



ARM Group LLC

Engineers and Scientists

July 14, 2020

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

Re: Response Action Completion Report:
A4-013 Cadmium Response Area
Area A: Parcel A4
Tradepoint Atlantic
Sparrows Point, MD 21219

Dear Ms. Brown:

ARM Group LLC (ARM), on behalf of EnviroAnalytics Group, LLC (EAG), has prepared this Response Action Completion Report for the Maryland Department of the Environment (MDE) and the United States Environmental Protection Agency (USEPA) to document the implementation of a remedial excavation to remove material containing elevated cadmium on a portion of the Tradepoint Atlantic property that is designated as Area A: Parcel A4 (the Site), which is shown on **Figure 1**.

Project Background

During the Phase II Investigation of Parcel A4, an elevated concentration of cadmium (33,600 mg/kg) was identified within the subsurface soil sample collected from 3 to 4 feet below ground surface (bgs) from soil boring A4-013-SB. Additional delineation of the elevated cadmium impacts at A4-013-SB was performed, and excavation of the material containing elevated concentrations of cadmium was selected as the preferred remedial response action to address the impacts observed in the vicinity of A4-013-SB (the Response Area). The complete findings of the delineation and the implementation protocols for the proposed remedial excavation were presented within a Work Plan entitled Delineation Activities and Proposed Excavation of Cadmium Impacted Soil for Parcel A4 (dated April 21, 2017). The criterion for material removal (determined through a preliminary risk screening analysis) was established as a cadmium concentration of 550 mg/kg. The Work Plan was approved by the MDE and USEPA on April 24, 2017.

Response Action Implementation

The preliminary extents of the excavations required to remove the cadmium contaminated soil, as presented in the Work Plan, were based on the cadmium data from the preceding delineation. Two locations exceeded 550 mg/kg of cadmium (A4-013-SB and A4-013Q-SB). Soil was excavated from the Response Area on October 3, 2019. The excavations were completed to final depths of 6 feet and 8 feet bgs at locations A4-013-SB and A4-013Q-SB, respectively. A total of approximately 26 cubic yards (bank) of potentially impacted material was removed. The completed excavation boundaries for the Response Area are shown on **Figure 2**. A photograph log of the implementation is included as **Attachment 1**.

All response activities were conducted in accordance with the property-wide Health and Safety Plan (HASP) developed by EAG. Excavation work was performed by Enterprise Network Resolutions Contracting, LLC (ENRC). Response Action oversight was performed by an ARM Environmental Professional (EP).

Materials Management and Disposal

Excavated material was segregated into two stockpiles, one for the excavation around A4-013-SB and the other for the excavation around A4-013Q-SB. Each of the stockpiles was placed adjacent to the respective excavation on polyethylene sheeting to protect the ground surface. Weighted polyethylene sheets were used to cover the stockpiles at the end of the excavation activities and the piles remained covered in order to minimize the generation of dust and prevent run-on/off until disposal. Visual dust monitoring was performed during excavation. No visual dust migration was observed; therefore, no dust suppression techniques were implemented. Groundwater was not encountered during excavation; thus, water management was not required.

One composite sample was collected from each of the excavation stockpiles. Each composite sample consisted of 10 randomly selected grab aliquots from the designated stockpile. The composite samples were submitted to Caliber Analytical Services for TCLP analysis to facilitate proper disposal. Analytical results from the waste characterization soil samples are summarized (detections only) in **Table 1**. The complete laboratory report from the waste characterization testing is included as **Attachment 2**. The waste characterization sample results indicated that excavated material in the southern stockpile (associated with location A4-013-SB) was hazardous (with a reported cadmium TCLP concentration of 10 mg/L) and required appropriate disposal offsite. The material in the northern stockpile (associated with location A4-013Q-SB) was non-hazardous and was disposed of onsite at Greys Landfill on February 29, 2020.

Because the analytical results indicated that the stockpiled material from the southern excavation must be handled as hazardous waste, the material was hauled offsite on February 20, 2020 for disposal at Envirite of Pennsylvania, Inc. in York, PA. The disposal manifest and Land Disposal Restriction and Certification forms are included in **Attachment 3**.



Confirmation Sampling

Once excavation activities were completed, confirmation soil samples were collected from the sidewalls at a rate of one sample from each sidewall, and from the bottom of each of the excavation pits to confirm that all soils exceeding 550 mg/kg of cadmium were removed. The confirmation samples were submitted to Pace Analytical Services, Inc. (PACE) and analyzed for cadmium via USEPA Method 6010C. The analytical cadmium results for the confirmation soil samples are provided in **Table 2**. The complete laboratory report from the cadmium confirmation sampling is included as **Attachment 4**. The confirmation sample locations and results are shown on **Figure 3**. Confirmation samples collected from the bottom of the excavations and along the sidewalls all yielded cadmium concentrations below 550 mg/kg, indicating that the extent of the elevated cadmium contamination was adequately removed.

Backfilling

Both the northern and southern excavations were backfilled to the existing grade with clean fill (#57 stone from Martin Marietta). Backfilling was conducted on February 21, 2020 by ECLS. The stone was placed in 6-inch lifts and compacted with the excavator bucket. Photographs of the completed backfilling are provided in **Attachment 1**.

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

Respectfully Submitted,
ARM Group LLC



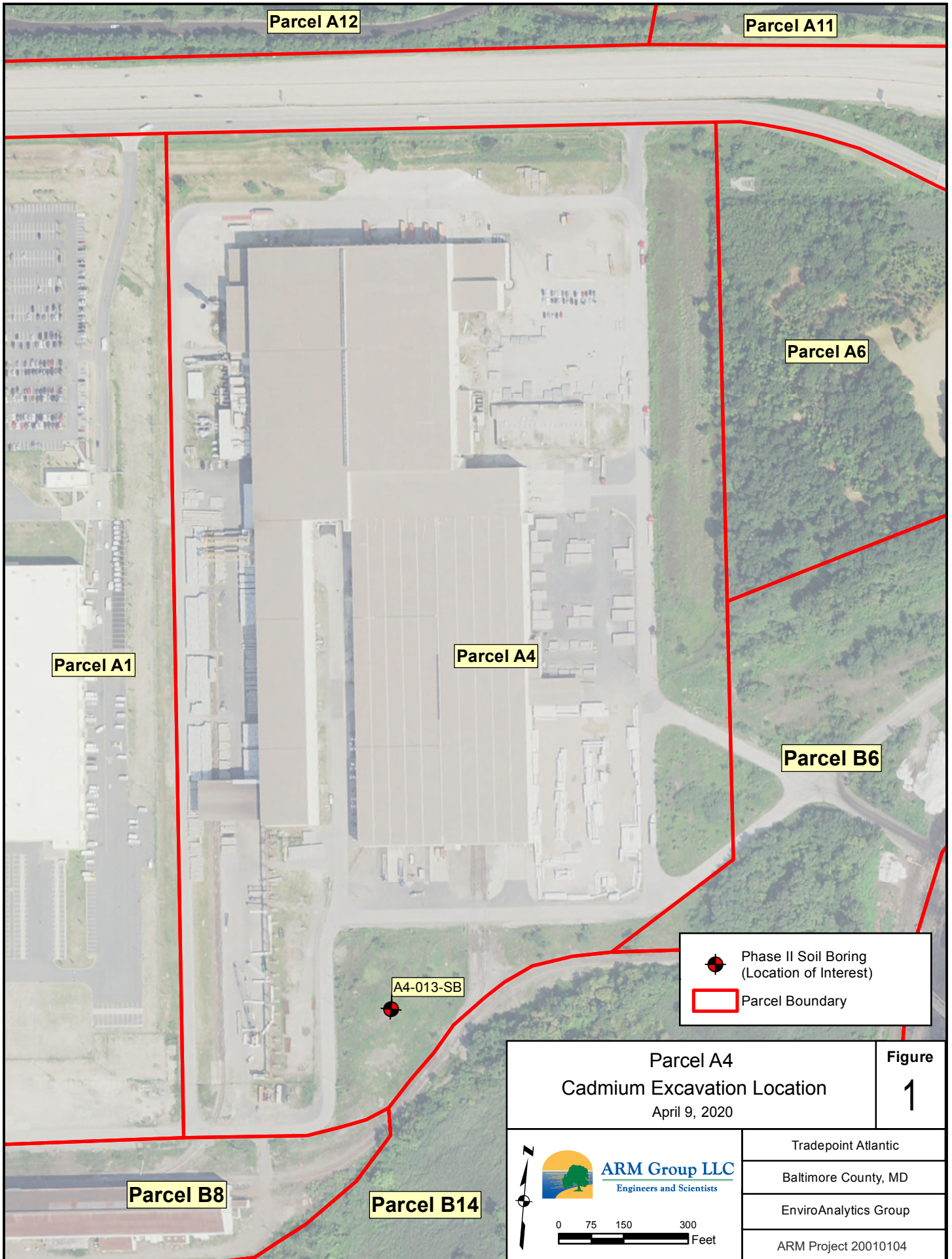
Melissa Replogle, E.I.T.
Project Engineer



Eric S. Magdar, P.G.
Vice President





FIGURES



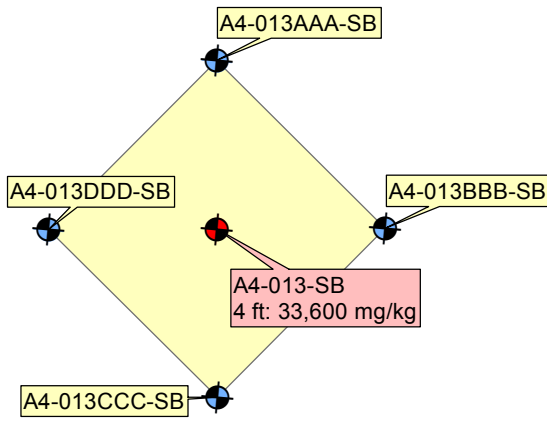
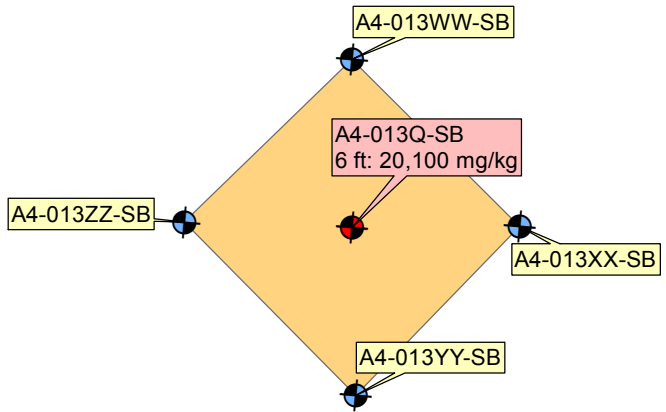
Parcel A4
 Cadmium Excavation Location
 April 9, 2020

Figure
 1

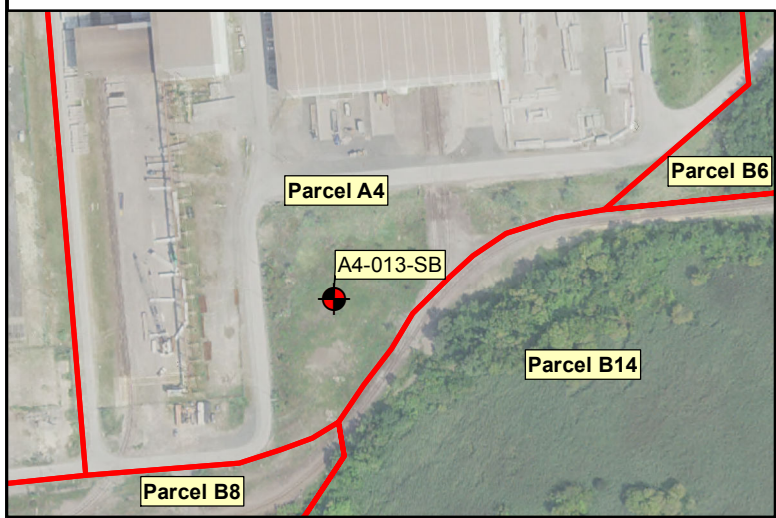


ARM Group LLC
 Engineers and Scientists

0 75 150 300
 Feet

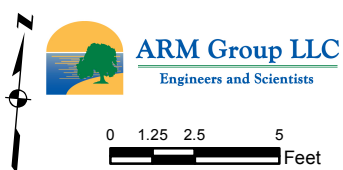
Tradepoint Atlantic
Baltimore County, MD
EnviroAnalytics Group
ARM Project 20010104

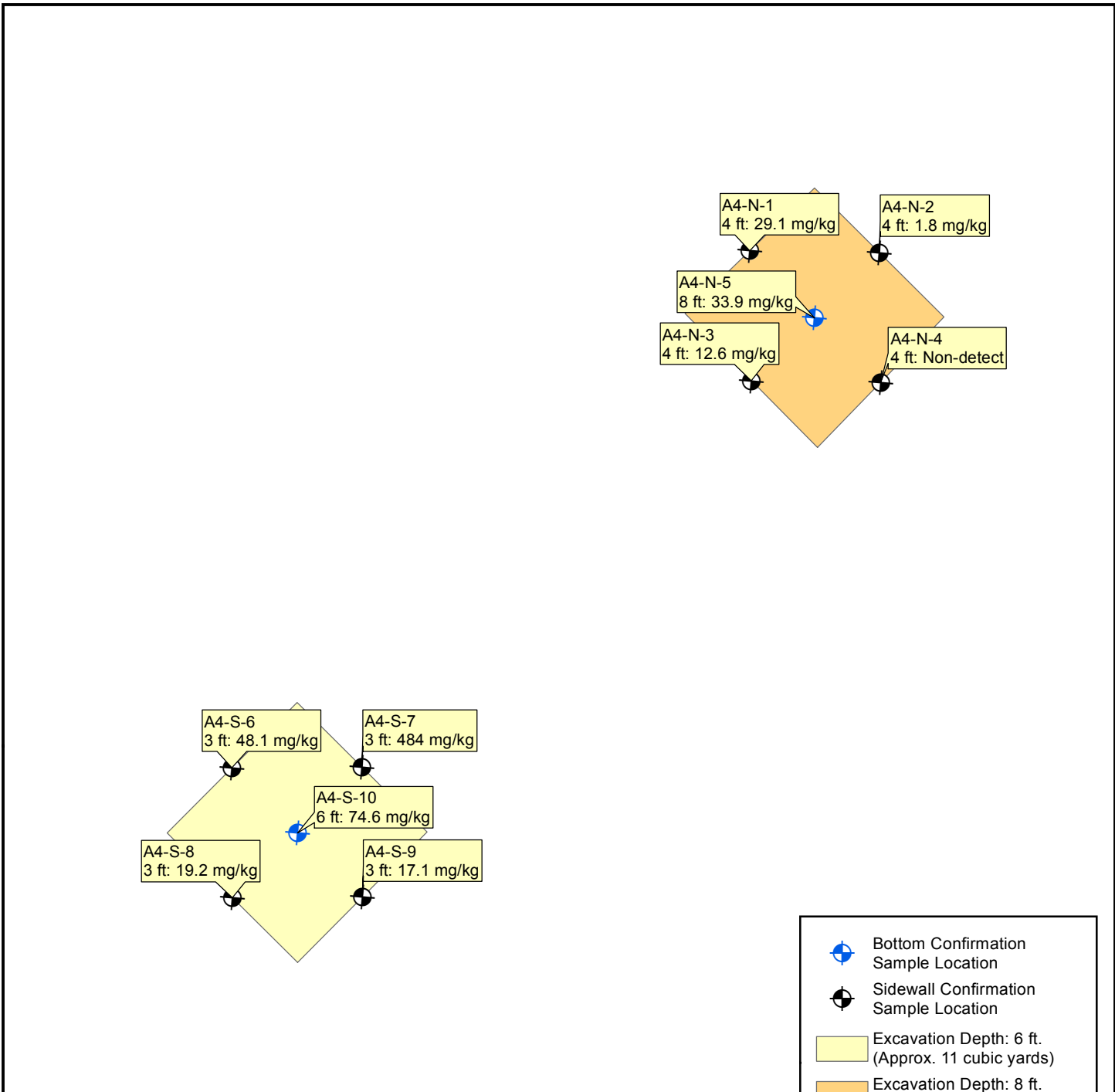


	Above Excavation Criteria
	Below Excavation Criteria
	Excavation Depth: 6 ft. (Approx. 11 cubic yards)
	Excavation Depth: 8 ft. (Approx. 15 cubic yards)
	Parcel Boundary
Cadmium Excavation Criterion Results > 550 mg/kg	

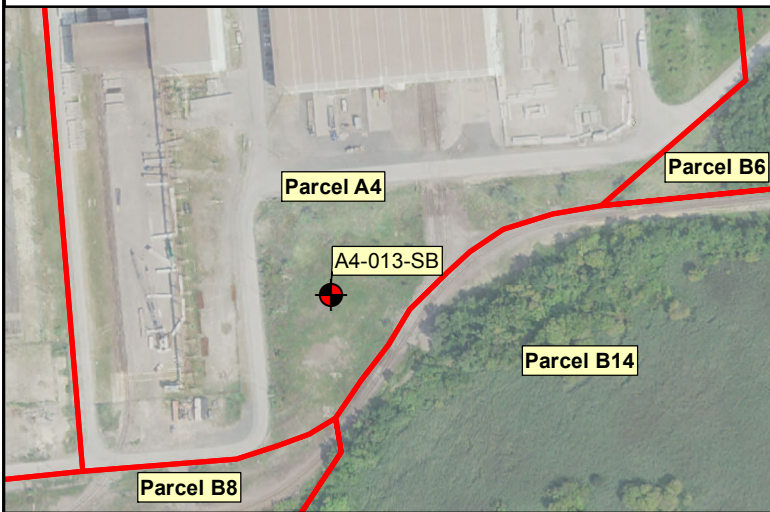


Parcel A4 Cadmium Excavation Final Boundaries 04/19, 2020		Figure 2
 ARM Group LLC Engineers and Scientists		Tradepoint Atlantic
		Baltimore County, MD
		EnviroAnalytics Group
		ARM Project 20010104





Bottom Confirmation Sample Location
 Sidewall Confirmation Sample Location
 Excavation Depth: 6 ft. (Approx. 11 cubic yards)
 Excavation Depth: 8 ft. (Approx. 15 cubic yards)
 Parcel Boundary
 Cadmium Excavation Criterion Results > 550 mg/kg



Parcel A4 Cadmium Excavation Confirmation Samples 01/19, 2020		Figure 3
		Tradepoint Atlantic
		Baltimore County, MD
		EnviroAnalytics Group
		ARM Project 20010104

TABLES

Table 1
Summary of Waste Characterization Sample Results
Parcel A4 - A4-013-SB Excavation
Tradepoint Atlantic
Sparrows Point, Maryland

Parameter	Units	Regulatory Limit	Minimum Detection Limit	A4 North	A4 South
Cadmium	mg/L	1	0.1	ND	10
Lead	mg/L	5	0.5	ND	0.73

ND: Non-detect

Bold indicates regulatory limit exceedance

Table 2
Cadmium Confirmation Sample Results
Parcel A4 - A4-013-SB Excavation
Tradepoint Atlantic
Sparrows Point, Maryland

Sample ID	Removal Criterion (mg/kg)	Cadmium Concentration (mg/kg)
A4-N-1	550	29.1
A4-N-2	550	1.8
A4-N-3	550	12.6
A4-N-4	550	1.2U
A4-N-5	550	33.9
A4-S-6	550	48.1
A4-S-7	550	484
A4-S-8	550	19.2
A4-S-9	550	17.1
A4-S-10	550	74.6

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

ATTACHMENT 1

**Excavation of Cadmium-Contaminated Media
Area A: Parcel A4-013 Response Area
Sparrows Point, Maryland**



100419-1: View to the southwest of the completed northern excavation.



100419-2: View to the northeast of the completed southern excavation.

**Excavation of Cadmium-Contaminated Media
Area A: Parcel A4-013 Response Area
Sparrows Point, Maryland**



100419-3: View to the northeast of the completed southern excavation. Covered stockpiles are visible to the east of the excavation.



100419-4: View to the southwest of the completed northern excavation. Covered stockpiles are visible to the west of the excavation.

**Excavation of Cadmium-Contaminated Media
Area A: Parcel A4-013 Response Area
Sparrows Point, Maryland**



100419-5: View to the south of the completed A4 cadmium excavations and stockpiled soil.



030620-1: View to the north of final backfilled state of A4-013 Response Area.

ATTACHMENT 2



CALIBER ANALYTICAL SERVICES

Certificate of Analysis

EnviroAnalytics Group, LLC
 1650 Des Peres Rd.
 Suite 303
 St. Louis, MO 63131

Date Sampled: 10/03/19 10:00
 Date Received: 10/04/19 10:28
 Date Issued: 10/11/19

Project: A4 Cadmium Excavation
 Site Location: Sparrows Point, MD

SDG Number: 19100404

Field Sample ID:	A4 North		Matrix:	Soil		Lab ID:	19100404-01		
	Result	Unit	LLQ	REGL	Method	Prepared	Analyzed	Init.	
Percent Solids									Batch: 22774
Percent Solids	89	%			SM2540G	10/04/19	10/08/19 11:09	DBS	
Polychlorinated Biphenyls									Batch: 22780
Aroclor 1016	ND	mg/kg	0.052	50	EPA 8082	10/07/19	10/08/19 18:57	DBS	
Aroclor 1221	ND	mg/kg	0.052	50	EPA 8082	10/07/19	10/08/19 18:57	DBS	
Aroclor 1232	ND	mg/kg	0.052	50	EPA 8082	10/07/19	10/08/19 18:57	DBS	
Aroclor 1242	ND	mg/kg	0.052	50	EPA 8082	10/07/19	10/08/19 18:57	DBS	
Aroclor 1248	ND	mg/kg	0.052	50	EPA 8082	10/07/19	10/08/19 18:57	DBS	
Aroclor 1254	ND	mg/kg	0.052	50	EPA 8082	10/07/19	10/08/19 18:57	DBS	
Aroclor 1260	ND	mg/kg	0.052	50	EPA 8082	10/07/19	10/08/19 18:57	DBS	
TCLP Metals									Batch: 22784
Arsenic	ND	mg/L	0.5	5	1311/6020A	10/08/19	10/08/19 15:55	MBC	
Barium	ND	mg/L	10	100	1311/6020A	10/08/19	10/08/19 15:55	MBC	
Cadmium	ND	mg/L	0.1	1	1311/6020A	10/08/19	10/08/19 15:55	MBC	
Chromium	ND	mg/L	0.5	5	1311/6020A	10/08/19	10/08/19 15:55	MBC	
Lead	ND	mg/L	0.5	5	1311/6020A	10/08/19	10/08/19 15:55	MBC	
Mercury	ND	mg/L	0.02	0.2	1311/6020A	10/08/19	10/08/19 15:55	MBC	
Selenium	ND	mg/L	0.1	1	1311/6020A	10/08/19	10/08/19 15:55	MBC	
Silver	ND	mg/L	0.5	5	1311/6020A	10/08/19	10/08/19 15:55	MBC	
TCLP Semi-Volatiles									Batch: 22792
2-Methylphenol	ND	ug/L	100	200000	1311/8270	10/10/19	10/10/19 20:12	GFH	
3+4-Methylphenol	ND	ug/L	200	200000	1311/8270	10/10/19	10/10/19 20:12	GFH	
2,4-Dinitrotoluene	ND	ug/L	100	130	1311/8270	10/10/19	10/10/19 20:12	GFH	
Hexachloroethane	ND	ug/L	100	3000	1311/8270	10/10/19	10/10/19 20:12	GFH	
Hexachlorobenzene	ND	ug/L	100	130	1311/8270	10/10/19	10/10/19 20:12	GFH	
Nitrobenzene	ND	ug/L	100	2000	1311/8270	10/10/19	10/10/19 20:12	GFH	
Pentachlorophenol	ND	ug/L	500	100000	1311/8270	10/10/19	10/10/19 20:12	GFH	
Pyridine	ND	ug/L	100	5000	1311/8270	10/10/19	10/10/19 20:12	GFH	
2,4,5-Trichlorophenol	ND	ug/L	100	400000	1311/8270	10/10/19	10/10/19 20:12	GFH	
2,4,6-Trichlorophenol	ND	ug/L	100	2000	1311/8270	10/10/19	10/10/19 20:12	GFH	
Hexachlorobutadiene`	ND	ug/L	100	500	1311/8270	10/10/19	10/10/19 20:12	GFH	



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Certificate of Analysis

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1650 Des Peres Rd.
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Date Sampled: 10/03/19 10:00
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Project: A4 Cadmium Excavation
Site Location: Sparrows Point, MD

SDG Number: 19100404

Field Sample ID:	A4 North	Matrix:	Soil	Lab ID:	19100404-01			
	Result	Unit	LLQ	REGL	Method	Prepared	Analyzed	Init.
TCLP Volatiles								
								Batch: 22788
Benzene	ND	ug/L	7	500	1311/8260	10/09/19	10/09/19 14:17	GFH
Carbon Tetrachloride	ND	ug/L	7	500	1311/8260	10/09/19	10/09/19 14:17	GFH
Chloroform	ND	ug/L	7	6000	1311/8260	10/09/19	10/09/19 14:17	GFH
1,2-Dichloroethane (EDC)	ND	ug/L	7	500	1311/8260	10/09/19	10/09/19 14:17	GFH
Tetrachloroethene	ND	ug/L	7	700	1311/8260	10/09/19	10/09/19 14:17	GFH
Vinyl Chloride	ND	ug/L	7	200	1311/8260	10/09/19	10/09/19 14:17	GFH
2-Butanone (MEK)	ND	ug/L	14	200000	1311/8260	10/09/19	10/09/19 14:17	GFH
Chlorobenzene	ND	ug/L	7	100000	1311/8260	10/09/19	10/09/19 14:17	GFH
1,4-Dichlorobenzene	ND	ug/L	7	7500	1311/8260	10/09/19	10/09/19 14:17	GFH
1,1-Dichloroethene	ND	ug/L	7	700	1311/8260	10/09/19	10/09/19 14:17	GFH
Trichloroethene	ND	ug/L	7	500	1311/8260	10/09/19	10/09/19 14:17	GFH

Notes/Qualifiers:

LLQ- Lowest Level of Quantitation

ND - Not Detected at a concentration greater than or equal to the LLQ.

REGL - RCRA Regulatory Limit. For TCLP reference 40CFR, Part 261.24, Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristic

Results reported on a dry weight basis.

Approved by:

QC Chemist



CALIBER ANALYTICAL SERVICES

Certificate of Analysis

EnviroAnalytics Group, LLC
 1650 Des Peres Rd.
 Suite 303
 St. Louis, MO 63131

Date Sampled: 10/03/19 10:10
 Date Received: 10/04/19 10:28
 Date Issued: 10/11/19

Project: A4 Cadmium Excavation
 Site Location: Sparrows Point, MD

SDG Number: 19100404

Field Sample ID:	A4 South		Matrix:	Soil		Lab ID:	19100404-02		
	Result	Unit	LLQ	REGL	Method	Prepared	Analyzed	Init.	
Percent Solids									Batch: 22774
Percent Solids	83	%			SM2540G	10/04/19	10/08/19 11:09	DBS	
Polychlorinated Biphenyls									Batch: 22780
Aroclor 1016	ND	mg/kg	0.065	50	EPA 8082	10/07/19	10/08/19 19:24	DBS	
Aroclor 1221	ND	mg/kg	0.065	50	EPA 8082	10/07/19	10/08/19 19:24	DBS	
Aroclor 1232	ND	mg/kg	0.065	50	EPA 8082	10/07/19	10/08/19 19:24	DBS	
Aroclor 1242	ND	mg/kg	0.065	50	EPA 8082	10/07/19	10/08/19 19:24	DBS	
Aroclor 1248	ND	mg/kg	0.065	50	EPA 8082	10/07/19	10/08/19 19:24	DBS	
Aroclor 1254	ND	mg/kg	0.065	50	EPA 8082	10/07/19	10/08/19 19:24	DBS	
Aroclor 1260	ND	mg/kg	0.065	50	EPA 8082	10/07/19	10/08/19 19:24	DBS	
TCLP Metals									Batch: 22784
Arsenic	ND	mg/L	0.5	5	1311/6020A	10/08/19	10/08/19 16:18	MBC	
Barium	ND	mg/L	10	100	1311/6020A	10/08/19	10/08/19 16:18	MBC	
Cadmium	* 10	mg/L	0.1	1	1311/6020A	10/08/19	10/08/19 16:18	MBC	
Chromium	ND	mg/L	0.5	5	1311/6020A	10/08/19	10/08/19 16:18	MBC	
Lead	0.73	mg/L	0.5	5	1311/6020A	10/08/19	10/08/19 16:18	MBC	
Mercury	ND	mg/L	0.02	0.2	1311/6020A	10/08/19	10/08/19 16:18	MBC	
Selenium	ND	mg/L	0.1	1	1311/6020A	10/08/19	10/08/19 16:18	MBC	
Silver	ND	mg/L	0.5	5	1311/6020A	10/08/19	10/08/19 16:18	MBC	
TCLP Semi-Volatiles									Batch: 22792
2-Methylphenol	ND	ug/L	100	200000	1311/8270	10/10/19	10/10/19 20:52	GFH	
3+4-Methylphenol	ND	ug/L	200	200000	1311/8270	10/10/19	10/10/19 20:52	GFH	
2,4-Dinitrotoluene	ND	ug/L	100	130	1311/8270	10/10/19	10/10/19 20:52	GFH	
Hexachloroethane	ND	ug/L	100	3000	1311/8270	10/10/19	10/10/19 20:52	GFH	
Hexachlorobenzene	ND	ug/L	100	130	1311/8270	10/10/19	10/10/19 20:52	GFH	
Nitrobenzene	ND	ug/L	100	2000	1311/8270	10/10/19	10/10/19 20:52	GFH	
Pentachlorophenol	ND	ug/L	500	100000	1311/8270	10/10/19	10/10/19 20:52	GFH	
Pyridine	ND	ug/L	100	5000	1311/8270	10/10/19	10/10/19 20:52	GFH	
2,4,5-Trichlorophenol	ND	ug/L	100	400000	1311/8270	10/10/19	10/10/19 20:52	GFH	
2,4,6-Trichlorophenol	ND	ug/L	100	2000	1311/8270	10/10/19	10/10/19 20:52	GFH	
Hexachlorobutadiene`	ND	ug/L	100	500	1311/8270	10/10/19	10/10/19 20:52	GFH	



CALIBER ANALYTICAL SERVICES

Certificate of Analysis

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Date Sampled: 10/03/19 10:10
Date Received: 10/04/19 10:28
Date Issued: 10/11/19

Project: A4 Cadmium Excavation
Site Location: Sparrows Point, MD

SDG Number: 19100404

Field Sample ID:	A4 South	Matrix:	Soil	Lab ID:	19100404-02			
	Result	Unit	LLQ	REGL	Method	Prepared	Analyzed	Init.
TCLP Volatiles								
								Batch: 22788
Benzene	ND	ug/L	14	500	1311/8260	10/09/19	10/09/19 14:48	GFH
Carbon Tetrachloride	ND	ug/L	14	500	1311/8260	10/09/19	10/09/19 14:48	GFH
Chloroform	ND	ug/L	14	6000	1311/8260	10/09/19	10/09/19 14:48	GFH
1,2-Dichloroethane (EDC)	ND	ug/L	14	500	1311/8260	10/09/19	10/09/19 14:48	GFH
Tetrachloroethene	ND	ug/L	14	700	1311/8260	10/09/19	10/09/19 14:48	GFH
Vinyl Chloride	ND	ug/L	14	200	1311/8260	10/09/19	10/09/19 14:48	GFH
2-Butanone (MEK)	ND	ug/L	27	200000	1311/8260	10/09/19	10/09/19 14:48	GFH
Chlorobenzene	ND	ug/L	14	100000	1311/8260	10/09/19	10/09/19 14:48	GFH
1,4-Dichlorobenzene	ND	ug/L	14	7500	1311/8260	10/09/19	10/09/19 14:48	GFH
1,1-Dichloroethene	ND	ug/L	14	700	1311/8260	10/09/19	10/09/19 14:48	GFH
Trichloroethene	ND	ug/L	14	500	1311/8260	10/09/19	10/09/19 14:48	GFH

Notes/Qualifiers:

LLQ- Lowest Level of Quantitation

ND - Not Detected at a concentration greater than or equal to the LLQ.

REGL - RCRA Regulatory Limit. For TCLP reference 40CFR, Part 261.24, Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristic

* - Result exceeds TCLP limit.

Results reported on a dry weight basis.

Approved by:

QC Chemist

Chain of Custody Record

Customer:	EAG
Contact/Report to:	James Calenda
Phone:	314-686-5623
Fax:	

E-mail address:	icalenda@enviroanalyticsgroup.com
Project Name:	A4 Cadmium Excavation
Project Number:	
Site Location:	Sparrows Point

SDG Number:	19100404
Sampled by:	GW
PO Number:	

 Page 1 of 1

Lab Number	Field Sample ID	Date Sampled	Time Sampled	No. of Bottles	Matrix *	Analysis Requested					Sampling Remarks/ Comments
						Preservative	PCBs	TCLP Metals	TCLP VOCs	TCLP SVOCs	
	A4 North	10/03/19	1000	1	Sed	X	X	X	X		
	A4 South	10/03/19	1010	1	Sed	X	X	X	X		

Relinquished by:	Gerald Walsh <i>[Signature]</i>	Date/Time:	10/3/19 1030	Deliverables:	I II III CLP EDD	Receipt Temperature:	Temp: <u>On Ice</u>	Turnaround Time:	<u>STD</u> Next Day 2-Day Other _____
Received by:	<i>[Signature]</i>	Date/Time:	10/4/19 1028	Custody Seals:	Sample Cooler	Comments/Special Instructions:			
Relinquished by:		Date/Time:		Delivered by client					
Received by:		Date/Time:							
Relinquished by:		Date/Time:							
Received by:		Date/Time:							

* W = Water; WW = Wastewater; GW = Groundwater; S = Soil; SL = Sludge

ATTACHMENT 3



LAND DISPOSAL RESTRICTION & CERTIFICATION FORM

Generator Name: Enviro Analytics Group, LLC U.S. EPA ID No.: MDD 053 945 432

Uniform Manifest No.: 020574683 JJK LDR Page 1 of 1

Manifest Page No. & Line Item	U.S. EPA Hazardous Waste Code (s)	NWW or WW	LDR Certification (One per Line)	Subcategory	Reference Number(s) of Hazardous Constituents contained in the waste. Complete for F001-F005, F039, D001-D043, Contaminated Soil (10x) and Debris.
1	D006	NWW	A	None	None

I hereby certify that all information submitted on this and all associated documents, is complete and accurate to the best of my knowledge and information.

Generator Signature: _____ Title: _____

Printed Name: _____ Date: _____



LAND DISPOSAL RESTRICTION & CERTIFICATION FORM

Generator Name: Enviro Analytics Group, LLC U.S. EPA ID No.: MDD 053 945 432

Uniform Manifest No.: 020574684 JJK LDR Page 1 of 1

Manifest Page No. & Line Item	U.S. EPA Hazardous Waste Code (s)	NWW or WW	LDR Certification (One per Line)	Subcategory	Reference Number(s) of Hazardous Constituents contained in the waste. Complete for F001-F005, F039, D001-D043, Contaminated Soil (10x) and Debris.
1	D006	NWW	A	None	None

I hereby certify that all information submitted on this and all associated documents, is complete and accurate to the best of my knowledge and information.

Generator Signature: _____ Title: _____

Printed Name: _____ Date: _____



LAND DISPOSAL RESTRICTION & CERTIFICATION FORM

Generator Name: Enviro Analytics Group, LLC U.S. EPA ID No.: MDD 053 945 432
Uniform Manifest No.: 020574685 JJK LDR Page 1 of 1

Manifest Page No. & Line Item	U.S. EPA Hazardous Waste Code (s)	NWW or WW	LDR Certification (One per Line)	Subcategory	Reference Number(s) of Hazardous Constituents contained in the waste. Complete for F001-F005, F039, D001-D043, Contaminated Soil (10x) and Debris.
1	D006	NWW	A	None	None

I hereby certify that all information submitted on this and all associated documents, is complete and accurate to the best of my knowledge and information.

Generator Signature: _____ Title: _____

Printed Name: _____ Date: _____

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MDD 053 845 432	2. Page 1 of 1	3. Emergency Response Phone 314-620-3056	4. Manifest Tracking Number 020574683 JJK						
5. Generator's Name and Mailing Address Enviro Analytics Group, LLC 1600 Sparrows Point Blvd. Suite B2, Baltimore, MD 21219 314-620-3056 Attn: James Calenda				Generator's Site Address (if different than mailing address) Enviro Analytics Group, LLC Same							
6. Transporter 1 Company Name Envirite of Pennsylvania, Inc.					U.S. EPA ID Number PAD 010 164 045						
7. Transporter 2 Company Name					U.S. EPA ID Number						
8. Designated Facility Name and Site Address Envirite of PA dba US Ecology York 730 Vogelsong Rd., York, PA 17404 (717) 849-1900					U.S. EPA ID Number PAD 010 154 045						
Facility's Phone:											
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes			
				No.	Type						
	X	1. NA3077, Hazardous Waste Solid N.O.S., 9, PG III (cadmium)		1	DT	22	P BPS	0008			
		2.									
		3.									
	4.										
14. Special Handling Instructions and Additional Information 1: App# B203524EPA ERG 171 (cadmium contaminated soil) 4077 Emergency response# Job# ROAN-SSCH											
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.											
Generator's/Offeor's Printed/Typed Name Ryan Clancy					Signature 			Month 7	Day 30	Year 20	
TRANSPORTER INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____ Transporter signature (for exports only): _____										
	17. Transporter Acknowledgment of Receipt of Materials										
TRANSPORTER	Transporter 1 Printed/Typed Name Donald Thompson					Signature 			Month 12	Day 20	Year 20
	Transporter 2 Printed/Typed Name					Signature			Month	Day	Year
DESIGNATED FACILITY	18. Discrepancy										
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection										
	18b. Alternate Facility (or Generator) U.S. EPA ID Number										
	Facility's Phone:										
18c. Signature of Alternate Facility (or Generator) Month Day Year											
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)											
1.		2.		3.		4.					
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a											
Printed/Typed Name					Signature			Month	Day	Year	

ATTACHMENT 4

October 14, 2019

Mr. James Calenda
EnviroAnalytics Group, LLC
1600 Sparrows Point Blvd
Suite B2
Sparrows Point, MD 21219

RE: Project: A4 Cadmium Excavation
Pace Project No.: 30328194

Dear Mr. Calenda:

Enclosed are the analytical results for sample(s) received by the laboratory on October 04, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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,



Samantha Bayura
samantha.bayura@pacelabs.com
(724)850-5622
Project Manager

Enclosures

cc: Ms. Penny Gardner, Environmental Data Quality, Inc.
Ms. Shawne M. Rodgers, Environmental Data Quality, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30328194001	A4-N-1	Solid	10/03/19 11:00	10/04/19 23:20
30328194002	A4-N-2	Solid	10/03/19 11:05	10/04/19 23:20
30328194003	A4-N-3	Solid	10/03/19 11:10	10/04/19 23:20
30328194004	A4-N-4	Solid	10/03/19 11:15	10/04/19 23:20
30328194005	A4-N-5	Solid	10/03/19 11:20	10/04/19 23:20
30328194006	A4-S-6	Solid	10/03/19 11:25	10/04/19 23:20
30328194007	A4-S-7	Solid	10/03/19 11:30	10/04/19 23:20
30328194008	A4-S-8	Solid	10/03/19 11:35	10/04/19 23:20
30328194009	A4-S-9	Solid	10/03/19 11:40	10/04/19 23:20
30328194010	A4-S-10	Solid	10/03/19 11:45	10/04/19 23:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30328194001	A4-N-1	EPA 6010C	KAS	1	PASI-PA
		ASTM D2974-87	SHD	1	PASI-PA
30328194002	A4-N-2	EPA 6010C	KAS	1	PASI-PA
		ASTM D2974-87	SHD	1	PASI-PA
30328194003	A4-N-3	EPA 6010C	KAS	1	PASI-PA
		ASTM D2974-87	SHD	1	PASI-PA
30328194004	A4-N-4	EPA 6010C	KAS	1	PASI-PA
		ASTM D2974-87	SHD	1	PASI-PA
30328194005	A4-N-5	EPA 6010C	KAS	1	PASI-PA
		ASTM D2974-87	SHD	1	PASI-PA
30328194006	A4-S-6	EPA 6010C	KAS	1	PASI-PA
		ASTM D2974-87	SHD	1	PASI-PA
30328194007	A4-S-7	EPA 6010C	KAS	1	PASI-PA
		ASTM D2974-87	SHD	1	PASI-PA
30328194008	A4-S-8	EPA 6010C	KAS	1	PASI-PA
		ASTM D2974-87	SHD	1	PASI-PA
30328194009	A4-S-9	EPA 6010C	KAS	1	PASI-PA
		ASTM D2974-87	SHD	1	PASI-PA
30328194010	A4-S-10	EPA 6010C	KAS	1	PASI-PA
		ASTM D2974-87	SHD	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

Method: EPA 6010C

Description: 6010C MET ICP

Client: EnviroAnalytics Group, LLC

Date: October 14, 2019

General Information:

10 samples were analyzed for EPA 6010C. 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.

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:

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

Sample: A4-N-1 **Lab ID: 30328194001** Collected: 10/03/19 11:00 Received: 10/04/19 23:20 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
6010C MET ICP									
Analytical Method: EPA 6010C Preparation Method: EPA 3050B									
Cadmium	29.1	mg/kg	1.5	0.30	5	10/08/19 08:09	10/11/19 20:12	7440-43-9	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	20.3	%	0.10	0.10	1		10/08/19 15:04		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: A4 Cadmium Excavation
Pace Project No.: 30328194

Sample: A4-N-2 **Lab ID: 30328194002** Collected: 10/03/19 11:05 Received: 10/04/19 23:20 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
6010C MET ICP									
Analytical Method: EPA 6010C Preparation Method: EPA 3050B									
Cadmium	1.8	mg/kg	1.2	0.25	5	10/08/19 08:09	10/11/19 20:24	7440-43-9	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	7.6	%	0.10	0.10	1		10/08/19 15:04		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: A4 Cadmium Excavation
Pace Project No.: 30328194

Sample: A4-N-3 **Lab ID: 30328194003** Collected: 10/03/19 11:10 Received: 10/04/19 23:20 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
6010C MET ICP									
Analytical Method: EPA 6010C Preparation Method: EPA 3050B									
Cadmium	12.6	mg/kg	1.3	0.26	5	10/08/19 08:09	10/11/19 20:26	7440-43-9	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	8.4	%	0.10	0.10	1		10/08/19 15:04		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

Sample: A4-N-4 **Lab ID: 30328194004** Collected: 10/03/19 11:15 Received: 10/04/19 23:20 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
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050B								
Cadmium	1.2 U	mg/kg	1.2	0.25	5	10/08/19 08:09	10/11/19 20:29	7440-43-9	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	6.5	%	0.10	0.10	1		10/08/19 15:04		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: A4 Cadmium Excavation
Pace Project No.: 30328194

Sample: A4-N-5 **Lab ID: 30328194005** Collected: 10/03/19 11:20 Received: 10/04/19 23:20 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
6010C MET ICP									
Analytical Method: EPA 6010C Preparation Method: EPA 3050B									
Cadmium	33.9	mg/kg	1.3	0.26	5	10/08/19 08:09	10/11/19 20:38	7440-43-9	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	11.8	%	0.10	0.10	1		10/08/19 15:04		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

Sample: A4-S-6 **Lab ID: 30328194006** Collected: 10/03/19 11:25 Received: 10/04/19 23:20 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
6010C MET ICP									
Analytical Method: EPA 6010C Preparation Method: EPA 3050B									
Cadmium	48.1	mg/kg	1.3	0.26	5	10/08/19 08:09	10/11/19 20:40	7440-43-9	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	9.0	%	0.10	0.10	1		10/08/19 15:04		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

Sample: A4-S-7 **Lab ID: 30328194007** Collected: 10/03/19 11:30 Received: 10/04/19 23:20 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
6010C MET ICP									
Analytical Method: EPA 6010C Preparation Method: EPA 3050B									
Cadmium	484	mg/kg	1.3	0.26	5	10/08/19 08:09	10/11/19 20:42	7440-43-9	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	10.8	%	0.10	0.10	1		10/08/19 15:04		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

Sample: A4-S-8 **Lab ID: 30328194008** Collected: 10/03/19 11:35 Received: 10/04/19 23:20 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
6010C MET ICP									
Analytical Method: EPA 6010C Preparation Method: EPA 3050B									
Cadmium	19.2	mg/kg	1.4	0.29	5	10/08/19 08:09	10/11/19 20:45	7440-43-9	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	21.5	%	0.10	0.10	1		10/08/19 15:05		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: A4 Cadmium Excavation
Pace Project No.: 30328194

Sample: A4-S-9 **Lab ID: 30328194009** Collected: 10/03/19 11:40 Received: 10/04/19 23:20 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
6010C MET ICP									
Analytical Method: EPA 6010C Preparation Method: EPA 3050B									
Cadmium	17.1	mg/kg	1.3	0.27	5	10/08/19 08:09	10/11/19 20:47	7440-43-9	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	12.1	%	0.10	0.10	1		10/08/19 15:05		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: A4 Cadmium Excavation
Pace Project No.: 30328194

Sample: A4-S-10 **Lab ID: 30328194010** Collected: 10/03/19 11:45 Received: 10/04/19 23:20 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
6010C MET ICP									
Analytical Method: EPA 6010C Preparation Method: EPA 3050B									
Cadmium	74.6	mg/kg	1.4	0.28	5	10/08/19 08:09	10/11/19 20:49	7440-43-9	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Percent Moisture	16.4	%	0.10	0.10	1		10/08/19 15:05		D6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: A4 Cadmium Excavation
Pace Project No.: 30328194

QC Batch: 365071 Analysis Method: EPA 6010C
QC Batch Method: EPA 3050B Analysis Description: 6010C MET
Associated Lab Samples: 30328194001, 30328194002, 30328194003, 30328194004, 30328194005, 30328194006, 30328194007,
30328194008, 30328194009, 30328194010

METHOD BLANK: 1770811 Matrix: Solid
Associated Lab Samples: 30328194001, 30328194002, 30328194003, 30328194004, 30328194005, 30328194006, 30328194007,
30328194008, 30328194009, 30328194010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium	mg/kg	0.30 U	0.30	0.061	10/11/19 20:07	

LABORATORY CONTROL SAMPLE: 1770812

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	mg/kg	49	48.4	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1770813 1770814

Parameter	Units	30328194001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Cadmium	mg/kg	29.1	49	49	70.6	74.0	85	92	75-125	5 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

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QUALITY CONTROL DATA

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

QC Batch: 365191

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 30328194001, 30328194002, 30328194003, 30328194004, 30328194005, 30328194006, 30328194007, 30328194008, 30328194009

SAMPLE DUPLICATE: 1771265

Parameter	Units	30327295001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	43.2	37.8	13	20	

SAMPLE DUPLICATE: 1771266

Parameter	Units	30328130001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	20.6	21.1	3	20	

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QUALITY CONTROL DATA

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

QC Batch: 365194

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 30328194010

SAMPLE DUPLICATE: 1771267

Parameter	Units	30328194010 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	16.4	4.4	116	20	D6

SAMPLE DUPLICATE: 1771268

Parameter	Units	30328226001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.2	19.8	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

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.

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: A4 Cadmium Excavation

Pace Project No.: 30328194

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30328194001	A4-N-1	EPA 3050B	365071	EPA 6010C	365172
30328194002	A4-N-2	EPA 3050B	365071	EPA 6010C	365172
30328194003	A4-N-3	EPA 3050B	365071	EPA 6010C	365172
30328194004	A4-N-4	EPA 3050B	365071	EPA 6010C	365172
30328194005	A4-N-5	EPA 3050B	365071	EPA 6010C	365172
30328194006	A4-S-6	EPA 3050B	365071	EPA 6010C	365172
30328194007	A4-S-7	EPA 3050B	365071	EPA 6010C	365172
30328194008	A4-S-8	EPA 3050B	365071	EPA 6010C	365172
30328194009	A4-S-9	EPA 3050B	365071	EPA 6010C	365172
30328194010	A4-S-10	EPA 3050B	365071	EPA 6010C	365172
30328194001	A4-N-1	ASTM D2974-87	365191		
30328194002	A4-N-2	ASTM D2974-87	365191		
30328194003	A4-N-3	ASTM D2974-87	365191		
30328194004	A4-N-4	ASTM D2974-87	365191		
30328194005	A4-N-5	ASTM D2974-87	365191		
30328194006	A4-S-6	ASTM D2974-87	365191		
30328194007	A4-S-7	ASTM D2974-87	365191		
30328194008	A4-S-8	ASTM D2974-87	365191		
30328194009	A4-S-9	ASTM D2974-87	365191		
30328194010	A4-S-10	ASTM D2974-87	365194		

REPORT OF LABORATORY ANALYSIS

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Section A
Required Client Information:
Company: EnviroAnalytics Group
Address: 1430 Sparrows Point Blvd
Sparrows Point, MD 21219
Email To: jcalenda@enviroanalyticsgroup.com
Phone: 314-620-3056
Requested Due Date: TAT Standard

Section B
Required Project Information:
Report To: James Calenda
Copy To:
PO Number: EAG-SPT-4046
Project Name: A/Cadmium Excavation
Project Number:

Section C
Invoice Information:
Attention: Laura Sargent
Company Name: EnviroAnalytics Group
Address: 1660 Des Peres Road, Suite 303 St. Louis, MO 63131
Pick Quota Reference:
Pick Project Manager: Samantha Bayura
Pick Profile #:

Ground Water NPDES DRINKING WATER
 Other RORA UST OTHER

State: MD

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOILS/SL OIL WIFE AR OTHER TISSUE	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		# OF CONTAINERS	PRESERVATIVES		ANALYSIS TEST	DATE	TIME	ACCEPTED BY/AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
			COMPOSITE START	COMPOSITE END/GRAB		DI Water	Methanol							
1	A4-N-1	SL C	10/18/1105	-	1	X		VOC/8260B	10/19	15:25	AMB/PAGE	10/19	15:25	Y
2	A4-N-2	SL C	10/18/1105	-	1	X		DRO/8015B	10/19	20:10	RDS/TRACE	10/19	20:15	Y
3	A4-N-3	SL C	10/18/1110	-	1	X		SVOC 8270D	10/19	23:20	SLN/PAGE	10/19	23:20	Y
4	A4-N-4	SL C	10/18/1115	-	1	X		GRO/8015B	10/19	23:20	SLN/PAGE	10/19	23:20	Y
5	A4-N-5	SL C	10/18/1120	-	1	X		MEALS/6010C	10/19	23:20	SLN/PAGE	10/19	23:20	Y
6	A4-S-6	SL C	10/18/1125	-	1	X		Mercury/7471A or 7470A	10/19	23:20	SLN/PAGE	10/19	23:20	Y
7	A4-S-7	SL C	10/18/1130	-	1	X		Hexavalent Chromium/7186A	10/19	23:20	SLN/PAGE	10/19	23:20	Y
8	A4-S-8	SL C	10/18/1135	-	1	X		Total Cyanide/9012A	10/19	23:20	SLN/PAGE	10/19	23:20	Y
9	A4-S-9	SL C	10/18/1140	-	1	X		Oil and Grease/1664A (soil)	10/19	23:20	SLN/PAGE	10/19	23:20	Y
10	A4-S-10	SL C	10/18/1145	-	1	X		Oil and Grease/9071B (soil)	10/19	23:20	SLN/PAGE	10/19	23:20	Y
11								Total Cadmium						
12								Residual Chlorine (Y/N)						

Section D
Required Client Information
SAMPLE ID (A-Z, 0-9/.):
Sample IDs MUST BE UNIQUE

Section E
Additional Comments:
Data Package Required? (Y/N):
Data Validation Required? (Y/N):
If data package is required, attach data package checklist.

Section F
Signatures:
Sampler Name and Signature: James Calenda
Print Name of Sampler: James Calenda
Signature of Sampler: [Signature]
Date Signed (MM/DD/YYYY): 10/2/2019

Section G
Temp in °C: 4.3
Received on Ice (Y/N): Y
Custody Sealed (Y/N): Y
Samples Intact (Y/N): Y

Section H
W0#: **30328194**

Barcode:

30328194

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: EnviroAnalytics

Project # 30328194

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Label	<u>SP</u>
LIMS Login	<u>SP</u>

Tracking #: _____

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

Thermometer Used 10 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 4.3 °C Correction Factor: 0 °C Final Temp: 4.3 °C

Temp should be above freezing to 6°C

Comments:	pH paper Lot#			Date and Initials of person examining contents: <u>SP 10/5/19</u>
	Yes	No	N/A	
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.
Sample Labels match COC: -Includes date/time/ID Matrix: <u>SL</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used: -Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>SP</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17.
Trip Blank Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18.
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Rad Samples Screened < 0.5 mrem/hr	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed: _____ Date: _____

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.