.5**	**0.52**	**0.43**	N/A	**0.52**	**0.44**
Benzaldehyde	mg/kg	120,000	N/A	**0.017 J**	0.08 U	**0.021 J**	**0.023 J**	N/A	**0.017 J**	0.082 U
Benzo[a]pyrene	mg/kg	2.1	**0.091**	**0.57**	**1.3**	**0.47**	**0.39**	**0.9**	**0.57**	**0.52**
Benzo[b]fluoranthene	mg/kg	21	**0.17**	**1.3**	**2.8**	**1.1**	**0.86**	N/A	**1.2**	**1.1**
Benzo[g,h,i]perylene	mg/kg		**0.021**	**0.36**	**0.42**	**0.16**	**0.15**	N/A	**0.38**	**0.27**
Benzo[k]fluoranthene	mg/kg	210	**0.13**	**1.1**	**2.3**	**0.92**	**0.71**	N/A	**0.93**	**0.96**
bis(2-Ethylhexyl)phthalate	mg/kg	160	N/A	**0.038 J**	0.08 U	**0.018 J**	0.081 U	N/A	**0.062 J**	0.082 U
Carbazole	mg/kg		N/A	**0.032 J**	**0.26**	**0.04 J**	**0.11**	N/A	0.076 U	0.082 U
Chrysene	mg/kg	2,100	**0.097**	**0.47**	**1.2**	**0.48**	**0.38**	N/A	**0.44**	**0.44**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.0069 J**	**0.091**	**0.16**	**0.073**	**0.048 J**	N/A	**0.12**	**0.089**
Diethylphthalate	mg/kg	660,000	N/A	**0.17**	0.08 U	0.07 U	0.081 U	N/A	0.076 U	0.082 U
Fluoranthene	mg/kg	30,000	**0.18**	**0.8**	**3.2**	**1**	**1.3**	N/A	**0.52**	**0.38**
Fluorene	mg/kg	30,000	**0.025**	**0.038 J**	**0.15**	**0.036**	**0.12**	N/A	0.077 U	**0.01 J**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.019**	**0.28**	**0.42**	**0.17**	**0.14**	N/A	**0.33**	**0.25**
Naphthalene	mg/kg	8.6	**0.038**	**0.2**	**0.031 J**	**0.092**	**0.11**	N/A	**0.022 J**	**0.033 J**
Phenanthrene	mg/kg		**0.15**	**0.44**	**1.9**	**0.62**	**0.8**	N/A	**0.14**	**0.16**
Phenol	mg/kg	250,000	N/A	**0.019 J**	0.08 U	0.07 U	0.081 U	N/A	0.076 U	0.082 U
Pyrene	mg/kg	23,000	**0.16**	**0.66**	**2.7**	**0.85**	**0.94**	N/A	**0.5**	**0.34**
TPH/Oil and Grease										
Diesel Range Organics	mg/kg	6,200	**113**	**151**	**124**	**105**	**557**	N/A	**149**	**257**
Gasoline Range Organics	mg/kg	6,200	9.4 U	10.8 U	11.1 U	10.7 U	**7.8 J**	N/A	11.2 U	11.2 U
Oil and Grease	mg/kg	6,200	**1,430**	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
B: This analyte was not detected substantially above the level of the associate method blank or field blank.
R: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this analyte in the sample.
J: The positive result reported for this analyte is a quantitative estimate.

Table 2 - Parcel B22 PORI Lagoon Characterization
Summary of Organics Detected in Soil (Test Pits)

Parameter	Units	PAL	B22 Test Pit 1-12* 6/5/2018	B22 Test Pit 2-12* 6/5/2018	B22-TP-1-1* 6/17/2020	B22-TP-1-3* 6/17/2020	B22-TP-1-5* 6/17/2020	B22-TP-2-1* 6/17/2020	B22-TP-2-3* 6/17/2020	B22-TP-2-5* 6/17/2020	B22-TP-3-1* 6/17/2020
Volatile Organic Compounds											
1,2,4-Trichlorobenzene	mg/kg	110	0.0077 U	0.0066 U	0.31 U	**0.077 J**	0.37 U	0.33 U	0.32 U	0.46 U	0.0098 U
1,2-Dichlorobenzene	mg/kg	9,300	0.0077 U	0.0066 U	0.31 U	**0.15 J**	0.37 U	**0.15 J**	**0.086 J**	0.46 U	0.0098 U
1,4-Dichlorobenzene	mg/kg	11	0.0077 U	**0.031**	**0.26 J**	**0.71**	**0.17 J**	**1.4**	**0.93**	**0.51**	**0.0093 J**
2-Butanone (MEK)	mg/kg	190,000	0.015 U	**0.02**	0.63 U	**0.18 J**	0.75 U	**0.32 J**	0.63 U	0.92 U	0.02 U
Acetone	mg/kg	670,000	**0.06**	**0.08**	0.63 U	**0.18 J**	**0.27 J**	**0.32 J**	**0.22 J**	**0.33 J**	0.02 U
Carbon disulfide	mg/kg	3,500	0.0077 U	**0.024**	**0.18 J**	**0.37**	**0.17 J**	**0.24 J**	**0.32**	**0.14 J**	0.0098 U
Chloromethane	mg/kg	460	0.0077 U	0.0066 U	0.31 U	0.24 U	0.37 U	0.33 U	0.32 U	0.46 U	**0.0091 J**
Ethylbenzene	mg/kg	25	0.0077 U	0.0066 U	0.31 U	0.24 U	0.37 U	0.33 U	0.32 U	0.46 U	0.0098 U
Isopropylbenzene	mg/kg	9,900	0.0077 U	0.0066 U	0.31 U	0.24 U	0.37 U	0.33 U	0.32 U	0.46 U	0.0098 U
Methyl Acetate	mg/kg	1,200,000	0.077 U	0.066 U	**1.3 J**	**0.42 J**	**0.16 J**	**0.8 J**	**0.26 J**	**0.33 J**	0.098 U
Toluene	mg/kg	47,000	0.0077 U	0.0066 U	0.31 U	0.24 U	0.37 U	0.33 U	0.32 U	0.46 U	0.0098 U
Xylenes	mg/kg	2,800	0.023 U	0.02 U	0.94 U	0.72 U	1.1 U	1 U	0.95 U	1.4 U	0.029 U
Semi-Volatile Organic Compounds^											
2-Methylnaphthalene	mg/kg	3,000	**0.13 J**	**0.24 J**	**0.046 J**	**0.25 J**	**0.039 J**	0.49 U	**0.075**	1.8 U	2.4 U
Acenaphthene	mg/kg	45,000	**0.068 J**	**0.82**	**0.14**	**0.54 J**	**0.22**	**0.59**	**0.35**	**0.69 J**	**2.4**
Acenaphthylene	mg/kg	45,000	**0.13 J**	**0.25 J**	**0.14**	**0.32 J**	**0.061 J**	**0.13 J**	**0.15**	1.8 U	**0.3 J**
Anthracene	mg/kg	230,000	**0.15 J**	**0.48**	**0.18**	**0.39 J**	**0.13**	**0.36 J**	**0.49**	**0.84 J**	**2.9**
Benz[a]anthracene	mg/kg	21	**0.68**	**0.84**	**0.63**	**0.63 J**	**0.37**	**0.49**	**1**	**1.5 J**	**4.2**
Benzo[a]pyrene	mg/kg	2.1	**0.62**	**0.71**	**0.64**	**2.2**	**0.35**	**2.2**	**1**	**1.2 J**	**3.2**
Benzo[b]fluoranthene	mg/kg	21	**0.92**	**1.3**	**0.9**	**2.8**	**0.66**	**2.5**	**0.8**	**2**	**4.7**
Benzo[g,h,i]perylene	mg/kg		**0.32 J**	**0.5**	**0.5**	**0.66 J**	**0.32**	**0.34 J**	**0.58**	**0.64 J**	**2.2 J**
Benzo[k]fluoranthene	mg/kg	210	**0.35 J**	**1.2**	**0.16**	**0.18 J**	**0.17**	**0.14 J**	**0.84**	**0.4 J**	**1.3 J**
Chrysene	mg/kg	2,100	**0.88**	**1.2**	**1.1**	**1.3**	**0.82**	**1.2**	**1.9**	**5.8**	**8.1**
Dibenz[a,h]anthracene	mg/kg	2.1	0.45 U	0.43 U	**0.13**	0.69 U	**0.097 J**	0.49 U	**0.16**	1.8 U	2.4 U
Fluoranthene	mg/kg	30,000	**1.4**	**3.6**	**1.6**	**1.8**	**1.1**	**1.5**	**4.2**	**3.7**	**11**
Fluorene	mg/kg	30,000	**0.14 J**	**0.35 J**	**0.047 J**	**0.28 J**	**0.057 J**	**0.53**	**0.52**	**0.93 J**	**3.6**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.27 J**	**0.28 J**	**0.44**	**0.44 J**	**0.3**	**0.21 J**	**0.62**	**0.6 J**	**1.8 J**
Naphthalene	mg/kg	8.6	**0.31 J**	**0.26 J**	**0.11**	**0.18 J**	**0.069 J**	0.49 U	**0.12**	1.8 U	2.4 U
Phenanthrene	mg/kg		**0.55**	**0.83**	**0.27**	**0.52 J**	**0.22**	**0.2 J**	**0.51**	**3**	**12**
Pyrene	mg/kg	23,000	**1.3**	**4.1**	**1.4**	**2.2**	**1.4**	**1.6**	**3.1**	**3.6**	**11**
TPH/Oil and Grease											
Diesel Range Organics	mg/kg	6,200	**14,800**	**23,700**	**6,380**	**27,600**	**4,940**	**29,600**	**18,400**	**8,300**	**18,800**
Gasoline Range Organics	mg/kg	6,200	14.8 U	14.7 U	13.1 U	10.2 U	15.7 U	15.1 U	**8.9 J**	19.9 U	18.4 U
Oil and Grease	mg/kg	6,200	**32,100**	**44,100**	**41,700**	**77,900**	**40,500**	**116,000**	**103,000**	**38,600**	**113,000**

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

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
J: The positive result reported for this analyte is a quantitative estimate.

Table 2 - Parcel B22 PORI Lagoon Characterization
Summary of Organics Detected in Soil (Test Pits)

Parameter	Units	PAL	B22-TP-3-3* 6/17/2020	B22-TP-3-5* 6/17/2020	B22-TP-4-1* 6/17/2020	B22-TP-4-3* 6/17/2020	B22-TP-5-1* 6/17/2020	B22-TP-5-3* 6/17/2020	B22-TP-5-5* 6/17/2020	B22-TP-6-1* 6/17/2020	B22-TP-6-3* 6/17/2020	B22-TP-6-5* 6/17/2020
Volatile Organic Compounds												
1,2,4-Trichlorobenzene	mg/kg	110	0.42 U	0.46 U	0.41 U	**0.089 J**	0.35 U	0.41 U	0.51 U	0.45 U	0.77 U	0.0048 U
1,2-Dichlorobenzene	mg/kg	9,300	0.42 U	0.46 U	0.41 U	0.33 U	0.35 U	0.41 U	0.51 U	0.45 U	0.77 U	0.0048 U
1,4-Dichlorobenzene	mg/kg	11	0.42 U	**0.16 J**	0.41 U	**0.13 J**	0.35 U	0.41 U	0.51 U	0.45 U	0.77 U	0.0048 U
2-Butanone (MEK)	mg/kg	190,000	0.85 U	0.92 U	0.83 U	0.67 U	**0.095 J**	0.82 U	**0.42 J**	0.9 U	1.5 U	**0.0021 J**
Acetone	mg/kg	670,000	0.85 U	0.92 U	**0.52 J**	0.67 U	**0.34 J**	**0.38 J**	**0.6 J**	**0.43 J**	**0.7 J**	0.0096 U
Carbon disulfide	mg/kg	3,500	**1**	0.46 U	0.41 U	**0.14 J**	0.35 U	0.41 U	**0.31 J**	0.45 U	0.77 U	**0.002 J**
Chloromethane	mg/kg	460	0.42 U	0.46 U	0.41 U	0.33 U	0.35 U	0.41 U	0.51 U	0.45 U	0.77 U	0.0048 U
Ethylbenzene	mg/kg	25	0.42 U	0.46 U	0.41 U	0.33 U	0.35 U	0.41 U	0.51 U	0.45 U	0.77 U	**0.0013 J**
Isopropylbenzene	mg/kg	9,900	0.42 U	0.46 U	0.41 U	**0.091 J**	0.35 U	0.41 U	**0.34 J**	0.45 U	0.77 U	**0.0053**
Methyl Acetate	mg/kg	1,200,000	**0.24 J**	**0.11 J**	**3.4 J**	**0.71 J**	**2.2 J**	**2.3 J**	**0.88 J**	**0.97 J**	**1.1 J**	0.048 U
Toluene	mg/kg	47,000	0.42 U	0.46 U	0.41 U	0.33 U	**0.073 J**	0.41 U	0.51 U	0.45 U	0.77 U	0.0048 U
Xylenes	mg/kg	2,800	1.3 U	1.4 U	1.2 U	1 U	1.1 U	1.2 U	1.5 U	1.3 U	2.3 U	**0.0047 J**
Semi-Volatile Organic Compounds^												
2-Methylnaphthalene	mg/kg	3,000	**0.13**	**0.038 J**	**1.7**	**6.4**	**0.73**	**0.86**	**1.8**	**0.16**	**0.58**	**0.44**
Acenaphthene	mg/kg	45,000	**0.41**	**0.24**	**5.5**	**9.9**	**0.38 J**	**0.14**	**5.8**	**0.18**	**3.4**	**6.2**
Acenaphthylene	mg/kg	45,000	**0.051**	**0.05 J**	**0.69**	**4.8**	0.56 U	**0.1**	**6.2**	**0.062 J**	**0.14 J**	**0.32**
Anthracene	mg/kg	230,000	**0.81**	**0.2**	**2.8**	**9.3**	**0.22 J**	**0.1**	**3.8**	**0.068**	**0.43**	**2.9**
Benz[a]anthracene	mg/kg	21	**1.6**	**0.36**	**2.2**	**10**	**0.32 J**	**0.22**	**4.5**	**0.15**	**0.57**	**1.5**
Benzo[a]pyrene	mg/kg	2.1	**1.3**	**0.31**	**2**	**11**	**0.38 J**	**0.22**	**4.9**	**0.19**	**0.53**	**1**
Benzo[b]fluoranthene	mg/kg	21	**1.6**	**0.42**	**2**	**11**	**0.4 J**	**0.24**	**5**	**0.17**	**0.7**	**0.94**
Benzo[g,h,i]perylene	mg/kg		**0.57**	**0.17**	**1.1**	**5.7**	**0.28 J**	**0.16**	**3.4**	**0.096**	**0.33 J**	**0.37**
Benzo[k]fluoranthene	mg/kg	210	**0.49**	**0.087 J**	**1.1**	**4.1**	**0.1 J**	**0.063**	**2**	**0.037 J**	**0.16 J**	**0.36**
Chrysene	mg/kg	2,100	**1.6**	**1**	**1.8**	**9.3**	**0.72**	**0.26**	**4.1**	**0.36**	**0.94**	**1.2**
Dibenz[a,h]anthracene	mg/kg	2.1	**0.22**	0.11 U	**0.11**	**1.5**	0.56 U	**0.04 J**	**0.87 J**	0.064 U	**0.11 J**	**0.11 J**
Fluoranthene	mg/kg	30,000	**3.6**	**0.8**	**5.1**	**25**	**0.6**	**0.36**	**9.6**	**0.18**	**1.2**	**5.2**
Fluorene	mg/kg	30,000	**0.38**	**0.14**	**3.6**	**10**	**0.43 J**	**0.18**	**5.6**	**0.08**	**0.26 J**	**3.7**
Indeno[1,2,3-c,d]pyrene	mg/kg	21	**0.71**	**0.15**	**1**	**6.1**	**0.19 J**	**0.14**	**2.4**	**0.07**	**0.24 J**	**0.39**
Naphthalene	mg/kg	8.6	**0.16**	**0.028 J**	**0.62**	**3.2**	**0.4 J**	**0.37**	**1.3 J**	**0.26**	**0.53**	**1**
Phenanthrene	mg/kg		**3.6**	**0.5**	**10**	**31**	**1.3**	**0.59**	**18**	**0.17**	**0.73**	**11**
Pyrene	mg/kg	23,000	**2.8**	**0.89**	**4.1**	**19**	**1.3**	**0.42**	**8.2**	**0.57**	**2**	**4.1**
TPH/Oil and Grease												
Diesel Range Organics	mg/kg	6,200	**18,800**	**5,500**	**17,200**	**46,900**	**18,400**	**9,220**	**26,800**	**7,070**	**5,470**	**1,030**
Gasoline Range Organics	mg/kg	6,200	17.9 U	19.8 U	17.4 U	14 U	**10.4 J**	17.1 U	20.8 U	19.2 U	32.6 U	**13.2**
Oil and Grease	mg/kg	6,200	**119,000**	**63,200**	**92,100**	**198,000**	**170,000**	**61,600**	**163,000**	**97,400**	**91,900**	**8,720**

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

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
J: The positive result reported for this analyte is a quantitative estimate.

Table 3 - Parcel B22 PORI Lagoon Characterization
Summary of Organics Detected in Groundwater

Parameter	Units	PAL	B22-119-PZ* 5/31/2018	B22-119-PZ* 5/28/2020	B22-119I-PZ* 5/31/2018	B22-119I-PZ* 6/1/2018	B22-119J-PZ* 5/31/2018	B22-119M-PZ* 5/27/2020	B22-119N-PZ* 5/27/2020	B22-119Q-PZ* 5/28/2020	B22-119R-PZ* 5/27/2020	B22-119S-PZ* 5/27/2020
Volatile Organic Compounds												
Acetone	µg/L	14,000	**58.3**	**37.4 J**	**58.3**	**18.9**	**6.9 J**	**6.3 J**	10 U	10 U	10 U	**8.2 J**
Benzene	µg/L	5	**859**	**835**	1 U	1 U	1 U	**0.75 J**	**1.6**	**3.2**	**0.63 J**	**50.5**
Bromomethane	µg/L	7.5	5 U	5 U	1 U	1 U	1 U	1 U	1.1 B	1 U	1 U	1 U
Carbon disulfide	µg/L	810	5 U	5 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	1 U
Chloromethane	µg/L	190	5 U	5 U	1 U	**2**	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	µg/L	700	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.64 J**
Methyl tert-butyl ether (MTBE)	µg/L	14	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.61 J**	1 U
Toluene	µg/L	1,000	**124**	**79.4**	**0.36 J**	1 U	1 U	**0.34 J**	**0.63 J**	**0.8 J**	**0.32 J**	**9.7**
Xylenes	µg/L	10,000	**49.3**	**24.6**	3 U	3 U	3 U	3 U	3 U	3 U	3 U	**4.4**
Semi-Volatile Organic Compounds^												
1,1-Biphenyl	µg/L	0.83	**24.4 J**	N/A	N/A	1 U	0.98 U	N/A	N/A	N/A	N/A	N/A
1,4-Dioxane	µg/L	0.46	**0.87**	**0.69**	N/A	0.1 U	0.098 U	**0.18**	0.1 U	**0.21**	**3**	0.1 U
2,4-Dimethylphenol	µg/L	360	**673**	N/A	N/A	1 U	0.98 U	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	µg/L	36	**75.6**	**31.3**	N/A	**0.074 J**	0.098 U	**5.2**	**2**	**0.27**	**1.6**	**3.7**
2-Methylphenol	µg/L	930	**1,820**	N/A	N/A	1 U	0.98 U	N/A	N/A	N/A	N/A	N/A
3&4-Methylphenol(m&p Cresol)	µg/L	930	**1,260**	N/A	N/A	2 U	2 U	N/A	N/A	N/A	N/A	N/A
Acenaphthene	µg/L	530	**29.7**	**36.6**	N/A	**0.49**	0.098 U	**8**	**0.99**	**0.19**	**1.8**	**2.9**
Acenaphthylene	µg/L	530	**38.4**	**4.9**	N/A	0.1 U	0.098 U	**0.3**	**0.61**	**0.069 J**	**0.081 J**	**0.68**
Anthracene	µg/L	1,800	**72.7**	**18.9**	N/A	**0.19**	**0.066 J**	**2.7**	**1.8**	**0.096 J**	**0.46**	**2**
Benz[a]anthracene	d	0.03	**65.8**	**4.4**	N/A	**0.14**	0.098 U	**0.3**	**4.2**	**0.21**	**0.11**	**2**
Benzo[a]pyrene	µg/L	0.2	**57.3**	**3**	N/A	**0.12**	0.098 U	**0.037 J**	**3.8**	**0.2**	**0.038 J**	**1.7**
Benzo[b]fluoranthene	µg/L	0.25	**77.9**	**5.4**	N/A	**0.19**	0.098 U	**0.07 J**	**6.5**	**0.44**	**0.057 J**	**1.8**
Benzo[g,h,i]perylene	µg/L		**18.7**	**1.3**	N/A	**0.06 J**	0.098 U	0.095 U	**1.9**	**0.13**	0.095 U	**0.78**
Benzo[k]fluoranthene	µg/L	2.5	**27.7**	**4.4**	N/A	**0.07 J**	0.098 U	0.095 U	**5.6**	**0.36**	0.095 U	**0.69**
bis(2-Ethylhexyl)phthalate	µg/L	6	98 U	N/A	N/A	**0.32 J**	0.98 U	N/A	N/A	N/A	N/A	N/A
Caprolactam	µg/L	9,900	245 U	N/A	N/A	**0.4 J**	2.5 U	N/A	N/A	N/A	N/A	N/A
Carbazole	µg/L		**208**	N/A	N/A	**1.8**	0.98 U	N/A	N/A	N/A	N/A	N/A
Chrysene	µg/L	25	**63.8**	**3.6**	N/A	**0.13**	0.098 U	**0.15**	**4.4**	**0.23**	**0.07 J**	**1.6**
Dibenz[a,h]anthracene	µg/L	0.025	**6.5**	**0.43 J**	N/A	0.1 U	0.098 U	0.095 U	**0.82**	**0.043 J**	0.095 U	**0.27**
Fluoranthene	µg/L	800	**181**	**20.1**	N/A	**0.52**	0.098 U	**5.8**	**7.7**	**0.42**	**0.53**	**5.7**
Fluorene	µg/L	290	**96.6**	**41.9**	N/A	**0.43**	0.098 U	**8.8**	**1.7**	**0.22**	**1.9**	**4.8**
Indeno[1,2,3-c,d]pyrene	µg/L	0.25	**20.5**	**1.3**	N/A	**0.051 J**	0.098 U	0.095 U	**2**	**0.11**	0.095 U	**0.83**
Naphthalene	µg/L	0.12	**2,550**	**886**	N/A	**0.15**	**0.041 J**	**39**	**1.1**	**6.2**	**5.2**	**120**
Phenanthrene	µg/L		**537**	**73.6**	N/A	**0.87**	0.098 U	**18.8**	**7.4**	**0.47**	**1.9**	**8.7**
Phenol	µg/L	5,800	**437**	N/A	N/A	1 U	0.98 U	N/A	N/A	N/A	N/A	N/A
Pyrene	µg/L	120	**126**	**13.8**	N/A	**0.39**	0.098 U	**3.7**	**6.2**	**0.42**	**0.33**	**3.7**
TPH/Oil and Grease												
Diesel Range Organics	µg/L	47	**17,200**	**19,700**	N/A	**363**	**282**	**1,700**	**12,000**	**2,770**	**1,600**	**1,900**
Gasoline Range Organics	µg/L	47	**2,460**	**1,470**	200 U	200 U	200 U	200 U	200 U	200 U	200 U	**129 J**
Oil and Grease	µg/L	47	**1,700 J**	**1,300 J**	N/A	4,750 U	4,770 U	**9,000**	4,750 U	**1,200 J**	**2,100 J**	**1,600 J**

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

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

Table 4 - Parcel B22 PORI Lagoon Characterization
Summary of PID Detections (Test Pits)

Test Pit Location	ID	Depth (ft. bgs)	PID Reading (ppm)
B22 TP 1-12	B22 TP 1-12	12*	NA
B22 TP 2-12	B22 TP 2-12	12*	NA
B22-TP-1	B22-TP-1-1	1	0.0
	B22-TP-1-3	3	0.2
	B22-TP-1-5	5	0.0
B22-TP-2	B22-TP-2-1	1	0.0
	B22-TP-2-3	3	3.7
	B22-TP-2-5	5	1.8
B22-TP-3	B22-TP-3-1	1	0.5
	B22-TP-3-3	3	0.0
	B22-TP-3-5	5	8.3
B22-TP-4	B22-TP-4-1	1	0.0
	B22-TP-4-3	3	0.0
	B22-TP-4-5	5	NA
B22-TP-5	B22-TP-5-1	1	0.6
	B22-TP-5-3	3	0.0
	B22-TP-5-5	5	0.0
B22-TP-6	B22-TP-6-1	1	1.2
	B22-TP-6-3	3	0.0
	B22-TP-6-5	5	0.0

bgs: below ground surface
ppm: parts per million
NA: PID readings are not available

*Measured in reference to the surrounding ground surface at the top of the PORI Lagoon (Remaining sample depths are in reference to the top of the PORI Lagoon sediments.)

Table 5 - Parcel B22 PORI Lagoon Characterization
Cumulative Vapor Intrusion Criteria Comparison

				B22-119I-PZ* 5/31/2018		B22-119I-PZ* 6/1/2018		B22-119J-PZ* 5/31/2018		B22-119M-PZ* 5/27/2020		B22-119N-PZ* 5/27/2020	
Parameter	Type	Organ Systems	VI Screening Criteria	Conc. (ug/L)	Risk/ Hazard	Conc. (ug/L)	Risk/ Hazard	Conc. (ug/L)	Risk/ Hazard	Conc. (ug/L)	Risk/ Hazard	Conc. (ug/L)	Risk/ Hazard
Cancer Risk													
Naphthalene	SVOC		200	NA	-	0.15	7.5E-09	0.041 J	2.1E-09	39	2.0E-06	1.1	5.5E-08
Benzene	VOC		69	1 U	0	1 U	0	1 U	0	0.75 J	1.1E-07	1.6	2.3E-07
Ethylbenzene	VOC		150	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0
Methyl tert-butyl ether	VOC		20,000	1 U	0	1 U	0	1 U	0	1 U	0	1 U	0
Cumulative Vapor Intrusion Cancer Risk					0		8E-09		2E-09		2E-06		3E-07
Non-Cancer Hazard													
1,1-Biphenyl	SVOC	Urinary	140	NA	-	1 U	0	0.98 U	0	NA	-	NA	-
Cumulative Vapor Intrusion Non-Cancer Hazard					-		0		0		-		-

				B22-119-PZ* 5/28/2020		B22-119-PZ* 5/31/2018		B22-119Q-PZ* 5/28/2020		B22-119R-PZ* 5/27/2020		B22-119S-PZ* 5/27/2020	
Parameter	Type	Organ Systems	VI Screening Criteria	Conc. (ug/L)	Risk/ Hazard	Conc. (ug/L)	Risk/ Hazard	Conc. (ug/L)	Risk/ Hazard	Conc. (ug/L)	Risk/ Hazard	Conc. (ug/L)	Risk/ Hazard
Cancer Risk													
Naphthalene	SVOC		200	886	4.4E-05	2,550	1.3E-04	6.2	3.1E-07	5.2	2.6E-07	120	6.0E-06
Benzene	VOC		69	835	1.2E-04	859	1.2E-04	3.2	4.6E-07	0.63 J	9.1E-08	50.5	7.3E-06
Ethylbenzene	VOC		150	5 U	0	5 U	0	1 U	0	1 U	0	0.64 J	4.3E-08
Methyl tert-butyl ether	VOC		20,000	5 U	0	5 U	0	1 U	0	0.61 J	3.1E-10	1 U	0
Cumulative Vapor Intrusion Cancer Risk					2E-04		3E-04		8E-07		4E-07		1E-05
Non-Cancer Hazard													
1,1-Biphenyl	SVOC	Urinary	140	NA	-	24.4 J	0.17	NA	-	NA	-	NA	-
Cumulative Vapor Intrusion Non-Cancer Hazard					-		0		-		-		-

Highlighted values indicate exceedances of the cumulative vapor intrusion criteria:
TCR>1E-05 THI>1
Conc. = Concentration
NA = Not Analyzed
*Indicates non-validated data

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
J: The positive result reported for this analyte is a quantitative estimate.

Table 6 - Parcel B22 PORI Lagoon Characterization
NAPL Gauging Activities

Sample ID	Install Date	Abandon Date	Well Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Riser Stick-Up (ft.)	5/19/2016			5/20/2016			5/23/2016		
						Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)
B22-119-PZ	5/19/2016	10/11/2016	22	7-22	2.63	-	11.82	-	-	11.23	-	-	10.93	-
B22-119-PZ	5/8/2018	6/8/2020	20	5-20	2.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119I-PZ	5/8/2018	^ 9/3/2019	24	5-24	3.13	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119J-PZ	5/9/2018	6/8/2020	16	5-16	4.13	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119K-PZ	5/9/2018	6/8/2020	24.5	4.5-24.5	5.45	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119L-PZ	10/12/2018	6/8/2020	17	7-17	4.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119M-PZ	10/12/2018	6/8/2020	18	8-18	5.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119N-PZ	10/12/2018	6/8/2020	20	10-20	5.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119O-PZ	10/12/2018	6/8/2020	20	10-20	2.69	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119P-PZ	10/12/2018	6/8/2020	20	10-20	1.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119Q-PZ	10/12/2018	6/8/2020	19	9-19	3.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119R-PZ	5/21/2020	6/8/2020	19	9-19	4.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119S-PZ	5/21/2020	6/8/2020	20	10-20	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample ID	Install Date	Abandon Date	Well Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Riser Stick-Up (ft.)	6/2/2016			7/22/2016			10/11/2016		
						Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)
B22-119-PZ	5/19/2016	10/11/2016	22	7-22	2.63	-	11.15	-	-	11.31	-	Abandoned		
B22-119-PZ	5/8/2018	6/8/2020	20	5-20	2.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119I-PZ	5/8/2018	^ 9/3/2019	24	5-24	3.13	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119J-PZ	5/9/2018	6/8/2020	16	5-16	4.13	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119K-PZ	5/9/2018	6/8/2020	24.5	4.5-24.5	5.45	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119L-PZ	10/12/2018	6/8/2020	17	7-17	4.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119M-PZ	10/12/2018	6/8/2020	18	8-18	5.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119N-PZ	10/12/2018	6/8/2020	20	10-20	5.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119O-PZ	10/12/2018	6/8/2020	20	10-20	2.69	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119P-PZ	10/12/2018	6/8/2020	20	10-20	1.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119Q-PZ	10/12/2018	6/8/2020	19	9-19	3.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119R-PZ	5/21/2020	6/8/2020	19	9-19	4.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119S-PZ	5/21/2020	6/8/2020	20	10-20	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Applicable
NM = Not Measured
SHADED = NAPL Detection

bgs = below ground surface
^ indicates piezometer was missing or destroyed

Table 6 - Parcel B22 PORI Lagoon Characterization
NAPL Gauging Activities

Sample ID	Install Date	Abandon Date	Well Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Riser Stick-Up (ft.)	5/8/2018			5/9/2018			5/10/2018		
						Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)
B22-119-PZ	5/19/2016	10/11/2016	22	7-22	2.63	Abandoned								
B22-119-PZ	5/8/2018	6/8/2020	20	5-20	2.86	-	17.11	-	NM	NM	NM	-	11.62	-
B22-119I-PZ	5/8/2018	^ 9/3/2019	24	5-24	3.13	-	27.37	-	NM	NM	NM	-	14.18	-
B22-119J-PZ	5/9/2018	6/8/2020	16	5-16	4.13	NA	NA	NA	-	14.13	-	NM	NM	NM
B22-119K-PZ	5/9/2018	6/8/2020	24.5	4.5-24.5	5.45	NA	NA	NA	-	26.95	-	NM	NM	NM
B22-119L-PZ	10/12/2018	6/8/2020	17	7-17	4.83	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119M-PZ	10/12/2018	6/8/2020	18	8-18	5.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119N-PZ	10/12/2018	6/8/2020	20	10-20	5.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119O-PZ	10/12/2018	6/8/2020	20	10-20	2.69	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119P-PZ	10/12/2018	6/8/2020	20	10-20	1.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119Q-PZ	10/12/2018	6/8/2020	19	9-19	3.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119R-PZ	5/21/2020	6/8/2020	19	9-19	4.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119S-PZ	5/21/2020	6/8/2020	20	10-20	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample ID	Install Date	Abandon Date	Well Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Riser Stick-Up (ft.)	5/11/2018			8/24/2018			10/12/2018		
						Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)
B22-119-PZ	5/19/2016	10/11/2016	22	7-22	2.63	Abandoned								
B22-119-PZ	5/8/2018	6/8/2020	20	5-20	2.86	NM	NM	NM	-	11.70	-	NM	NM	NM
B22-119I-PZ	5/8/2018	^ 9/3/2019	24	5-24	3.13	NM	NM	NM	-	8.51	-	NM	NM	NM
B22-119J-PZ	5/9/2018	6/8/2020	16	5-16	4.13	-	14.16	-	-	16.43	-	NM	NM	NM
B22-119K-PZ	5/9/2018	6/8/2020	24.5	4.5-24.5	5.45	**14.33**	**14.47**	**0.14**	**15.30**	**15.32**	**0.02**	NM	NM	NM
B22-119L-PZ	10/12/2018	6/8/2020	17	7-17	4.83	NA	NA	NA	NA	NA	NA	-	15.76	-
B22-119M-PZ	10/12/2018	6/8/2020	18	8-18	5.05	NA	NA	NA	NA	NA	NA	-	14.91	-
B22-119N-PZ	10/12/2018	6/8/2020	20	10-20	5.05	NA	NA	NA	NA	NA	NA	-	15.64	-
B22-119O-PZ	10/12/2018	6/8/2020	20	10-20	2.69	NA	NA	NA	NA	NA	NA	-	15.84	-
B22-119P-PZ	10/12/2018	6/8/2020	20	10-20	1.00	NA	NA	NA	NA	NA	NA	-	15.79	-
B22-119Q-PZ	10/12/2018	6/8/2020	19	9-19	3.86	NA	NA	NA	NA	NA	NA	-	19.48	-
B22-119R-PZ	5/21/2020	6/8/2020	19	9-19	4.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119S-PZ	5/21/2020	6/8/2020	20	10-20	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Applicable
NM = Not Measured
SHADED = NAPL Detection

bgs = below ground surface
^ indicates piezometer was missing or destroyed

Table 6 - Parcel B22 PORI Lagoon Characterization
NAPL Gauging Activities

Sample ID	Install Date	Abandon Date	Well Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Riser Stick-Up (ft.)	10/15/2018			11/14/2018			9/3/2019		
						Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)
B22-119-PZ	5/19/2016	10/11/2016	22	7-22	2.63	Abandoned								
B22-119-PZ	5/8/2018	6/8/2020	20	5-20	2.86	NM	NM	NM	NM	NM	NM	-	12.27	-
B22-119I-PZ	5/8/2018	^ 9/3/2019	24	5-24	3.13	NM	NM	NM	NM	NM	NM	Destroyed		
B22-119J-PZ	5/9/2018	6/8/2020	16	5-16	4.13	NM	NM	NM	NM	NM	NM	-	14.89	-
B22-119K-PZ	5/9/2018	6/8/2020	24.5	4.5-24.5	5.45	NM	NM	NM	NM	NM	NM	**trace**	**15.09**	**trace**
B22-119L-PZ	10/12/2018	6/8/2020	17	7-17	4.83	-	15.88	-	-	15.21	-	-	15.34	-
B22-119M-PZ	10/12/2018	6/8/2020	18	8-18	5.05	-	15.03	-	-	14.55	-	-	14.86	-
B22-119N-PZ	10/12/2018	6/8/2020	20	10-20	5.05	-	15.40	-	-	14.61	-	-	14.68	-
B22-119O-PZ	10/12/2018	6/8/2020	20	10-20	2.69	-	15.73	-	-	14.83	-	-	12.25	-
B22-119P-PZ	10/12/2018	6/8/2020	20	10-20	1.00	-	14.63	-	-	13.79	-	-	11.16	-
B22-119Q-PZ	10/12/2018	6/8/2020	19	9-19	3.86	-	17.17	-	-	16.12	-	-	13.83	-
B22-119R-PZ	5/21/2020	6/8/2020	19	9-19	4.22	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-119S-PZ	5/21/2020	6/8/2020	20	10-20	2.83	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample ID	Install Date	Abandon Date	Well Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Riser Stick-Up (ft.)	5/21/2020			5/26/2020			6/8/2020		
						Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)	Depth to NAPL (ft. TOC)	Depth to Water (ft. TOC)	NAPL Thickness (ft.)
B22-119-PZ	5/19/2016	10/11/2016	22	7-22	2.63	Abandoned								
B22-119-PZ	5/8/2018	6/8/2020	20	5-20	2.86	NM	NM	NM	NM	NM	NM	-	11.33	Abandoned
B22-119I-PZ	5/8/2018	^ 9/3/2019	24	5-24	3.13	Destroyed								
B22-119J-PZ	5/9/2018	6/8/2020	16	5-16	4.13	NM	NM	NM	NM	NM	NM	-	13.87	Abandoned
B22-119K-PZ	5/9/2018	6/8/2020	24.5	4.5-24.5	5.45	NM	NM	NM	NM	NM	NM	**13.10**	**13.27**	Abandoned
B22-119L-PZ	10/12/2018	6/8/2020	17	7-17	4.83	NM	NM	NM	NM	NM	NM	-	14.20	Abandoned
B22-119M-PZ	10/12/2018	6/8/2020	18	8-18	5.05	NM	NM	NM	NM	NM	NM	**13.72**	**13.74**	Abandoned
B22-119N-PZ	10/12/2018	6/8/2020	20	10-20	5.05	NM	NM	NM	NM	NM	NM	-	13.50	Abandoned
B22-119O-PZ	10/12/2018	6/8/2020	20	10-20	2.69	NM	NM	NM	NM	NM	NM	-	11.22	Abandoned
B22-119P-PZ	10/12/2018	6/8/2020	20	10-20	1.00	NM	NM	NM	NM	NM	NM	-	10.22	Abandoned
B22-119Q-PZ	10/12/2018	6/8/2020	19	9-19	3.86	NM	NM	NM	NM	NM	NM	-	12.75	Abandoned
B22-119R-PZ	5/21/2020	6/8/2020	19	9-19	4.22	-	13.67	-	-	13.03	-	-	12.99	Abandoned
B22-119S-PZ	5/21/2020	6/8/2020	20	10-20	2.83	-	19.50	-	-	11.51	-	-	11.52	Abandoned

NA = Not Applicable
NM = Not Measured
SHADED = NAPL Detection

bgs = below ground surface
^ indicates piezometer was missing or destroyed

ATTACHMENT 1

ARM Group LLC
Engineers and Scientists

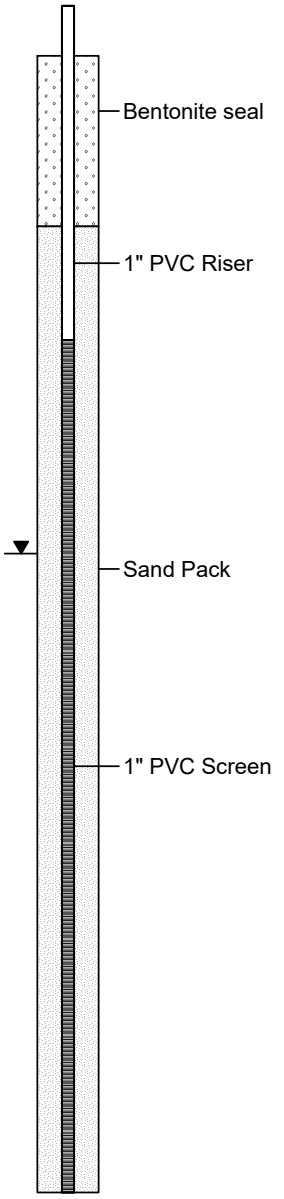
Boring ID: B22-119-SB/PZ

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 5/8/18
Piezometer Installation Date	: 5/8/18
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 571288.15
Easting (US ft)	: 1461171.37
0-Hr DTW	: 17.11' TOC
48-Hr DTW	: 11.62' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-				
		-				
	60	0.7		(0-5') SAND with GRAVEL, medium to dense, dark brown to black, no plasticity, no cohesion	SW	Trace SLAG COBBLES throughout
		0.5				
		1.3	B22-119-SB-5			
5		-		(5-20') CLAY with SAND and GRAVEL, pale brown to bluish gray, firm, medium plasticity, cohesive, slightly moist to wet at 15' bgs		Wood at 5.5' bgs
		42.5				
	90	180.9				Oil throughout from 7-10' bgs, with prominent oil at 8' bgs and 9' bgs
		237.6				
		18.5				SLAG GRAVEL lens at 7.5' bgs
10		-				
		10.2				
	100	27.8			CL	
		1.4				
		1.5	B22-119-SB-15			
15		-				Wet at 15' bgs
		-				
	90	-				
		-				
		-				Trace NAPL at 19' bgs
20				End of boring		



Boring terminated at 20' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface
AMSL: Above mean sea level

Riser Stickup: 2.86'
Riser: 0 - 5' bgs
Screen: 5 - 20' bgs [Slot Size: 0.010"]
Sand Pack: 3 - 20' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 3' bgs [Grain Size: 3/8" chips]

ARM Group LLC
Engineers and Scientists

Boring ID: B22-119A-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 5/7/18
Weather	: Sunny 60s
Northing (US ft)	: 571315.97
Easting (US ft)	: 1461258.41

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	60	-		(0-9.5') SAND with GRAVEL, medium to coarse, dense, light to dark brown, slightly moist, no plasticity, no cohesion	SW	
		-				
		0.3				
		0.0				
		0.6	B22-119A-SB-5			BRICK at 4' bgs
5	40	-				
		-				
		-				
		0.2	B22-119A-SB-9			
		0.0				
10				(9.5-10') CONCRETE		
	100	-		(10-12.5') GRAVEL with SAND, black to pale brown, wet, no plasticity, no cohesion	GW	Wet at 10.5' bgs
		-				
		-				
		-				
				End of boring		
15						

Boring terminated at 12.5' bgs due to refusal.

ARM Group LLC
Engineers and Scientists

Boring ID: B22-119B-SB

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 5/7/18
Weather	: Sunny 60s
Northing (US ft)	: 571290.82
Easting (US ft)	: 1461273.18

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	60	-		(0-10.5') SAND with GRAVEL, medium to coarse, dense, slightly moist, light brown to black, no plasticity, no cohesion		
		-				
		5.1				
		4.2				
		0.6	B22-119B-SB-5			
5		-			SW	
	40	-				
		-				BRICK at 8' bgs
		2.2				
		0.0	B22-119B-SB-9.5			
10		-		(10.5-13') GRAVEL with SAND, dense, dark gray to black, wet, no plasticity, no cohesion		Wet at 10.5' bgs
		-			GW	
	80	-				
		-		(13-15') CLAY with SAND and GRAVEL, firm, bluish gray to black, wet, low plasticity, cohesive		Odor from 11-15' bgs
		-			CL	
		1.3	B22-119B-SB-15			
15				End of boring		

Boring terminated at 12.5' bgs due to refusal

ARM Group LLC
Engineers and Scientists

Boring ID: B22-119C-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 5/7/18
Weather	: Sunny 60s
Northing (US ft)	: 571318.83
Easting (US ft)	: 1461230.72

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	60	-		(0-9.4') SAND with GRAVEL, medium to coarse, dense, pale yellow to black, slightly moist, no plasticity, no cohesion		
		-				
		0.0				
		0.1				
		0.0	B22-119C-SB-5		SW	
5						
	60	-				
		-				
		3.1				BRICK COBBLES throughout
		0.4				
			B22-119C-SB-9.5			
		2.5			CL	Wet at 9.5' bgs
10				(9.4-9.5') CLAY, tan to dark brown, wet, low plasticity, cohesive		
		-		(9.5-12') SAND with GRAVEL, medium to coarse, dense, pale yellow to black, wet, no plasticity, no cohesion	SW	
		-				
	100	-		(12-15') CLAY with GRAVEL and SAND, very firm, bluish gray to pale brown, wet, no plasticity, no cohesion		Slight odor from 12-15' bgs
		-			CL	
		0.0				
15				End of boring		

Boring terminated at 15' bgs due to water

ARM Group LLC
Engineers and Scientists

Boring ID: B22-119D-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 5/7/18
Weather	: Sunny 60s
Northing (US ft)	: 571307.43
Easting (US ft)	: 1461205.37

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	60	-		(0-12') SAND with GRAVEL, medium to fine, dense, dark brown to bluish gray, slightly moist then wet at 9.5' bgs, no plasticity, no cohesion, with thin light brown to pale brown clay lenses at 8.5' bgs	SW	
		0.4				
		1.2				
		0.8	B22-119D-SB-5			
5						SLAG and BRICK COBBLES throughout
	60	-				
		-				
		4.1				
		5.2	B22-119D-SB-9			
		0.0				Wet at 9.5' bgs
10						
		-				
		-				
	80	-		(12-13') GRAVEL with SAND, very dense, pale gray to light brown, wet, no plasticity, no cohesion	GW	
		-		(13-15') WOOD, possible telephone pole remnants, with thin pale green clay lens at 13.5' bgs	NA	
		-				
15				End of boring		

Boring terminated at 15' bgs due to water

ARM Group LLC
Engineers and Scientists

Boring ID: B22-119E-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 5/7/18
Weather	: Sunny 60s
Northing (US ft)	: 571306.32
Easting (US ft)	: 1461172.57

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	60	-		(0-7.5') SAND with GRAVEL, medium to coarse, dense, dry to slightly moist, light brown to pale yellow, no plasticity, no cohesion		
		-				
		0.2				Firebrick COBBLES at 2.5' bgs
		5.6			SW	
		0.9	B22-119E-SB-5			
5						
	50	-				
		-				
		0.9				Napthalene-like odor 7.5-15' bgs
				(7.5-15') CLAY with SAND and GRAVEL, very firm, pale yellow grading to dark bluish gray, moist, medium plasticity, cohesive		
		0.3	B22-119E-SB-10			
						No water encountered
		0.6				
10						
		-				
		-			CL	
	40	-				
		-				
		-	B22-119E-SB-15			
15						
				End of boring		

Boring terminated at 15' bgs due to maximum depth.

ARM Group LLC
Engineers and Scientists

Boring ID: B22-119F-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 5/8/18
Weather	: Sunny 60s
Northing (US ft)	: 571224.68
Easting (US ft)	: 1461166.47

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-10.5') CLAY with SAND and GRAVEL, firm, pale brown to bluish green grading to black at 8.5' bgs, slightly moist to wet at 8' bgs, low plasticity, cohesive		
	70	0.0				
		0.0				
		0.1				
		0.0	B22-119F-SB-5			
5		-			CL	
		0.3				
	80	0.1				Naphthalene-like odor from 8-10' bgs
		0.0				
		0.0	B22-119F-SB-10			Trace SLAG and BRICK COBBLES at 7.5' bgs
10		-		(10.5-15') CLAY with SAND, firm, black to bluish gray, wet, medium plasticity, cohesive		
		-				
	80	-			CL	
		0.0				Petroleum-like odor at 13' bgs
		0.0	B22-119F-SB-15			
15				End of boring		

Boring terminated at 15' bgs due to water

ARM Group LLC
Engineers and Scientists

Boring ID: B22-119G-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 5/8/18
Weather	: Sunny 60s
Northing (US ft)	: 571251.07
Easting (US ft)	: 1461161.13

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
		-		(0-2') SAND with GRAVEL, medium to coarse, loose, dark brown to blackish red, slightly moist, no plasticity, no cohesion	SW	
		0.0				
	80	0.0		(2-15') CLAY with SAND and GRAVEL, firm, very pale brown grading to pale gray from 8-15' bgs, slightly moist to wet at 7.5' bgs, medium plasticity, cohesive		
		0.0				
		0.0	B22-119G-SB-5			CONCRETE at 4' bgs
5		-				
		0.6				
	80	1.3				Wet at 7.5' bgs
		0.0			CL	
		0.0	B22-119G-SB-10			
10		-				Odor from 7.5-15' bgs
		-				
	90	-				
		-				
		-	B22-119G-SB-15			
15				End of boring		

Boring terminated at 15' bgs due to water

ARM Group LLC
Engineers and Scientists

Boring ID: B22-119H-SB

(page 1 of 1)

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Date	: 5/8/18
Weather	: Sunny 70s
Northing (US ft)	: 571276.07
Easting (US ft)	: 1461171.61

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0						
	60	-		(0-5') SAND with GRAVEL, medium to fine, firm, dark brown, slightly moist, no plasticity, no cohesion	SW	
		-				
		1.4				
		0.1				
		0.1	B22-119H-SB-5			
5						
	90	0.2		(5-14') CLAY with SAND and GRAVEL, very firm, pale greenish blue to pale brown, slightly moist, low plasticity, cohesive	CL	
		0.4				
		1.6				
		4.1				
		0.6				
10						
	100	-	B22-119H-SB-11			Odor at 11' bgs
		-				
		-				
		-	B22-119H-SB-14			
		-		(14-15') GRAVEL with SAND, dense, dark brown, wet, no plasticity, no cohesion	GW	Wet at 14' bgs
15				End of boring		

Boring terminated at 15' bgs due to water

ARM Group LLC
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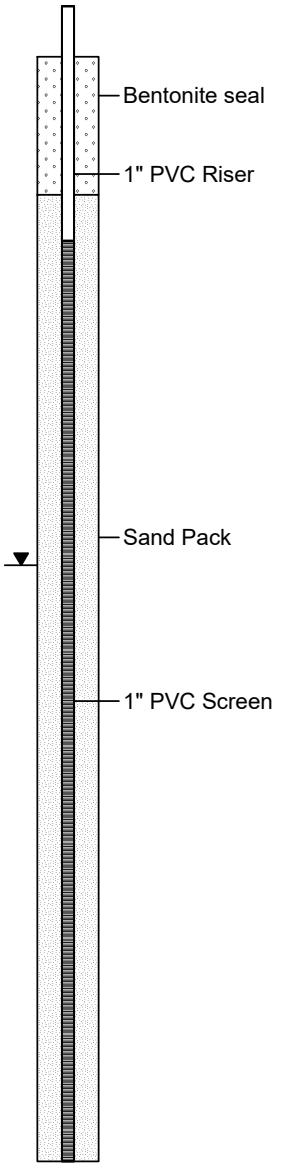
Boring ID: B22-119I-SB/PZ

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 5/8/18
Piezometer Installation Date	: 5/8/18
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 571240.63
Easting (US ft)	: 1461111.01
0-Hr DTW	: 27.37' TOC
48-Hr DTW	: 14.18' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-				
		0.5		(0-4') SAND with GRAVEL, medium to fine, slightly moist, loose, light brown to pale yellow, no plasticity, no cohesion	SW	BRICK fragments from 1-4' bgs
	80	4.4				
		5.6				
		7.9	B22-119I-SB-5	(4-25') CLAY with SAND and GRAVEL, dark greenish gray to black, very firm, moist, medium plasticity, cohesive		Odor at 5' bgs
5		3.7				
		2.4				
	100	1.6				
		0.2				
		0.4	B22-119I-SB-10			
10		-				
		-				
	70	-				
		-				
		-	B22-119I-SB-15		CL	
15		-				
		-				
	100	-				
		-				
		-				
20		-				
		-				
	100	-				
25				End of boring		



Boring terminated at 25' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface
AMSL: Above mean sea level

Riser Stickup: 3.13'
Riser: 0 - 4' bgs
Screen: 4 - 24' bgs [Slot Size: 0.010"]
Sand Pack: 3 - 24' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 3' bgs [Grain Size: 3/8" chips]

ARM Group LLC
Engineers and Scientists

Boring ID: B22-119J-SB/PZ

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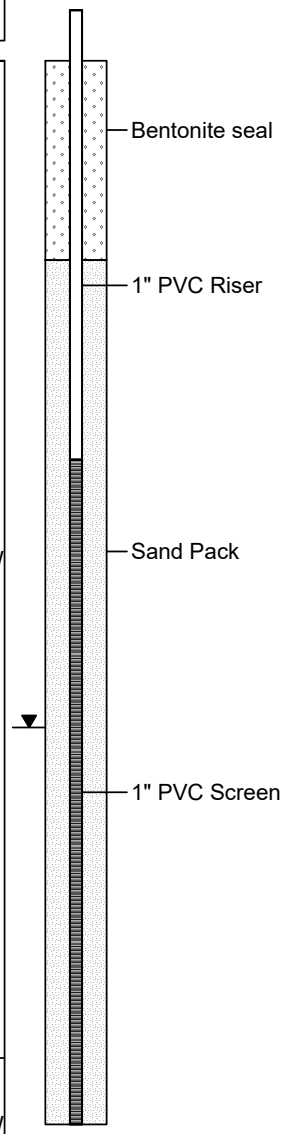
Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: S. Kabis
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 5/9/18
Piezometer Installation Date	: 5/9/18
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 571337.95
Easting (US ft)	: 1461151.64
0-Hr DTW	: 14.13' TOC
48-Hr DTW	: 14.16' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	80	-		(0-15') SLAG SAND and GRAVEL with some SLAG COBBLES, loose, black, dry, no plasticity, no cohesion	SW/GW	Wet at 9' bgs
		0.6				
		1.6				
		1.7				
		0.6	B22-119J-SB-5			
5	90	0.2				
		1.6				
		2.5				
		1.7				
		1.3	B22-119J-SB-10			
10	80	-				
		-				
		-				
		-				
		-				
15	100	-		(15-17') SLAG SAND and GRAVEL, black, wet, dense, no plasticity, no cohesion	SW/GW	
		-		End of boring		



Boring terminated at 16' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface
AMSL: Above mean sea level

Riser Stickup: 4.13'
Riser: 0 - 6' bgs
Screen: 6 - 16' bgs [Slot Size: 0.010"]
Sand Pack: 3 - 16' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 3' bgs [Grain Size: 3/8" chips]

ARM Group LLC
Engineers and Scientists

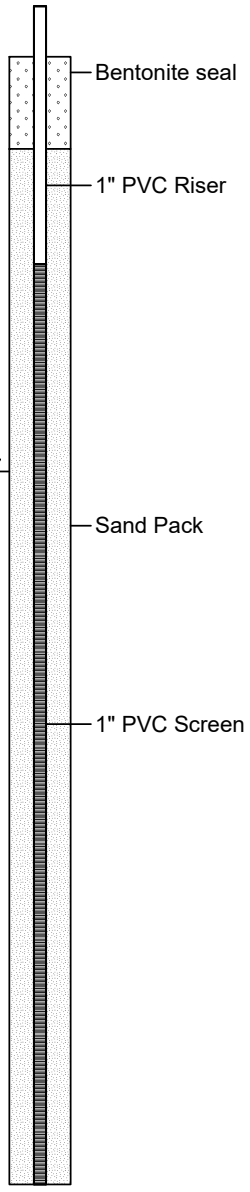
Boring ID: B22-119K-SB/PZ

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: S. Kabis
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Ryan Sites
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 5/9/18
Piezometer Installation Date	: 5/9/18
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 571366.76
Easting (US ft)	: 1461244.93
0-Hr DTW	: 26.95' TOC
48-Hr DTW	: 14.46' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-		(0-7') SLAG SAND and GRAVEL, loose, black, dry, no plasticity, no cohesion		
	80	0.8				
		1.4				
		0.4			SW/GW	
		0.6	B22-119K-SB-5			
5		0.1				
		0.6				
	100	0.7				
		1.1	B22-119K-SB-9	(8-9') SLAG GRAVEL and SILT, hard, tan, dry, no plasticity, cohesive	GW/ML	Wet at 9' bgs
		-		(9-12') SLAG SAND and GRAVEL, black, wet, no plasticity, no cohesion	SW/GW	
10		-				
		-				
	70	1.7		(12-25') CLAY with GRAVEL from 20-21' bgs, firm, dry to wet at 20' bgs, gray, high plasticity, cohesive		
		0.6				
		0.1	B22-119K-SB-15			
15		-				
		-				
	60	-			CL	
		-				
		-				
20						
	100					
25				End of Boring		



Boring terminated at 24.5' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface
AMSL: Above mean sea level

Riser Stickup: 5.45'
Riser: 0 - 4.5' bgs
Screen: 4.5 -24.5' bgs [Slot Size: 0.010"]
Sand Pack: 2 - 24.5' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 2' bgs [Grain Size: 3/8" chips]

ARM Group LLC
Engineers and Scientists

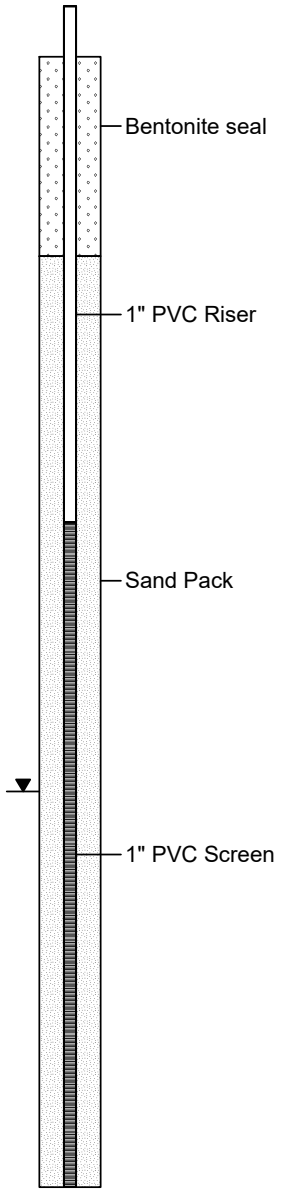
Boring ID: B22-119L-SB/PZ

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Lou Davis
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 10/12/18
Piezometer Installation Date	: 10/12/18
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 571366.76
Easting (US ft)	: 1461269.93
0-Hr DTW	: 15.76' TOC
48-Hr DTW	: 15.88' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	No Samples Collected	(0-4') Non-native SAND with some SLAG GRAVEL, medium dense to dense, grayish brown, dry, no plasticity, no cohesion	SW	
	70	0.2				
		0.1				
		0.0		(4-12') CONCRETE and BRICK GRAVEL with SAND, medium dense, yellow and red with brown, dry, no plasticity, no cohesion	NA	
5		-				
		-				
	50	-				
		0.2				
		0.2				
10		-				
		-				
	70	0.3		(12-12.6') SLAG GRAVEL with SAND and SILT, loose, very dark gray, wet, no plasticity, no cohesion	GW/SW	Wet at 12' bgs
		0.0		(12.6-13.4') CLAY with some SAND, greenish gray, gray, and very dark gray, very moist, low plasticity, cohesive	CL	
		0.0		(13.4-14') SLAG GRAVEL with SAND and SILT, loose, very dark gray, wet, no plasticity, no cohesion	GW/SW	
15		-		(14-15') CLAY with some SAND, greenish gray, gray, and very dark gray, very moist, low plasticity, cohesive	CL	
	0	-				
				End of Boring		



Boring terminated at 16' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface
AMSL: Above mean sea level

Riser Stickup: 4.83'
Riser: 0 - 7' bgs
Screen: 7 - 17' bgs [Slot Size: 0.010"]
Sand Pack: 3 - 17' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 3' bgs [Grain Size: 3/8" chips]

ARM Group LLC
Engineers and Scientists

Boring ID: B22-119M-SB/PZ

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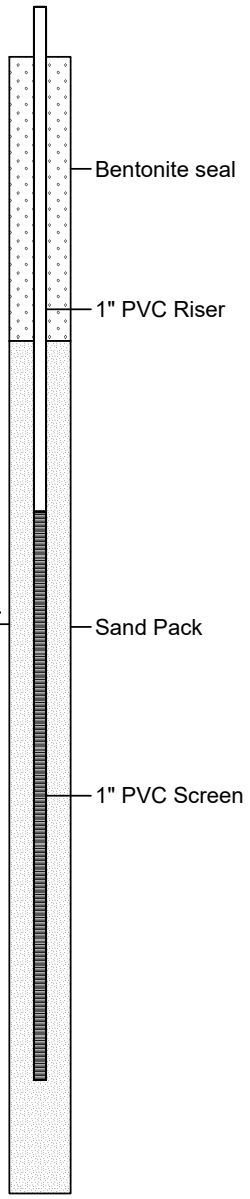
Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Lou Davis
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 10/12/18
Piezometer Installation Date	: 10/12/18
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 571341.76
Easting (US ft)	: 1461244.93
0-Hr DTW	: 14.91' TOC
48-Hr DTW	: 15.03' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	No Samples Collected	(0-10') SAND with GRAVEL, coarse to fine, medium dense, dark brown to pale brown to pale gray, slightly moist to dry, no plasticity, no cohesion		
		45.1				
	80	5.2				
		1.0				
		4.0				
5		-			SW	
		-				
	60	20.5				
		1.6				
		3.6				Wet at 9' bgs
10		-		(10-12') SAND, medium, dense, black to pale gray, wet, no plasticity, no cohesion	SP	
		0.4				
	80	0.6		(12-20') CLAY with GRAVEL, soft, pale gray to bluish gray, wet, low plasticity, cohesive		
		1.5				
		5.8				
15		-			CL	
		-				
	50	1.1				
		0.5				
		0.3				
20				End of Boring		



Boring terminated at 20' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface
AMSL: Above mean sea level

Riser Stickup: 5.05'
Riser: 0 - 8' bgs
Screen: 8 - 18' bgs [Slot Size: 0.010"]
Sand Pack: 5 - 20' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 5' bgs [Grain Size: 3/8" chips]

ARM Group LLC
Engineers and Scientists

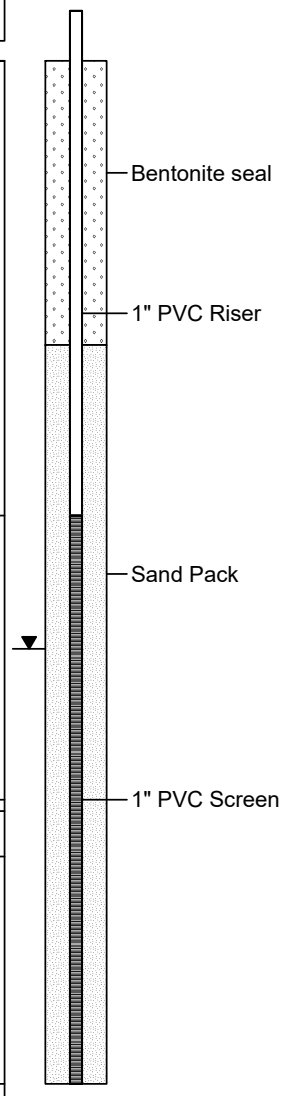
Boring ID: B22-119N-SB/PZ

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Lou Davis
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 10/12/18
Piezometer Installation Date	: 10/12/18
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 571391.76
Easting (US ft)	: 1461244.93
0-Hr DTW	: 15.64' TOC
48-Hr DTW	: 15.40' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS
0		-	No Samples Collected	(0-8') Non-native SAND with trace BRICK GRAVEL, fine to coarse, medium dense to dense, brown to grayish brown, dry, no plasticity, no cohesion	SW
	74	0.0			
		0.1			
		0.2			
		0.1			
5		-			
		-			
	60	0.0			
		1.5		(8-13') CLAY, soft to firm, greenish gray with heavy black staining, moist, low plasticity, cohesive	CL
		0.0			
10		-			
		-			
	62	11.7			
		0.0		(13-13.2') BRICK GRAVEL, medium dense, white, dry, no plasticity, no cohesion	NA / CL
		0.1		(13.2-14') CLAY, soft to firm, greenish gray with heavy black staining, moist, low plasticity, cohesive	
15		-		(14-18') CLAYEY SAND with trace BRICK GRAVEL, medium dense, pale brown, wet, no plasticity, no cohesion	SC
		-			
	56	0.2			
		0.2		(18-20') CLAY, soft, gray, very moist, low plasticity, cohesive	CL
		0.3			
20				End of Boring	



REMARKS: Wet at 14' bgs

Boring terminated at 20' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface
AMSL: Above mean sea level

Riser Stickup: 5.05'
Riser: 0 - 10' bgs
Screen: 10 - 20' bgs [Slot Size: 0.010"]
Sand Pack: 8 - 20' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 8' bgs [Grain Size: 3/8" chips]

ARM Group LLC
Engineers and Scientists

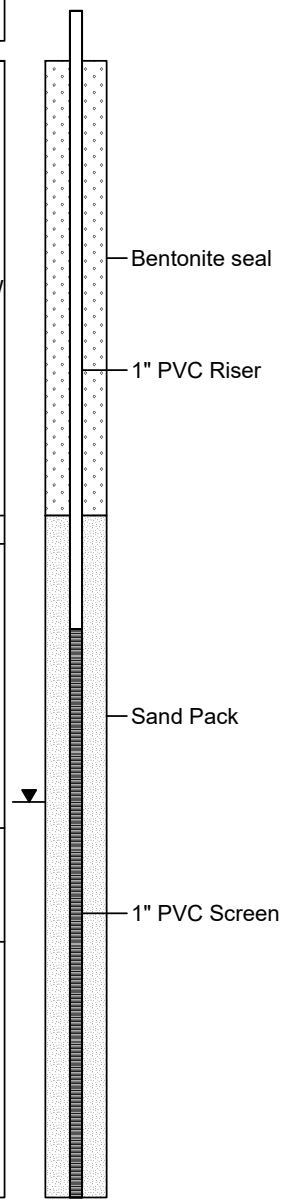
Boring ID: B22-119O-SB/PZ

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: M. Kedenburg, G.I.T.
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Lou Davis
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 10/12/18
Piezometer Installation Date	: 10/12/18
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 571366.76
Easting (US ft)	: 1461219.93
0-Hr DTW	: 15.84' TOC
48-Hr DTW	: 15.73' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-	No Samples Collected	(0-8') SAND with GRAVEL, medium to fine, medium dense, dark brown to pale gray, moist, no plasticity, no cohesion	SW/GW	
	40	-				
		1.2				
		2.1				
5		-				
		1.3				
	80	0.4				
		1.6		(8-8.5') BRICK	NA	
		59.2		(8.5-13.5') SAND with GRAVEL, medium to fine, medium dense, dark brown to pale gray, moist, no plasticity, no cohesion	SW	
10		-				
		-				
	50	18.7				
		4.2				Wet at 13.5' bgs
		2.5		(13.5-15.5') GRAVEL with SAND, medium, dense, black to dark brown, wet, no plasticity, no cohesion	GP	
15		-				
		0.3		(15.5-20') CLAY, soft, dark bluish gray, wet, low plasticity, cohesive	CL	
	80	0.2				
		0.1				
		0.3				
20				End of boring		



Boring terminated at 20' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface
AMSL: Above mean sea level

Riser Stickup: 2.69'
Riser: 0 - 10' bgs
Screen: 10 - 20' bgs [Slot Size: 0.010"]
Sand Pack: 8 - 20' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 8' bgs [Grain Size: 3/8" chips]

ARM Group LLC
Engineers and Scientists

Boring ID: B22-119P-SB/PZ

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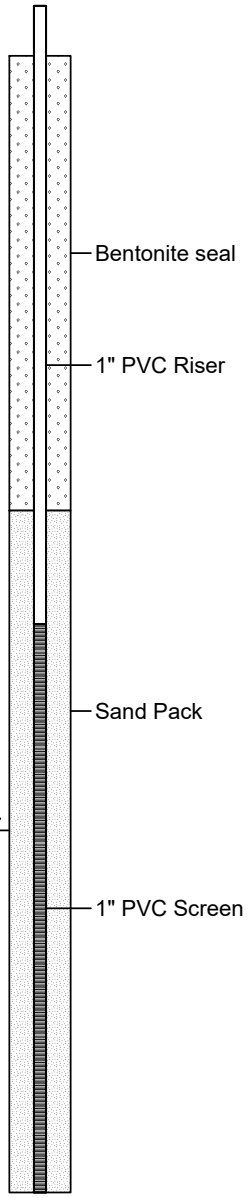
Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Lou Davis
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 10/12/18
Piezometer Installation Date	: 10/12/18
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 571372.66
Easting (US ft)	: 1461178.21
0-Hr DTW	: 15.79' TOC
48-Hr DTW	: 14.63' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS
0		-	No Samples Collected	(0-0.5') SLAG GRAVEL, coarse, loose, light gray, dry, no plasticity, no cohesion	GP
		-		(0.5-14') Non-native SAND with some SLAG and BRICK GRAVEL and some SILT, medium dense, to dense, brown, grayish brown and some yellow, dry, no plasticity, no cohesion	
	60	1.1			
		0.5			
		0.1			
5		-			
		5.2			
	80	0.3			SW/GW
		0.1			
		0.0			
10		-			
		-			
	60	0.0			
		0.0			
		0.0		(14-20') GRAVEL with SILT and some SAND, fine, medium dense, dark brown with trace yellow, wet, no plasticity, no cohesion	
15		-			
		0.0			GP-GM
	80	0.1			
		0.0			
		0.4			
20				End of Boring	



REMARKS
Wet at 14' bgs
Trace BRICK from 14-20' bgs

Boring terminated at 20' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface
AMSL: Above mean sea level

Riser Stickup: 1.00'
Riser: 0 - 10' bgs
Screen: 10 - 20' bgs [Slot Size: 0.010"]
Sand Pack: 8 - 20' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 8' bgs [Grain Size: 3/8" chips]

ARM Group LLC
Engineers and Scientists

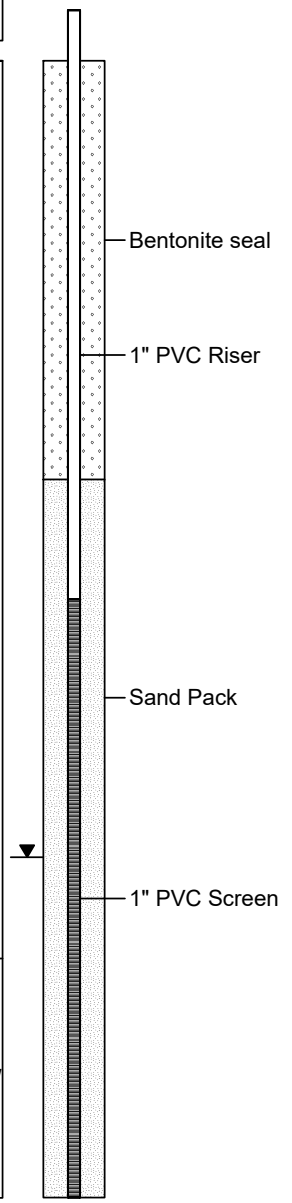
Boring ID: B22-119Q-SB/PZ

Client	: EnviroAnalytics Group
ARM Project No.	: 150300M-20-10
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: M. Replogle, E.I.T.
Drilling Company	: Allied Drilling Co.
Driller	: Lou Davis
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 10/12/18
Piezometer Installation Date	: 10/12/18
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 571333.77
Easting (US ft)	: 1461194.88
0-Hr DTW	: 19.42' TOC
48-Hr DTW	: 17.17' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0	80	-	No Samples Collected	(0-15') SAND with GRAVEL, fine to coarse, loose, dark brown to pale gray, dry, no plasticity, no cohesion	SW	
		2.3				
		2.0				
		59.8				
		2.7				
5	80	-				
		7.7				
		0.5				
		0.6				
		2.6				
10	80	-				
		8.5				
		6.6				
		6.1				
		6.9				
15	100	0.2		(15-19') SLAG GRAVEL with SAND, medium to coarse, dense, black to reddish brown, no plasticity, no cohesion	SW/GW	Wet at 16' bgs
		0.3				
		5.5				BRICK at 17' bgs
		8.0				
20				End of boring		



Boring terminated at 19' bgs due to water and refusal
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface
AMSL: Above mean sea level

Riser Stickup: 3.86'
Riser: 0 - 9' bgs
Screen: 9 - 19' bgs [Slot Size: 0.010"]
Sand Pack: 7 - 19' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 7' bgs [Grain Size: 3/8" chips]

ARM Group LLC
Engineers and Scientists

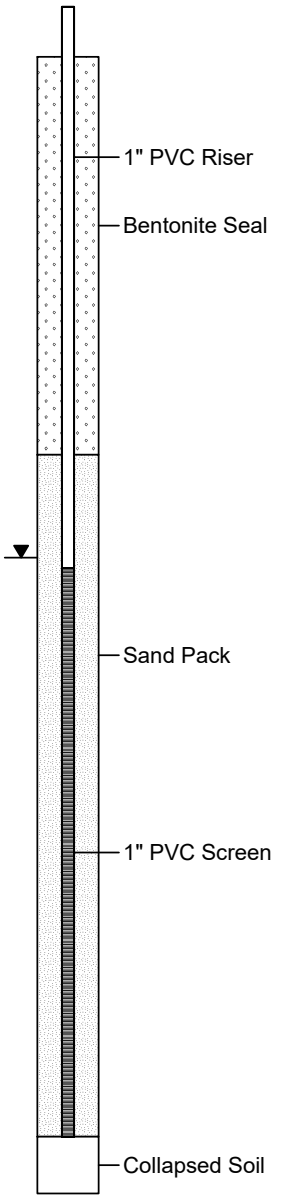
Boring ID: B22-119R-SB/PZ

Client	: EnviroAnalytics Group
ARM Project No.	: 20010222
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: M. Replogle, E.I.T.
Drilling Company	: GSI
Driller	: D. Marchese
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 5/21/20
Piezometer Installation Date	: 5/21/20
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 571203.88
Easting (US ft)	: 1461171.48
0-Hr DTW	: 13.67' TOC
48-Hr DTW	: 13.03' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS
0		-	No Samples Collected	(0-0.6') Non-native SILT with very fine SAND, loose, very pale brown, dry, no plasticity, no cohesion	ML
		1.2			
	78	26.9		(0.6-6.2') SAND with CLAY and GRAVEL, non-native, med dense, brown with trace yellow and reddish yellow, dry, no plasticity, no cohesion, with trace concrete gravel at 4' bgs	SW-SC
		8.5			
		4.0			
5		0.2			
		0.8		(6.2-12') CLAY, very firm to hard, moist, grayish brown and pale green, low plasticity, cohesive	CL
	94	0.0			
		0.0			
		0.0			
10		0.0			
		0.0			
	100	0.0		(12-13.1') CLAYEY GRAVEL with SAND, medium dense, black and pale green, wet, no plasticity, no cohesion	GC/SW
		0.0		(13.1-15.2') CLAY with GRAVEL and some SAND, soft to firm, black and yellowish brown, very moist, low plasticity, cohesive	CL/GW
		1.9			
15		0.0		(15.2-17.2') FILL GRAVEL with some SAND and SILT, medium dense, red yellow and brown, wet, no plasticity, no cohesion	GW
		0.0			
	86	0.5		(17.2-20') CLAY with trace SAND, very firm, pale green and black, moist, low plasticity, cohesive	CL
		0.0			
		0.0			
20				End of Boring	



REMARKS

Wet at 12' bgs

Boring terminated at 20' bgs due to water and piezometer installation
Piezometer installed to 19' bgs
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface

Riser Stickup: 4.22' ags
Riser: 0 - 9' bgs
Screen: 9 - 19' bgs [Slot Size: 0.010"]
Sand Pack: 7 - 19' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 7' bgs [Grain Size: bentonite chips]

ARM Group LLC
Engineers and Scientists

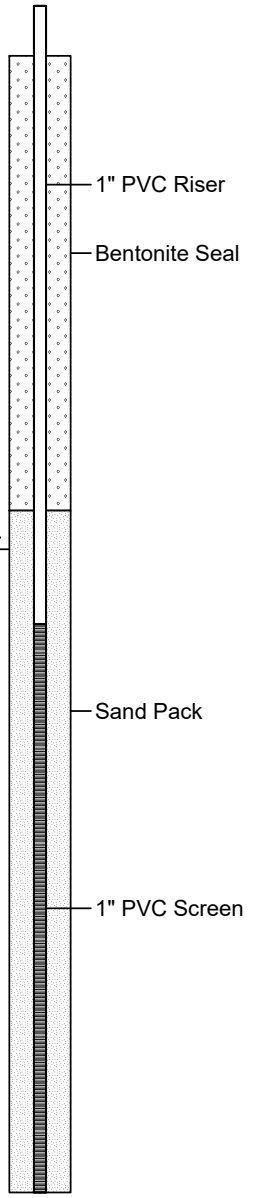
Boring ID: B22-119S-SB/PZ

Client	: EnviroAnalytics Group
ARM Project No.	: 20010222
Project Description	: Sparrows Point - Parcel B22
Site Location	: Sparrows Point, MD
ARM Representative	: L. Perrin
Checked by	: M. Replogle, E.I.T.
Drilling Company	: GSI
Driller	: D. Marchese
Drilling Equipment	: Geoprobe 7822DT

Soil Boring Installation Date	: 05/21/2020
Piezometer Installation Date	: 05/21/2020
Casing/Riser/Screen Type	: PVC
Borehole Diameter	: 2.25"
Riser/Screen Diameter	: 1"
Northing (US ft)	: 571275.08
Easting (US ft)	: 1461265.19
0-Hr DTW	: 19.50' TOC
48-Hr DTW	: 11.51' TOC

No LNAPL or DNAPL detected at 0 or 48 hours

Depth (ft.)	% Recovery	PID Reading (PPM)	Sample No/Interval	DESCRIPTION	USCS	REMARKS
0		-				
		-				
	48	3.2	No Samples Collected	(0-1.5') FILL/CONCRETE, SAND and GRAVEL sized, with SILT, loose, very pale brown, dry, no plasticity, no cohesion	SW/GW	
		0.0				
		0.3		(1.5-7.4') Non-native SAND with SILT and SLAG/BRICK GRAVEL, medium dense, brown to dark brown with light gray, dry, no plasticity, no cohesion	SW-SM/ GW	
5		-				
		-				
	60	3.4		(7.4-8.5') SILT with SAND and SLAG/BRICK GRAVEL, medium dense to dense, dark brown, moist, no plasticity, no cohesion	ML	
		13.4				
		1.2		(8.5-9.6') SILTY SAND with GRAVEL, medium dense, dark brown with yellow, moist, no plasticity, no cohesion	SM/GW	Wet at 9.5' bgs
10		6.6		(9.6-10') FILL GRAVEL and cobbles, loose, yellow and brown, wet, no plasticity, no cohesion	GW	
		1.5		(11.3-12') FILL/SLAG GRAVEL, fine to coarse, brown and yellow and black, wet, no plasticity, no cohesion	GW	light amount of sheen and strong odor from 11.3-12' bgs
	74	2.4				
		3.9		(12-20') CLAY with trace intermittent sand, soft to very firm, pale green, black and reddish yellow, moist, low plasticity, cohesive, moderate odor	CL	
		32.0				
15		-				
		-				
	40	-				
		23.0				
		2.7				
20				End of Boring		



Boring terminated at 20' bgs due to water and piezometer installation
TOC: Top of PVC casing
DTW: Depth to water
bgs: Below ground surface

Riser Stickup: 2.83' ags
Riser: 0 - 10' bgs
Screen: 10 - 20' bgs [Slot Size: 0.010"]
Sand Pack: 8 - 20' bgs [Grain Size: WG #2]
Bentonite Seal: 0 - 8' bgs [Grain Size: bentonite chips]

ATTACHMENT 2

Low Flow Sampling
Temporary Piezometers

ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: B22 Pori Lagoon GW	Project Number: 150300M-2010
Piezometer Number: B22-119-PZ	Date: 5/31/18
Piezometer Diameter (in): 1	One Well Volume (gal): —
Depth to Product (ft): NA	QED Controller Settings: —
Depth to Water (ft): 11.51	Flow Rate (mL/min) 227
Product Thickness (ft): NA	Length of time Purged (min) 30/20
Depth to Bottom (ft): 21.47	

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
948	0.0	14.03	18.6	8.89	2.430	2.16	-174.8		
953	0.3	14.03	18.8	9.57	2.297	1.07	-233.6		Clear
958	0.6	14.03	19.0	9.84	2.456	0.83	-261.1		
1003	0.9	14.03	19.1	9.92	2.481	0.76	-268.8		Cloudy
1008	1.20	14.03	19.0	10.01	2.512	0.72	-276.9		
								☆	Cloudy grey when sampling

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
B22-119-PZ	1015	TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	Y
		TPH-DRO	2 - 1 L Amber	none	Y
		TCL-SVOCs	2- 1 L Amber	none	Y
		Oil & Grease	2 - 1 L Amber	HCl	Y
		Total Cyanide	1 - 250 mL Plastic	NaOH	N
		TAL-Metals & Mercury (Dissolved) **Field Filtered**	1 - 250 mL Plastic	HNO3	N
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	None	N
Matrix Spike					Y
Duplicate					N

Sampled By: LL

Comments: Purged 2nd time during sampling Purged dry → wanted to refill → could not get well clearer

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

10 ft x 0.041 gal/ft = 0.41 (gal)

Low Flow Sampling
Temporary Piezometers

ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: B22 Pori Lagoon GW	Project Number: 150300M-20-10
Piezometer Number: B22-119I-PZ	Date: 5/31/18 - 6/1/18 (sampled)
Piezometer Diameter (in): 1	One Well Volume (gal): —
Depth to Product (ft): NA	QED Controller Settings: —
Depth to Water (ft): 8.63	Flow Rate (mL/min) 159
Product Thickness (ft): NA	Length of time Purged (min) 40/20
Depth to Bottom (ft): 27.24	

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
1256	0.0	18.53	20.2	10.22	1.216	3.31	-69.9		
1301	0.28	20.50	21.6	10.30	1.254	1.26	-108.1		
1306	0.50	21.52	22.0	10.27	1.329	0.96	-134.1		
1311	0.67	22.09	23.0	10.20	1.374	0.84	-141.3		
1316	0.84	22.98	23.3	10.17	1.398	0.75	-150.2		

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
B22-119I-PZ	(6-31-18) (DUP 2 VOC GRO 1330	TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	Y
		TPH-DRO	2 - 1 L Amber	none	Y
		TCL-SVOCs	2- 1 L Amber	none	Y
		Oil & Grease	2 - 1 L Amber	HCl	Y
		Total Cyanide	1 - 250 mL Plastic	NaOH	N
	845 (6-1-18) (DUP & 1 VOC VOA 1 DRO VOA 3 SVOC/DRO 1 OTHER	TAL-Metals & Mercury (Dissolved) **Field Filtered**	1 - 250 mL Plastic	HNO3	N
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	None	N
		Matrix Spike			#N
		Duplicate			#Y

Sampled By: LLP

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

18.61 ft x 0.041 gal/ft = 0.76 (gal)

Low Flow Sampling
~~Permanent~~ Wells
TEMP.

ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: B22 Port Lagoon GW	Project Number: 150300m-20-10
Well Number: B22-119J-PZ	Date: 5/31/18
Well Diameter (in): 2	One Well Volume (gal): ———
Depth to Product (ft): NA	QED Controller Settings: ———
Depth to Water (ft): 13.59	Flow Rate (mL/min) 227
Product Thickness (ft): NA	Length of time Purged (min) 25 / 15
Depth to Bottom (ft): 19.82	~~Condition of Pad/Cover~~: ———

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
1407	0.0	13.59	21.3	10.95	0.733	6.75	-16.6		
1412	0.3	13.59	21.8	11.17	0.706	5.21	-7.0		
1417	0.6	13.57	21.9	11.17	0.718	4.96	-4.5		
1422	0.9	13.55	22.1	11.20	0.724	4.94	-2.9		

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
B22-119J-PZ	1445	TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	Y
		TPH-DRO	2 - 1 L Amber	none	Y
		TCL-SVOCs	2- 1 L Amber	none	Y
		Oil & Grease	2- 1 L Amber	HCl	Y
		TAL-Metals & Mercury (total)	1 - 250 mL Plastic	HNO3	N
		Total Cyanide	1 - 250 mL Plastic	NaOH	N
		TAL-Metals & Mercury (Dissolved) **Field Filtered**	1 - 250 mL Plastic	HNO3	N
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	N
		PCB	2 - 1 L Amber	None	N
Matrix Spike					Y
Duplicate					N

Sampled By: LLP

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

5 ft x 0.041 gal/ft = 0.20 (gal)

Low Flow Sampling
Temporary Piezometers

ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name:	B22 Peri Lagoon GW	Project Number:	150300m-20-10
Piezometer Number:	B22-119K-PZ	Date:	5/31/18
Piezometer Diameter (in):	1	One Well Volume (gal):	—
Depth to Product (ft):	Trace	QED Controller Settings:	—
Depth to Water (ft):	13.77 TOC	Flow Rate (mL/min)	
Product Thickness (ft):	Trace	Length of time Purged (min)	
Depth to Bottom (ft):	30.03 TOC		

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

See below (Not sampled)

Attempted to sample per N. Kurtz

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
B22-119K-PZ		TCL-VOCs	3 - 40 mL VOA	HCl	Y
		TPH-GRO	3 - 40 mL VOA	HCl	Y
		TPH-DRO	2 - 1 L Amber	none	Y
		TCL-SVOCs	2- 1 L Amber	none	Y
		Oil & Grease	2 - 1 L Amber	HCl	Y
		Total Cyanide	1 - 250 mL Plastic	NaOH	N
		TAL-Metals & Mercury (Dissolved) **Field Filtered**	1 - 250 mL Plastic	HNO3	N
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	None	N
Matrix Spike					N
Duplicate					N

Sampled By: LH

Comments: Attempted to purge → would not clear and clogged tubing due to heavy silt/NAPL

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

16.3 ft x 0.041 gal/ft = 0.67 (gal)

Low Flow Sampling
Permanent Wells

ARM Group Inc.
Earth Resource Engineers and Consultants

Project Name: PORI	Project Number:
Well Number: B22-119-P2	Date: 5/18/2020
Well Diameter (in): 1	One Well Volume (gal):
Depth to Product (ft): none	QED Controller Settings:
Depth to Water (ft): 11.42	Flow Rate (mL/min) 300
Product Thickness (ft): —	Length of time Purged (min)
Depth to Bottom (ft): 22.48	Condition of Pad/Cover: /

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
1115	1	15.71	21.5	8.17	2.006	2.80	-215.2	112	
1120	1.3	16.32	22.2	8.58	1.991	2.18	-250.8	78.4	
1125	.6	"	22.1	8.97	2.046	1.84	-276.4	51.2	
1130	.9	17.6	22.7	9.10	2.084	1.66	-28.9	356.4	
1135	1.2	18.2	22.8	9.41	2.185	1.57	-299.6	48.9	
1140	1.5	19.8	22.4	9.66	2.276	1.43	-309.2	31.4	
1145	1.8	19.6	22.3	9.83	2.335	1.38	-318.5	32.4	
1150	2.1	21.00	22.1	10.03	2.426	1.32	-328.4	46.1	
1155	2.4	21.82	22.1	10.13	2.457	1.30	-335.4	23.3	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
	1200	TCL-VOCs	3 - 40 mL VOA	HCl	
		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	HNO3	
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	
Matrix Spike					
Duplicate					

Sampled By: LMG

Comments:

pH not stabilized

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: POR 1	Project Number:
Well Number: B22-119M-P7	Date: 05/27/2020
Well Diameter (in): 1	One Well Volume (gal):
Depth to Product (ft):	QED Controller Settings:
Depth to Water (ft): 14.72	Flow Rate (mL/min) 200
Product Thickness (ft):	Length of time Purged (min)
Depth to Bottom (ft): 19.89	Condition of Pad/Cover: /

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
1255	1	17.21	22.3	9.46	1.866	6.40	-39.4	65.2	
1300	1.25	19.01	23.1	9.53	1.885	5.43	-47.9	63.4	
1305	.5	.11	21.2	9.43	2.760	4.03	-24.3	11.4	
1310	.75	.23	21.5	9.58	2.823	2.80	-110.8	42.1	
1315	2	.45	22.1	9.57	2.911	2.51	-120.2	18.2	
1320	.25	19.54	21.6	9.64	3.014	2.04	-130.2	37.3	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
	1325	TCL-VOCs	3 - 40 mL VOA	HCl	
		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	HNO3	
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	
Matrix Spike					
Duplicate					

Ind DTB; 22.18' TOC

Sampled By: LMG

Comments: no registered LD NAPL 1 no trace on probe
milky product on initial purge ~150mL collected

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: PDR1	Project Number:
Well Number: B22-119N-PZ	Date: 05/27/2020
Well Diameter (in): 1	One Well Volume (gal):
Depth to Product (ft): none	QED Controller Settings:
Depth to Water (ft): 13.71	Flow Rate (mL/min) 358
Product Thickness (ft): –	Length of time Purged (min)
Depth to Bottom (ft): 24.66	Condition of Pad/Cover: /

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
1420	1	.74	19.6	10.92	1.131	3.29	-224.4	26.2	
1425	1.4	.74	20.6	10.92	1.191	2.40	-248.3	32.4	
1440	1.8		19.8	10.95	1.233	2.19	-256.1	24.8	
1445	2.2		19.9	10.94	1.241	2.04	-261.4	15.3	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
	1450	TCL-VOCs	3 - 40 mL VOA	HCl	
		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	HNO3	
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	
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: POL1	Project Number:
Well Number: B22-1190-P2	Date: 05/28/2020
Well Diameter (in): 1	One Well Volume (gal):
Depth to Product (ft):	QED Controller Settings:
Depth to Water (ft): 16.62	Flow Rate (mL/min) 250 lowest possible
Product Thickness (ft):	Length of time Purged (min)
Depth to Bottom (ft): 19.48	Condition of Pad/Cover: /

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
0910	1.5	18.48	21.2	11.48	1.193	4.20	-21.9	259	
0915	1.75	19.02	22.0	11.43	1.236	4.72	-66.1	112	
0920	2	19.54	20.8	11.34	1.762	5.36	-115.5	164	
0925	2.25	20.08	22.7	11.29	1.566	5.83	-150.8	98.1	
0930	5	20.62	23.3	11.29	1.571	5.91	-158.4	68.9	
0935	.75	21.11	23.6	11.85	1.565	5.79	-166.8	32.4	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
	0940	TCL-VOCs	3 - 40 mL VOA	HCl	
		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	HNO3	
	end DTB: 22.02 recharge slow	Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	
Matrix Spike					
Duplicate					

Sampled By: LMA

Comments: no registered L/D NAPL no trace on probe
milky product on initial purge; less viscous than M

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: PORI	Project Number:
Well Number: B22-119R-PZ	Date: 05/27/2020
Well Diameter (in): 1	One Well Volume (gal):
Depth to Product (ft): none	QED Controller Settings:
Depth to Water (ft): 13.04	Flow Rate (mL/min) 400
Product Thickness (ft): —	Length of time Purged (min)
Depth to Bottom (ft): 23.32	Condition of Pad/Cover: /

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
1015	1.5	13.04	19.2	9.54	0.821	5.38	84.0	26.4	
1020	1.9	〃	19.3	9.79	0.806	2.99	-66.1	16.9	
1025	2.3		18.8	10.11	0.818	2.24	-112.3	15.8	
1030	2.7		18.2	10.34	0.834	2.02	-135.0	38.4	
1035	3.1		17.9	10.56	0.844	1.80	-159.7	56.2	
1040	3.5		18.6	10.59	0.854	1.66	-175.7	22.1	
1045	3.9		18.0	10.71	0.8164	1.54	-195.6	9.43	
1050	4.3		17.8	10.74	0.890	1.53	-204.8	13.2	
1055	4.7		18.0	10.75	0.875	1.50	-211.8	8.97	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
	1100	TCL-VOCs	3 - 40 mL VOA	HCl	
		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	HNO3	
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	
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: POR1	Project Number:
Well Number: B22-1195-PZ	Date: 05/27/2026
Well Diameter (in): 1	One Well Volume (gal):
Depth to Product (ft): none	QED Controller Settings:
Depth to Water (ft): 11.64	Flow Rate (mL/min) 400
Product Thickness (ft): —	Length of time Purged (min)
Depth to Bottom (ft): 22.28	Condition of Pad/Cover: /

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
1135	1.5	11.7	21.0	7.33	1.028	2.62	-204.1	164	
1140	2	.71	22.0	7.29	0.983	2.03	-191.7	122	
1145	2.5		21.8	7.28	0.986	1.80	-189.0	78.2	
1150	3		21.7	7.25	0.961	1.69	-187.5	44.1	
1155	3.5		21.3	7.23	0.933	1.60	-186.5	10.17	

MONITORING SAMPLE RECORD

Sample ID	Time Collected	Parameter/Order	Container	Perservative	Collected?
	1200	TCL-VOCs	3 - 40 mL VOA	HCl	
		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	HNO3	
		Hexavalent Chromium (Dissolved) **Field Filtered**	1 - 250 mL Plastic	none	
		PCB	2 - 1 L Amber	None	
Matrix Spike					
Duplicate					

Sampled By: LMG

Comments: moth ball odor

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)

ATTACHMENT 3

Test Pit Photograph Log
Area B: Parcel B22 PORI Lagoon
Sparrows Point, Maryland

060518-1: View of the PORI Lagoon facing south.

060518-2: View of the ground surface at the PORI Lagoon.

060518-3: View of the sheet piling at the northern end of the PORI Lagoon.

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060518-4: View of the sheet piling at the northern end of the PORI Lagoon.

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060518-5: View of excavated material from test pitting activities at the PORI Lagoon.

060518-6: View of excavated material from test pitting activities at the PORI Lagoon.

Test Pit Photograph Log
Area B: Parcel B22 PORI Lagoon
Sparrows Point, Maryland

061720-1: View of excavated material from test pitting activities at the PORI Lagoon.

061720-2: View of excavated material from test pitting activities at the PORI Lagoon. Sheet piling is visible to the left side of the image.

Test Pit Photograph Log
Area B: Parcel B22 PORI Lagoon
Sparrows Point, Maryland

061720-3: View of excavated material from test pitting activities at the PORI Lagoon. Sheet piling is visible in the background.

061720-4: View of excavated material from test pitting activities at the PORI Lagoon.

061720-5: View of excavated material from test pitting activities at B22-TP-2.

061720-6: View of excavated material from test pitting activities at B22-TP-6. Sheet piling is visible in the background.

ATTACHMENT 4

Well/Piezometer Abandonment Form

Well/Piezometer ID: B22-119-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: B22

Abandonment Date: 6/8/20

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → (Pulled) / Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned – (Grout) / Bentonite Chips

Field Equipment: Heron oil-water probe/Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): L. Perrin

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 20'	Depth to Water (TOC): 11.33'
Measured: 22.44'	Depth to NAPL (TOC): No LNAPL/DNAPL

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B22-119 PORI Lagoon**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):

ARM Group LLC
Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: B22-119I-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: B22

Abandonment Date: 9/3/19

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → Pulled / Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned → Grout / Bentonite Chips

Field Equipment: NA

ARM Representative(s): L. Perrin

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 24'	Depth to Water (TOC): NA
Measured: NA	Depth to NAPL (TOC): NA

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B22-119 PORI Lagoon**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any): Destroyed and unable to properly abandon

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Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: B22-119J-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: B22

Abandonment Date: 6/8/20

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → (Pulled) / Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned – (Grout) / Bentonite Chips

Field Equipment: Heron oil-water probe/Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): L. Perrin

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 19'	Depth to Water (TOC): 13.87'
Measured: 18.93'	Depth to NAPL (TOC): No LNAPL/DNAPL

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B22-119 PORI Lagoon**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):

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Columbia, Maryland 21046
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Well/Piezometer Abandonment Form

Well/Piezometer ID: B22-119K-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: B22

Abandonment Date: 6/8/20

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → (Pulled) / Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned → (Grout) / Bentonite Chips

Field Equipment: Heron oil-water probe/Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): L. Perrin

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 24.5'	Depth to Water (TOC): 13.27'
Measured: 28.87'	Depth to NAPL (TOC): 13.10'

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B22-119 PORI Lagoon**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):

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Well/Piezometer Abandonment Form

Well/Piezometer ID: B22-119L-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: B22

Abandonment Date: 6/8/20

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → (Pulled) / Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned → (Grout) / Bentonite Chips

Field Equipment: Heron oil-water probe/Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): L. Perrin

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 17'	Depth to Water (TOC): 14.20'
Measured: 21.51'	Depth to NAPL (TOC): No LNAPL/DNAPL

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B22-119 PORI Lagoon**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):

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Engineers and Scientists
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Columbia, Maryland 21046
(410) 290-7775 FAX: (410) 290-7775

Well/Piezometer Abandonment Form

Well/Piezometer ID: B22-119M-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: B22

Abandonment Date: 6/8/20

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → (Pulled) / Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned – (Grout) / Bentonite Chips

Field Equipment: Heron oil-water probe/Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): L. Perrin

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 18'	Depth to Water (TOC): 13.74'
Measured: 22.13'	Depth to NAPL (TOC): 13.72'

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B22-119 PORI Lagoon**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):

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Engineers and Scientists
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Columbia, Maryland 21046
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Well/Piezometer Abandonment Form

Well/Piezometer ID: B22-119N-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: B22

Abandonment Date: 6/8/20

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → (Pulled) / Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned → (Grout) / Bentonite Chips

Field Equipment: Heron oil-water probe/Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): L. Perrin

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 20'	Depth to Water (TOC): 13.50'
Measured: 22.95'	Depth to NAPL (TOC): No LNAPL/DNAPL

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B22-119 PORI Lagoon**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):

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Engineers and Scientists
9175 Guilford Road - Suite 310
Columbia, Maryland 21046
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Well/Piezometer Abandonment Form

Well/Piezometer ID: B22-119O-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: B22

Abandonment Date: 6/8/20

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → (Pulled) / Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned → (Grout) / Bentonite Chips

Field Equipment: Heron oil-water probe/Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): L. Perrin

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 22'	Depth to Water (TOC): 11.22'
Measured: 17.94'	Depth to NAPL (TOC): No LNAPL/DNAPL

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B22-119 PORI Lagoon**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):

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Well/Piezometer Abandonment Form

Well/Piezometer ID: B22-119P-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: B22

Abandonment Date: 6/8/20

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → (Pulled) / Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned → (Grout) / Bentonite Chips

Field Equipment: Heron oil-water probe/Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): L. Perrin

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 20'	Depth to Water (TOC): 10.22'
Measured: 12.66'	Depth to NAPL (TOC): No LNAPL/DNAPL

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B22-119 PORI Lagoon**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any): Blockage observed during gauging activities at approximately 10' TOC

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Well/Piezometer Abandonment Form

Well/Piezometer ID: B22-119Q-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: B22

Abandonment Date: 6/8/20

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → (Pulled) / Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned – (Grout) / Bentonite Chips

Field Equipment: Heron oil-water probe/Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): L. Perrin

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 19'	Depth to Water (TOC): 12.75'
Measured: 21.71'	Depth to NAPL (TOC): No LNAPL/DNAPL

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B22-119 PORI Lagoon**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):

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Well/Piezometer Abandonment Form

Well/Piezometer ID: B22-119R-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: B22

Abandonment Date: 6/8/20

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → (Pulled) / Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned → (Grout) / Bentonite Chips

Field Equipment: Heron oil-water probe/Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): L. Perrin

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 19'	Depth to Water (TOC): 12.99'
Measured: 18.27'	Depth to NAPL (TOC): No LNAPL/DNAPL

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B22-119 PORI Lagoon**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):

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Well/Piezometer Abandonment Form

Well/Piezometer ID: B22-119S-PZ

General Project Information:

Client: EAG

Site Location: Sparrows Point, MD

Parcel ID: B22

Abandonment Date: 6/8/20

Abandonment Contractor: GSI

Abandonment Method (circle appropriate):

1. PVC → (Pulled) / Split / Perforated / Left-In-Place / Overdrilled, 4.25" hollow stem
2. Abandoned → (Grout) / Bentonite Chips

Field Equipment: Heron oil-water probe/Geoprobe/Grout machine (95% Portland/5% Bentonite)

ARM Representative(s): L. Perrin

Well Diameter: 1"

Depth to Bottom (TOC)	Final Gauging Prior to Abandonment:
Reported (historical/log): 20'	Depth to Water (TOC): 11.52'
Measured: 22.36'	Depth to NAPL (TOC): No LNAPL/DNAPL

Please note if this abandonment is for a known NAPL delineation/monitoring area or individual NAPL screening piezometer and identify the name of the delineation area (e.g., B6-066 NAPL Area or B5-144 Screening Piezometer): **B22-119 PORI Lagoon**

Please Note: If NAPL is identified in a piezometer, the Project Manager should be notified and the piezometer may not be abandoned unless the presence of NAPL is already known and a decision has been made to abandon the NAPL monitoring network.

Additional Comments (if any):

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