ARM Group LLC
Engineers and Scientists

December 8, 2022

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

Re: Lead Excavation Report
Area B: Parcel B18 (B18-043-SB)
Tradepoint Atlantic
Sparrows Point, MD 21219

Dear Ms. Brown:

ARM Group LLC (ARM), on behalf of Tradepoint Atlantic (TPA), has prepared this Completion Report summarizing excavation activities conducted inside Parcel B18 (the Site) on the Tradepoint Atlantic (TPA) property located in Sparrows Point, Maryland. Following review and approval of the Lead Excavation Work Plan (ARM, January 20, 2022) by the Maryland Department of the Environment (MDE) and the United States Environmental Protection Agency (USEPA), the excavation was completed at the Site on May 11, 2022 to address known areas of lead impacted soil (in the vicinity of B18-043-SB).

1. PROJECT BACKGROUND

1.1 Phase II Investigation 2016/17

ARM completed the Phase II Investigation of Parcel B18 (the Site) between September 2016 and August 2017. The Phase II Investigation Report (Revision 0) was submitted to the MDE and the USEPA on August 3, 2020. The analytical soil results from the Phase II Investigation identified an elevated lead concentration (9,580 mg/kg) in subsurface sample B18-043-SB-5, which was collected from boring B18-043-SB in the interval from 4 to 5 feet below ground surface (bgs).

From the Phase II Investigation, the original intermediate soil sample (B18-043-SB-5) had a lead concentration of 9,580 mg/kg.

1.2 2018 Sampling Program

Additional sampling was proposed under the Work Plan for Delineation/Characterization of Lead Impacted Soil at B18-043-SB (February 16, 2018). Agency approval was received on February

27, 2018. Soil sampling was conducted in May and June 2018, with the results reported to the agencies within an Interim Submittal dated September 5, 2018.

The original Phase II Investigation intermediate soil sample (B18-043-SB-5) was resampled during the characterization activities in 2018, and the replicated soil sample had a significantly lower lead concentration of only 1,020 mg/kg. During the soil characterization activities completed in 2018, three soil samples contained elevated concentrations of lead (over 8,000 mg/kg). These samples include B18-043A-SB-5, B18-043B-SB-5, and B18-043C-SB-1 with lead concentrations of 10,300 mg/kg, 8,270 mg/kg, and 10,000, respectively.

1.3 2019/20 Sampling Program

Agency comments requested additional groundwater sampling in the area and Toxicity Characteristic Leaching Procedure (TCLP) sampling in discrete soil samples in the area with elevated lead. Additional sampling was proposed in the Work Plan for Characterization of Groundwater & TCLP Analysis (Revision 1, September 5, 2019). Agency approval was received on February 3, 2020. Additional sampling was conducted in June 2020, with the results reported to the agencies within the No. 10 Tank Area Investigation Report dated January 6, 2020.

During the additional soil characterization activities completed in 2020, B18-084-SB-1 had a lead concentration of 11,600 mg/kg. All 34 remaining soil samples collected during the Phase II Investigation and the supplemental characterization activities contained significantly lower lead concentrations, most of which were below 1,000 mg/kg. The lead impacts appear to be limited to a relatively small area. Refer to **Figure 1** for results from soil sampling.

One soil sample B18-085-SB-5 had a TCLP-lead concentration of 8.5 mg/L, which is above the characteristically hazardous threshold of 5 mg/L. Waste soil generated from the June 4, 2020 mobilization was determined to exceed the TCLP limit for lead and was classified as characteristically hazardous. The groundwater samples had undetectable concentrations of lead, indicating a lack of impacts to groundwater resulting from lead-contaminated soils in the area.

1.4 2022 Lead Excavation Work Plan

The Lead Excavation Work Plan proposed one excavation area encompassing B18-043A, B18-043B, B18-043C, B18-084-SB, and B18-085-SB. In the southwestern portion of the excavation (in the vicinity of B18-043C and B18-084-SB) the total depth of excavation was proposed to be 3 feet bgs (lead concentrations detected in the 5 ft bgs soil samples were significantly lower than the lead concentrations detected in the 1 ft bgs soil samples). In the northeastern portion of the excavation (in the vicinity of B18-043A, B18-043B, and B18- 085-SB) the total depth of excavation was proposed to be 8 feet bgs, as shown in **Figure 2**.

2. 2022 LEAD EXCAVATION

2.1 May 2022

The lead excavation for Parcel B18 was completed on May 11, 2022, in accordance with the proposed excavation limits from the Lead Excavation Work Plan (refer to **Figure 2**). The material from the southwestern and northeastern portions of the excavation were stockpiled separately, with northeastern material further divided into four stockpile lifts (0-2 ft bgs, 2-4 ft bgs, 4-6 ft bgs, and 6-8 ft bgs). Confirmation samples were collected from the base and sidewalls of the excavation and analyzed for total lead and TCLP lead. The results are included in **Table 1** and in **Figure 2**. Based on the result, additional excavation was required in the southwestern portion of the excavation, both laterally to the west and vertically down to 5-feet bgs.

2.2 November 2022

In November 2022, the excavation was expanded to the west and to a depth of 5-feet bgs. Following excavation one confirmation soil sample was collected from the western sidewall (refer to **Table 1** and **Figure 2**). Additional base soil samples were not required, as the lead concentrations from the 5-foot samples collected during the original delineation work were significantly lower than the lead concentrations from the shallower soil samples.

3. EXCAVATED MATERIAL SAMPLING AND TERRABOND MIXING

In May 2022, a composite sample was collected from each of the excavation stockpiles (refer to **Table 2**). Each composite sample consisted of 10 randomly selected grab aliquots from the designated stockpile. The composite samples were then be submitted for TCLP analysis. Based on the stockpile results, three of the five stockpiles were identified as hazardous (the northeast portion from 2-4 ft bgs, 4-6 ft bgs, and 6-8 ft bgs). The Agencies approved the use of TerraBond® Heavy Metal Control Technology as a mitigative measure in a June 21, 2022 e-mail. Therefore, TerraBond® was mixed into the three hazardous stockpiles and another round of composite sampling was conducted in July 2022, with analysis for TCLP Lead and total lead. The analytical results from the stockpiles following TerraBond® mixing were below the hazardous threshold (refer to **Table 2**).

As discussed in the previous section (May 2022 Sampling Program), three of the confirmation samples showed lead concentrations that were still elevated, as shown on **Figure 2**. In November 2022, the southwestern portion of the excavation was expanded to the west and to a depth of 5-feet bgs. TerraBond® was mixed into the generated soil in-situ. Two additional composite samples were collected of the material following Terrabond® mixing with analysis for TCLP Lead. The analytical results from the stockpiles following TerraBond® mixing were below the hazardous threshold (refer to **Table 2**). In total, approximately 11.7 tons of Terrabond® was mixed into the B18 lead-impacted soils in July and November 2022.

Based on the composite results collected from the soil stockpiles post treatment, TPA is proposing to backfill of the excavation with the treated material.

3.1 Dust Monitoring

To ensure no unacceptable worker exposures to dust and windblown particulates, a real-time dust meter was used to monitor the concentration of dust generated while excavating impacted material. The dust meter readings did not exceed the action threshold of 3.0 mg/m³ during excavation activities.

If you have questions regarding any information covered in this document, please feel free to contact Peter Haid at Tradepoint Atlantic: 443-649-5055.

Respectfully Submitted,
ARM Group LLC

Joshua M. Barna, G.I.T.
Project Geologist

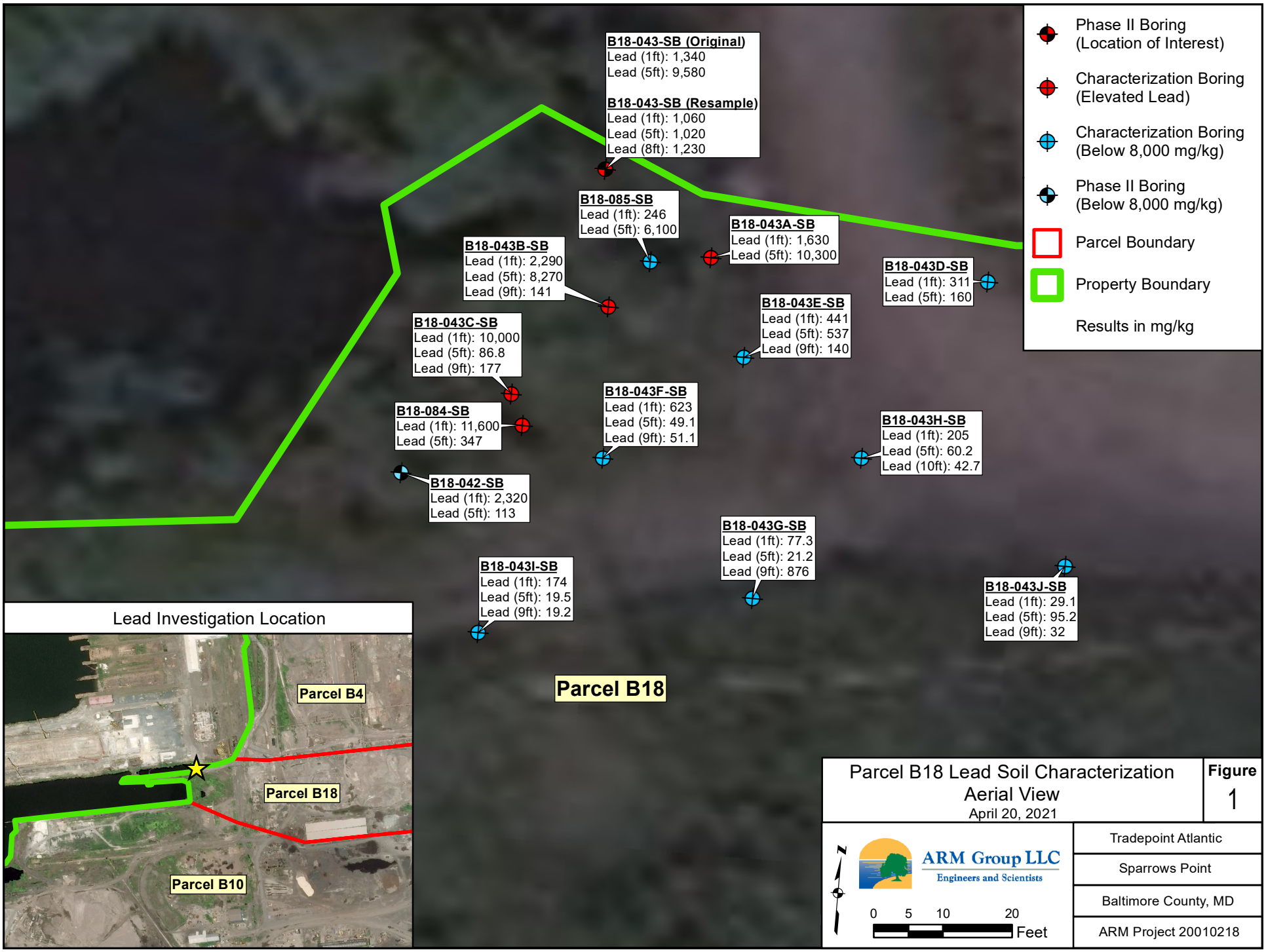
Kaye Guille, P.E., PMP
Senior Engineer

Attachments:
Figure 1: Parcel B18 Lead Soil Characterization
Figure 2: Parcel B18 Proposed Soil Excavation Boundaries

Table 1: Soil Confirmation Results
Table 2: Stockpile and Treated Soil Sampling Results

Attachment 1: Laboratory Reports

FIGURES



Parcel B18 Lead Soil Characterization
Aerial View
April 20, 2021

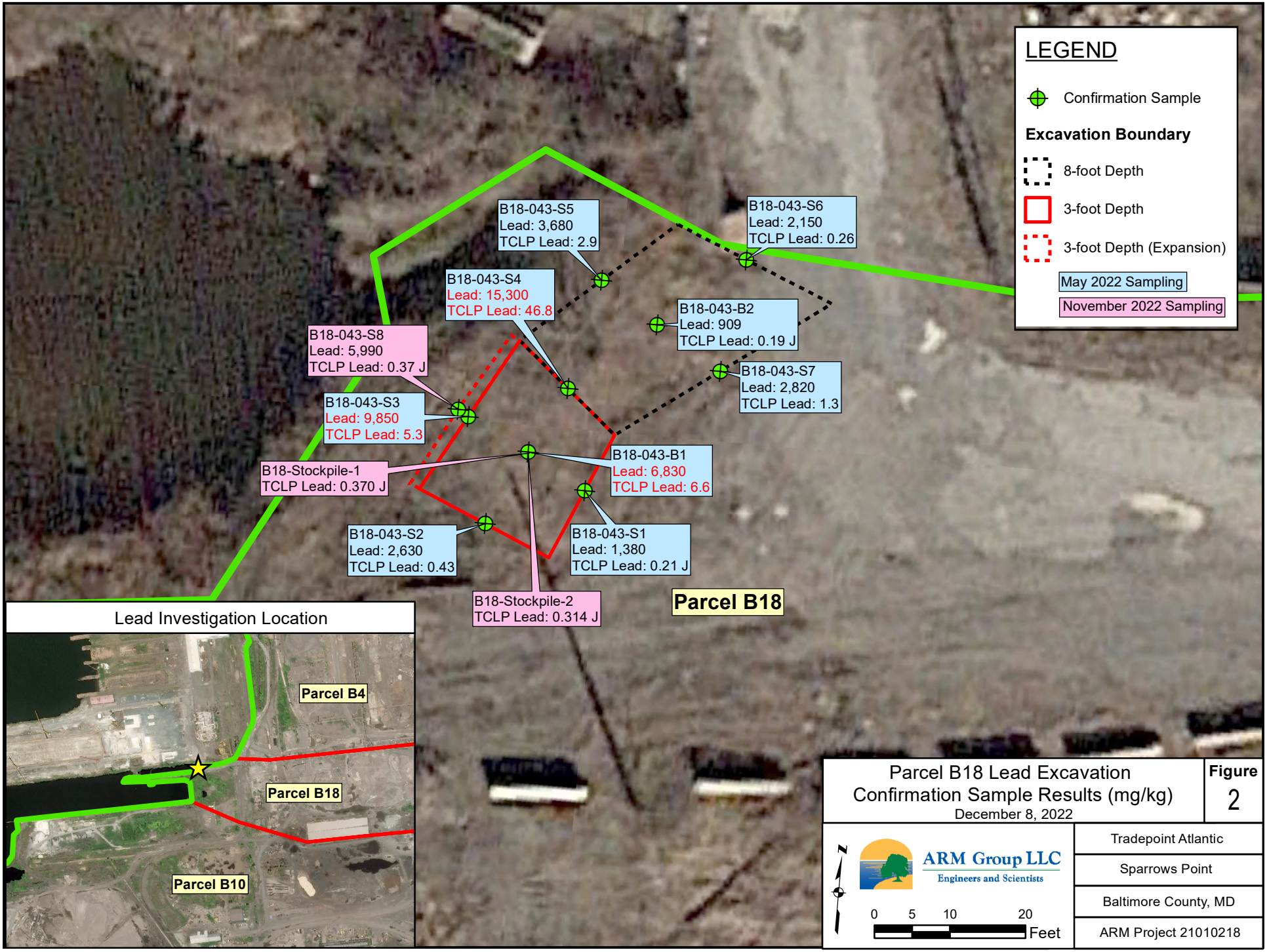
Figure 1

ARM Group LLC
Engineers and Scientists

0 5 10 20
Feet

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 20010218

P:\EnviroAnalytics Group\150300M EAG_Sparrows Point Area BGIS\Parcel B18 Lead Characterization.mxd



Parcel B18 Lead Excavation
Confirmation Sample Results (mg/kg)
December 8, 2022

Figure 2

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Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010218

P:\EnviroAnalytics Group\150300M EAG_Sparrows Point Area BGIS\Parcel B18 Lead Characterization.mxd

TABLES

Table 1 - Parcel B18
Soil Confirmation Results
Sparrows Point, Maryland

Sample Date	Location ID	Sample Location	Lead (mg/kg)	TCLP Lead (mg/L)
5/10/2022	B18-043-B1	Base (3 ft)	6,830	**6.6**
5/10/2022	B18-043-B2	Base (8 ft)	909	0.19 J
5/10/2022	B18-043-S1	Sidewall	1,380	0.21 J
5/10/2022	B18-043-S2	Sidewall	2,630	0.43
5/10/2022	B18-043-S3	Sidewall	9,850	**5.3**
5/10/2022	B18-043-S4	Excavation Midpoint (3 ft)	15,300	**46.8**
5/10/2022	B18-043-S5	Sidewall	3,680	2.9
5/10/2022	B18-043-S6	Sidewall	2,150	0.26
5/10/2022	B18-043-S7	Sidewall	2,820	1.3
11/8/2022	B18-043-S8	Sidewall	5,990	1.34

Highlighted indicate an elevated lead result over 8,000 mg/kg
Value in red exceeds the TCLP Lead threshold of 5 mg/L
Indicates sample was excavated

TCLP = Toxicity Characteristic Leaching Procedure
J: The positive result reported for this analyte is a quantitative estimate.

Table 2 - Parcel B18
Stockpile and Treated Soil Sampling Results
Sparrows Point, Maryland

Sample Date	Location ID	Lead (mg/kg)	TCLP Lead Result (mg/L)	Notes
5/10/2022	B18-SW-0-3	-	2.9	Soil stockpiled from SW excavation from 0-3 ft bgs, pre treatment
5/10/2022	B18-NE-0-2	-	0.59	Soil stockpiled from NE excavation from 0-2 ft bgs, pre treatment
5/10/2022	B18-NE-2-4	-	**10.3**	Soil stockpiled from NE excavation from 2-4 ft bgs, pre treatment
5/10/2022	B18-NE-4-6	-	**11.7**	Soil stockpiled from NE excavation from 4-6 ft bgs, pre treatment
5/10/2022	B18-NE-6-8	-	**22.3**	Soil stockpiled from NE excavation from 6-8 ft bgs, pre treatment
7/18/2022	B18-Stockpile-North	3,770	0.335 J	Soil stockpiled from NE excavation from 4-6 ft bgs, post treatment
7/18/2022	B18-Stockpile-South	3,780	0.214 J	Soil stockpiled from NE excavation from 2-4 ft bgs, post treatment
7/18/2022	B18-Stockpile-West	3,710	0.179 J	Soil stockpiled from NE excavation from 6-8 ft bgs, post treatment
11/4/2022	B18-Stockpile-1	-	0.370 J	Treated soil following Terrabond® mixing in SW excavation
11/4/2022	B18-Stockpile-2	-	0.314 J	Treated soil following Terrabond® mixing in SW excavation

Value in red exceeds the TCLP Lead threshold of 5 mg/L

TCLP = Toxicity Characteristic Leaching Procedure
J: The positive result reported for this analyte is a quantitative estimate.

ATTACHMENT 1

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

May 25, 2022

Mr. Bob Tworkowski
Tradepoint Atlantic
1600 Sparrow's Point Boulevard
Sparrows Point, MD 21219

RE: Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Dear Mr. Tworkowski:

Enclosed are the analytical results for sample(s) received by the laboratory on May 11, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Beaver

This project follows the April 5, 2016 revision 3 Quality Assurance Project Plan for Sparrows Point Terminal Site, Sparrows Point, MD prepared for EnviroAnalytics Group and is not for PA DEP compliance reporting.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Skyler C. Richmond
skyler.richmond@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Kaye Guille, ARM Group Inc.
J.Price, ARM Group Inc.
Stewart Kabis, ARM Group Inc.
Mr. Eric S. Magdar, ARM Group Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Pace Analytical Services Beaver
225 Industrial Park Road, Beaver, WV 25813
Virginia VELAP 460148
West Virginia DEP 060
West Virginia DHHR 00412CM
North Carolina DEQ 466
Kentucky Wastewater Certification KY90039
Pennsylvania DEP 68-00839

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30488859001	**B18-043-S1**	Solid	05/10/22 10:00	05/11/22 22:30
30488859002	**B18-043-S2**	Solid	05/10/22 10:05	05/11/22 22:30
30488859003	**B18-043-S3**	Solid	05/10/22 10:10	05/11/22 22:30
30488859004	**B18-043-S4**	Solid	05/10/22 11:00	05/11/22 22:30
30488859005	**B18-043-S5**	Solid	05/10/22 11:05	05/11/22 22:30
30488859006	**B18-043-S6**	Solid	05/10/22 11:10	05/11/22 22:30
30488859007	**B18-043-S7**	Solid	05/10/22 11:15	05/11/22 22:30
30488859008	**B18-043-B1**	Solid	05/10/22 10:15	05/11/22 22:30
30488859009	**B18-043-B2**	Solid	05/10/22 10:20	05/11/22 22:30
30488859010	**Duplicate**	Solid	05/10/22 00:01	05/11/22 22:30
30488859011	**B18-SW-0-3**	Solid	05/10/22 12:00	05/11/22 22:30
30488859012	**B18-NE-0-2**	Solid	05/10/22 12:05	05/11/22 22:30
30488859013	**B18-NE-2-4**	Solid	05/10/22 12:10	05/11/22 22:30
30488859014	**B18-NE-4-6**	Solid	05/10/22 12:15	05/11/22 22:30
30488859015	**B18-NE-6-8**	Solid	05/10/22 12:20	05/11/22 22:30

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30488859001	**B18-043-S1**	EPA 6010D	MFC	1	PASI-BV
		EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859002	**B18-043-S2**	EPA 6010D	MFC	1	PASI-BV
		EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859003	**B18-043-S3**	EPA 6010D	MFC	1	PASI-BV
		EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859004	**B18-043-S4**	EPA 6010D	MFC	1	PASI-BV
		EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859005	**B18-043-S5**	EPA 6010D	MFC	1	PASI-BV
		EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859006	**B18-043-S6**	EPA 6010D	MFC	1	PASI-BV
		EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859007	**B18-043-S7**	EPA 6010D	MFC	1	PASI-BV
		EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859008	**B18-043-B1**	EPA 6010D	MFC	1	PASI-BV
		EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859009	**B18-043-B2**	EPA 6010D	MFC	1	PASI-BV
		EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859010	**Duplicate**	EPA 6010D	MFC	1	PASI-BV

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859011	**B18-SW-0-3**	EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859012	**B18-NE-0-2**	EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859013	**B18-NE-2-4**	EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859014	**B18-NE-4-6**	EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV
30488859015	**B18-NE-6-8**	EPA 6010D	MEH	7	PASI-BV
		EPA 7470A	RCH	1	PASI-BV
		SM 2540G-11	LPO	1	PASI-BV

PASI-BV = Pace Analytical Services - Beaver

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Method: **EPA 6010D**
Description: BVR 6010D MET ICP,Solid,3050B
Client: Tradepoint Atlantic
Date: May 25, 2022

General Information:
10 samples were analyzed for EPA 6010D by Pace Analytical Services Beaver. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 505004

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30488859009

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2445951)
  - Lead
- MSD (Lab ID: 2445952)
  - Lead

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Method: **EPA 6010D**
Description: BVR 6010D MET ICP, TCLP, 3010A
Client: Tradepoint Atlantic
Date: May 25, 2022

General Information:
15 samples were analyzed for EPA 6010D by Pace Analytical Services Beaver. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Method: **EPA 7470A**
Description: BVR 7470 Mercury, TCLP
Client: Tradepoint Atlantic
Date: May 25, 2022

General Information:
15 samples were analyzed for EPA 7470A by Pace Analytical Services Beaver. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Method: **SM 2540G-11**
Description: BVR Percent Moisture
Client: Tradepoint Atlantic
Date: May 25, 2022

General Information:
15 samples were analyzed for SM 2540G-11 by Pace Analytical Services Beaver. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

QC Batch: 504925

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 2445538)
  - Percent Moisture
- DUP (Lab ID: 2445539)
  - Percent Moisture

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Method: **SM 2540G-11**
Description: BVR Percent Moisture
Client: Tradepoint Atlantic
Date: May 25, 2022

Analyte Comments:

QC Batch: 504925

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- B18-043-B1 (Lab ID: 30488859008)
  - Percent Moisture
- B18-043-B2 (Lab ID: 30488859009)
  - Percent Moisture
- B18-043-S1 (Lab ID: 30488859001)
  - Percent Moisture
- B18-043-S2 (Lab ID: 30488859002)
  - Percent Moisture
- B18-043-S3 (Lab ID: 30488859003)
  - Percent Moisture
- B18-043-S4 (Lab ID: 30488859004)
  - Percent Moisture
- B18-043-S5 (Lab ID: 30488859005)
  - Percent Moisture
- B18-043-S6 (Lab ID: 30488859006)
  - Percent Moisture
- B18-043-S7 (Lab ID: 30488859007)
  - Percent Moisture
- B18-NE-0-2 (Lab ID: 30488859012)
  - Percent Moisture
- B18-NE-2-4 (Lab ID: 30488859013)
  - Percent Moisture
- B18-NE-4-6 (Lab ID: 30488859014)
  - Percent Moisture
- B18-NE-6-8 (Lab ID: 30488859015)
  - Percent Moisture
- B18-SW-0-3 (Lab ID: 30488859011)
  - Percent Moisture
- DUP (Lab ID: 2445538)
  - Percent Moisture
- DUP (Lab ID: 2445539)
  - Percent Moisture
- Duplicate (Lab ID: 30488859010)
  - Percent Moisture

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-043-S1 **Lab ID: 30488859001** Collected: 05/10/22 10:00 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP,Solid,3050B	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Beaver								
Lead	**1380**	mg/kg	60.5	5.8	10	05/17/22 15:15	05/18/22 18:12	7439-92-1	
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 7.51; Final pH: 4.98 Pace Analytical Services - Beaver								
Arsenic	**0.039J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 17:31	7440-38-2	
Barium	**0.68J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 17:31	7440-39-3	
Cadmium	**0.0053J**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 17:31	7440-43-9	
Chromium	**0.12 U**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 17:31	7440-47-3	
Lead	**0.21J**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 17:31	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 17:31	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 17:31	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 7.51; Final pH: 4.98 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 08:56	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**17.3**	%	0.10	0.10	1		05/17/22 11:47		D6,N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-043-S2 **Lab ID: 30488859002** Collected: 05/10/22 10:05 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP,Solid,3050B	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Beaver								
Lead	**2630**	mg/kg	59.5	5.7	10	05/17/22 15:15	05/18/22 18:15	7439-92-1	
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 7.84; Final pH: 4.67 Pace Analytical Services - Beaver								
Arsenic	**0.041J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 17:33	7440-38-2	
Barium	**0.48J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 17:33	7440-39-3	
Cadmium	**0.042J**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 17:33	7440-43-9	
Chromium	**0.038J**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 17:33	7440-47-3	
Lead	**0.43**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 17:33	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 17:33	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 17:33	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 7.84; Final pH: 4.67 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 08:57	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**16.8**	%	0.10	0.10	1		05/17/22 11:50		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-043-S3 **Lab ID: 30488859003** Collected: 05/10/22 10:10 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP,Solid,3050B	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Beaver								
Lead	**9850**	mg/kg	70.4	6.8	10	05/17/22 15:15	05/18/22 18:17	7439-92-1	
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 7.99; Final pH: 4.81 Pace Analytical Services - Beaver								
Arsenic	**0.028J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 17:35	7440-38-2	
Barium	**1.4J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 17:35	7440-39-3	
Cadmium	**0.18**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 17:35	7440-43-9	
Chromium	**0.0046J**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 17:35	7440-47-3	
Lead	**5.3**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 17:35	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 17:35	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 17:35	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 7.99; Final pH: 4.81 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 08:59	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**29.0**	%	0.10	0.10	1		05/17/22 11:53		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-043-S4 **Lab ID: 30488859004** Collected: 05/10/22 11:00 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP,Solid,3050B	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Beaver								
Lead	**15300**	mg/kg	70.0	6.8	10	05/17/22 15:15	05/18/22 18:19	7439-92-1	
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 7.44; Final pH: 4.75 Pace Analytical Services - Beaver								
Arsenic	**0.027J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 17:37	7440-38-2	
Barium	**0.94J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 17:37	7440-39-3	
Cadmium	**0.19**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 17:37	7440-43-9	
Chromium	**0.12 U**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 17:37	7440-47-3	
Lead	**46.8**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 17:37	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 17:37	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 17:37	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 7.44; Final pH: 4.75 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 09:01	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**29.3**	%	0.10	0.10	1		05/17/22 11:56		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-043-S5 **Lab ID: 30488859005** Collected: 05/10/22 11:05 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP,Solid,3050B	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Beaver								
Lead	**3680**	mg/kg	59.2	5.7	10	05/17/22 15:15	05/18/22 18:22	7439-92-1	
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 9.09; Final pH: 5.23 Pace Analytical Services - Beaver								
Arsenic	**0.024J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 17:43	7440-38-2	
Barium	**1.0J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 17:43	7440-39-3	
Cadmium	**0.058**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 17:43	7440-43-9	
Chromium	**0.0070J**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 17:43	7440-47-3	
Lead	**2.9**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 17:43	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 17:43	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 17:43	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 9.09; Final pH: 5.23 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 09:02	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**16.4**	%	0.10	0.10	1		05/17/22 11:58		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-043-S6 **Lab ID: 30488859006** Collected: 05/10/22 11:10 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP,Solid,3050B	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Beaver								
Lead	**2150**	mg/kg	63.0	6.1	10	05/17/22 15:15	05/18/22 18:24	7439-92-1	
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 9.37; Final pH: 5.64 Pace Analytical Services - Beaver								
Arsenic	**0.040J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 17:45	7440-38-2	
Barium	**0.96J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 17:45	7440-39-3	
Cadmium	**0.017J**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 17:45	7440-43-9	
Chromium	**0.12 U**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 17:45	7440-47-3	
Lead	**0.26**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 17:45	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 17:45	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 17:45	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 9.37; Final pH: 5.64 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 09:04	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**21.4**	%	0.10	0.10	1		05/17/22 12:01		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-043-S7 **Lab ID: 30488859007** Collected: 05/10/22 11:15 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP,Solid,3050B	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Beaver								
Lead	**2820**	mg/kg	57.0	5.5	10	05/17/22 15:15	05/18/22 18:26	7439-92-1	
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.21; Final pH: 4.7 Pace Analytical Services - Beaver								
Arsenic	**0.50 U**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 17:47	7440-38-2	
Barium	**0.82J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 17:47	7440-39-3	
Cadmium	**0.027J**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 17:47	7440-43-9	
Chromium	**0.0047J**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 17:47	7440-47-3	
Lead	**1.3**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 17:47	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 17:47	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 17:47	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.21; Final pH: 4.7 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 09:09	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**13.2**	%	0.10	0.10	1		05/17/22 12:04		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-043-B1 **Lab ID: 30488859008** Collected: 05/10/22 10:15 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP,Solid,3050B	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Beaver								
Lead	**6830**	mg/kg	71.9	6.9	10	05/17/22 15:15	05/18/22 18:33	7439-92-1	
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.31; Final pH: 4.75 Pace Analytical Services - Beaver								
Arsenic	**0.044J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 17:49	7440-38-2	
Barium	**1.1J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 17:49	7440-39-3	
Cadmium	**0.14**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 17:49	7440-43-9	
Chromium	**0.0062J**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 17:49	7440-47-3	
Lead	**6.6**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 17:49	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 17:49	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 17:49	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.31; Final pH: 4.75 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 09:11	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**31.1**	%	0.10	0.10	1		05/17/22 12:05		N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-043-B2 **Lab ID: 30488859009** Collected: 05/10/22 10:20 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP,Solid,3050B	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Beaver								
Lead	**909**	mg/kg	81.8	7.9	10	05/17/22 15:15	05/18/22 18:36	7439-92-1	M1
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.83; Final pH: 5.56 Pace Analytical Services - Beaver								
Arsenic	**0.029J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 17:51	7440-38-2	
Barium	**0.48J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 17:51	7440-39-3	
Cadmium	**0.0068J**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 17:51	7440-43-9	
Chromium	**0.12 U**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 17:51	7440-47-3	
Lead	**0.19J**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 17:51	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 17:51	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 17:51	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.83; Final pH: 5.56 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 09:13	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**38.9**	%	0.10	0.10	1		05/17/22 12:09		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: Duplicate **Lab ID: 30488859010** Collected: 05/10/22 00:01 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP,Solid,3050B	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Beaver								
Lead	**517**	mg/kg	80.0	7.7	10	05/17/22 15:15	05/18/22 18:38	7439-92-1	
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.78; Final pH: 5.05 Pace Analytical Services - Beaver								
Arsenic	**0.035J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 18:01	7440-38-2	
Barium	**0.53J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 18:01	7440-39-3	
Cadmium	**0.011J**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 18:01	7440-43-9	
Chromium	**0.12 U**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 18:01	7440-47-3	
Lead	**0.66**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 18:01	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 18:01	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 18:01	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.78; Final pH: 5.05 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 09:18	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**37.5**	%	0.10	0.10	1		05/17/22 12:12		D6,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-SW-0-3 **Lab ID: 30488859011** Collected: 05/10/22 12:00 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.5; Final pH: 4.92 Pace Analytical Services - Beaver								
Arsenic	**0.021J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 18:07	7440-38-2	
Barium	**1.2J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 18:07	7440-39-3	
Cadmium	**0.095**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 18:07	7440-43-9	
Chromium	**0.0060J**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 18:07	7440-47-3	
Lead	**2.9**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 18:07	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 18:07	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 18:07	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.5; Final pH: 4.92 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 09:20	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**20.0**	%	0.10	0.10	1		05/17/22 12:16		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-NE-0-2 **Lab ID: 30488859012** Collected: 05/10/22 12:05 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 9.36; Final pH: 5.46 Pace Analytical Services - Beaver								
Arsenic	**0.036J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 18:09	7440-38-2	
Barium	**0.99J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 18:09	7440-39-3	
Cadmium	**0.033J**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 18:09	7440-43-9	
Chromium	**0.12 U**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 18:09	7440-47-3	
Lead	**0.59**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 18:09	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 18:09	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 18:09	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 9.36; Final pH: 5.46 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 09:22	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**20.4**	%	0.10	0.10	1		05/17/22 12:19		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Greensburg, PA 15601
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ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-NE-2-4 **Lab ID: 30488859013** Collected: 05/10/22 12:10 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.91; Final pH: 5.19 Pace Analytical Services - Beaver								
Arsenic	**0.030J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 18:11	7440-38-2	
Barium	**1.0J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 18:11	7440-39-3	
Cadmium	**0.12**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 18:11	7440-43-9	
Chromium	**0.12 U**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 18:11	7440-47-3	
Lead	**10.3**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 18:11	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 18:11	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 18:11	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.91; Final pH: 5.19 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 09:24	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**23.8**	%	0.10	0.10	1		05/17/22 12:20		N2

REPORT OF LABORATORY ANALYSIS

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(724)850-5600

ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-NE-4-6 **Lab ID: 30488859014** Collected: 05/10/22 12:15 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.69; Final pH: 5.07 Pace Analytical Services - Beaver								
Arsenic	**0.50 U**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 18:13	7440-38-2	
Barium	**0.92J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 18:13	7440-39-3	
Cadmium	**0.10**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 18:13	7440-43-9	
Chromium	**0.12 U**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 18:13	7440-47-3	
Lead	**11.7**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 18:13	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 18:13	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 18:13	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.69; Final pH: 5.07 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 09:25	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**25.1**	%	0.10	0.10	1		05/17/22 12:22		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(724)850-5600

ANALYTICAL RESULTS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Sample: B18-NE-6-8 **Lab ID: 30488859015** Collected: 05/10/22 12:20 Received: 05/11/22 22:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 6010D MET ICP, TCLP, 3010A	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.76; Final pH: 4.9 Pace Analytical Services - Beaver								
Arsenic	**0.042J**	mg/L	0.50	0.021	1	05/18/22 09:32	05/24/22 18:15	7440-38-2	
Barium	**1.2J**	mg/L	2.5	0.0052	1	05/18/22 09:32	05/24/22 18:15	7440-39-3	
Cadmium	**0.028J**	mg/L	0.050	0.00093	1	05/18/22 09:32	05/24/22 18:15	7440-43-9	
Chromium	**0.0062J**	mg/L	0.12	0.0029	1	05/18/22 09:32	05/24/22 18:15	7440-47-3	
Lead	**22.3**	mg/L	0.25	0.012	1	05/18/22 09:32	05/24/22 18:15	7439-92-1	
Selenium	**0.10 U**	mg/L	0.10	0.038	1	05/18/22 09:32	05/24/22 18:15	7782-49-2	
Silver	**0.12 U**	mg/L	0.12	0.010	1	05/18/22 09:32	05/24/22 18:15	7440-22-4	
BVR 7470 Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 05/17/22 11:59 Initial pH: 8.76; Final pH: 4.9 Pace Analytical Services - Beaver								
Mercury	**0.0010 U**	mg/L	0.0010	0.00018	1	05/24/22 11:46	05/25/22 09:31	7439-97-6	
BVR Percent Moisture	Analytical Method: SM 2540G-11 Pace Analytical Services - Beaver								
Percent Moisture	**33.2**	%	0.10	0.10	1		05/17/22 12:24		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

QC Batch: 505004 | Analysis Method: EPA 6010D
QC Batch Method: EPA 3050B | Analysis Description: BVR 6010D MET ICP,Solid,3050B
Laboratory: Pace Analytical Services - Beaver
Associated Lab Samples: 30488859001, 30488859002, 30488859003, 30488859004, 30488859005, 30488859006, 30488859007, 30488859008, 30488859009, 30488859010

METHOD BLANK: 2445902 Matrix: Solid
Associated Lab Samples: 30488859001, 30488859002, 30488859003, 30488859004, 30488859005, 30488859006, 30488859007, 30488859008, 30488859009, 30488859010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Lead	mg/kg	5.0 U	5.0	0.48	05/18/22 16:02	

LABORATORY CONTROL SAMPLE: 2445903

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	100	118	118	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2445951 2445952

Parameter	Units	30488859009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/kg	909	164	164	902	967	15	55	75-125	7	20	M1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

QC Batch: 505152
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D MET ICP, TCLP, 3010A
Laboratory: Pace Analytical Services - Beaver
Associated Lab Samples: 30488859001, 30488859002, 30488859003, 30488859004, 30488859005, 30488859006, 30488859007, 30488859008, 30488859009, 30488859010, 30488859011, 30488859012, 30488859013, 30488859014, 30488859015

LABORATORY CONTROL SAMPLE: 2446941

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10	10.3	103	80-120	
Barium	mg/L	10	10.3	103	80-120	
Cadmium	mg/L	5	5.1	103	80-120	
Chromium	mg/L	10	10.3	103	80-120	
Lead	mg/L	10	10.1	101	80-120	
Selenium	mg/L	10	10.6	106	80-120	
Silver	mg/L	2.5	2.6	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2446942 2446943

Parameter	Units	30488859009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.029J	10	10	10.5	10.5	105	105	75-125	1	20	
Barium	mg/L	0.48J	10	10	10.5	10.4	100	99	75-125	0	20	
Cadmium	mg/L	0.0068J	5	5	5.0	4.9	100	99	75-125	1	20	
Chromium	mg/L	0.12 U	10	10	10.2	10.1	102	101	75-125	1	20	
Lead	mg/L	0.19J	10	10	10.1	10	99	98	75-125	1	20	
Selenium	mg/L	0.10 U	10	10	10.6	10.5	106	105	75-125	1	20	
Silver	mg/L	0.12 U	2.5	2.5	2.6	2.6	104	103	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

QC Batch: 506345
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: BVR 7470 Mercury TCLP
Laboratory: Pace Analytical Services - Beaver
Associated Lab Samples: 30488859001, 30488859002, 30488859003, 30488859004, 30488859005, 30488859006, 30488859007, 30488859008, 30488859009, 30488859010, 30488859011, 30488859012, 30488859013, 30488859014, 30488859015

METHOD BLANK: 2445881 Matrix: Water
Associated Lab Samples: 30488859001, 30488859002, 30488859003, 30488859004, 30488859005, 30488859006, 30488859007, 30488859008, 30488859009, 30488859010, 30488859011, 30488859012, 30488859013, 30488859014, 30488859015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	0.0010 U	0.0010	0.00018	05/25/22 08:52	

LABORATORY CONTROL SAMPLE: 2453599

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.02	0.019	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2452920 2452921

Parameter	Units	30488859009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	0.0010 U	0.02	0.02	0.020	0.020	98	98	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(724)850-5600

QUALITY CONTROL DATA

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

QC Batch: 504925
QC Batch Method: SM 2540G-11
Analysis Method: SM 2540G-11
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Beaver
Associated Lab Samples: 30488859001, 30488859002, 30488859003, 30488859004, 30488859005, 30488859006, 30488859007, 30488859008, 30488859009, 30488859010, 30488859011, 30488859012, 30488859013, 30488859014, 30488859015

SAMPLE DUPLICATE: 2445538

Parameter	Units	30488859001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.3	14.6	17	5	D6,N2

SAMPLE DUPLICATE: 2445539

Parameter	Units	30488859010 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	37.5	34.9	7	5	D6,N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30488859001	**B18-043-S1**	EPA 3050B	505004	EPA 6010D	505280
30488859002	**B18-043-S2**	EPA 3050B	505004	EPA 6010D	505280
30488859003	**B18-043-S3**	EPA 3050B	505004	EPA 6010D	505280
30488859004	**B18-043-S4**	EPA 3050B	505004	EPA 6010D	505280
30488859005	**B18-043-S5**	EPA 3050B	505004	EPA 6010D	505280
30488859006	**B18-043-S6**	EPA 3050B	505004	EPA 6010D	505280
30488859007	**B18-043-S7**	EPA 3050B	505004	EPA 6010D	505280
30488859008	**B18-043-B1**	EPA 3050B	505004	EPA 6010D	505280
30488859009	**B18-043-B2**	EPA 3050B	505004	EPA 6010D	505280
30488859010	**Duplicate**	EPA 3050B	505004	EPA 6010D	505280
30488859001	**B18-043-S1**	EPA 3010A	505152	EPA 6010D	506458
30488859002	**B18-043-S2**	EPA 3010A	505152	EPA 6010D	506458
30488859003	**B18-043-S3**	EPA 3010A	505152	EPA 6010D	506458
30488859004	**B18-043-S4**	EPA 3010A	505152	EPA 6010D	506458
30488859005	**B18-043-S5**	EPA 3010A	505152	EPA 6010D	506458
30488859006	**B18-043-S6**	EPA 3010A	505152	EPA 6010D	506458
30488859007	**B18-043-S7**	EPA 3010A	505152	EPA 6010D	506458
30488859008	**B18-043-B1**	EPA 3010A	505152	EPA 6010D	506458
30488859009	**B18-043-B2**	EPA 3010A	505152	EPA 6010D	506458
30488859010	**Duplicate**	EPA 3010A	505152	EPA 6010D	506458
30488859011	**B18-SW-0-3**	EPA 3010A	505152	EPA 6010D	506458
30488859012	**B18-NE-0-2**	EPA 3010A	505152	EPA 6010D	506458
30488859013	**B18-NE-2-4**	EPA 3010A	505152	EPA 6010D	506458
30488859014	**B18-NE-4-6**	EPA 3010A	505152	EPA 6010D	506458
30488859015	**B18-NE-6-8**	EPA 3010A	505152	EPA 6010D	506458
30488859001	**B18-043-S1**	EPA 7470A	506345	EPA 7470A	506825
30488859002	**B18-043-S2**	EPA 7470A	506345	EPA 7470A	506825
30488859003	**B18-043-S3**	EPA 7470A	506345	EPA 7470A	506825
30488859004	**B18-043-S4**	EPA 7470A	506345	EPA 7470A	506825
30488859005	**B18-043-S5**	EPA 7470A	506345	EPA 7470A	506825
30488859006	**B18-043-S6**	EPA 7470A	506345	EPA 7470A	506825
30488859007	**B18-043-S7**	EPA 7470A	506345	EPA 7470A	506825
30488859008	**B18-043-B1**	EPA 7470A	506345	EPA 7470A	506825
30488859009	**B18-043-B2**	EPA 7470A	506345	EPA 7470A	506825
30488859010	**Duplicate**	EPA 7470A	506345	EPA 7470A	506825
30488859011	**B18-SW-0-3**	EPA 7470A	506345	EPA 7470A	506825
30488859012	**B18-NE-0-2**	EPA 7470A	506345	EPA 7470A	506825
30488859013	**B18-NE-2-4**	EPA 7470A	506345	EPA 7470A	506825
30488859014	**B18-NE-4-6**	EPA 7470A	506345	EPA 7470A	506825
30488859015	**B18-NE-6-8**	EPA 7470A	506345	EPA 7470A	506825
30488859001	**B18-043-S1**	SM 2540G-11	504925		
30488859002	**B18-043-S2**	SM 2540G-11	504925		
30488859003	**B18-043-S3**	SM 2540G-11	504925		
30488859004	**B18-043-S4**	SM 2540G-11	504925		
30488859005	**B18-043-S5**	SM 2540G-11	504925		
30488859006	**B18-043-S6**	SM 2540G-11	504925		
30488859007	**B18-043-S7**	SM 2540G-11	504925		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: B18 Lead Excavation 21010218
Pace Project No.: 30488859

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30488859008	**B18-043-B1**	SM 2540G-11	504925		
30488859009	**B18-043-B2**	SM 2540G-11	504925		
30488859010	**Duplicate**	SM 2540G-11	504925		
30488859011	**B18-SW-0-3**	SM 2540G-11	504925		
30488859012	**B18-NE-0-2**	SM 2540G-11	504925		
30488859013	**B18-NE-2-4**	SM 2540G-11	504925		
30488859014	**B18-NE-4-6**	SM 2540G-11	504925		
30488859015	**B18-NE-6-8**	SM 2540G-11	504925		

Pace Analytical
www.pacelabs.com

WO# : 30488859

30488859

...Document
...ted accurately.

Page: 1 of 2

Section A Required Client Information:

Company:	Tradepoint Atlantic
Address:	1600 Sparrows Point Blvd
	Sparrows Point, MD 21219
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	3 day ~~5 day~~

Section B Required Project Information:

Report To:	Matt Newman
Copy To:	Stew Kabis
PO Number:	
Project Name:	BIS lead excavation
Project Number:	21010218

Attention:	Matt Newman
Company Name:	Tradepoint Atlantic
Address:	1600 Sparrows Point Blvd, Sparrows Point, MD 21219
Pace Quote Reference:	
Pace Project Manager:	Samantha Bayura
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: MD

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Other	DI Water	Analysis Test Y/N →	~~VOC 8260~~ TCLP metals	~~GRO 8015~~ lead 6010	DRO 8015B	Oil and Grease	Total Cyanide	Mercury	Metals 6010	Hexavalent Chromium	SVOC 8270	PAH Sim	Dissolved metals and hexavalent chro	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	BIS-043-S1	SL	G	5/10 ~~5/9~~	5pm	5/10	1000		4	4									X	X										001
2	BIS-043-S2	SL	G			5/10	1005		4	4									X	X										002
3	BIS-043-S3	SL	G			5/10	1010		4	4									X	X										003
4	BIS-043-S4	SL	G			5/10	1100		4	4									X	X										004
5	BIS-043-S5	SL	G			5/10	1105		4	4									X	X										005
6	BIS-043-S6	SL	G			5/10	1110		4	4									X	X										006
7	BIS-043-S7	SL	G			5/10	1115		4	4									X	X										007
8	BIS-043-B1	SL	G			5/10	1015		4	4									X	X										008
9	BIS-043-B2	SL	G			5/10	1020		12	12									X	X									MS/MSD	009
10	Duplicate	SL	G			5/10	—		4	4									X	X										010
11	BIS-SW-0-3	SL	C			5/10	1200		2	2									X											011
12	BIS-NE-0-2	SL	C			5/10	1205		2	2									X											012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Conditions		
Data Package Required? (Y/N):	[signature] ARM	5/10/22	1300	[signature]	05/11/22	14:30			
Data Validation Required? (Y/N):	[signature] PACE	05/11/22	1750	[signature]	5/11/22	1800	—		
If data package is required, attach data package checklist.	[signature]	5/11-22	2230	[signature]	5-11-22	2230	4	N	4

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joshua Barnes

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 05/10/22

Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

30488859et MS 5-13-22

Page: 2 of 2

Section A Required Client Information:

Company:	Tradepoint Atlantic
Address:	1600 Sparrows Point Blvd
	Sparrows Point, MD 21219
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	3 day ~~5 day~~

Section B Required Project Information:

Report To:	Matt Newman
Copy To:	Stew Kabis
PO Number:	~~210218~~
Project Name:	BIS lead excavation
Project Number:	210102218

Section C Invoice Information:

Attention:	Matt Newman
Company Name:	Tradepoint Atlantic
Address:	1600 Sparrows Point Blvd, Sparrows Point, MD 21219
Pace Quote Reference:	
Pace Project Manager:	Samantha Bayura
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: MD

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Other	DI Water	Y/N	Analysis Test: ~~VOC 8260~~ TCLP Metals	GRO 8015	DRO 8015B	Oil and Grease	Total Cyanide	Mercury	Metals 6010	Hexavalent Chromium	SVOC 8270	PAH Sim	Dissolved metals and hexavalent chro	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	BIS-NE-2-4	SL	C			5/10	1210		2	2									X										013
2	BIS-NE-4-6	SL	C			5/10	1215		2	2									X										014
3	BIS-NE-6-8	SL	C			5/10	1220		2	2									X										015
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Data Package Required? (Y/N):	Joshua Barney ARM	5/10/22	1300		05/11/22	14:30
Data Validation Required? (Y/N)		05/11/22	1750	KDS PACE	5-11-22	
If data package is required, attach data package checklist.	KDS PACE	5/11/22	2230		5-11-22	2230

Sample Conditions		
—		
Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joshua Barney

SIGNATURE of SAMPLER: Joshua Barney

DATE Signed (MM/DD/YY): 05/10/22

Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: Trade point Project # 30488854

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other _____

Label MJS
LIMS Login MJS

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Thermometer Used 17 Type of Ice: (Wet) Blue None

Cooler Temperature Observed Temp 4.4 °C Correction Factor: +0.0 °C Final Temp: 4.4 °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot# NA	Date and Initials of person examining contents: MJS 5-13-22
Chain of Custody Present:	✓			1.	
Chain of Custody Filled Out:	✓			2.	
Chain of Custody Relinquished:	✓			3.	
Sampler Name & Signature on COC:	✓			4.	
Sample Labels match COC:	✓	✓		5. MJSS-1322	
-Includes date/time/ID Matrix: SL				Time on Sample 009 is 11:20	
Samples Arrived within Hold Time:	✓			6.	
Short Hold Time Analysis (<72hr remaining):		✓		7.	
Rush Turn Around Time Requested:	✓			8.	
Sufficient Volume:	✓			9.	
Correct Containers Used:	✓			10.	
-Pace Containers Used:	✓				
Containers Intact:	✓			11.	
Orthophosphate field filtered			✓	12.	
Hex Cr Aqueous sample field filtered			✓	13.	
Organic Samples checked for dechlorination:			✓	14.	
Filtered volume received for Dissolved tests			✓	15.	
All containers have been checked for preservation. exceptions: ~~VOA~~, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix			✓	16.	
~~All containers meet~~ method preservation requirements.	✓			Initial when completed MJS	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):			✓	17.	
Trip Blank Present:			✓	18.	
Trip Blank Custody Seals Present			✓		
Rad Samples Screened < 0.5 mrem/hr			✓	Initial when completed:	Date: / Survey Meter SN:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

***PM review** is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

WO# : 30488859

30488859

LIMS30 Internal Shipping Manifest

COOLER 25

Shipping Laboratory Location Code		Receiving Laboratory Location Code	
GBUR		BEAV	
Pace Greensburg: 1638 Roseytown Road Suite 2,3,4 Greensburg PA 15601		Pace Beaver: 225 Industrial Park Road Beaver WV 25813	
Shipping information		Received information	
Cooler ID	25	Cooler temp (rcvd) °C	
Packaged on Ice (Y/N)	Yes	Correction Factor	
Shipping Method	Courier	Cooler temp (corr) °C	
Tracking #	N/A	IR GUN ID	
PWS* Drinking water?	No	Received on ice?	

* If sample is from a PWS, the PWSID can be found in LIMS30

	Signature	Location	Date	Time
Relinquished		GBUR	5-13-22	1855
Received			5-14-22	750
Relinquished				
Received				
Relinquished				
Received				

Shipper	Scan Date	Columns	Type	LIMS Lab ID	LIMS Work Order
MF	5/13/2022	30488859009 WGFUA/C	WGFU	30488859009	30488859
MF	5/13/2022	30488859007 WGFU2/4	WGFU	30488859007	30488859
MF	5/13/2022	30488859002 WGFU4/4	WGFU	30488859002	30488859
MF	5/13/2022	30488859006 WGFU3/4	WGFU	30488859006	30488859
MF	5/13/2022	30488859008 WGFU2/4	WGFU	30488859008	30488859
MF	5/13/2022	30488859006 WGFU4/4	WGFU	30488859006	30488859
MF	5/13/2022	30488859008 WGFU1/4	WGFU	30488859008	30488859
MF	5/13/2022	30488859006 WGFU1/4	WGFU	30488859006	30488859
MF	5/13/2022	30488859010 WGFU3/4	WGFU	30488859010	30488859
MF	5/13/2022	30488859010 WGFU4/4	WGFU	30488859010	30488859
MF	5/13/2022	30488859003 WGFU4/4	WGFU	30488859003	30488859
MF	5/13/2022	30488859009 WGFUB/C	WGFU	30488859009	30488859
MF	5/13/2022	30488859001 WGFU3/4	WGFU	30488859001	30488859
MF	5/13/2022	30488859009 WGFU7/C	WGFU	30488859009	30488859
MF	5/13/2022	30488859009 WGFU3/4	WGFU	30488859009	30488859
MF	5/13/2022	30488859012 WGKU1/2	WGKU	30488859012	30488859
MF	5/13/2022	30488859011 WGKU2/2	WGKU	30488859011	30488859
MF	5/13/2022	30488859012 WGKU2/2	WGKU	30488859012	30488859
MF	5/13/2022	30488859013 WGKU2/2	WGKU	30488859013	30488859
MF	5/13/2022	30488859015 WGKU1/2	WGKU	30488859015	30488859
MF	5/13/2022	30488859011 WGKU1/2	WGKU	30488859011	30488859
MF	5/13/2022	30488859013 WGKU1/2	WGKU	30488859013	30488859
MF	5/13/2022	30488859014 WGKU2/2	WGKU	30488859014	30488859
MF	5/13/2022	30488859015 WGKU2/2	WGKU	30488859015	30488859
MF	5/13/2022	30488859014 WGKU1/2	WGKU	30488859014	30488859
MF	5/13/2022	30488859008 WGFU4/4	WGFU	30488859008	30488859
MF	5/13/2022	30488859009 WGFU1/4	WGFU	30488859009	30488859
MF	5/13/2022	30488859009 WGFU2/4	WGFU	30488859009	30488859
MF	5/13/2022	30488859006 WGFU2/4	WGFU	30488859006	30488859
MF	5/13/2022	30488859004 WGFU1/4	WGFU	30488859004	30488859
MF	5/13/2022	30488859004 WGFU2/4	WGFU	30488859004	30488859
MF	5/13/2022	30488859009 WGFU5/C	WGFU	30488859009	30488859
MF	5/13/2022	30488859004 WGFU4/4	WGFU	30488859004	30488859
MF	5/13/2022	30488859005 WGFU4/4	WGFU	30488859005	30488859

LIMS30 Internal Shipping Manifest

COOLER 25

Shipping Laboratory Location Code		Receiving Laboratory Location Code	
GBUR		BEAV	
Pace Greensburg: 1638 Roseytown Road Suite 2,3,4 Greensburg PA 15601		Pace Beaver: 225 Industrial Park Road Beaver WV 25813	
Shipping information		Received information	
Cooler ID	25	Cooler temp (rcvd) °C	
Packaged on Ice (Y/N)	Yes	Correction Factor	
Shipping Method	Courier	Cooler temp (corr) °C	
Tracking #	N/A	IR GUN ID	
PWS* Drinking water?	No	Received on ice?	

* If sample is from a PWS, the PWSID can be found in LIMS30

	Signature	Location	Date	Time
Relinquished	[signature]	GBUR	5-13-22	1855
Received	[signature]		5-14-22	750
Relinquished				
Received				
Relinquished				
Received				

Project	Sam Date	Column1	Type	LIMS Lab ID	LIMS Work Order
MF	5/13/2022	30488859004 WGFU3/4	WGFU	30488859004	30488859
MF	5/13/2022	30488859009 WGFU6/C	WGFU	30488859009	30488859
MF	5/13/2022	30488859003 WGFU3/4	WGFU	30488859003	30488859
MF	5/13/2022	30488859003 WGFU2/4	WGFU	30488859003	30488859
MF	5/13/2022	30488859007 WGFU4/4	WGFU	30488859007	30488859
MF	5/13/2022	30488859009 WGFU8/C	WGFU	30488859009	30488859
MF	5/13/2022	30488859010 WGFU1/4	WGFU	30488859010	30488859
MF	5/13/2022	30488859005 WGFU1/4	WGFU	30488859005	30488859
MF	5/13/2022	30488859001 WGFU1/4	WGFU	30488859001	30488859
MF	5/13/2022	30488859001 WGFU4/4	WGFU	30488859001	30488859
MF	5/13/2022	30488859009 WGFUC/C	WGFU	30488859009	30488859
MF	5/13/2022	30488859001 WGFU2/4	WGFU	30488859001	30488859
MF	5/13/2022	30488859010 WGFU2/4	WGFU	30488859010	30488859
MF	5/13/2022	30488859002 WGFU3/4	WGFU	30488859002	30488859
MF	5/13/2022	30488859007 WGFU1/4	WGFU	30488859007	30488859
MF	5/13/2022	30488859002 WGFU1/4	WGFU	30488859002	30488859
MF	5/13/2022	30488859003 WGFU1/4	WGFU	30488859003	30488859
MF	5/13/2022	30488859009 WGFU4/4	WGFU	30488859009	30488859
MF	5/13/2022	30488859007 WGFU3/4	WGFU	30488859007	30488859
MF	5/13/2022	30488859009 WGFU9/C	WGFU	30488859009	30488859
MF	5/13/2022	30488859002 WGFU2/4	WGFU	30488859002	30488859
MF	5/13/2022	30488859008 WGFU3/4	WGFU	30488859008	30488859
MF	5/13/2022	30488859005 WGFU3/4	WGFU	30488859005	30488859

LIMS73 Lab Sample Condition Upon Receipt (West Virgin

WO#: 30488859

PM: SCR **Due Date: 05/17/22**

CLIENT: TRADEPOINT

Face Analytical

Client Name: _____

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☑ Other: 3rd Party

Tracking #: _____

Custody Seal on Cooler/Box/Containers Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Thermometer Used IRTmaw **Type of Ice:** (Wet) Blue None

Cooler Temperature **Observed Temp** -1.5 °C Correction Factor: .0 °C Final Temp: -1.5 °C

Comments:

pH paper Lot#	Date and Initials of person examining contents: _____

	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:			✓	4. From Pitt
Sample Labels match COC:	✓			5.
-Includes date/time/ID Matrix: SL				Lab Labeled by: CDW Checked by: CDW
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:	✓			8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used:	✓			
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous sample field filtered:			✓	13.
-pH adjusted within 24 hours? (If yes, indicate acid lot #)			✓	
Filtered volume received for Dissolved tests:			✓	14.
All containers have been checked for preservation:			✓	15.
exceptions: VOA, coliform, O&G, LLMercury, Non-aqueous matrix				
All containers meet method preservation requirements:			✓	Initial when completed: CDW Date: 5-16-22
				Tests not preserved:
Headspace in VOA Vials:			✓	16.
Trip Blank Present:			✓	17.
Trip Blank Custody Seals Present:			✓	
				Initial when completed: CDW Date: 5-16-22

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

☐ **A check in this box indicates that additional information has been stored in ereports.**

***PM review** is documented electronically in LIMS, when the Project Manager closes the SRF Review schedule in LIMS. The status may be reviewed in the Status section of the Workorder Edit Screen.

ANALYTICAL REPORT

Lab Number:	L2238142
Client:	Tradepoint Atlantic 1600 Sparrows Point Boulevard Baltimore, MD 21219
ATTN:	Robert Tworkowski
Phone:	(443) 649-5073
Project Name:	B18 STOCKPILE
Project Number:	21010218
Report Date:	07/20/22

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: B18 STOCKPILE
Project Number: 21010218

Lab Number: L2238142
Report Date: 07/20/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2238142-01	B18-STOCKPILE-NORTH	SOIL	SPARROWS POINT	07/18/22 13:00	07/18/22
L2238142-02	B18-STOCKPILE-SOUTH	SOIL	SPARROWS POINT	07/18/22 13:10	07/18/22
L2238142-03	B18-STOCKPILE-WEST	SOIL	SPARROWS POINT	07/18/22 13:20	07/18/22

Project Name:	B18 STOCKPILE	**Lab Number:**	L2238142
Project Number:	21010218	**Report Date:**	07/20/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	B18 STOCKPILE	**Lab Number:**	L2238142
Project Number:	21010218	**Report Date:**	07/20/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Total Metals

L2238142-01, -02, and -03: The sample has an elevated detection limit due to the dilution required by matrix interferences encountered during analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 07/20/22

METALS

Project Name: B18 STOCKPILE
Lab Number: L2238142
Project Number: 21010218
Report Date: 07/20/22

SAMPLE RESULTS

Lab ID: L2238142-01
Client ID: B18-STOCKPILE-NORTH
Sample Location: SPARROWS POINT
Date Collected: 07/18/22 13:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%
TCLP/SPLP Ext. Date: 07/19/22 04:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	0.355	J	mg/l	0.500	0.027	1	07/20/22 08:38	07/20/22 11:51	EPA 3015	1,6010D	EW

Project Name: B18 STOCKPILE
Lab Number: L2238142
Project Number: 21010218
Report Date: 07/20/22

SAMPLE RESULTS

Lab ID: L2238142-01
Client ID: B18-STOCKPILE-NORTH
Sample Location: SPARROWS POINT
Date Collected: 07/18/22 13:00
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3770		mg/kg	4.55	0.244	2	07/19/22 08:25	07/19/22 17:23	EPA 3050B	1,6010D	DL

Project Name: B18 STOCKPILE
Lab Number: L2238142
Project Number: 21010218
Report Date: 07/20/22

SAMPLE RESULTS

Lab ID: L2238142-02
Client ID: B18-STOCKPILE-SOUTH
Sample Location: SPARROWS POINT
Date Collected: 07/18/22 13:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%
TCLP/SPLP Ext. Date: 07/19/22 04:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	0.214	J	mg/l	0.500	0.027	1	07/20/22 08:38	07/20/22 11:47	EPA 3015	1,6010D	EW

Project Name: B18 STOCKPILE
Lab Number: L2238142
Project Number: 21010218
Report Date: 07/20/22

SAMPLE RESULTS

Lab ID: L2238142-02
Client ID: B18-STOCKPILE-SOUTH
Sample Location: SPARROWS POINT
Date Collected: 07/18/22 13:10
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3780		mg/kg	4.57	0.245	2	07/19/22 08:25	07/19/22 17:27	EPA 3050B	1,6010D	DL

Project Name: B18 STOCKPILE
Lab Number: L2238142
Project Number: 21010218
Report Date: 07/20/22

SAMPLE RESULTS

Lab ID: L2238142-03
Client ID: B18-STOCKPILE-WEST
Sample Location: SPARROWS POINT
Date Collected: 07/18/22 13:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%
TCLP/SPLP Ext. Date: 07/19/22 04:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	0.179	J	mg/l	0.500	0.027	1	07/20/22 08:38	07/20/22 10:56	EPA 3015	1,6010D	EW

Project Name: B18 STOCKPILE
Lab Number: L2238142
Project Number: 21010218
Report Date: 07/20/22

SAMPLE RESULTS

Lab ID: L2238142-03
Client ID: B18-STOCKPILE-WEST
Sample Location: SPARROWS POINT
Date Collected: 07/18/22 13:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3710		mg/kg	4.59	0.246	2	07/19/22 08:25	07/19/22 17:32	EPA 3050B	1,6010D	DL

Project Name: B18 STOCKPILE
Project Number: 21010218
Lab Number: L2238142
Report Date: 07/20/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1664550-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	07/19/22 08:25	07/19/22 15:21	1,6010D	NB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 01-03 Batch: WG1665103-1										
Lead, TCLP	ND		mg/l	0.500	0.027	1	07/20/22 08:38	07/20/22 11:28	1,6010D	EW

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 07/19/22 04:43

Lab Control Sample Analysis

Batch Quality Control

Project Name: B18 STOCKPILE

Project Number: 21010218

Lab Number: L2238142

Report Date: 07/20/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1664550-2 SRM Lot Number: D113-540								
Lead, Total	95		-		72-128	-		
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-03 Batch: WG1665103-2								
Lead, TCLP	92		-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: B18 STOCKPILE
Project Number: 21010218
Lab Number: L2238142
Report Date: 07/20/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1664550-3 QC Sample: L2238134-01 Client ID: MS Sample												
Lead, Total	16.6	46.1	50.2	**73**	Q	-	-		75-125	-		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1665103-3 QC Sample: L2238142-01 Client ID: B18-STOCKPILE-NORTH												
Lead, TCLP	0.355J	5.3	5.40	102		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: B18 STOCKPILE

Project Number: 21010218

Lab Number: L2238142

Report Date: 07/20/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1664550-4 QC Sample: L2238134-01 Client ID: DUP Sample						
Lead, Total	16.6	15.8	mg/kg	5		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1665103-4 QC Sample: L2238142-01 Client ID: B18-STOCKPILE-NORTH						
Lead, TCLP	0.355J	0.366J	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: B18 STOCKPILE
Project Number: 21010218
Lab Number: L2238142
Report Date: 07/20/22

SAMPLE RESULTS

Lab ID: L2238142-01
Client ID: B18-STOCKPILE-NORTH
Sample Location: SPARROWS POINT
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 13:00
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.0		%	0.100	NA	1	-	07/19/22 07:42	121,2540G	RI

Project Name: B18 STOCKPILE
Project Number: 21010218
Lab Number: L2238142
Report Date: 07/20/22

SAMPLE RESULTS

Lab ID: L2238142-02
Client ID: B18-STOCKPILE-SOUTH
Sample Location: SPARROWS POINT
Sample Depth:
Matrix: Soil
Date Collected: 07/18/22 13:10
Date Received: 07/18/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.8		%	0.100	NA	1	-	07/19/22 07:42	121,2540G	RI

Project Name: B18 STOCKPILE
Project Number: 21010218

Lab Number: L2238142
Report Date: 07/20/22

SAMPLE RESULTS

Lab ID: L2238142-03
Client ID: B18-STOCKPILE-WEST
Sample Location: SPARROWS POINT

Date Collected: 07/18/22 13:20
Date Received: 07/18/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.6		%	0.100	NA	1	-	07/19/22 07:42	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: B18 STOCKPILE

Project Number: 21010218

Lab Number: L2238142

Report Date: 07/20/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1664509-1 QC Sample: L2238134-01 Client ID: DUP Sample						
Solids, Total	90.3	88.9	%	2		20

Project Name: B18 STOCKPILE
Project Number: 21010218

Lab Number: L2238142
Report Date: 07/20/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2238142-01A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		PB-TI(180)
L2238142-01B	Glass 250ml/8oz unpreserved	A	NA		5.5	Y	Absent		TS(7)
L2238142-01X	Plastic 120ml HNO3 preserved Extracts	A	NA		5.5	Y	Absent		PB-CI(180)
L2238142-01X9	Tumble Vessel	A	NA		5.5	Y	Absent		-
L2238142-02A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		PB-TI(180)
L2238142-02B	Glass 250ml/8oz unpreserved	A	NA		5.5	Y	Absent		TS(7)
L2238142-02X	Plastic 120ml HNO3 preserved Extracts	A	NA		5.5	Y	Absent		PB-CI(180)
L2238142-02X9	Tumble Vessel	A	NA		5.5	Y	Absent		-
L2238142-03A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		PB-TI(180)
L2238142-03B	Glass 250ml/8oz unpreserved	A	NA		5.5	Y	Absent		TS(7)
L2238142-03X	Plastic 120ml HNO3 preserved Extracts	A	NA		5.5	Y	Absent		PB-CI(180)
L2238142-03X9	Tumble Vessel	A	NA		5.5	Y	Absent		-

*Values in parentheses indicate holding time in days

Project Name:	B18 STOCKPILE	**Lab Number:**	L2238142
Project Number:	21010218	**Report Date:**	07/20/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	B18 STOCKPILE	**Lab Number:**	L2238142
Project Number:	21010218	**Report Date:**	07/20/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	B18 STOCKPILE	**Lab Number:**	L2238142
Project Number:	21010218	**Report Date:**	07/20/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	B18 STOCKPILE	**Lab Number:**	L2238142
Project Number:	21010218	**Report Date:**	07/20/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 7/19/22

ALPHA Job #: L2238142

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Tradepoint Atlantic
Address: 6995 Bethlehem blvd
Sparrows Point MD
Phone:
Fax:
Email: skabis@armgroup.net
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: BIS stockpile
Project Location: Sparrows Point
Project #: 21010218
Project Manager:
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved!)
Date Due: ASAP Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

SAMPLE HANDLING

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCLP Lead	total Lead	Sample Specific Comments	TOTAL # BOTTLES
38142-01	BIS-Stockpile-North	7/18	1300	Soil	JMB	x	x		2
-02	BIS-stockpile-South	7/18	1310	Soil	JMB	x	x		2
-03	BIS-stockpile-~~West~~ ~~East~~ JMB	7/18	1320	Soil	JMB	x	x		2

Container Type	number	number
Preservative	NA	NA

7/19/22 0130
CF BAL 7/19/22 0130

Relinquished By:	Date/Time	Received By:	Date/Time
JMB ARM	7/18/22 1400		
	7/18/22 1730		7/18/22 1545
	7/18 2400		7/18/22 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

ANALYTICAL REPORT

Lab Number:	L2262167
Client:	Tradepoint Atlantic 1600 Sparrows Point Boulevard Baltimore, MD 21219
ATTN:	Robert Tworkowski
Phone:	(443) 649-5073
Project Name:	B18 STOCKPILE
Project Number:	21010218
Report Date:	11/16/22

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: B18 STOCKPILE
Project Number: 21010218

Lab Number: L2262167
Report Date: 11/16/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2262167-01	B18-NW-SIDEWALL	SOIL	B18	11/04/22 11:00	11/04/22
L2262167-02	B18-STOCKPILE-1	SOIL	B18	11/04/22 11:05	11/04/22
L2262167-03	B18-STOCKPILE-2	SOIL	B18	11/04/22 11:10	11/04/22

Project Name:	B18 STOCKPILE	**Lab Number:**	L2262167
Project Number:	21010218	**Report Date:**	11/16/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	B18 STOCKPILE	**Lab Number:**	L2262167
Project Number:	21010218	**Report Date:**	11/16/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 11/16/22

METALS

Project Name: B18 STOCKPILE
Lab Number: L2262167
Project Number: 21010218
Report Date: 11/16/22

SAMPLE RESULTS

Lab ID: L2262167-01
Client ID: B18-NW-SIDEWALL
Sample Location: B18
Date Collected: 11/04/22 11:00
Date Received: 11/04/22
Field Prep: Not Specified
Sample Depth:
TCLP/SPLP Ext. Date: 11/06/22 05:13
Matrix: Soil
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	1.34		mg/l	0.500	0.0270	1	11/08/22 09:35	11/09/22 00:15	EPA 3015	1,6010D	NTB

Project Name: B18 STOCKPILE
Lab Number: L2262167
Project Number: 21010218
Report Date: 11/16/22

SAMPLE RESULTS

Lab ID: L2262167-01
Client ID: B18-NW-SIDEWALL
Sample Location: B18
Date Collected: 11/04/22 11:00
Date Received: 11/04/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 57%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	5990		mg/kg	34.2	1.83	10	11/08/22 07:30	11/11/22 22:27	EPA 3050B	1,6010D	MRC

Project Name: B18 STOCKPILE
Lab Number: L2262167
Project Number: 21010218
Report Date: 11/16/22

SAMPLE RESULTS

Lab ID: L2262167-02
Client ID: B18-STOCKPILE-1
Sample Location: B18
Sample Depth:
Matrix: Soil

Date Collected: 11/04/22 11:05
Date Received: 11/04/22
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 11/06/22 05:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	0.370	J	mg/l	0.500	0.0270	1	11/08/22 13:38	11/09/22 22:56	EPA 3015	1,6010D	DHL

Project Name: B18 STOCKPILE
Lab Number: L2262167
Project Number: 21010218
Report Date: 11/16/22

SAMPLE RESULTS

Lab ID: L2262167-03
Client ID: B18-STOCKPILE-2
Sample Location: B18
Sample Depth:
Matrix: Soil

Date Collected: 11/04/22 11:10
Date Received: 11/04/22
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 11/06/22 05:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	0.314	J	mg/l	0.500	0.0270	1	11/08/22 13:38	11/09/22 22:51	EPA 3015	1,6010D	DHL

Project Name: B18 STOCKPILE
Project Number: 21010218
Lab Number: L2262167
Report Date: 11/16/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 01 Batch: WG1709053-1										
Lead, TCLP	ND		mg/l	0.500	0.0270	1	11/08/22 09:35	11/08/22 22:49	1,6010D	NTB

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 11/05/22 16:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1709296-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	11/08/22 07:30	11/09/22 16:41	1,6010D	MC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 02-03 Batch: WG1709535-1										
Lead, TCLP	ND		mg/l	0.500	0.0270	1	11/08/22 13:38	11/09/22 22:42	1,6010D	DHL

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 11/05/22 06:00

Lab Control Sample Analysis

Batch Quality Control

Project Name: B18 STOCKPILE

Project Number: 21010218

Lab Number: L2262167

Report Date: 11/16/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 Batch: WG1709053-2								
Lead, TCLP	96		-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1709296-2 SRM Lot Number: D113-540								
Lead, Total	88		-		72-128	-		
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 02-03 Batch: WG1709535-2								
Lead, TCLP	96		-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: B18 STOCKPILE
Project Number: 21010218
Lab Number: L2262167
Report Date: 11/16/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1709053-3 QC Sample: L2261347-04 Client ID: MS Sample												
Lead, TCLP	ND	5.3	5.19	98		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1709296-3 QC Sample: L2259426-18 Client ID: MS Sample												
Lead, Total	31.9	43	67.6	83		-	-		75-125	-		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1709535-3 QC Sample: L2262167-02 Client ID: B18-STOCKPILE-1												
Lead, TCLP	0.370J	5.3	5.53	104		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: B18 STOCKPILE

Project Number: 21010218

Lab Number: L2262167

Report Date: 11/16/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1709053-4 QC Sample: L2261347-04 Client ID: DUP Sample						
Lead, TCLP	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1709296-4 QC Sample: L2259426-18 Client ID: DUP Sample						
Lead, Total	31.9	38.7	mg/kg	19		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1709535-4 QC Sample: L2262167-02 Client ID: B18-STOCKPILE-1						
Lead, TCLP	0.370J	0.386J	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: B18 STOCKPILE
Project Number: 21010218
Lab Number: L2262167
Report Date: 11/16/22

SAMPLE RESULTS

Lab ID: L2262167-01
Client ID: B18-NW-SIDEWALL
Sample Location: B18
Sample Depth:
Matrix: Soil
Date Collected: 11/04/22 11:00
Date Received: 11/04/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	57.1		%	0.100	NA	1	-	11/11/22 20:40	121,2540G	MF

Lab Duplicate Analysis

Batch Quality Control

Project Name: B18 STOCKPILE

Project Number: 21010218

Lab Number: L2262167

Report Date: 11/16/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1711350-1 QC Sample: L2261916-15 Client ID: DUP Sample						
Solids, Total	82.9	82.7	%	0		20

Project Name: B18 STOCKPILE
Project Number: 21010218

Lab Number: L2262167
Report Date: 11/16/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2262167-01A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		PB-TI(180)
L2262167-01B	Glass 500ml/16oz unpreserved	A	NA		2.1	Y	Absent		TS(7)
L2262167-01X	Plastic 120ml HNO3 preserved Extracts	A	NA		2.1	Y	Absent		PB-CI(180)
L2262167-01X9	Tumble Vessel	A	NA		2.1	Y	Absent		-
L2262167-02A	Glass 500ml/16oz unpreserved	A	NA		2.1	Y	Absent		-
L2262167-02X	Plastic 120ml HNO3 preserved Extracts	A	NA		2.1	Y	Absent		PB-CI(180)
L2262167-02X9	Tumble Vessel	A	NA		2.1	Y	Absent		-
L2262167-03A	Glass 500ml/16oz unpreserved	A	NA		2.1	Y	Absent		-
L2262167-03X	Plastic 120ml HNO3 preserved Extracts	A	NA		2.1	Y	Absent		PB-CI(180)
L2262167-03X9	Tumble Vessel	A	NA		2.1	Y	Absent		-

*Values in parentheses indicate holding time in days

Project Name:	B18 STOCKPILE	**Lab Number:**	L2262167
Project Number:	21010218	**Report Date:**	11/16/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	B18 STOCKPILE	**Lab Number:**	L2262167
Project Number:	21010218	**Report Date:**	11/16/22

Data Qualifiers

Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	B18 STOCKPILE	**Lab Number:**	L2262167
Project Number:	21010218	**Report Date:**	11/16/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 11/5/22

ALPHA Job #: L2262167

Client Information
Client: Tradepoint Atlantic
Address: 6995 Bethlehem Blvd
Sparrows Point MD
Phone:
Fax:
Email: skabis@cairngroup.net

Project Information
Project Name: BIS Lead Sampling
Project Location: BIS
Project #: 210218
(Use Project name as Project #) ☐
Project Manager: Kaye Guille
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☐ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: total lead	ANALYSIS: TCLP lead	Sample Specific Comments	Total Bottle
62167-01	BIS-NW-Sidewall	11/4/22	1100	SOIL	JMB	X	X	NW Sidewall	2
-02	BIS-Stockpile-1	11/4/22	1105	SOIL	JMB		X	Terabond mix 1	1
-03	BIS-Stockpile-2	11/4/22	1110	SOIL	JMB		X	Terabond mix 2	1

Container Type: amber amber
Preservative: NA NA

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
JMB MRM	11/4/22 1300		11/4/22 1453
	11/4/22 1611	Soares MRM	11/4/22 184
Soares MRM	11.4.22	Yes	11.4.22 2100
Yes	11.5.22		11/5/22 0235

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

11/5/22 0235