Appendix H

Sediment Chemistry Assessment

Environment

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PORTAMBROSE

Sediment Chemistry Field Sampling Results—October 2013 Survey

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List of Acronyms and Abbreviations

BSGV	bioaccumulation-based sediment guidance value
BTEX	benzene, toluene, ethylbenzene, and xylene
COI	Constituents of Interest
CRE	CR Environmental
DGPS	Differential Global Positioning System
DL	Detection limit
EMPC	Estimated Maximum Possible Concentration
LCS	Laboratory Control Sample
LNG	Liquefied Natural Gas
NYSDEC	New York State Department of Environmental Conservation
OCDD	Octachlorodibenzodioxin
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyls
PLEM	Pipeline End Manifold
Project	Port Ambrose Project
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference
RV	Regasification Vessel
SVOC	Semivolatile organic compounds
SQG	Sediment Quality Guideline
TOC	Total Organic Carbon
TOGS	Technical & Operational Guidance Series
VOA	volatile organic analysis
VOC	volatile organic compound

1.0 Introduction

Liberty Natural Gas, LLC (Liberty or the Applicant) is proposing to construct, own, and operate a deepwater port, known as Port Ambrose (Port Ambrose, or the Project) in the New York Bight. Port Ambrose is similar in design to two offshore LNG ports near Boston, Massachusetts and an approved port near Tampa, Florida, and consists of two basic sets of components:

- Offloading Buoys: two Submerged Turret Loading™ buoy (STL Buoy) systems (collectively, the Port), which will receive and transfer natural gas from purpose-built LNG regasification vessels (LNGRVs) to the pipeline system; and
- Offshore Pipeline Facilities: two offshore subsea lateral pipelines (Laterals) connected to a subsea natural gas mainline (the Mainline).

The STL Buoy systems will be located in water depths of approximately 103 feet (31 m), in federal waters roughly 19 miles (30 km) off Jones Beach, New York, and approximately 31 miles (50 km) from the entrance to New York Harbor. Natural gas will be delivered through the STL Buoy systems and Laterals into a buried, 21.67 mile (34.87 km) subsea mainline, which will connect offshore with the existing Transco Lower New York Bay lateral for delivery to shore. When not in use, each STL Buoy will be lowered to rest on a landing pad on the ocean floor.

From the Port facility, the pipeline will follow a route NNW toward Rockaway Beach where at a point of approximately 2.5 miles offshore southern Long Island, it will connect with the Transco pipeline. Thus, most of the route to the interconnection with the Transco pipeline is in Federal waters with only a short segment in New York State waters.

This report presents the results of a vibracore survey that was focused in the portion of the proposed pipeline route within New York State waters. The survey was performed in October 2013 aboard the R/V Jamie Hanna, a 55-foot custom-built research vessel that was subcontracted through CR Environmental (CRE) of North Falmouth, Massachusetts. The purpose of the vibracore survey was to collect samples intended to identify the physical characteristics (percent moisture, grain size, and total organic carbon) of sediments to be disturbed. Any samples found to contain adequate organic material or fine-grained sediments along the mainline route within New York State waters were analyzed for chemical constituents (BTEX (benzene, toluene, ethylbenzene, and xylene), VOCs (volatile organic compounds), SVOCs (Semi-volatile organic compounds), PAHs (polycyclic aromatic hydrocarbons) metals, methyl-mercury, pesticides, PCBs (polychlorinated biphenyls), and dioxins/furans). All sampling and analyses were conducted in accordance with Liberty's Sediment Chemistry Field Sampling Plan (AECOM 2013), accepted by the New York State Department of Environmental Conservation (NYSDEC) on September 03, 2013.

This Project does not propose to remove dredge material from the mainline route but rather plow or hand jet (dredge) a trench into the sediment in two passes, temporarily side-casting the material, and then backfilling over the pipeline by reversing the plow shares and making a final pass with the plow to return the same native material to the trench. The results of this study will be used to address the NYSDEC requirements to evaluate; using ecological screening criteria, the potential for contaminants to be dispersed or resuspended and adversely impact water quality, benthic infauna, and other aquatic biota. A New York Certified Laboratory (Alpha Labs in Mansfield, Massachusetts) was selected to perform the chemical analyses.

The results presented in this report include an analysis of the physical characteristics of the sediment as well as its chemical parameters.

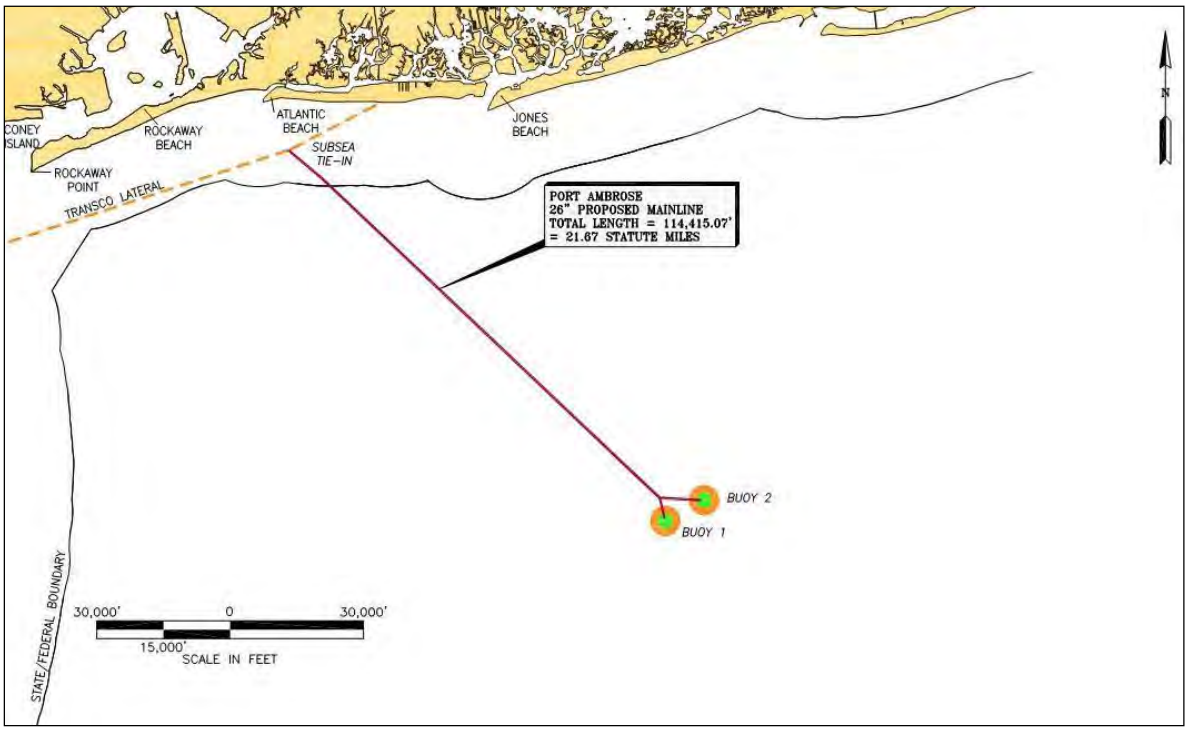

Figure 1. Location of the proposed Port Ambrose DWP and Mainline Route.

2.0 Methods

2.1 Field Methods

The vibracore survey for the Project began on October 23, 2013, was delayed by weather, and was completed on October 28–29, 2013, on the R/V *Jamie Hanna*. The vessel was mobilized, berthed nightly, and demobilized at the Atlantic Highlands Marina located south of Sandy Hook, NJ. AECOM took eight (8) vibracore samples at one-half mile intervals along the pipeline route and five (5) samples at selected locations where recent geotechnical surveys indicated the presence of paleochannels or strata with fine-grained sediments (Figure 2). AECOM collected vibracore samples to a depth of 10 feet (maximum project depth of 8 feet below seafloor surface plus two feet) or to refusal at each of the 13 stations. These 13 stations were selected so as to accurately and sufficiently characterize the sediments and sediment chemistry along the Mainline route in State waters.

AECOM used a Munsell Color Chart to classify the color of sediments present in each visible layer of the cores. Photographs of the entire length of cores were taken.

AECOM did not composite single (or multiple) cores if the grain size indicated that individual horizons may be present and significantly different in sediment contaminant characteristics. Instead, AECOM sampled and analyzed such horizons separately. One horizon from each core was selected to potentially get the full suite of samples, while the other horizons were sampled for grain-size only. It was assumed that these other horizons would contain 90% or more coarse sediments based on field observations.

2.1.1 Survey Vessel and Navigation

The R/V *Jamie Hanna* is a 55-ft custom-built fiberglass single-screw research vessel equipped with a Furuno NavNet 3^{D}MFDBB Black Box Navigation System with a Trimble real time DGPS (Differential Global Positioning System) system. Depths were obtained from a Furuno DFF Digital Bottom Machine equipped with a Furuno 1kW 50-200 kHz transducer. Navigation data and depth were recorded electronically. Target files that provide position information were created for each sample. Table 1 gives the actual sampled location of each of the 13 stations.

2.1.2 Vibracore Operations

Vibracores were collected using a NAVCO BH-5 Pneumatic Piston Vibrator Head with a custom check valve and pipe clamp. Core pipes were stainless steel with a 1/8 inch wall thickness, with 6 mil polyethylene liners and stainless steel cutter catcher assemblies. The air pressure to drive the vibrator head used a CONEX 100 CFM screw compressor with regulator and oiler and 3/4 inch hoses. The vibrator head was hooked up to the deck winch with a cable through an A-frame block. The steel winch cable was measured and marked in 10-ft increments to what would be water depth of 70 ft. This exceeded the projected maximum water depth in the areas being sampled. Once on station, the water depth was noted on the vessels fathometer and the vibracore lowered to the bottom. The nearest measurement on the cable, with interpolations as to actual depth, was noted in the field log before vibracoring proceeded. The vibracore was energized and began penetrating the bottom. The progress of the core was known by referencing the mark on the cable, as well as through the vibracoring technician who kept a hand on the cable to keep track of depth of penetration. Refusal was defined as the vibracore not making any further progress for a period of 5 minutes, at which point the vibracore was de-energized and the frame was retrieved.

Upon recovery of the vibracore frame, the soft-core liner holding the core sample was removed from the barrel, and the core length and penetration depth were recorded. At several stations multiple attempts were made trying to achieve the same depth of penetration that had been previously obtained by OSI in 2012. The cores not selected for processing were opened and the sediment was returned to the same site where it had been removed. Cores selected for processing were handled as described in section 2.1.3.

2.1.3 Chemistry Sampling

Sediment samples were collected at all 13 stations for constituents of interest (COI) analysis as well as for the characterization of sediment grain-size. The suitable cores were laid on the gunwale of the vessel, split lengthwise down one side of the soft core liner and opened for inspection, photographing, and sampling. As soon as the core was opened, it was sampled for volatiles. Two (2) low-level VOA (volatile organic analysis) vials and one (1) high-level VOA vial were filled. Visual observations of layer depths, sediment color and texture, odor, and any observed biota were then recorded in the field logbook. After the core was described and photographed (Appendix A), subsamples of the stratified layers were removed from the core, homogenized in a clean stainless steel bowl, and distributed to the designated sample jars. A total of six (6) containers were filled for the full suite of analyses: 1) the three (3) previously filled VOA vials; 2) an aliquot of sediment intended for the determination of dioxin/furans was placed into a 4-oz amber glass jar; 3) sediment intended for grain-size determination was placed into an 8-oz clear plastic jar; and 4) samples intended for chemical analysis (including polycyclic aromatic hydrocarbons (PAHs), pesticides, PCB aroclors, metals and total organic carbon (TOC)) were placed in another 4-oz amber glass jar. Due to having a small inventory of glassware on board, all layers that were assumed to be at least 90% coarse sediments were sub-sampled for grain-size only. These grain-size only samples were placed in available zip-lock bags. All samples were put on ice in coolers until they were picked-up by the analytical laboratory.

2.1.4 Laboratory Methods/Sediment Chemistry

AECOM selected Alpha Analytical, of Mansfield, Massachusetts, a State of New York Certified Laboratory, to perform most sediment analyses. Sediment dioxin/furan analyses were performed by SGS of North America.

All samples were tested for grain size prior to chemistry analysis; if it was determined that the samples had 90% or greater coarse sediments, no testing for COI was necessary pursuant to NYSDEC's TOGS (Technical & Operational Guidance Series) 5.1.9 (2004). Sediment grain size was determined using the ASTM D422 method, with results provided as percent totals for phi classes 4, 10, 40, and 200. The percent of sand in the samples was confirmed to be less than 90% at all but one station; therefore, the full suite of contaminant analyses was carried out. Analytical methods for COI are listed in Table 2. In some cases, updated methods or EPA methods that provide greater sensitivity were used instead of those listed in the project SAP and recommended by NYSDEC. The actual methods used met or were well within project detection limit (DL) requirements.

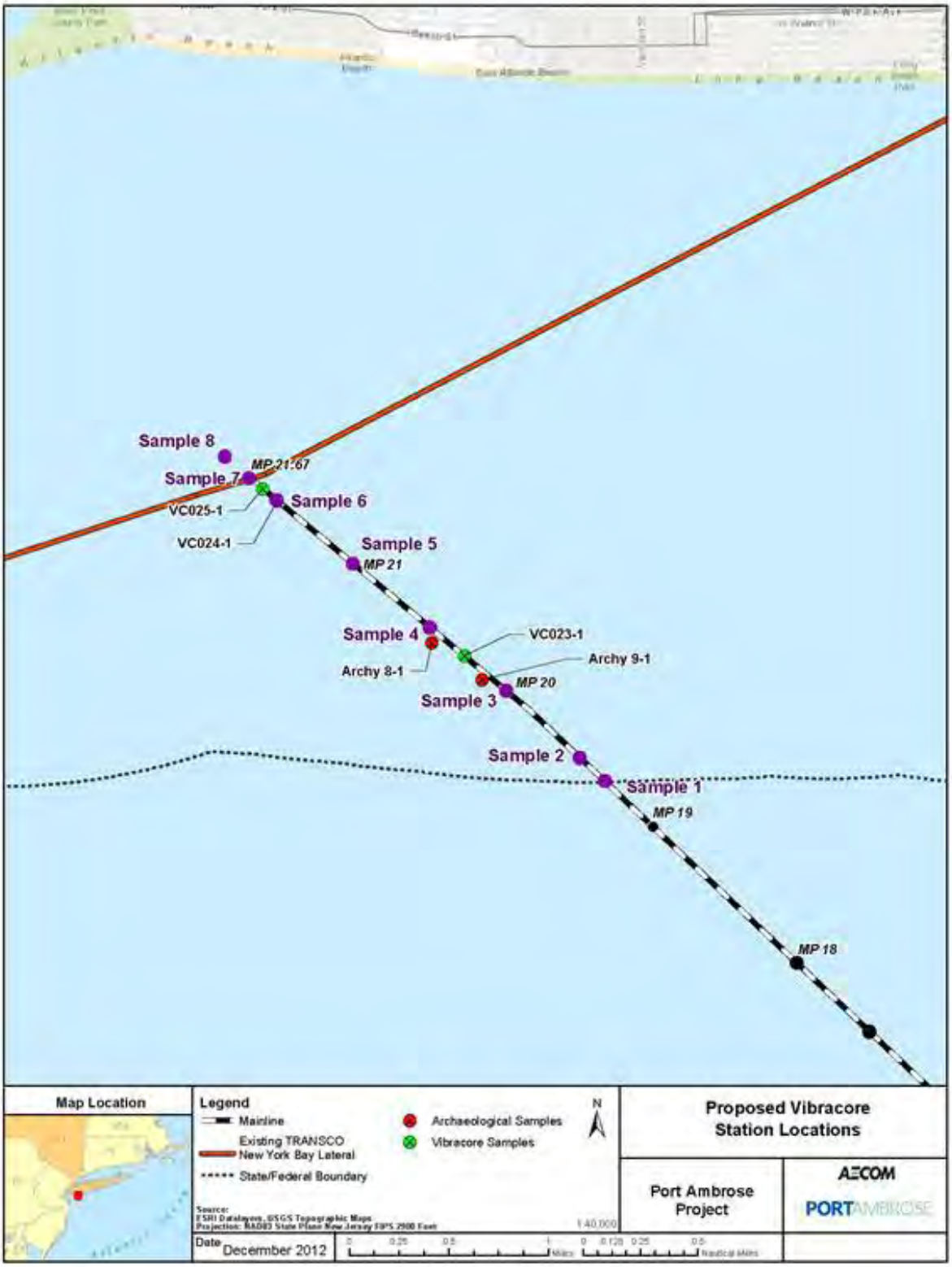

Figure 2. Sampling stations shown with the proposed pipeline route.

Table 1. Locations of Stations Sampled during the 2013 Vibracore Survey.

STATION ID	DATE	EASTING	NORTHING	LATITUDE (N)	LONGITUDE (W)	DEPTH (ft)	NO. TRIES	MAX. CORE PENETRATION (ft)	CORE RECOVERY (ft)	PHOTOS	MUNSELL
Station 1	10/29/2013	1068449	133417	40 31.948	73 41.866	58.7	2	5.2	3.5	Yes	Yes
Station 2	10/29/2013	1067753	133998	40 32.045	73 41.976	58.1	2	3	2.5	Yes	Yes
Station 3	10/29/2013	1065821	135804	40 32.343	73 42.392	57.7	1	4	3.4	Yes	Yes
Station 4	10/28/2013	1063780	137505	40 32.624	73 42.831	54.8	2	4.5	2	Yes	Yes
Station 5	10/28/2013	1061759	139235	40 32.524	73 43.266	52	1	4	3.9	Yes	Yes
Station 6*	10/28/2013	1060114	140431	40 33.108	73 43.620	51	4	2.5	2.5	Yes	Yes
Station 7	10/28/2013	1058858	141608	40 33.302	73 43.890	47	3	3.5	3	Yes	Yes
Station 8	10/23/2013	1058419	142042	40 33.377	73 43.985	50	3	6	5.5	Yes	Yes
VCO 23-1	10/28/2013	1064686	136747	30 32.499	73 52.643	54.8	1	3	3	Yes	Yes
VCO 24-1	10/28/2013	1059753	140952	40 33.194	73 43.698	49.5	1	7.5	6.2	Yes	Yes
VCO 25-1	10/28/2013	1059319	141165	40 33.229	73 43.792	48	2	3.5	3.5	Yes	Yes
ARCHY 8-1	10/29/2013	1063843	137148	40 32.565	73 42.818	53.8	1	7.2	7	Yes	Yes
ARCHY 9-1	10/29/2013	1065140	136119	40 32.395	73 42.538	54.8	1	4	3.5	Yes	Yes

*Station 6 was moved from the planned location because of underground cables marked on the chart
*Two core barrels were bent at Station 6 on the first 2 of 4 attempts

Table 2. Methods used for Chemical Analysis of Vibracore Samples.

Analyte	EPA Method
TOC	9060
Metals (As, Cd, Cu, Pb, and Hg)	6020/7474
Total PCB aroclors	8082
Pesticides	8081
PAHs	8270D-SIM
Volatiles (BTX)	8260
Dioxins and furans	1613B

3.0 Results

3.1 Sediment Coring Results

Successful cores were obtained at all 13 stations during the October sampling program. Two stations had recoveries of less than 80 percent (Stations PA 01 and PA 04). In each case multiple attempts were made to collect a suitable core, and ultimately the best attempt was used for analysis. It is AECOM's opinion that the analyses performed on the samples collected at these two stations are completely valid and in line with the overall objectives of this survey; while understanding that the depth of the horizon stated may not be completely accurate due to compaction and/or loss. The results of the coring activities are presented in standard coring logs found in Appendix B.

In general, the lengths of the cores obtained during this survey were different than that expected based on the results of the 2012 OSI survey in the same approximate area. Typically during the October 2013 survey, refusal occurred at depths shallower than expected even after multiple attempts at the same location.

Table 3. Description of cores obtained in 2012 at the same locations (OSI 2012).

Core #	Easting ft	Northing ft	Water Depth (ft)	Lab Length (ft)	Description
VC023-1	711530	623215	55	8.3	0.0-0.3' Silty Sand
					0.3-0.7' Sand with shell fragments
					0.7-1.1' Gravel with sand
					1.1-2.2' Silty Clay
					2.2-2.5' Clay and Gravel
					2.4-4.4' Peat and Clay
					4.4-8.3' Silty Sand
VC024-1	706577	627328	47	7.4	0.0-1.5' Sand with shells and shell fragments
					1.5-3.0' Sand
					3.0-4.6' Silty Sand
					4.6-7.4' Gravel with sand
VC025-1	706187	627655	50	10.3	0.0-2.1' Sand with gravel
					2.1-10.3' Gravel with sand
VC025-2	706195	627653	48	13.5	0.0-13.5' Sand and Gravel
Archy 8-1	710679	623574	53	14.5	0.0-0.9' Gravel with sand
					0.9-3.9' Clayey/Sandy Silt
					3.9-7.3' Silty Clay
					7.3-9.5' Clayey/Sandy Silt
					9.5-14.5' Clayey/Silty Sand
Archy 9-1	712003	622591	56	10.3	0.0-1.3' Sand
					1.3-4.4' Gravel with sand
					4.4-9.1' Clayey/Silty Sand
					9.1-10.3' Sand

3.2 Sediment Chemistry Analyses

3.2.1 Quality Assurance/Quality Control

This section provides quality control information and documents the overall quality of the data upon which the project conclusions are drawn. Overall, the chemical data collected was of sufficient quality and sensitivity to meet the project objectives. A full set of Quality Control (QC) sample findings (method blanks, duplicate precision results, laboratory control sample results, and matrix spike results) is provided in Appendices C and D for the chemistry data and associated QA/QC Data.

Sample Handling and Storage

Sample handling and storage were also carefully considered to ensure that samples were not degraded before analysis. Specifically, after the samples were collected, only sediment texture was analyzed immediately upon receipt by the analytical laboratory. Because coarse-grained sediments commonly exhibit a low affinity to trace organic and metal contaminants, chemical analysis was considered unnecessary unless the fraction of fine-grained material equaled or exceeded 11 percent. For this reason, samples retained for chemical analysis were frozen upon laboratory receipt for possible future analysis. However, the samples intended for BTEX compounds exceeded holding times and while it is unlikely that BTEX would be present within this coarse-grained sedimentary environment, the resulting (non-detect) data are not considered valid (i.e., have been rejected) for the purposes of this assessment. All other data are valid for assessment/decision-making purposes.

Analytical sensitivity

The sensitivity of program chemical measurements can sometimes dictate the ultimate usefulness of the final data. Results that are insufficiently sensitive to detect changes can limit the final project conclusions. In the case of the achieved Port Ambrose project reporting limits (RLs), all were below common Sediment Quality Guidelines (SQGs). The detection limits achieved were low enough to allow the sediment quality to be assessed relative to common SQGs, where available.

Contamination concerns

Sample contamination can sometimes affect sample results, particularly when measuring chemical parameters at very low concentrations. In this study, potential contamination was monitored using method blank QC samples. In fact, very few analytes were detected in the laboratory method blanks, and those that were detected were present at very low concentrations.

The only parameters detected in method blanks were the metals, arsenic and copper (at concentrations of 0.22 and 0.036 mg/Kg, respectively). Also detected were the trace organic compounds naphthalene (1.12 µg/Kg) and OCDD (Octachlorodibenzodioxin) (at 1.83 pg/g) although an Estimated Maximum Potential Concentration in the method blank was calculated for 1234678-HpCDD at 0.157 pg/g.

A mitigating factor with respect to these measured blank concentrations is the fact that in the cases of arsenic, copper, and OCDD the amount detected in the blank was an order of magnitude lower than was measured in the actual samples and so had no or negligible effect on the data quality. In the case of naphthalene, the measured value was only slightly higher than the method detection limit, as were the detected sediment sample results. For this reason, the detected naphthalene results are qualified (J) as estimates. Similarly, any sediment 1234678-HpCDD (Heptachloro-

dibenzo-p-dioxin) values measured within an order of magnitude of the corresponding blank concentration are J-qualified as an estimate.

Data precision

Sediment analysis precision was evaluated using matrix duplicates and matrix spike duplicates or laboratory control sample (LCS) duplicates. A common precision objective (as Relative Percent Difference or RPD) for sediment programs is 50% for matrix spike duplicates, matrix duplicates, and LCS duplicates. This RPD criterion was met for all parameters of interest for the program. Field duplicates were collected to evaluate field precision and, while precision could not be calculated in many cases because one or both replicates were not detected, calculated values were typically less than 50 percent (as RPD). In a few cases dioxin/furan compound replicates had higher calculated RPD values, but in each of these cases one or both of the values was in fact only EMPC (Estimated Maximum Possible Concentration) results, with some doubt surrounding the actual concentration. Overall, the field and laboratory precision data quality indicators were very good for the dataset.

Chemical data accuracy

Accuracy was evaluated using several QC sample types by calculating the percent recovered for each parameter of interest. A recovery value of 100% corresponds to 100% accuracy in this analysis. LCS and matrix-spiked samples were incorporated as accuracy QC samples. Additionally, surrogate spikes provide an added accuracy measure within trace organic analytical methods. Common matrix spike and LCS accuracy (percent recovery) objectives for sedimentary chemicals are 75–125 percent for metals and 40–140 percent for trace organic compounds (pesticides, PCBs, PAHs, VOCs and dioxin/furan congeners). All chemical data met these quality goals with one exception: benzene was recovered at 151 percent in one of the duplicate matrix spikes. A common surrogate spike accuracy objective for organic compounds is 30–130 percent and all surrogates met this objective. Dioxin measurements also included extraction spikes as a measure of accuracy and all were within acceptable limits.

3.3 Sediment Characteristics

Sediment quality evaluations require the consideration of physical and chemical parameters because of the interrelationship between them. For example, a trace organic compound at a particular concentration may pose no risk within sediments that contain a large amount of organic carbon, and yet pose some potential risk within sediments that contain very little carbon. Fine-grained clay minerals are also naturally higher in metal content than silica sand.

3.3.1 Sediment Texture (Grain Size)

Within the Port Ambrose project sample set, sediment textures were generally coarse (Figure 1; Table 3), and samples were typically measured to be 1/3 or less fines (defined as silt + clay). This was particularly true for surficial samples, whereas deeper horizons more commonly contained a larger fraction of finer material (PA-VC023-1-1.5-3.0 [70.4% fines], PA-ARCHY 8-1-3.2-7.0 [39%], and PA-VC024-1-2.6-4.5 [46.6%]).

Grain size results are shown in Table 3, and the raw data is included in Appendix E. Grain size results from most of the cores obtained in October 2013 indicate relatively high percentages of fine sand except Stations PA-05 and PA-07, which were comprised of well-mixed sand and lower levels of both fine sand and total fines. The fine, silty sediments associated with the paleochannels

identified by OSI (2012) at Stations VC023 and Archy 8-1 show up in the form of “total fines” percentages of 70% and 39% respectively. A layer of very fine sediments (46.6% total fines) shows up at a depth of 4.5 feet at PA-VC024 which was not clearly identified in the OSI survey (OSI 2012). That report described the layer as “silty sand.” If these samples are considered as paleochannel anomalies, total fines in State waters are generally in the 20–25 percent range.

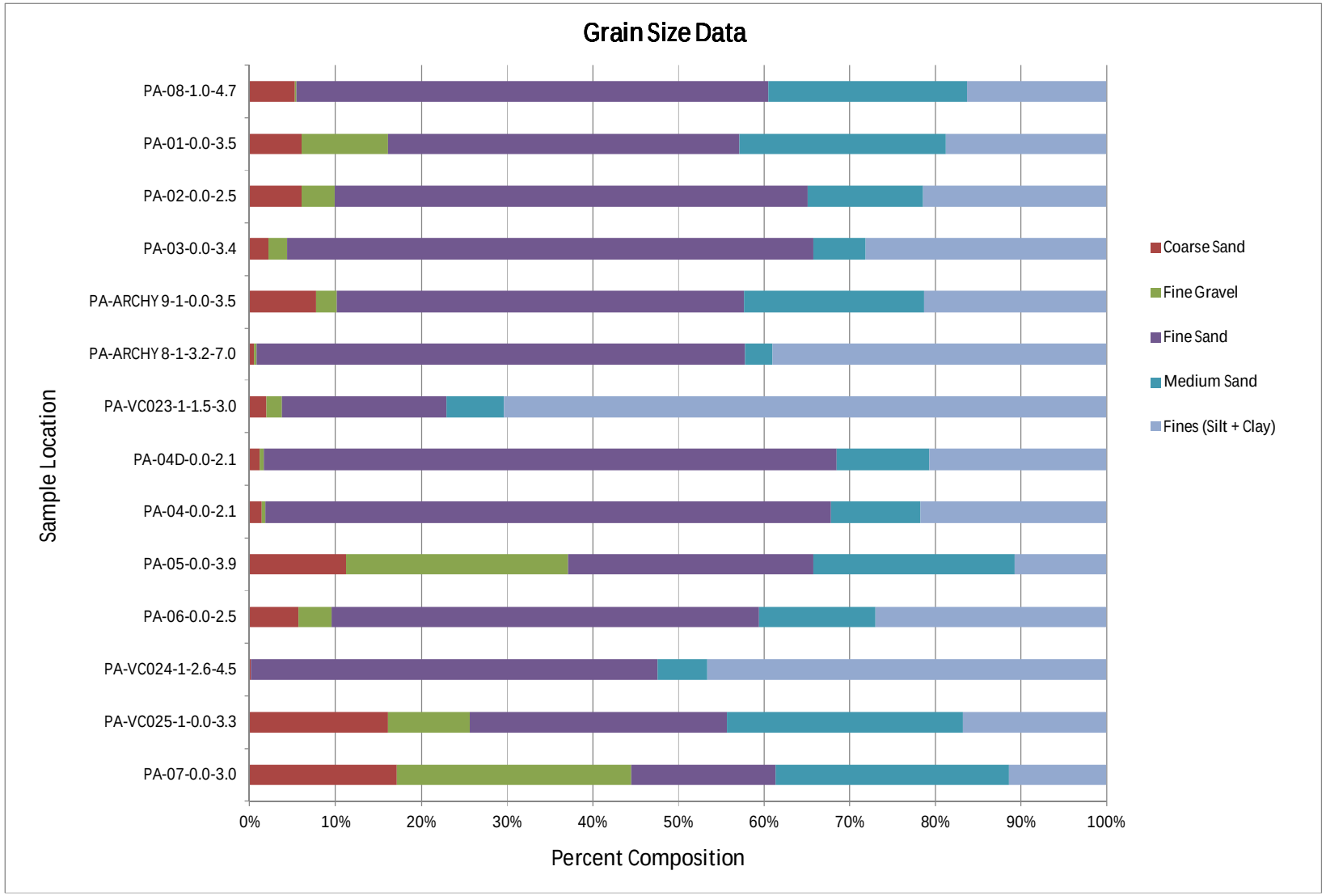

Figure 3. Sediment Grain Size Results from the October 2013 Port Ambrose Sediment Survey.

Table 4. Sediment Grain Size Results for all Samples Collected in October 2013.

Sample	Cobbles	%Coarse Gravel	%Fine Gravel	%Coarse Sand	%Medium Sand	%Fine Sand	%Total Gravel	%Total Sand	%Total Fines
PA-08-0.0-1.0	ND*	ND	2.31	2.89	23.92	70.01	2.31	96.82	0.87
PA-08-1.0-4.7	ND	ND	0.23	5.21	23.12	55.12	0.23	83.45	16.32
PA-07-0.0-3.0	ND	ND	27.32	17.20	27.29	16.79	27.32	61.28	11.40
PA-VC025-1-0.0-3.3	ND	ND	9.53	16.10	27.68	30.01	9.53	73.79	16.68
PA-VC024-1-0.0-2.6	ND	ND	11.78	7.22	19.81	44.56	11.78	71.59	16.63
PA-VC024-1-2.6-4.5	ND	ND	ND	0.15	5.83	47.41	ND	53.39	46.61
PA-VC024-1-4.5-6.2	ND	ND	0.34	0.98	14.30	61.83	0.34	77.11	22.55
PA-06-0.0-2.5	ND	ND	3.85	5.74	13.73	49.82	3.85	69.29	26.86
PA-05-0.0-3.9	ND	ND	25.93	11.30	23.54	28.56	25.93	63.40	10.67
PA-04-0.0-2.1	ND	ND	0.47	1.41	10.39	65.95	0.47	77.75	21.78
PA-04D-0.0-2.1	ND	ND	0.43	1.18	10.77	66.91	0.43	78.86	20.71
PA-VC023-1-0.0-1.5	ND	ND	0.46	1.42	12.77	61.95	0.46	76.14	23.40
PA-VC023-1-1.5-3.0	ND	ND	1.84	1.97	6.62	19.17	1.84	27.76	70.40
PA-ARCHY 8.1-0.0-3.2	ND	ND	18.23	10.83	27.14	26.76	18.23	64.73	17.04
PA-ARCHY 8.1-3.2-7.0	ND	ND	0.42	0.42	3.19	56.93	0.42	60.54	39.04
PA-ARCHY-9.1-0.0-3.5	ND	ND	2.34	7.72	21.03	47.65	2.34	76.40	21.26
PA-03-0.0-3.4	ND	ND	2.12	2.16	6.10	61.52	2.12	69.78	28.10
PA-02-0.0-2.5	ND	ND	3.84	6.03	13.46	55.31	3.84	74.80	21.36
PA-01-0.0-3.5	ND	ND	10.11	6.05	24.07	40.95	10.11	71.07	18.82

***ND, Not detected.**

3.3.2 Total Organic Carbon

Total organic carbon (TOC) was similarly low in the coarse-grained surface sediment samples (<0.6%) and was measured above this level in one deep horizon (PA-VC023-1-1.5-3.0 [1.72% TOC]). Because trace (non-polar) organic compound sediment quality thresholds are often a function of the amount of sedimentary carbon, lower TOC content will result in lower quality thresholds when utilizing an equilibrium partitioning evaluation approach.

3.3.3 Chemical Constituents

The Port Ambrose sediment chemistry data are also detailed in Table 4. Raw data is included in Appendix C and D. In many cases, data were qualified because measurements were either not detected (U) or considered estimates (J) as a result of low reporting confidence at such low concentrations or in a few cases as a result of some method blank contribution.

Sediment Quality Guidelines (SQGs) are also included in Table 4 for comparison purposes, and have been derived from NYSDEC (2004, 2013) or EPA (2003). In the analysis of dioxin and furan congeners (PCDDs/PCDFs), a Toxicity Equivalence (TEQ) was calculated to take into account the relative toxicity of the various congeners as related to 2,3,7,8-TCDD according to NYSDEC's Technical and Operational Guidance Series (TOGS) 5.1.9 (NYSDEC, 2004). For this calculation, undetected congeners are commonly included in the sum in one of three ways: 1) the detection limit is used, 2) ½ the detection limit is used, or 3) zero is used for any undetected congener. In this analysis, the data were censored to calculate the 2,3,7,8-TCDD TEQ by using the detection limit value in any case where the congener was not detected.

Additionally, some dioxin analyses occurred whereby the signal/noise ratio was not sufficient for peak identification or where a co-eluting interference existed. Given the importance of dioxin measurements, these values are reported as an Estimated Maximum Possible Concentration (EMPC; values Z-qualified in Table 4). This analysis took a conservative approach protective of the environment and included EMPC data in all calculations.

Metals. The metals measured in the Project area were relatively low and below corresponding SQGs with the exception of 2 arsenic data points (PA-VC023-1-1.5-3.0 [16.1 mg/Kg], and PA-ARCHY 9-1-0.0-3.5 [9.84 mg/Kg]). These were either very near the SQG value or were associated with high silt/clay content where metal enrichment is common. For example, Bowen (1979) reports the arsenic composition of marine clays to be 13 mg/Kg.

Pesticides, PCBs, and PAHs. The pesticide, PCB, and PAH compounds of interest in the Project area sediments were typically not detected or detected well below corresponding screening SQGs.

Dioxin/Furan compounds. The dioxin/furan congener results, summed together to calculate a TEQ were consistently at concentrations below NYSDEC's Class A sediment designation (i.e., No Appreciable Contamination/No Toxicity to Aquatic Life). The Class A threshold has been included in Table 4 for comparison.

Table 5A. Results of Chemical Analysis of Port Ambrose Vibracore Samples, Part 1.

LOCATION			PA-07-0.0-3.0		PA-VC025-1-0.0-3.3		PA-VC024-1-2.6-4.5		PA-06-0.0-2.5		PA-05-0.0-3.9		PA-04-0.0-2.1		PA-04D-0.0-2.1	
SAMPLING DATE			28-OCT-13		28-OCT-13		28-OCT-13		28-OCT-13		28-OCT-13		28-OCT-13		28-OCT-13	
LAB SAMPLE ID			L1323606-01		L1323606-02		L1323606-03		L1323606-04		L1323606-05		L1323606-06		L1323606-07	
	Units	SQG[1]	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Solids, Total	%		88.5		85.7		81.2		80		83.7		78.8		76.6	
Total Organic Carbon	%		0.131		0.075		0.042		0.069		0.095		0.013		0.010	U
Metals																
Arsenic, Total	mg/kg	*8.2*	7.86		5.59		0.958		3.79		2.13		1.13		1.15	
Cadmium, Total	mg/kg	*1.2*	0.01	J	0.012	J	0.011	J	0.015		0.011	J	0.005	J	0.007	J
Copper, Total	mg/kg	*34*	1.23		0.968		6.23		3.5		0.86		1.38		1.5	
Lead, Total	mg/kg	*47*	2.16		4.12		3.96		4.36		0.933		0.655		0.723	
Mercury, Total	mg/kg	*0.15*	0.005	J	0.003	J	0.016	U	0.008	J	0.002	J	0.005	J	0.006	J
Volatile Organics by 8260/5035																
Benzene	mg/kg		0.00072	R	0.0009	R	0.00067	R	0.00075	R	0.00062	R	0.0011	R	0.0008	R
Ethylbenzene	mg/kg		0.00072	R	0.0009	R	0.00067	R	0.00075	R	0.00062	R	0.0011	R	0.0008	R
o-Xylene	mg/kg		0.0014	R	0.0018	R	0.0013	R	0.0015	R	0.0012	R	0.0023	R	0.0016	R
p/m-Xylene	mg/kg		0.0014	R	0.0018	R	0.0013	R	0.0015	R	0.0012	R	0.0023	R	0.0016	R
Toluene	mg/kg		0.0011	R	0.0013	R	0.001	R	0.0011	R	0.00092	R	0.0017	R	0.0012	R
PAHs by GC/MS-SIM																
2-Chloronaphthalene	mg/kg		0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
2-Methylnaphthalene	mg/kg		0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Acenaphthene	mg/kg	*0.045*	0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Acenaphthylene	mg/kg	*0.049*	0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Anthracene	mg/kg	*0.059*	0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Benz(a)anthracene	mg/kg	*0.084*	0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Benzo(a)pyrene	mg/kg	*0.096*	0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Benzo(b)fluoranthene	mg/kg	*0.098*	0.0013	J	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Benzo(g,h,i)perylene	mg/kg	*0.110*	0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Benzo(k)fluoranthene	mg/kg	*0.098*	0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Chrysene	mg/kg	*0.084*	0.000929	J	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Dibenz(a,h)anthracene	mg/kg	*0.110*	0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Fluoranthene	mg/kg	*0.071*	0.0016	J	0.00874	U	0.00979	U	0.00176	J	0.00856	U	0.00976	U	0.0104	U
Fluorene	mg/kg	*0.054*	0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Indeno(1,2,3-cd)pyrene	mg/kg	*0.110*	0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Naphthalene	mg/kg	*0.039*	0.00204	J	0.00151	J	0.00979	U	0.00998	U	0.00123	J	0.00976	U	0.0104	U
Phenanthrene	mg/kg	*0.060*	0.00816	U	0.00874	U	0.00979	U	0.00998	U	0.00856	U	0.00976	U	0.0104	U
Pyrene	mg/kg	*0.070*	0.0013	J	0.00874	U	0.00979	U	0.00123	J	0.00856	U	0.00976	U	0.0104	U
Polychlorinated Biphenyls by GC																
Aroclor 1016	mg/kg	0.023	0.016	U	0.0167	U	0.0197	U	0.0173	U	0.0183	U	0.0198	U	0.0193	U

LOCATION			PA-07-0.0-3.0		PA-VC025-1-0.0-3.3		PA-VC024-1-2.6-4.5		PA-06-0.0-2.5		PA-05-0.0-3.9		PA-04-0.0-2.1		PA-04D-0.0-2.1	
SAMPLING DATE			28-OCT-13		28-OCT-13		28-OCT-13		28-OCT-13		28-OCT-13		28-OCT-13		28-OCT-13	
LAB SAMPLE ID			L1323606-01		L1323606-02		L1323606-03		L1323606-04		L1323606-05		L1323606-06		L1323606-07	
	Units	SQG[1]	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Aroclor 1221	mg/kg		0.016	U	0.0167	U	0.0197	U	0.0173	U	0.0183	U	0.0198	U	0.0193	U
Aroclor 1232	mg/kg		0.016	U	0.0167	U	0.0197	U	0.0173	U	0.0183	U	0.0198	U	0.0193	U
Aroclor 1242	mg/kg		0.016	U	0.0167	U	0.0197	U	0.0173	U	0.0183	U	0.0198	U	0.0193	U
Aroclor 1248	mg/kg		0.016	U	0.0167	U	0.0197	U	0.0173	U	0.0183	U	0.0198	U	0.0193	U
Aroclor 1254	mg/kg		0.016	U	0.0167	U	0.0197	U	0.0173	U	0.0183	U	0.0198	U	0.0193	U
Aroclor 1260	mg/kg		0.016	U	0.0167	U	0.0197	U	0.0173	U	0.0183	U	0.0198	U	0.0193	U
Organochlorine Pesticides by GC																
4,4'-DDD	mg/kg	*0.002*	0.000401	U	0.000417	U	0.000492	U	0.000432	U	0.000458	U	0.000496	U	0.000483	U
4,4'-DDE	mg/kg	*0.0022*	0.000401	U	0.000417	U	0.000492	U	0.000432	U	0.000458	U	0.000496	U	0.000483	U
4,4'-DDT	mg/kg	*0.001*	0.000401	U	0.000417	U	0.000492	U	0.000432	U	0.000458	U	0.000496	U	0.000483	U
alpha-Chlordane	mg/kg		0.000401	U	0.000417	U	0.000492	U	0.000432	U	0.000458	U	0.000496	U	0.000483	U
Dieldrin	mg/kg	*0.00002*	0.000401	U	0.000417	U	0.000492	U	0.000432	U	0.000458	U	0.000496	U	0.000483	U
gamma-Chlordane	mg/kg		0.000401	U	0.000417	U	0.000492	U	0.000432	U	0.000458	U	0.000496	U	0.000483	U
Mirex	mg/kg		0.000401	U	0.000417	U	0.000492	U	0.000432	U	0.000458	U	0.000496	U	0.000483	U
Technical Chlordane	mg/kg	*0.0005*	0.0202	U	0.021	U	0.0247	U	0.0217	U	0.023	U	0.0249	U	0.0242	U
Polychlorinated Dibenzo-p-Dioxins and Dibenzofurans																
1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g		0.415	J	0.314	J	0.31	Z J	1.83	J	0.154	Z J	0.116	J	0.273	Z J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g		1.1	J B	1.11	J B	2.31	J	3.38		1.02	J B	0.373	J B	0.541	Z J B
1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g		0.158	U	0.0961	U	0.157	U	0.217	J	0.12	U	0.0715	U	0.158	U
1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g		0.151	U	0.0806	U	0.112	U	0.123	Z J	0.0912	U	0.0715	U	0.131	U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g		0.245	U	0.105	U	0.127	U	0.121	U	0.194	U	0.079	U	0.17	U
1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g		0.15	U	0.078	U	0.112	U	0.157	Z J	0.0839	U	0.0749	U	0.125	U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g		0.26	U	0.109	U	0.132	U	0.199	Z J	0.202	U	0.0808	U	0.171	U
1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g		0.208	U	0.102	U	0.127	U	0.0825	U	0.105	U	0.0851	U	0.155	U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	pg/g		0.256	U	0.108	U	0.119	U	0.227	Z J	0.194	U	0.0799	U	0.185	U
1,2,3,7,8-Pentachlorodibenzofuran	pg/g		0.106	U	0.0734	U	0.0853	U	0.0849	U	0.0854	U	0.0583	U	0.106	U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g		0.171	U	0.109	U	0.139	U	0.12	U	0.132	U	0.0678	U	0.207	U
2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g		0.165	U	0.0779	U	0.0987	U	0.142	Z J	0.0932	U	0.0726	U	0.128	U
2,3,4,7,8-Pentachlorodibenzofuran	pg/g		0.104	U	0.0798	U	0.0839	U	0.0774	U	0.0785	U	0.0579	U	0.116	U
2,3,7,8-Tetrachlorodibenzofuran	pg/g		0.129	U	0.0669	U	0.0812	U	0.12	Z J	0.0885	U	0.0685	U	0.0937	U
2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/g		0.179	U	0.0994	U	0.0994	U	0.102	U	0.119	U	0.0802	U	0.127	U
Octachlorodibenzofuran	pg/g		0.465	Z J	0.209	U	0.586	J	1.1	Z J	0.243	U	0.162	U	0.428	U
Octachlorodibenzo-p-dioxin	pg/g		14		15.4		24.6		33.4		10.5		5.55		4.84	J
Total HpCDD	pg/g		3.44		3.83		8.29		8.81		3.64		1.11	Z	1.73	Z

LOCATION			PA-07-0.0-3.0		PA-VC025-1-0.0-3.3		PA-VC024-1-2.6-4.5		PA-06-0.0-2.5		PA-05-0.0-3.9		PA-04-0.0-2.1		PA-04D-0.0-2.1	
SAMPLING DATE			28-OCT-13		28-OCT-13		28-OCT-13		28-OCT-13		28-OCT-13		28-OCT-13		28-OCT-13	
LAB SAMPLE ID			L1323606-01		L1323606-02		L1323606-03		L1323606-04		L1323606-05		L1323606-06		L1323606-07	
	Units	SQG[1]	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual	Value	Qual
Total HpCDF	pg/g		0.653		0.314		0.31	Z	2.51	Z	0.154	Z	0.116		0.273	Z
Total HxCDD	pg/g		1.12	Z	1.6		5.99		3.25	Z	3.01	Z	1.14	Z	0.704	Z
Total HxCDF	pg/g		0.225		0.1		0.129	Z	1.16	Z	0.0926	U	0.0756	U	0.134	U
Total PeCDD	pg/g		0.171	U	0.153	Z	3.2	Z	0.652	Z	2	Z	0.6	Z	0.207	U
Total PeCDF	pg/g		0.105	U	0.0766	U	0.0845	U	0.293	Z	0.0819	U	0.0581	U	0.111	U
Total TCDD	pg/g		2.07		0.18		1.82	Z	1.02	Z	0.899	Z	0.996	Z	0.557	
Total TCDF	pg/g		0.129	U	0.0669	U	0.189		0.466	Z	0.0885	U	0.0685	U	0.0937	U
2, 3, 7, 8 - TCDD TEQ[2] (ND = DL/2)	mg/Kg		0.000000509		0.00000030		0.00000036		0.00000041		0.00000036		0.00000022		0.00000043	
Class A Quality Threshold (per TOGs 5.1.9. Table 2)	mg/kg		0.0000045		0.0000045		0.0000045		0.0000045		0.0000045		0.0000045		0.0000045	

[1]Sediment Quality Guidelines (SQGs):

Metals, PCBs, Pesticides: ERL from Long et al., (1995) rounded to 2 significant figures

PAHs: SGV normalized to lowest TOC value among sediment samples to represent worst-case scenario from NYSDEC (2013) and EPA (2003)

[2]Toxic Equivalence per TOGs 5.1.9 (i.e., NATO, 1988) _. Calculated with ND = DL; EMPCs included.

Qualifiers: B, Analyte was found in the method blank; J, Estimated value; R, Not Valid Value (Data rejected at Validation); U, Analyte was not detected; Z, Estimated Maximum Possible Concentration.

Table 5B. Results of Chemical Analysis of Port Ambrose Vibracore Samples, Part 2.

LOCATION			PA-VC023-1-1.5-3.0		PA-ARCHY 8-1-3.2-7.0		PA-ARCHY 9-1-0.0-3.5		PA-03-0.0-3.4		PA-02-0.0-2.5		PA-01-0.0-3.5		PA-08-1.0-4.7	
SAMPLING DATE			28-OCT-13		29-OCT-13		29-OCT-13		29-OCT-13		29-OCT-13		29-OCT-13		23-OCT-13	
LAB SAMPLE ID			L1323606-08		L1323606-09		L1323606-10		L1323606-11		L1323606-12		L1323606-13		L1323606-14	
	Units	**SQG[1]**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**
Solids, Total	%		58.6		67.7		79.5		74.2		78.6		79.5		69.6	
Total Organic Carbon	%		1.720		0.436		0.288		0.133		0.108		0.076		0.602	
Metals																
Arsenic, Total	mg/kg	*8.2*	16.1		4.96		9.84		2.89		7.96		3.65		7.12	
Cadmium, Total	mg/kg	*1.2*	0.072		0.04		0.025		0.034		0.052		0.009	J	0.125	
Copper, Total	mg/kg	*34*	13		5.49		2.64		4.53		1.63		0.985		6.95	
Lead, Total	mg/kg	*47*	10		2.78		4.73		4.77		3.93		3.73		6.48	
Mercury, Total	mg/kg	*0.15*	0.017	J	0.005	J	0.016	U	0.011	J	0.003	J	0.006	J	0.007	J
Volatile Organics by 8260/5035																
Benzene	mg/kg		0.0018	R	0.00086	R	0.00068	R	0.00072	R	0.00067	R	0.0007	R	0.00091	R
Ethylbenzene	mg/kg		0.0018	R	0.00086	R	0.00068	R	0.00072	R	0.00067	R	0.0007	R	0.00091	R
o-Xylene	mg/kg		0.0036	R	0.0017	R	0.0014	R	0.0014	R	0.0013	R	0.0014	R	0.0018	R
p/m-Xylene	mg/kg		0.0036	R	0.0017	R	0.0014	R	0.0014	R	0.0013	R	0.0014	R	0.0018	R
Toluene	mg/kg		0.0027	R	0.0013	R	0.001	R	0.0011	R	0.001	R	0.001	R	0.0014	R
PAHs by GC/MS-SIM																
2-Chloronaphthalene	mg/kg		0.00675	U	0.00545	U	0.00975	U	0.00966	U	0.00984	U	0.00894	U	0.0057	U
2-Methylnaphthalene	mg/kg		0.00675	U	0.00545	U	0.00975	U	0.00966	U	0.00984	U	0.00894	U	0.0057	U
Acenaphthene	mg/kg	*0.045*	0.00675	U	0.00545	U	0.00975	U	0.00966	U	0.00984	U	0.00894	U	0.0057	U
Acenaphthylene	mg/kg	*0.049*	0.00675	U	0.00545	U	0.00975	U	0.00966	U	0.00984	U	0.00894	U	0.0057	U
Anthracene	mg/kg	*0.059*	0.00675	U	0.00545	U	0.00975	U	0.00966	U	0.00984	U	0.00894	U	0.0057	U
Benz(a)anthracene	mg/kg	*0.084*	0.00675	U	0.00545	U	0.00975	U	0.00966	U	0.00984	U	0.00894	U	0.0057	U
Benzo(a)pyrene	mg/kg	*0.096*	0.00675	U	0.00545	U	0.00975	U	0.00176	J	0.00984	U	0.00894	U	0.0057	U
Benzo(b)fluoranthene	mg/kg	*0.098*	0.00112	J	0.000636	J	0.00975	U	0.00218	J	0.00984	U	0.00894	U	0.0057	U
Benzo(g,h,i)perylene	mg/kg	*0.110*	0.00675	U	0.00545	U	0.00975	U	0.00208	J	0.00984	U	0.00894	U	0.0057	U
Benzo(k)fluoranthene	mg/kg	*0.098*	0.00675	U	0.00545	U	0.00975	U	0.0017	J	0.00984	U	0.00894	U	0.0057	U
Chrysene	mg/kg	*0.084*	0.00123	J	0.00545	U	0.00975	U	0.00143	J	0.00984	U	0.00894	U	0.0057	U
Dibenz(a,h)anthracene	mg/kg	*0.110*	0.00675	U	0.00545	U	0.00975	U	0.00966	U	0.00984	U	0.00894	U	0.0057	U
Fluoranthene	mg/kg	*0.071*	0.00251	J	0.00113	J	0.00975	U	0.00272	J	0.00984	U	0.00894	U	0.0057	U
Fluorene	mg/kg	*0.054*	0.00129	J	0.00545	U	0.00975	U	0.00966	U	0.00984	U	0.00894	U	0.0057	U
Indeno(1,2,3-cd)pyrene	mg/kg	*0.110*	0.00675	U	0.00545	U	0.00975	U	0.00966	U	0.00984	U	0.00894	U	0.0057	U
Naphthalene	mg/kg	*0.039*	0.0014	J	0.00128	J	0.00146	J	0.00294	J	0.00317	J	0.00894	U	0.0057	U
Phenanthrene	mg/kg	*0.060*	0.00173	J	0.00127	J	0.00975	U	0.00966	U	0.00984	U	0.00894	U	0.0057	U
Pyrene	mg/kg	*0.070*	0.00167	J	0.00071	J	0.000828	J	0.00217	J	0.00984	U	0.00894	U	0.0057	U
Polychlorinated Biphenyls by GC																
Aroclor 1016	mg/kg	*0.023*	0.0128	U	0.0113	U	0.0192	U	0.02	U	0.0193	U	0.019	U	0.0114	U
Aroclor 1221	mg/kg		0.0128	U	0.0113	U	0.0192	U	0.02	U	0.0193	U	0.019	U	0.0114	U

LOCATION			PA-VC023-1-1.5-3.0		PA-ARCHY 8-1-3.2-7.0		PA-ARCHY 9-1-0.0-3.5		PA-03-0.0-3.4		PA-02-0.0-2.5		PA-01-0.0-3.5		PA-08-1.0-4.7	
SAMPLING DATE			28-OCT-13		29-OCT-13		29-OCT-13		29-OCT-13		29-OCT-13		29-OCT-13		23-OCT-13	
LAB SAMPLE ID			L1323606-08		L1323606-09		L1323606-10		L1323606-11		L1323606-12		L1323606-13		L1323606-14	
	Units	**SQG[1]**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**
Aroclor 1232	mg/kg		0.0128	U	0.0113	U	0.0192	U	0.02	U	0.0193	U	0.019	U	0.0114	U
Aroclor 1242	mg/kg		0.0128	U	0.0113	U	0.0192	U	0.02	U	0.0193	U	0.019	U	0.0114	U
Aroclor 1248	mg/kg		0.0128	U	0.0113	U	0.0192	U	0.02	U	0.0193	U	0.019	U	0.0114	U
Aroclor 1254	mg/kg		0.0128	U	0.0113	U	0.0192	U	0.02	U	0.0193	U	0.019	U	0.0114	U
Aroclor 1260	mg/kg		0.0128	U	0.0113	U	0.0192	U	0.02	U	0.0193	U	0.019	U	0.0114	U
Organochlorine Pesticides by GC																
4,4'-DDD	mg/kg	*0.002*	0.00032	U	0.000283	U	0.00048	U	0.000499	U	0.000483	U	0.000475	U	0.000284	U
4,4'-DDE	mg/kg	*0.0022*	0.00032	U	0.000283	U	0.00048	U	0.000499	U	0.000483	U	0.000475	U	0.000284	U
4,4'-DDT	mg/kg	*0.001*	0.00032	U	0.000283	U	0.00048	U	0.000499	U	0.000483	U	0.000475	U	0.000284	U
alpha-Chlordane	mg/kg		0.00032	U	0.000283	U	0.00048	U	0.000499	U	0.000483	U	0.000475	U	0.000284	U
Dieldrin	mg/kg	*0.00002*	0.00032	U	0.000283	U	0.00048	U	0.000499	U	0.000483	U	0.000475	U	0.000284	U
gamma-Chlordane	mg/kg		0.00032	U	0.000283	U	0.00048	U	0.000499	U	0.000483	U	0.000475	U	0.000284	U
Mirex	mg/kg		0.00032	U	0.000283	U	0.00048	U	0.000499	U	0.000483	U	0.000475	U	0.000284	U
Technical Chlordane	mg/kg	*0.0005*	0.016	U	0.0142	U	0.0241	U	0.025	U	0.0242	U	0.0238	U	0.0142	U
Polychlorinated Dibenzo-p-Dioxins and Dibenzofurans																
1,2,3,4,6,7,8-Heptachlorodibenzofuran	pg/g		0.442	Z J	0.21	Z J	0.436	J	1.06	J	0.245	J	0.512	J	0.791	J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	pg/g		34.3		4.61		1.25	J B	3.32		1.22	J B	4.43		32.5	
1,2,3,4,7,8,9-Heptachlorodibenzofuran	pg/g		0.115	U	0.15	U	0.103	U	0.139	U	0.112	U	0.166	U	0.105	U
1,2,3,4,7,8-Hexachlorodibenzofuran	pg/g		0.111	Z J	0.111	U	0.102	U	0.141	Z J	0.0731	U	0.0851	U	0.11	Z J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	pg/g		1.02	J	0.179	U	0.124	U	0.156	U	0.101	U	0.187	U	0.704	J
1,2,3,6,7,8-Hexachlorodibenzofuran	pg/g		0.101	J	0.0924	U	0.0938	U	0.118	Z J	0.0682	U	0.0949	U	0.0928	U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	pg/g		1.49	J	0.199	Z J	0.153	J	0.289	J	0.106	U	0.311	J	1.2	J
1,2,3,7,8,9-Hexachlorodibenzofuran	pg/g		0.107	U	0.122	U	0.118	U	0.103	U	0.0851	U	0.118	U	0.122	U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	pg/g		2.54		0.185	Z J	0.226	J	0.28	J	0.186	J	0.332	J	2.08	J
1,2,3,7,8-Pentachlorodibenzofuran	pg/g		0.0886	Z J	0.105	U	0.0647	U	0.0779	Z J	0.0544	U	0.0859	U	0.0754	U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	pg/g		0.605	Z J	0.186	U	0.154	U	0.152	U	0.0853	U	0.129	U	0.379	J
2,3,4,6,7,8-Hexachlorodibenzofuran	pg/g		0.0968	U	0.0997	U	0.0996	U	0.132	J	0.071	U	0.0867	U	0.17	J
2,3,4,7,8-Pentachlorodibenzofuran	pg/g		0.071	U	0.0983	U	0.065	U	0.15	J	0.0536	U	0.0895	U	0.0698	U
2,3,7,8-Tetrachlorodibenzofuran	pg/g		0.0858	U	0.0817	U	0.0599	U	0.152	Z J	0.0686	U	0.089	U	0.0662	U
2,3,7,8-Tetrachlorodibenzo-p-dioxin	pg/g		0.131	U	0.155	U	0.112	U	0.116	U	0.107	U	0.129	U	0.092	U
Octachlorodibenzofuran	pg/g		0.492	Z J	0.282	U	0.495	J	1.29	Z J	0.711	Z J	0.381	Z J	0.367	Z J
Octachlorodibenzo-p-dioxin	pg/g		561		84.7		16.1		36.2		18.5		79.2		752	
Total HpCDD	pg/g		114		18.8		4.5		10.8		4.72		16.1		149	

LOCATION			PA-VC023-1-1.5-3.0		PA-ARCHY 8-1-3.2-7.0		PA-ARCHY 9-1-0.0-3.5		PA-03-0.0-3.4		PA-02-0.0-2.5		PA-01-0.0-3.5		PA-08-1.0-4.7	
SAMPLING DATE			28-OCT-13		29-OCT-13		29-OCT-13		29-OCT-13		29-OCT-13		29-OCT-13		23-OCT-13	
LAB SAMPLE ID			L1323606-08		L1323606-09		L1323606-10		L1323606-11		L1323606-12		L1323606-13		L1323606-14	
	Units	**SQG[1]**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**	**Value**	**Qual**
Total HpCDF	pg/g		0.442	Z	0.21	Z	0.436		1.64		0.245		0.676		0.924	Z
Total HxCDD	pg/g		52.5	Z	7.91	Z	4.21		8.5	Z	2.49		6.67	Z	96.7	Z
Total HxCDF	pg/g		0.439	Z	0.105	U	0.12		1.31	Z	0.104	Z	0.224		0.71	Z
Total PeCDD	pg/g		11.1	Z	1.74		1.99	Z	3.82	Z	0.8	Z	1.33	Z	27	Z
Total PeCDF	pg/g		0.622	Z	0.102	U	0.0648	U	0.927	Z	0.054	U	0.0877	U	0.0725	U
Total TCDD	pg/g		4.12	Z	1.11	Z	1.26	Z	5.93	Z	0.305	Z	0.167	Z	20.9	Z
Total TCDF	pg/g		6.39	Z	0.51	Z	0.0599	U	1.13	Z	0.0686	U	0.345	Z	1.39	Z
2, 3, 7, 8 - TCDD TEQ[2] (ND = DL/2)	Mg/Kg		0.000001939		0.00000054		0.00000036		0.00000050		0.00000029		0.00000051		0.00000187	
Class A Quality Threshold (per TOGs 5.1.9. Table 2)	Mg/Kg		*0.0000045*		*0.0000045*		*0.0000045*		*0.0000045*		*0.0000045*		*0.0000045*		*0.0000045*	

[1]Sediment Quality Guidelines (SQGs):

Metals, PCBs, Pesticides: ERL from Long et al., (1995) rounded to 2 significant figures

PAHs: SGV normalized to lowest TOC value among sediment samples to represent worst-case scenario from NYSDEC (2013) and EPA (2003)

[2]Toxic Equivalence per TOGs 5.1.9 (i.e., NATO, 1988) _. Calculated with ND = DL; EMPCs included.

Qualifiers: B, Analyte was found in the method blank; J, Estimated value; R, Not Valid Value (Data rejected at Validation); U, Analyte was not detected; Z, Estimated Maximum Possible Concentration.

3.4 *Classification*

The array of potential contaminants evaluated in this study were found at or below regulatory limits and guidance levels, as specified in NYSDECs TOGS 5.1.9 (NYSDEC, 2004), for meeting the Class A criteria. Class A criteria stipulates that "…if sediment chemistry is found to be at or below the chemical concentrations which define this class, dredging and in-water or riparian placement, at approved locations, can generally proceed." The Project's proposed disturbances (plowing, limited jetting and subsequent backfill of sediments) along the pipeline route for pipeline construction should therefore have negligible effects on the marine environment beyond the initial benthos disturbance.

4.0 References

AECOM. 2013. Sediment Chemistry Field Sampling and Analysis Plan Port Ambrose Project. 30 pp.

Bowen, H.J.M., 1979. Environmental Chemistry of the Elements. Academic Press, London. 317 pp.

NATO, 1988. International Toxicity Equivalency Factor (I-tef) Method of risk assessment for complex mixtures of dioxins and related compounds. North Atlantic Treaty Organization. Report Number 176.

NYSDEC, Division of Water. 2004. Technical & Operational Guidance Series (TOGS) 5.1.9. In-Water and Riparian Management of Sediment and Dredged Material. November, 2004. 72 pp.

NYSDEC, Division of Fish, Wildlife and Marine Resources, Bureau of Habitat, 2013. Screening and Assessment of Contaminated Sediment. Draft Ver 4.0 - 1/24/2013.

Ocean Surveys, Inc (OSI) 2012. Port Ambrose Shallow Hazards Survey Report, Marine Geophysical, Geotechnical and Remote Sensing Investigations, Port Ambrose Project, New York Bight, Atlantic Ocean, OSI Report No. 12ES024-D, 8/9/2012, 247 pp.

U.S. EPA, 1988. Determination of Total Organic Carbon (Lloyd Kahn Method), July 27, 1988, USEPA, Region II.

U.S. EPA, 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. U.S. Environmental Protection Agency, EPA/600/R-02/013, November 2003.

Van den Berg, M., et al., 2006. The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxin and Dioxin-Like Compounds. Toxicological Sciences 93 (2) 223-241.

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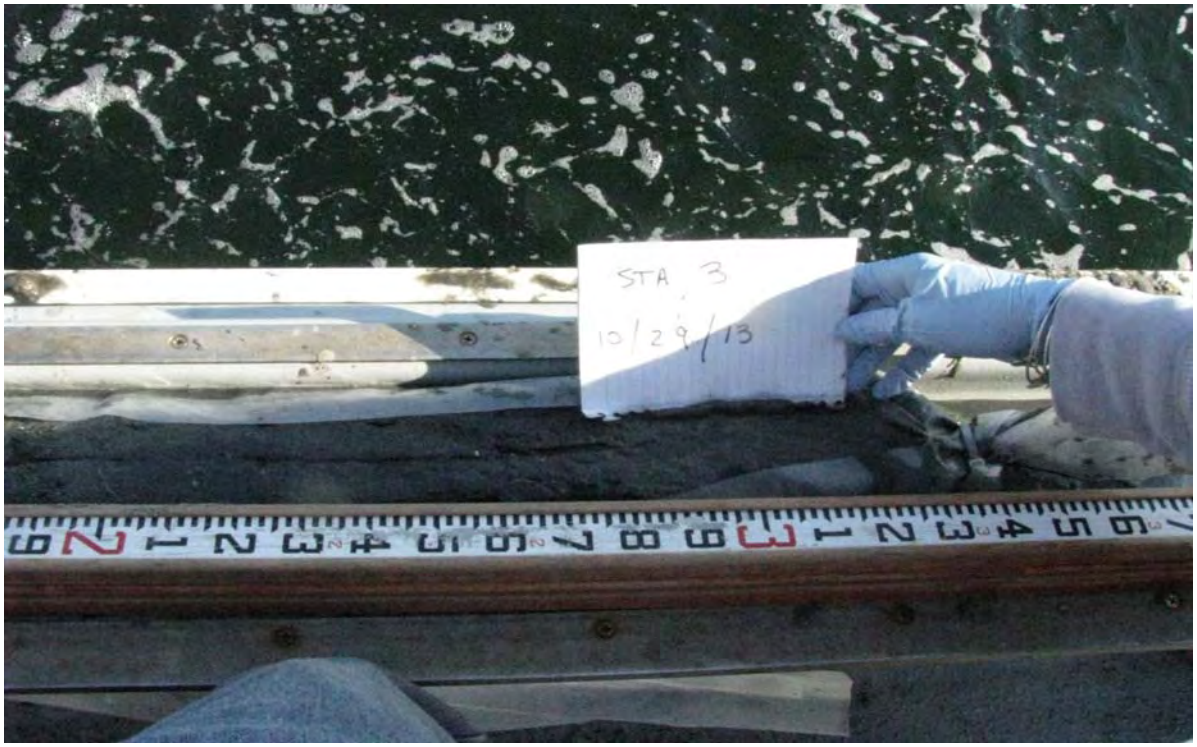
APPENDIX A
PHOTOGRAPHIC RECORD OF THE CORES 1

Station 1: core section 1-2'

Station 1: core section 2-3.5'

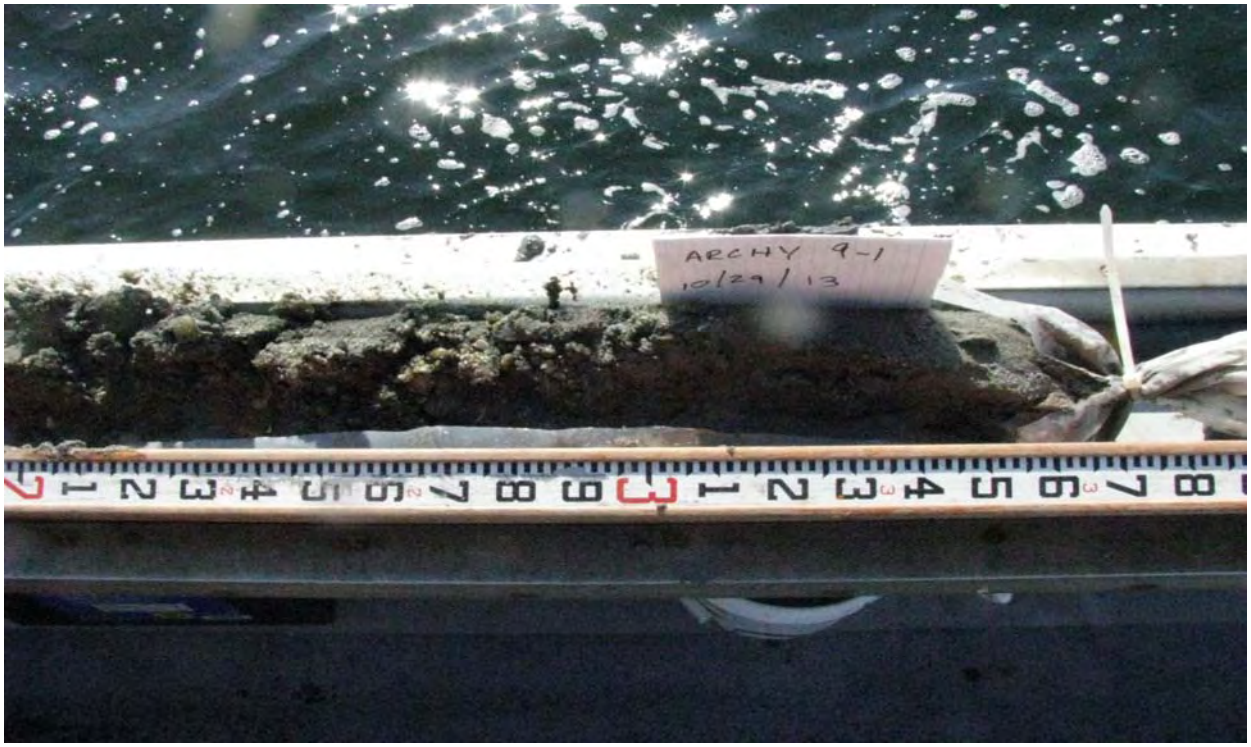
Station 2: core section 0-2.4'

Station 3: core section 0-2'



Station 3: core section 2-3.4'

Station ARCHY 9-1: core section 0-2'

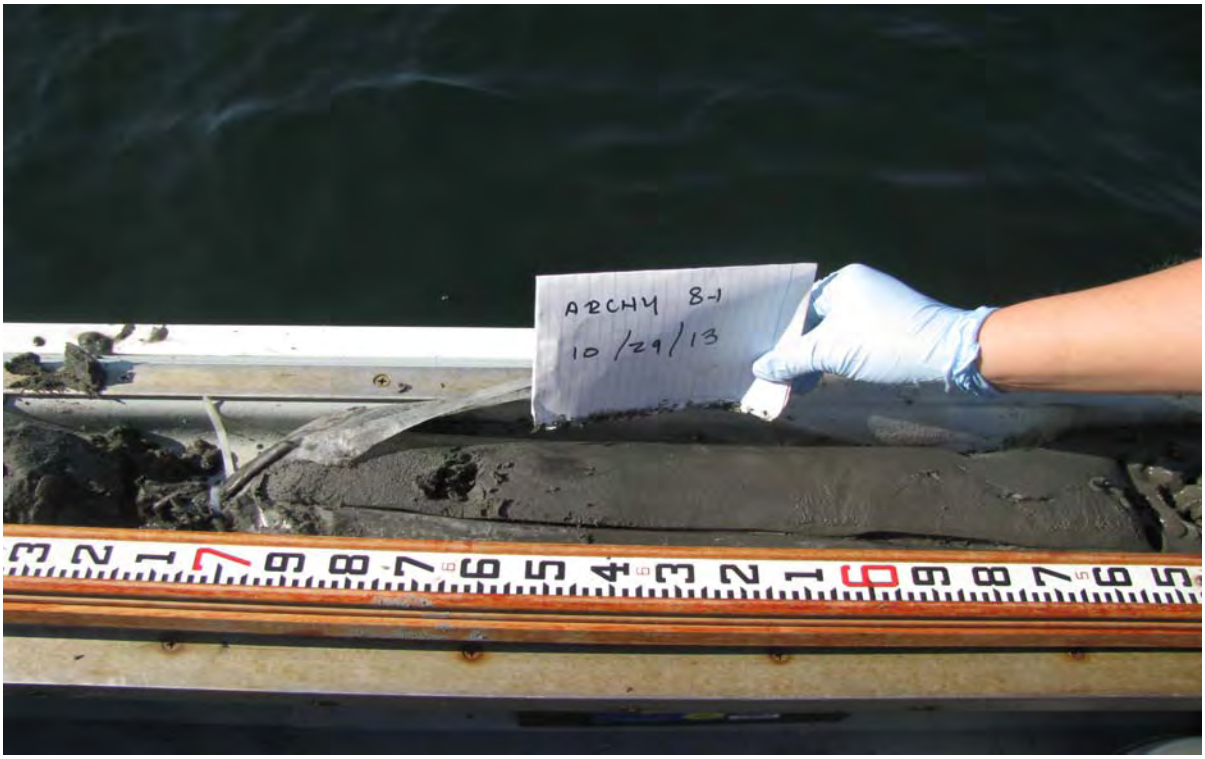


Station ARCHY 9-1 : core section 2-3.5'

Station ARCHY 8-1: Core section 0-2'

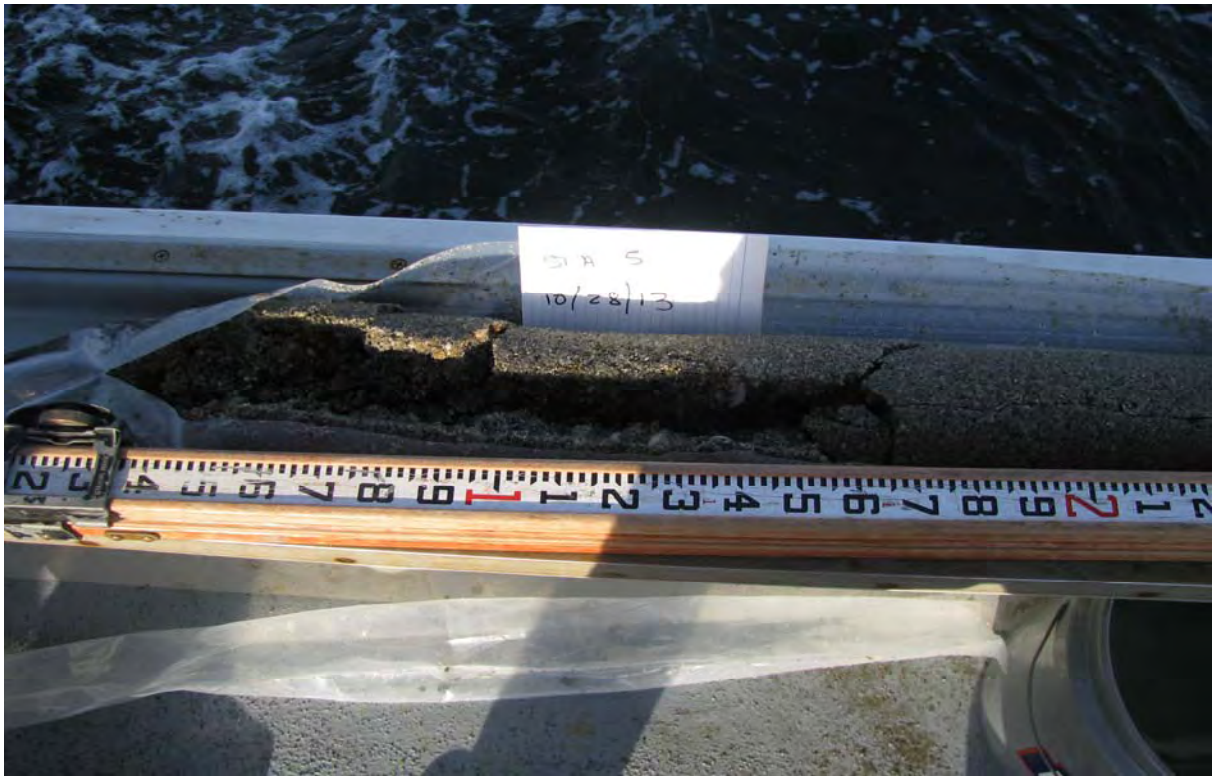
Station ARCHY 8-1: core section 2-4'

Station Archy 8-1: core section 4-6'

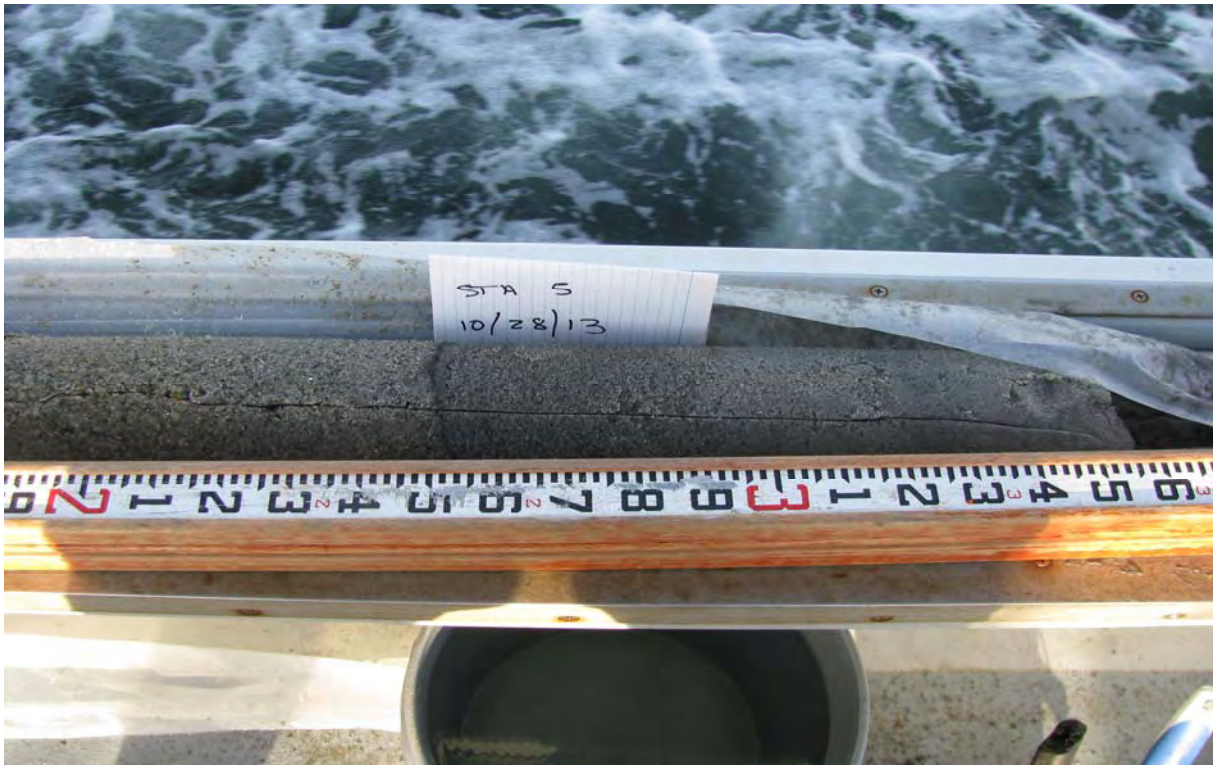


Station ARCHY 8-1: core section 6-7'

Station 4: core section 0-2'



Station 5: core section 0-2'

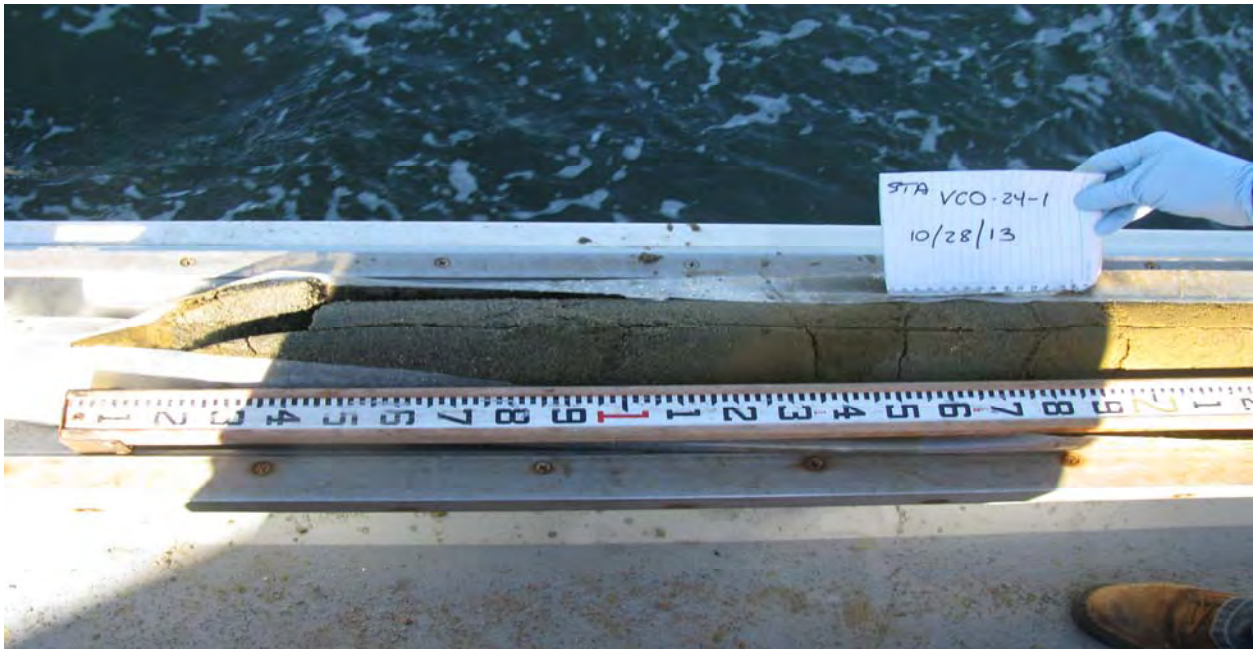


Station 5: core section 2-3.9'

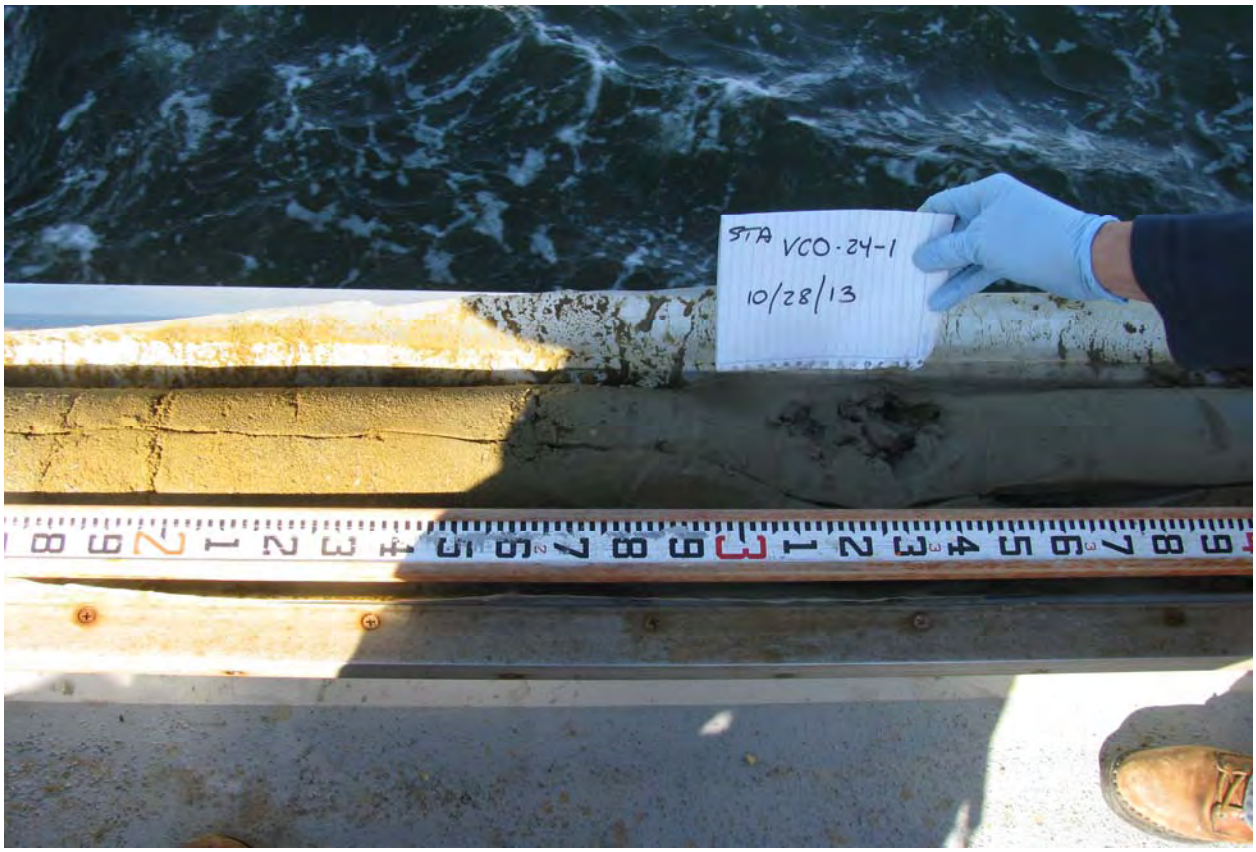
Station VCO23-1: core section 0-2'

Station VCO23-1: core section 2-3'

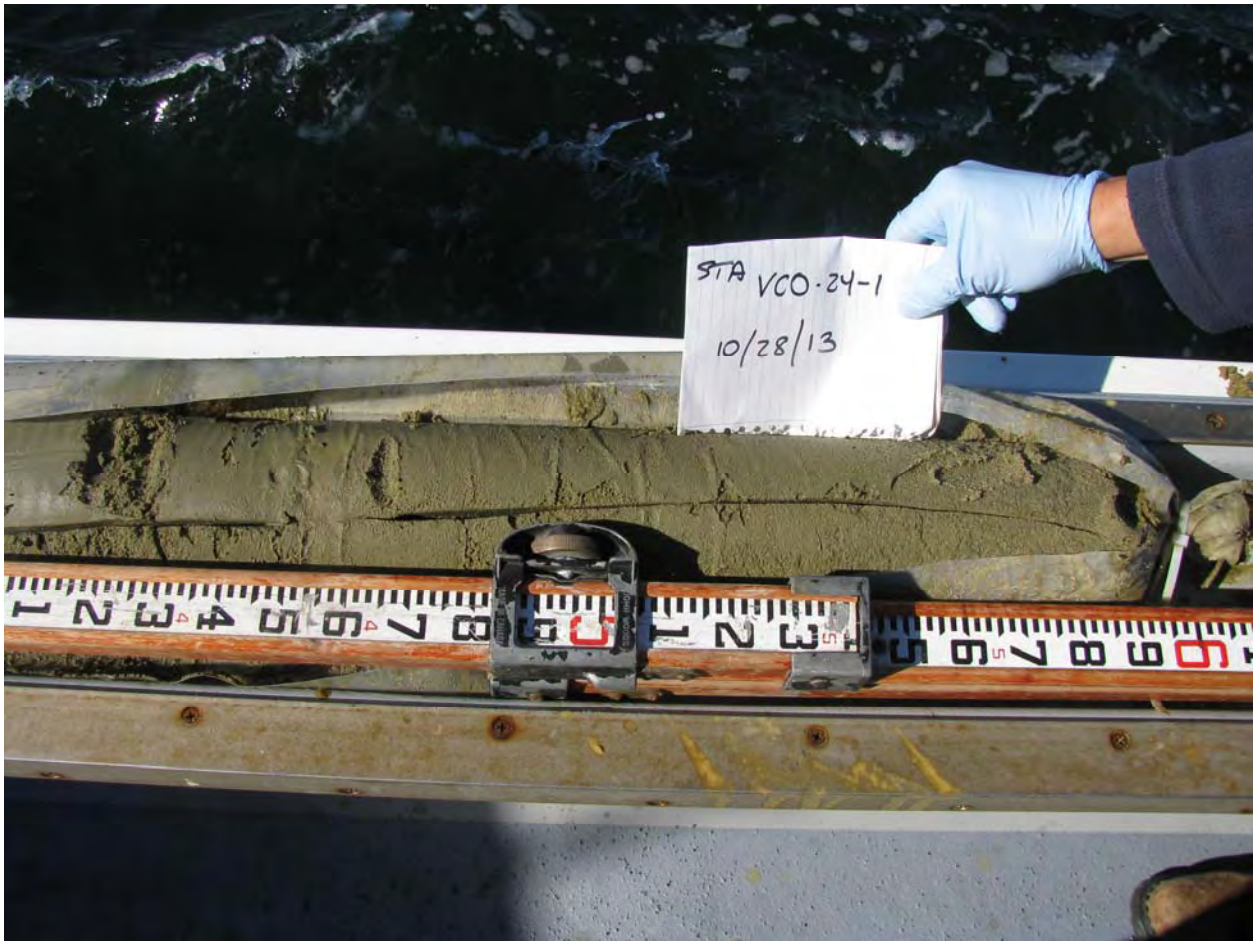
Station 6: core section 0-2.5'



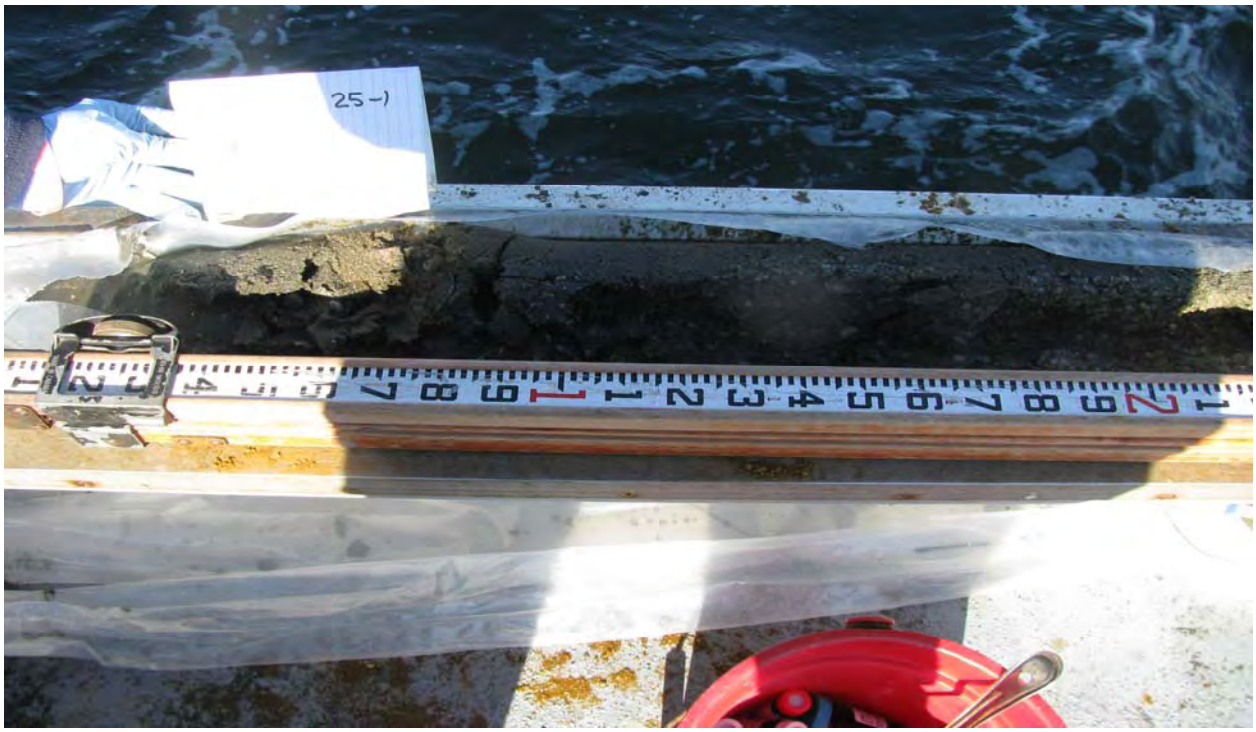
Station VCO24-1: core section 0-2'



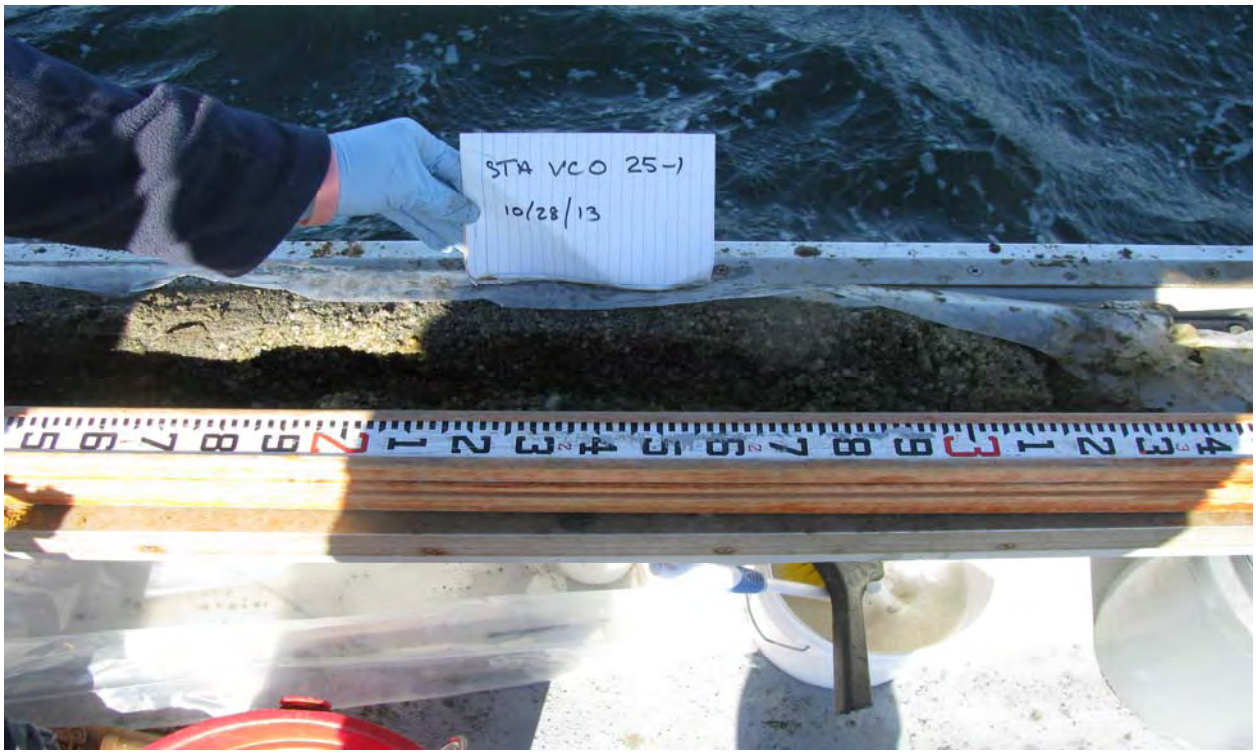
Station VCO24-1: core section 2-4'



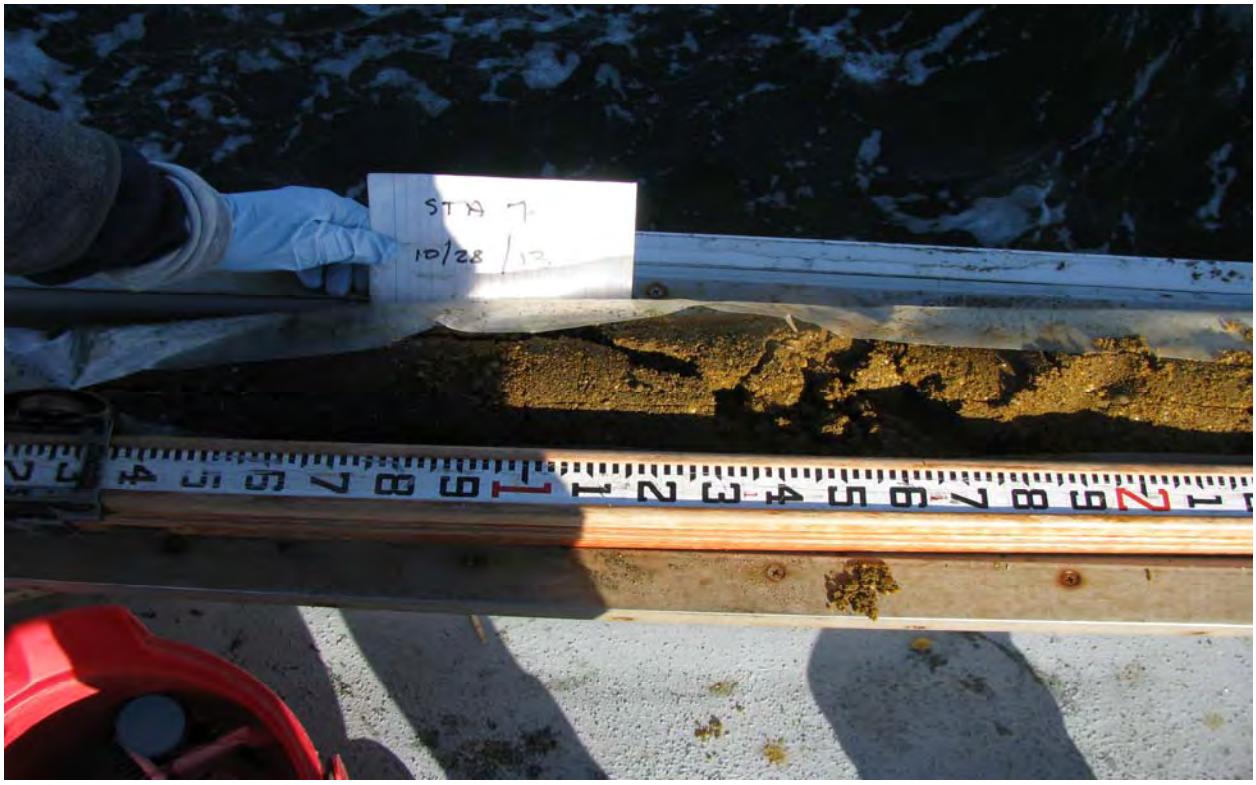
Station VCO 24-1: core section 4-6.2'



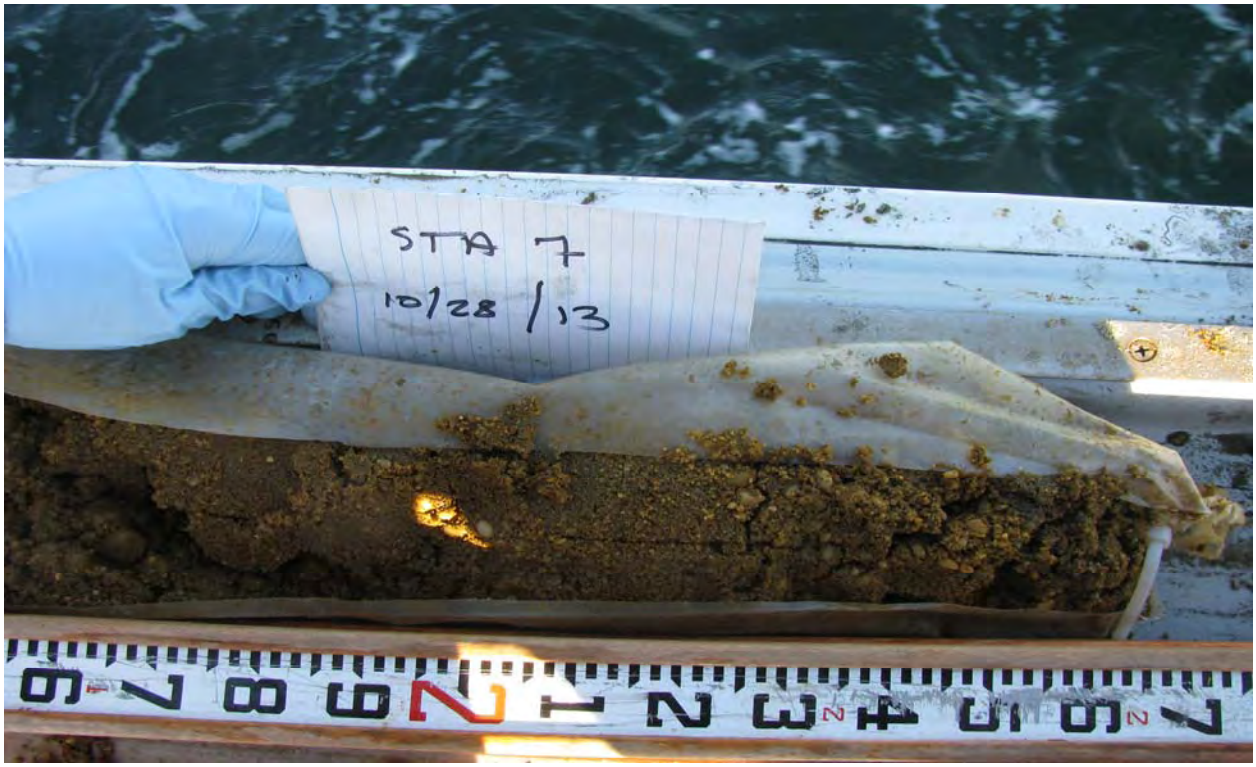
Station VCO25-1: core section 0-2'



Station VCO25-1: core section 2-3.4'

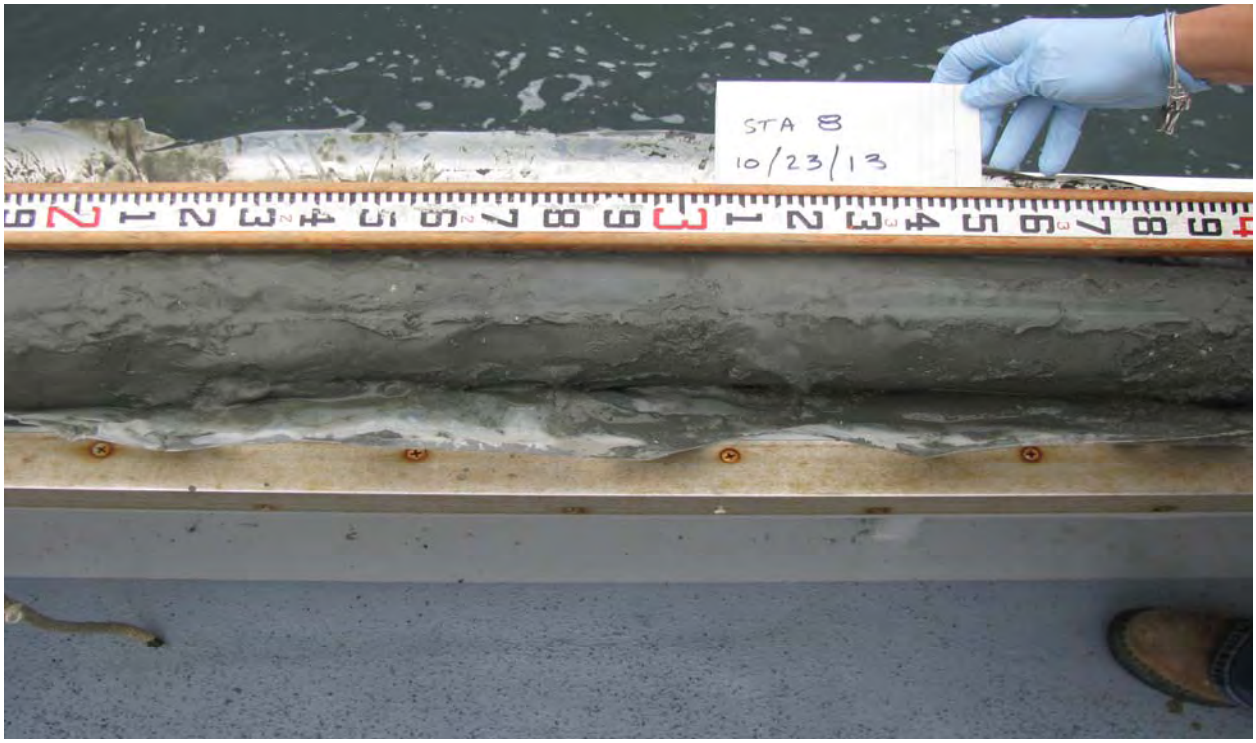


Station 7: core section 0-2’



Station 7: core section 2-2.7’

Station 8: core section 0-2'



Station 8: core section 2-4'

Station 8: core section 4-4.7'

APPENDIX B
CORING LOGS

BORING CONTRACTOR: CR Environmental		SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station 1
		SURFACE ELEV.: -58.7
SOILS ENGINEER: S. Aubrey	**CORING REPORT**	START DATE: 10/29/2013
		FINISH DA TE: 10/29/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET: none
GROUND WATER OBSERVATIONS	SAM PLER	DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E: VIBRA CORE	BORING TYPE: C
AT AFTER HRS.	SIZE I.D.: 3”	BORING O.D.:
DATUM	SIZE O.D.	
TIM E 1552		NORTH COORD. 133417
		EAST COORD. 1068449

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, Main Component, minor component(s), moisture content, odor, and Geologic Unit (if known)
5 10 15 20 25 30 35 40		0-5.2		64	42								no odor, no visible fauna 0-2.5– sand Munsell –5y 4/2 2.5-3.5 – sand with binding mud Munsell – 5y 3/1 2 Attempts

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

The information contained o n this lo g is not warranted to show the actual subsurface condition. The contractor agrees that he will make no claims against AECOM if he finds that the actual conditions do not conform to those indicated by this log.

SAM PLE TYP E: S= SPLIT SP OON U=SHELB Y TUBE C=CORE PROPORTIONS: TRA CE=1-10% LITTLE=10-20% SOM E=20-35% A ND=35-50%

BORING CONTRACTOR: CR Environmental		SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station 2
		SURFACE ELEV.: -58.1
OILS ENGINEER: S. Aubrey	**CORING REPORT**	START DATE: 10/29/2013
		FINISH DA TE: 10/29/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET: none

GROUND WATER OBSERVATIONS		SAM PLER				DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E	VIBRA CORE				BORING TYPE: C
AT AFTER HRS.	SIZE I.D.	3”				BORING O.D.:
DATUM	SIZE O.D.					
TIM E 1438						NORTH COORD. 133998
						EAST COORD. 1067753

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, Main Component, minor component(s), moisture content, odor, and Geologic Unit (if known)
5 10 15 20 25 30 35 40		0-3.0		36	30								no odor, no visible fauna 0-2.5– fine hardpacked sand, w/ shellhash and gravel Munsell –2.5y 5/1 2 Attempts

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

The information contained o n this lo g is not warranted to show the actual subsurface condition. The contractor agrees that he will make no claims against AECOM if he finds that the actual conditions do not conform to those indicated by this log.

SAM PLE TYP E: S= SPLIT SP OON U=SHELB Y TUBE C=CORE PROPORTIONS: TRA CE=1-10% LITTLE=10-20% SOM E=20-35% A ND=35-50%

BORING CONTRACTOR: CR Environmental		SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station 3
		SURFACE ELEV.: -57.7
SOILS ENGINEER: S. Aubrey	**CORING REPORT**	START DATE: 10/29/2013
		FINISH DA TE: 10/29/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET: none

GROUND WATER OBSERVATIONS		SAM PLER				DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E	VIBRA CORE				BORING TYPE: C
AT AFTER HRS.	SIZE I.D.	3”				BORING O.D.:
DATUM	SIZE O.D.					
TIM E 1346						NORTH COORD. 135804
						EAST COORD. 1065821

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, Main Component, minor component(s), moisture content, odor, and Geologic Unit (if known)
5 10 15 20 25 30 35 40		0-4.0		48	40								no odor, no visible fauna 0-3.4– sand Munsell –5y 3/1 1 Attempt

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

The information contained o n this lo g is not warranted to show the actual subsurface condition. The contractor agrees that he will make no claims against AECOM if he finds that the actual conditions do not conform to those indicated by this log.

SAM PLE TYP E: S= SPLIT SP OON U=SHELB Y TUBE C=CORE PROPORTIONS: TRA CE=1-10% LITTLE=10-20% SOM E=20-35% A ND=35-50%

BORING CONTRACTOR: CR Environmental		SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station 4
		SURFACE ELEV.: -54.8
SOILS ENGINEER: S. Aubrey	**CORING REPORT**	START DATE: 10/28/2013
		FINISH DA TE: 10/28/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET: none

GROUND WATER OBSERVATIONS		SAM PLER				DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E	VIBRA CORE				BORING TYPE: C
AT AFTER HRS.	SIZE I.D.	3”				BORING O.D.:
DATUM	SIZE O.D.					
TIM E 1646						NORTH COORD. 137505
						EAST COORD. 1063780

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, Main Component, minor component(s), moisture content, odor, and Geologic Unit (if known)
5 10 15 20 25 30 35 40		0-4.5		54	24								no odor, no visible fauna 0-.75’– gravel .75’-2.0- medium fine sand Munsell – 2.5y 5/2 2 Attempts

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

The information contained o n this lo g is not warranted to show the actual subsurface condition. The contractor agrees that he will make no claims against AECOM if he finds that the actual conditions do not conform to those indicated by this log.

SAM PLE TYP E: S= SPLIT SP OON U=SHELB Y TUBE C=CORE PROPORTIONS: TRA CE=1-10% LITTLE=10-20% SOM E=20-35% A ND=35-50%

BORING CONTRACTOR: CR Environmental		SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station 5
		SURFACE ELEV.: -52
SOILS ENGINEER: S. Aubrey	**CORING REPORT**	START DATE: 10/28/2013
		FINISH DA TE: 10/28/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET: none

GROUND WATER OBSERVATIONS		SAM PLER				DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E	VIBRA CORE				BORING TYPE: C
AT AFTER HRS.	SIZE I.D.	3”				BORING O.D.:
DATUM	SIZE O.D.					
TIM E 1607						NORTH COORD. 139235
						EAST COORD. 1061759

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, Main Component, minor component(s), moisture content, odor, and Geologic Unit (if known)
5 10 15 20 25 30 35 40		0-4		48	46								no odor, no visible fauna 0-2.5– coarse sand w/ shellhash and pebbles Munsell – 2.5y 2.5/2 2.5’-3.9’- fine sand Munsell – 5y 4/1 1 Attempt

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

The information contained o n this lo g is not warranted to show the actual subsurface condition. The contractor agrees that he will make no claims against AECOM if he finds that the actual conditions do not conform to those indicated by this log.

SAM PLE TYP E: S= SPLIT SP OON U=SHELB Y TUBE C=CORE PROPORTIONS: TRA CE=1-10% LITTLE=10-20% SOM E=20-35% A ND=35-50%

BORING CONTRACTOR: CR Environmental		SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station 6
		SURFACE ELEV.: -51
SOILS ENGINEER: S. Aubrey	**CORING REPORT**	START DATE: 10/28/2013
		FINISH DA TE: 10/28/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET: none

GROUND WATER OBSERVATIONS		SAM PLER				DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E	VIBRA CORE				BORING TYPE: C
AT AFTER HRS.	SIZE I.D.	3”				BORING O.D.:
DATUM	SIZE O.D.					
TIM E 1302						NORTH COORD. 140431
						EAST COORD. 1060114

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, Main Component, minor component(s), moisture content, odor, and Geologic Unit (if known)
5 10 15 20 25 30 35 40		0-3		36	30								no odor, no visible fauna 0-1.1 – coarse sand w/ shellhash and pebbles Munsell – 2.5y 2.51 1.1-2.5’- fine sand Munsell – 5y 4/2 4 Attempts

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

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SAM PLE TYP E: S= SPLIT SP OON U=SHELB Y TUBE C=CORE PROPORTIONS: TRA CE=1-10% LITTLE=10-20% SOM E=20-35% A ND=35-50%

BORING CONTRACTOR: CR Environmental		SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station 7
		SURFACE ELEV.: -47
SOILS ENGINEER: S. Aubrey	**CORING REPORT**	START DATE: 10/28/2013
		FINISH DA TE: 10/28/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET:

GROUND WATER OBSERVATIONS		SAM PLER				DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E	VIBRA CORE				BORING TYPE: C
AT AFTER HRS.	SIZE I.D.	3”				BORING O.D.:
DATUM	SIZE O.D.					
TIM E 1000						NORTH COORD. 141607
						EAST COORD. 1058861

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, Main Component, minor component(s), moisture content, odor, and Geologic Unit (if known)
5 10 15 20 25 30 35 40		0-3.5		42	36								Dark gray, no odor, no visible fauna 0-.8’ – sand and gravel Munsell – 7.5yr 2.5/1 .8’-3’- sand and gravel Munsell - 7.5yr 4/6 3 Attempts

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

The information contained o n this lo g is not warranted to show the actual subsurface condition. The contractor agrees that he will make no claims against AECOM if he finds that the actual conditions do not conform to those indicated by this log.

SAM PLE TYP E: S= SPLIT SP OON U=SHELB Y TUBE C=CORE PROPORTIONS: TRA CE=1-10% LITTLE=10-20% SOM E=20-35% A ND=35-50%

BORING CONTRACTOR: CR Environmental		SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station 8
		SURFACE ELEV.: -50
SOILS ENGINEER: S. Aubrey	**CORING REPORT**	START DATE: 10/23/2013
		FINISH DA TE: 10/23/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET:

GROUND WATER OBSERVATIONS		SAM PLER				DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E	VIBRA CORE				BORING TYPE: C
AT AFTER HRS.	SIZE I.D.	3”				BORING O.D.:
DATUM	SIZE O.D.					
TIM E 0832						NORTH COORD. 142042
						EAST COORD. 1058419

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, M ain Component, minor component(s), moisture content, odor, and Geologic Unit (if kno wn)
		0-5.5		72	66								Dark gray, no odor, no visible fauna 0-1’ - medium grain sand Munsell – 7.5yr 3/1 1-4.7’- fine sand w/ clay Munsell - 7.5yr 2.5/1 3 Attempts
5													
10													
15													
20													
25													
30													
35													
40													

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

The information contained o n this lo g is not warranted to show the actual subsurface condition. The contractor agrees that he will make no claims against AECOM if he finds that the actual conditions do not conform to those indicated by this log.

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LITTLE=10-20% SOM E=20-35%
A ND=35-50%

BORING CONTRACTOR: CR Environmental	**CORING REPORT**	SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station 4
		SURFACE ELEV.: -54.8
SOILS ENGINEER: S. Aubrey		START DATE: 10/28/2013
		FINISH DA TE: 10/28/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET: none

GROUND WATER OBSERVATIONS		SAM PLER				DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E	VIBRA CORE				BORING TYPE: C
AT AFTER HRS.	SIZE I.D.	3”				BORING O.D.:
DATUM	SIZE O.D.					
TIM E 1803						NORTH COORD. 137505
						EAST COORD. 1063780

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, Main Component, minor component(s), moisture content, odor, and Geologic Unit (if known)
5 10 15 20 25 30 35 40		0-4.5		54	24								no odor, no visible fauna 0-.1.5’– sand w/ shellhash Munsell – 2.5y 3/2 1.5- 3.0’- hard clay with sand Munsell – 2.5y 2/5.1 1 Attempt

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

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SAM PLE TYP E: S= SPLIT SP OON U=SHELB Y TUBE C=CORE PROPORTIONS: TRA CE=1-10% LITTLE=10-20% SOM E=20-35% A ND=35-50%

BORING CONTRACTOR: CR Environmental		SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station VCO-24-1
		SURFACE ELEV.: -49.5
SOILS ENGINEER: S. Aubrey	**CORING REPORT**	START DATE: 10/28/2013
		FINISH DA TE: 10/28/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET:

GROUND WATER OBSERVATIONS		SAM PLER				DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E	VIBRA CORE				BORING TYPE: C
AT AFTER HRS.	SIZE I.D.	3”				BORING O.D.:
DATUM	SIZE O.D.					
TIM E 1204						NORTH COORD. 140952
						EAST COORD. 1059753

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, Main Component, minor component(s), moisture content, odor, and Geologic Unit (if known)
5 10 15 20 25 30 35 40		0-7.5		90	74								no odor, no visible fauna 0-2.6’ – sand Munsell – 2.5y 4/4 2.6’-4.5’- fine sand Munsell – 5y 4/2 4.5-6.2 – coarse sand Munsell – 5y 4/2 1 Attempt

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

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BORING CONTRACTOR: CR Environmental		SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station VCO-25-1
		SURFACE ELEV.: -48
SOILS ENGINEER: S. Aubrey	**CORING REPORT**	START DATE: 10/28/2013
		FINISH DA TE: 10/28/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET:

GROUND WATER OBSERVATIONS		SAM PLER				DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E	VIBRA CORE				BORING TYPE: C
AT AFTER HRS.	SIZE I.D.	3”				BORING O.D.:
DATUM	SIZE O.D.					
TIM E 1102						NORTH COORD. 141173
						EAST COORD. 1059316

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, Main Component, minor component(s), moisture content, odor, and Geologic Unit (if known)
5 10 15 20 25 30 35 40		0-3.5		48	41								Dark gray, no odor, no visible fauna 0-1.1’ – sand Munsell – 5y 3/1 1.1’-3.5’- coarse sand and small pebbles Munsell - 2.5yr 4/2 2 Attempts

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

The information contained o n this lo g is not warranted to show the actual subsurface condition. The contractor agrees that he will make no claims against AECOM if he finds that the actual conditions do not conform to those indicated by this log.

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BORING CONTRACTOR: CR Environmental		SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station ARCHY 8-1
		SURFACE ELEV.: -53.8
SOILS ENGINEER: S. Aubrey	**CORING REPORT**	START DATE: 10/29/2013
		FINISH DA TE: 10/29/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET: none

GROUND WATER OBSERVATIONS		SAM PLER				DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E	VIBRA CORE				BORING TYPE: C
AT AFTER HRS.	SIZE I.D.	3”				BORING O.D.:
DATUM	SIZE O.D.					
TIM E 1222						NORTH COORD. 137148
						EAST COORD. 1063843

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, Main Component, minor component(s), moisture content, odor, and Geologic Unit (if known)
5 10 15 20 25 30 35 40		0-7.0		84	84								no odor, no visible fauna 0-2’– sand Munsell –5y 4/1 2- 3.2’- sand with gravel Munsell –5y 4/1 3.2- 7’ – fine sand Munsell –5y 2.5/1 1 Attempt

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

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BORING CONTRACTOR: CR Environmental		SHEET 1 OF
		P ROJECT NO.:
DRILLER: Ken Thompson		Sample NO.: Station ARCHY 9-1
		SURFACE ELEV.: -54.8
SOILS ENGINEER: S. Aubrey	**CORING REPORT**	START DATE: 10/29/2013
		FINISH DA TE: 10/29/2013
LOCA TION: Offshore Jones Beach Long Island		OFFSET: none

GROUND WATER OBSERVATIONS		SAM PLER				DRILL RIG: Jamie Hannah
AT AFTER HRS.	TYP E	VIBRA CORE				BORING TYPE: C
AT AFTER HRS.	SIZE I.D.	3”				BORING O.D.:
DATUM	SIZE O.D.					
TIM E 1312						NORTH COORD. 136119
						EAST COORD. 1065140

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM TO (FEET)	TYPE AND NO.	PEN. INCH	REC. INCH	BLOWS PER 6 INCHES ON SAMPLER				N	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS Color, Size, Range, Main Component, minor component(s), moisture content, odor, and Geologic Unit (if known)
5 10 15 20 25 30 35 40		0-4.0		48	42								no odor, no visible fauna 0-1.5’– sand Munsell –5y 4/2 1.5-3.5’- sand with gravel Munsell –5y 4/1 1 Attempt

NOTES: Soil description represents a field identification after D.M . Burmister unless otherwise noted.

The information contained o n this lo g is not warranted to show the actual subsurface condition. The contractor agrees that he will make no claims against AECOM if he finds that the actual conditions do not conform to those indicated by this log.

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APPENDIX C
CHEMISTRY RESULTS: METALS AND ORGANICS DATA AND QA/QC

ANALYTICAL REPORT

Lab Number:	L1323606
Client:	AECOM Environment, Marine & Cosatal Center 89 Water Street Woods Hole, MA 02543
ATTN:	James Blake
Phone:	(508) 457-7900
Project Name:	PORT AMBROSE 2013
Project Number:	PORT AMBROSE 2013
Report Date:	12/13/13

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Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1323606-01	PA-07-0.0-3.0	Not Specified	10/28/13 09:38
L1323606-02	PA-VC025-1-0.0-3.3	Not Specified	10/28/13 11:02
L1323606-03	PA-VC024-1-2.6-4.5	Not Specified	10/28/13 12:18
L1323606-04	PA-06-0.0-2.5	Not Specified	10/28/13 15:04
L1323606-05	PA-05-0.0-3.9	Not Specified	10/28/13 16:07
L1323606-06	PA-04-0.0-2.1	Not Specified	10/28/13 17:12
L1323606-07	PA-04D-0.0-2.1	Not Specified	10/28/13 17:12
L1323606-08	PA-VC023-1-1.5-3.0	Not Specified	10/28/13 18:04
L1323606-09	PA-ARCHY 8-1-3.2-7.0	Not Specified	10/29/13 12:22
L1323606-10	PA-ARCHY 9-1-0.0-3.5	Not Specified	10/29/13 13:12
L1323606-11	PA-03-0.0-3.4	Not Specified	10/29/13 13:46
L1323606-12	PA-02-0.0-2.5	Not Specified	10/29/13 14:38
L1323606-13	PA-01-0.0-3.5	Not Specified	10/29/13 15:52
L1323606-14	PA-08-1.0-4.7	Not Specified	10/23/13 10:00

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

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 all of the requirements of NELAC, for all NELAC accredited parameters. 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. 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. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606
Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

Case Narrative (continued)

Volatile Organics 8260
L1323606-01 thru -07 were analyzed with the method required holding time exceeded.

L1323606-08,09,10,11,12,13,14 were analyzed with the method required holding time exceeded.

The WG658059-5 MS/MSD recoveries, performed on L1323606-09, are above the acceptance criteria for Benzene (151%), p/m-Xylene (131%), o-Xylene (131%); however, the associated LCS/LCSD recoveries are within overall method allowances. The results of the sample utilized for the MS/MSD are considered to have a potentially high bias for these compounds.

The WG658059-5 MS/MSD RPDs, performed on L1323606-09, are above the acceptance criteria for Benzene (38%), Toluene (37%), Ethylbenzene (38%), p/m-Xylene(37%), o-Xylene(35%).

PAH's 8270-SIM
Samples L1323606-01 through -14 were frozen upon sample receipt.

Laboratory Control Spike Duplicate WG655350-3 was not reported due to a laboratory accident in the extraction procedure of this sample.

Pesticides 8081
The WG 655353-5/6 MS/MSD RPD's perfromed on L1323606-09, are outside the acceptance criteria of 50% at 55%

Total Metals
The continuous calibration blanks, associated with L1323606-01 through -14 have concentrations above the reporting limit for Arsenic. Since the associated sample concentrations are greater than 10x the blank

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

Case Narrative (continued)

concentration for this analyte, no qualification of the results was performed.

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: Peter Henriksen

Title: Technical Director/Representative Date: 12/13/13

ORGANICS

VOLATILES

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-01	Date Collected:	10/28/13 09:38
Client ID:	PA-07-0.0-3.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 11:25		
Analyst:	PP		
Percent Solids:	89%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	0.72	0.09	1
Toluene	ND		ug/kg	1.1	0.08	1
Ethylbenzene	ND		ug/kg	0.72	0.11	1
p/m-Xylene	ND		ug/kg	1.4	0.23	1
o-Xylene	ND		ug/kg	1.4	0.20	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	78		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	96		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-02	Date Collected:	10/28/13 11:02
Client ID:	PA-VC025-1-0.0-3.3	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 12:00		
Analyst:	PP		
Percent Solids:	86%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	0.90	0.10	1
Toluene	ND		ug/kg	1.3	0.10	1
Ethylbenzene	ND		ug/kg	0.90	0.13	1
p/m-Xylene	ND		ug/kg	1.8	0.29	1
o-Xylene	ND		ug/kg	1.8	0.24	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	70		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	82		70-130
Dibromofluoromethane	88		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-03	Date Collected:	10/28/13 12:18
Client ID:	PA-VC024-1-2.6-4.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 12:35		
Analyst:	PP		
Percent Solids:	81%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	0.67	0.08	1
Toluene	ND		ug/kg	1.0	0.08	1
Ethylbenzene	ND		ug/kg	0.67	0.10	1
p/m-Xylene	ND		ug/kg	1.3	0.22	1
o-Xylene	ND		ug/kg	1.3	0.18	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	70		70-130
Toluene-d8	85		70-130
4-Bromofluorobenzene	80		70-130
Dibromofluoromethane	87		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-04	Date Collected:	10/28/13 15:04
Client ID:	PA-06-0.0-2.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 13:09		
Analyst:	PP		
Percent Solids:	80%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	0.75	0.09	1
Toluene	ND		ug/kg	1.1	0.08	1
Ethylbenzene	ND		ug/kg	0.75	0.11	1
p/m-Xylene	ND		ug/kg	1.5	0.24	1
o-Xylene	ND		ug/kg	1.5	0.20	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	76		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	96		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-05	Date Collected:	10/28/13 16:07
Client ID:	PA-05-0.0-3.9	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 13:44		
Analyst:	PP		
Percent Solids:	84%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	0.62	0.07	1
Toluene	ND		ug/kg	0.92	0.07	1
Ethylbenzene	ND		ug/kg	0.62	0.09	1
p/m-Xylene	ND		ug/kg	1.2	0.20	1
o-Xylene	ND		ug/kg	1.2	0.17	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	75		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	92		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-06	Date Collected:	10/28/13 17:12
Client ID:	PA-04-0.0-2.1	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 14:19		
Analyst:	PP		
Percent Solids:	79%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	1.1	0.13	1
Toluene	ND		ug/kg	1.7	0.13	1
Ethylbenzene	ND		ug/kg	1.1	0.17	1
p/m-Xylene	ND		ug/kg	2.3	0.36	1
o-Xylene	ND		ug/kg	2.3	0.31	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	78		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	97		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-07	Date Collected:	10/28/13 17:12
Client ID:	PA-04D-0.0-2.1	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 14:55		
Analyst:	PP		
Percent Solids:	77%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	0.80	0.09	1
Toluene	ND		ug/kg	1.2	0.09	1
Ethylbenzene	ND		ug/kg	0.80	0.12	1
p/m-Xylene	ND		ug/kg	1.6	0.26	1
o-Xylene	ND		ug/kg	1.6	0.22	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	70		70-130
Toluene-d8	86		70-130
4-Bromofluorobenzene	81		70-130
Dibromofluoromethane	87		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-08	Date Collected:	10/28/13 18:04
Client ID:	PA-VC023-1-1.5-3.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 11:42		
Analyst:	PP		
Percent Solids:	59%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	1.8	0.21	1
Toluene	ND		ug/kg	2.7	0.20	1
Ethylbenzene	ND		ug/kg	1.8	0.27	1
p/m-Xylene	ND		ug/kg	3.6	0.58	1
o-Xylene	ND		ug/kg	3.6	0.49	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	106		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-09	Date Collected:	10/29/13 12:22
Client ID:	PA-ARCHY 8-1-3.2-7.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 12:10		
Analyst:	PP		
Percent Solids:	68%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	0.86	0.10	1
Toluene	ND		ug/kg	1.3	0.10	1
Ethylbenzene	ND		ug/kg	0.86	0.13	1
p/m-Xylene	ND		ug/kg	1.7	0.28	1
o-Xylene	ND		ug/kg	1.7	0.23	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	106		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-10	Date Collected:	10/29/13 13:12
Client ID:	PA-ARCHY 9-1-0.0-3.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 16:19		
Analyst:	PP		
Percent Solids:	80%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	0.68	0.08	1
Toluene	ND		ug/kg	1.0	0.08	1
Ethylbenzene	ND		ug/kg	0.68	0.10	1
p/m-Xylene	ND		ug/kg	1.4	0.22	1
o-Xylene	ND		ug/kg	1.4	0.18	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	105		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-11	Date Collected:	10/29/13 13:46
Client ID:	PA-03-0.0-3.4	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 14:01		
Analyst:	PP		
Percent Solids:	74%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	0.72	0.09	1
Toluene	ND		ug/kg	1.1	0.08	1
Ethylbenzene	ND		ug/kg	0.72	0.11	1
p/m-Xylene	ND		ug/kg	1.4	0.23	1
o-Xylene	ND		ug/kg	1.4	0.20	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	105		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-12	Date Collected:	10/29/13 14:38
Client ID:	PA-02-0.0-2.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 16:48		
Analyst:	PP		
Percent Solids:	79%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	0.67	0.08	1
Toluene	ND		ug/kg	1.0	0.08	1
Ethylbenzene	ND		ug/kg	0.67	0.10	1
p/m-Xylene	ND		ug/kg	1.3	0.22	1
o-Xylene	ND		ug/kg	1.3	0.18	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	106		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-13	Date Collected:	10/29/13 15:52
Client ID:	PA-01-0.0-3.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 15:52		
Analyst:	PP		
Percent Solids:	80%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	0.70	0.08	1
Toluene	ND		ug/kg	1.0	0.08	1
Ethylbenzene	ND		ug/kg	0.70	0.10	1
p/m-Xylene	ND		ug/kg	1.4	0.22	1
o-Xylene	ND		ug/kg	1.4	0.19	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	105		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-14	Date Collected:	10/23/13 10:00
Client ID:	PA-08-1.0-4.7	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	1,8260C		
Analytical Date:	12/10/13 15:24		
Analyst:	PP		
Percent Solids:	70%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by 8260/5035 - Westborough Lab						
Benzene	ND		ug/kg	0.91	0.11	1
Toluene	ND		ug/kg	1.4	0.10	1
Ethylbenzene	ND		ug/kg	0.91	0.13	1
p/m-Xylene	ND		ug/kg	1.8	0.29	1
o-Xylene	ND		ug/kg	1.8	0.25	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	106		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/10/13 10:51
Analyst: PP

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01-07 Batch: WG658022-3					
Benzene	ND		ug/kg	1.0	0.12
Toluene	ND		ug/kg	1.5	0.11
Ethylbenzene	ND		ug/kg	1.0	0.15
p/m-Xylene	ND		ug/kg	2.0	0.32
o-Xylene	ND		ug/kg	2.0	0.27

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	73		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	90		70-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/10/13 09:50
Analyst: PP

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 08-14 Batch: WG658059-3					
Benzene	ND		ug/kg	1.0	0.12
Toluene	ND		ug/kg	1.5	0.11
Ethylbenzene	ND		ug/kg	1.0	0.15
p/m-Xylene	ND		ug/kg	2.0	0.32
o-Xylene	ND		ug/kg	2.0	0.27

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	103		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-07 Batch: WG658022-1 WG658022-2								
Methylene chloride	89		92		70-130	3		30
1,1-Dichloroethane	89		92		70-130	3		30
Chloroform	94		98		70-130	4		30
Carbon tetrachloride	104		107		70-130	3		30
1,2-Dichloropropane	87		92		70-130	6		30
Dibromochloromethane	98		102		70-130	4		30
2-Chloroethylvinyl ether	**136**	Q	124		70-130	9		30
1,1,2-Trichloroethane	93		97		70-130	4		30
Tetrachloroethene	108		112		70-130	4		30
Chlorobenzene	98		102		70-130	4		30
Trichlorofluoromethane	104		107		70-139	3		30
1,2-Dichloroethane	85		88		70-130	3		30
1,1,1-Trichloroethane	97		103		70-130	6		30
Bromodichloromethane	90		93		70-130	3		30
trans-1,3-Dichloropropene	70		73		70-130	4		30
cis-1,3-Dichloropropene	82		85		70-130	4		30
1,1-Dichloropropene	93		96		70-130	3		30
Bromoform	101		105		70-130	4		30
1,1,2,2-Tetrachloroethane	88		91		70-130	3		30
Benzene	97		101		70-130	4		30
Toluene	95		98		70-130	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-07 Batch: WG658022-1 WG658022-2								
Ethylbenzene	93		98		70-130	5		30
Chloromethane	94		93		52-130	1		30
Bromomethane	117		112		57-147	4		30
Vinyl chloride	117		118		67-130	1		30
Chloroethane	113		116		50-151	3		30
1,1-Dichloroethene	110		113		65-135	3		30
trans-1,2-Dichloroethene	105		109		70-130	4		30
Trichloroethene	98		103		70-130	5		30
1,2-Dichlorobenzene	98		103		70-130	5		30
1,3-Dichlorobenzene	97		101		70-130	4		30
1,4-Dichlorobenzene	97		101		70-130	4		30
Methyl tert butyl ether	101		106		66-130	5		30
p/m-Xylene	98		102		70-130	4		30
o-Xylene	98		103		70-130	5		30
cis-1,2-Dichloroethene	102		107		70-130	5		30
Dibromomethane	100		104		70-130	4		30
Styrene	96		100		70-130	4		30
Dichlorodifluoromethane	97		98		30-146	1		30
Acetone	84		73		54-140	14		30
Carbon disulfide	101		102		59-130	1		30
2-Butanone	86		77		70-130	11		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-07 Batch: WG658022-1 WG658022-2								
Vinyl acetate	72		73		70-130	1		30
4-Methyl-2-pentanone	82		81		70-130	1		30
1,2,3-Trichloropropane	84		86		68-130	2		30
2-Hexanone	75		71		70-130	5		30
Bromochloromethane	108		111		70-130	3		30
2,2-Dichloropropane	78		83		70-130	6		30
1,2-Dibromoethane	105		106		70-130	1		30
1,3-Dichloropropane	90		93		69-130	3		30
1,1,1,2-Tetrachloroethane	100		104		70-130	4		30
Bromobenzene	97		103		70-130	6		30
n-Butylbenzene	93		96		70-130	3		30
sec-Butylbenzene	92		96		70-130	4		30
tert-Butylbenzene	93		96		70-130	3		30
o-Chlorotoluene	87		91		70-130	4		30
p-Chlorotoluene	86		90		70-130	5		30
1,2-Dibromo-3-chloropropane	93		93		68-130	0		30
Hexachlorobutadiene	104		109		67-130	5		30
Isopropylbenzene	97		101		70-130	4		30
p-Isopropyltoluene	95		98		70-130	3		30
Naphthalene	90		94		70-130	4		30
Acrylonitrile	89		87		70-130	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-07 Batch: WG658022-1 WG658022-2								
Isopropyl Ether	76		80		66-130	5		30
tert-Butyl Alcohol	90		93		70-130	3		30
n-Propylbenzene	87		91		70-130	4		30
1,2,3-Trichlorobenzene	107		112		70-130	5		30
1,2,4-Trichlorobenzene	107		112		70-130	5		30
1,3,5-Trimethylbenzene	91		95		70-130	4		30
1,2,4-Trimethylbenzene	92		95		70-130	3		30
Methyl Acetate	83		82		51-146	1		30
Ethyl Acetate	86		84		70-130	2		30
Acrolein	92		90		70-130	2		30
Cyclohexane	84		87		59-142	4		30
1,4-Dioxane	111		113		65-136	2		30
1,1,2-Trichloro-1,2,2-Trifluoroethane	103		106		50-139	3		30
1,4-Diethylbenzene	97		100		70-130	3		30
4-Ethyltoluene	92		95		70-130	3		30
1,2,4,5-Tetramethylbenzene	95		98		70-130	3		30
Tetrahydrofuran	76		75		66-130	1		30
Ethyl ether	98		102		67-130	4		30
trans-1,4-Dichloro-2-butene	79		80		70-130	1		30
Methyl cyclohexane	92		96		70-130	4		30
Ethyl-Tert-Butyl-Ether	116		124		70-130	7		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-07 Batch: WG658022-1 WG658022-2								
Tertiary-Amyl Methyl Ether	81		86		70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	75		76		70-130
Toluene-d8	91		94		70-130
4-Bromofluorobenzene	82		86		70-130
Dibromofluoromethane	96		98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 08-14 Batch: WG658059-1 WG658059-2								
Methylene chloride	100		104		70-130	4		30
1,1-Dichloroethane	108		113		70-130	5		30
Chloroform	103		106		70-130	3		30
Carbon tetrachloride	99		103		70-130	4		30
1,2-Dichloropropane	108		113		70-130	5		30
Dibromochloromethane	91		97		70-130	6		30
2-Chloroethylvinyl ether	72		74		70-130	3		30
1,1,2-Trichloroethane	96		98		70-130	2		30
Tetrachloroethene	98		98		70-130	0		30
Chlorobenzene	96		98		70-130	2		30
Trichlorofluoromethane	118		121		70-139	3		30
1,2-Dichloroethane	100		102		70-130	2		30
1,1,1-Trichloroethane	105		110		70-130	5		30
Bromodichloromethane	103		107		70-130	4		30
trans-1,3-Dichloropropene	94		98		70-130	4		30
cis-1,3-Dichloropropene	106		109		70-130	3		30
1,1-Dichloropropene	110		114		70-130	4		30
Bromoform	84		88		70-130	5		30
1,1,2,2-Tetrachloroethane	91		94		70-130	3		30
Benzene	107		111		70-130	4		30
Toluene	94		98		70-130	4		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 08-14 Batch: WG658059-1 WG658059-2								
Ethylbenzene	96		97		70-130	1		30
Chloromethane	100		102		52-130	2		30
Bromomethane	109		115		57-147	5		30
Vinyl chloride	122		127		67-130	4		30
Chloroethane	129		137		50-151	6		30
1,1-Dichloroethene	114		118		65-135	3		30
trans-1,2-Dichloroethene	107		113		70-130	5		30
Trichloroethene	110		112		70-130	2		30
1,2-Dichlorobenzene	90		88		70-130	2		30
1,3-Dichlorobenzene	92		90		70-130	2		30
1,4-Dichlorobenzene	89		87		70-130	2		30
Methyl tert butyl ether	96		100		66-130	4		30
p/m-Xylene	100		101		70-130	1		30
o-Xylene	100		100		70-130	0		30
cis-1,2-Dichloroethene	108		112		70-130	4		30
Dibromomethane	106		112		70-130	6		30
Styrene	99		99		70-130	0		30
Dichlorodifluoromethane	98		103		30-146	5		30
Acetone	121		113		54-140	7		30
Carbon disulfide	102		106		59-130	4		30
2-Butanone	111		104		70-130	7		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 08-14 Batch: WG658059-1 WG658059-2								
Vinyl acetate	109		113		70-130	4		30
4-Methyl-2-pentanone	104		106		70-130	2		30
1,2,3-Trichloropropane	90		90		68-130	0		30
2-Hexanone	92		91		70-130	1		30
Bromochloromethane	110		114		70-130	4		30
2,2-Dichloropropane	108		113		70-130	5		30
1,2-Dibromoethane	95		97		70-130	2		30
1,3-Dichloropropane	93		98		69-130	5		30
1,1,1,2-Tetrachloroethane	92		96		70-130	4		30
Bromobenzene	90		91		70-130	1		30
n-Butylbenzene	97		90		70-130	7		30
sec-Butylbenzene	97		95		70-130	2		30
tert-Butylbenzene	93		93		70-130	0		30
o-Chlorotoluene	91		92		70-130	1		30
p-Chlorotoluene	91		89		70-130	2		30
1,2-Dibromo-3-chloropropane	91		89		68-130	2		30
Hexachlorobutadiene	89		81		67-130	9		30
Isopropylbenzene	92		92		70-130	0		30
p-Isopropyltoluene	95		91		70-130	4		30
Naphthalene	89		88		70-130	1		30
Acrylonitrile	107		113		70-130	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 08-14 Batch: WG658059-1 WG658059-2								
Isopropyl Ether	109		116		66-130	6		30
tert-Butyl Alcohol	93		95		70-130	2		30
n-Propylbenzene	95		94		70-130	1		30
1,2,3-Trichlorobenzene	90		84		70-130	7		30
1,2,4-Trichlorobenzene	87		82		70-130	6		30
1,3,5-Trimethylbenzene	92		91		70-130	1		30
1,2,4-Trimethylbenzene	92		90		70-130	2		30
Methyl Acetate	108		110		51-146	2		30
Ethyl Acetate	108		108		70-130	0		30
Acrolein	108		113		70-130	5		30
Cyclohexane	112		119		59-142	6		30
1,4-Dioxane	109		110		65-136	1		30
1,1,2-Trichloro-1,2,2-Trifluoroethane	114		119		50-139	4		30
1,4-Diethylbenzene	94		88		70-130	7		30
4-Ethyltoluene	94		90		70-130	4		30
1,2,4,5-Tetramethylbenzene	91		84		70-130	8		30
Tetrahydrofuran	108		114		66-130	5		30
Ethyl ether	100		108		67-130	8		30
trans-1,4-Dichloro-2-butene	88		93		70-130	6		30
Methyl cyclohexane	112		117		70-130	4		30
Ethyl-Tert-Butyl-Ether	103		108		70-130	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 08-14 Batch: WG658059-1 WG658059-2								
Tertiary-Amyl Methyl Ether	101		106		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		95		70-130
Toluene-d8	93		94		70-130
4-Bromofluorobenzene	97		97		70-130
Dibromofluoromethane	104		102		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 08-14 QC Batch ID: WG658059-4 WG658059-5 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0												
Benzene	ND	17	17	101		25	**151**	Q	70-130	**38**	Q	30
Toluene	ND	17	15	89		22	130		70-130	**37**	Q	30
Ethylbenzene	ND	17	15	87		22	129		70-130	**38**	Q	30
p/m-Xylene	ND	34	30	89		44	**131**	Q	70-130	**37**	Q	30
o-Xylene	ND	34	31	90		44	**131**	Q	70-130	**35**	Q	30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		96		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	102		106		70-130
Toluene-d8	94		92		70-130

SEMIVOLATILES

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-01	Date Collected:	10/28/13 09:38
Client ID:	PA-07-0.0-3.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 19:26	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	89%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	2.04	J	ug/kg	8.16	1.12	1
Acenaphthylene	ND		ug/kg	8.16	0.780	1
Acenaphthene	ND		ug/kg	8.16	0.950	1
Fluorene	ND		ug/kg	8.16	1.22	1
Phenanthrene	ND		ug/kg	8.16	1.55	1
Anthracene	ND		ug/kg	8.16	1.23	1
Fluoranthene	1.60	J	ug/kg	8.16	1.03	1
Pyrene	1.30	J	ug/kg	8.16	0.664	1
Benz(a)anthracene	ND		ug/kg	8.16	1.38	1
Chrysene	0.929	J	ug/kg	8.16	0.760	1
Benzo(b)fluoranthene	1.30	J	ug/kg	8.16	0.932	1
Benzo(k)fluoranthene	ND		ug/kg	8.16	0.960	1
Benzo(a)pyrene	ND		ug/kg	8.16	1.46	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	8.16	1.93	1
Dibenz(a,h)anthracene	ND		ug/kg	8.16	1.56	1
Benzo(g,h,i)perylene	ND		ug/kg	8.16	1.55	1
2-Methylnaphthalene	ND		ug/kg	8.16	1.74	1
2-Chloronaphthalene	ND		ug/kg	8.16	0.773	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	85		30-130
Pyrene-d10	92		30-130
Benzo(b)fluoranthene-d12	95		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-02	Date Collected:	10/28/13 11:02
Client ID:	PA-VC025-1-0.0-3.3	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 19:56	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	86%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	1.51	J	ug/kg	8.74	1.19	1
Acenaphthylene	ND		ug/kg	8.74	0.836	1
Acenaphthene	ND		ug/kg	8.74	1.02	1
Fluorene	ND		ug/kg	8.74	1.31	1
Phenanthrene	ND		ug/kg	8.74	1.66	1
Anthracene	ND		ug/kg	8.74	1.31	1
Fluoranthene	ND		ug/kg	8.74	1.10	1
Pyrene	ND		ug/kg	8.74	0.711	1
Benz(a)anthracene	ND		ug/kg	8.74	1.47	1
Chrysene	ND		ug/kg	8.74	0.814	1
Benzo(b)fluoranthene	ND		ug/kg	8.74	0.998	1
Benzo(k)fluoranthene	ND		ug/kg	8.74	1.03	1
Benzo(a)pyrene	ND		ug/kg	8.74	1.57	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	8.74	2.06	1
Dibenz(a,h)anthracene	ND		ug/kg	8.74	1.68	1
Benzo(g,h,i)perylene	ND		ug/kg	8.74	1.66	1
2-Methylnaphthalene	ND		ug/kg	8.74	1.86	1
2-Chloronaphthalene	ND		ug/kg	8.74	0.828	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	81		30-130
Pyrene-d10	87		30-130
Benzo(b)fluoranthene-d12	91		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-03	Date Collected:	10/28/13 12:18
Client ID:	PA-VC024-1-2.6-4.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 20:26	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	81%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	ND		ug/kg	9.79	1.34	1
Acenaphthylene	ND		ug/kg	9.79	0.936	1
Acenaphthene	ND		ug/kg	9.79	1.14	1
Fluorene	ND		ug/kg	9.79	1.47	1
Phenanthrene	ND		ug/kg	9.79	1.86	1
Anthracene	ND		ug/kg	9.79	1.47	1
Fluoranthene	ND		ug/kg	9.79	1.23	1
Pyrene	ND		ug/kg	9.79	0.797	1
Benz(a)anthracene	ND		ug/kg	9.79	1.65	1
Chrysene	ND		ug/kg	9.79	0.912	1
Benzo(b)fluoranthene	ND		ug/kg	9.79	1.12	1
Benzo(k)fluoranthene	ND		ug/kg	9.79	1.15	1
Benzo(a)pyrene	ND		ug/kg	9.79	1.75	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	9.79	2.31	1
Dibenz(a,h)anthracene	ND		ug/kg	9.79	1.88	1
Benzo(g,h,i)perylene	ND		ug/kg	9.79	1.86	1
2-Methylnaphthalene	ND		ug/kg	9.79	2.08	1
2-Chloronaphthalene	ND		ug/kg	9.79	0.927	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	86		30-130
Pyrene-d10	92		30-130
Benzo(b)fluoranthene-d12	96		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-04	Date Collected:	10/28/13 15:04
Client ID:	PA-06-0.0-2.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 20:56	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	80%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	ND		ug/kg	9.98	1.36	1
Acenaphthylene	ND		ug/kg	9.98	0.954	1
Acenaphthene	ND		ug/kg	9.98	1.16	1
Fluorene	ND		ug/kg	9.98	1.50	1
Phenanthrene	ND		ug/kg	9.98	1.90	1
Anthracene	ND		ug/kg	9.98	1.50	1
Fluoranthene	1.76	J	ug/kg	9.98	1.26	1
Pyrene	1.23	J	ug/kg	9.98	0.812	1
Benz(a)anthracene	ND		ug/kg	9.98	1.68	1
Chrysene	ND		ug/kg	9.98	0.929	1
Benzo(b)fluoranthene	ND		ug/kg	9.98	1.14	1
Benzo(k)fluoranthene	ND		ug/kg	9.98	1.17	1
Benzo(a)pyrene	ND		ug/kg	9.98	1.79	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	9.98	2.36	1
Dibenz(a,h)anthracene	ND		ug/kg	9.98	1.91	1
Benzo(g,h,i)perylene	ND		ug/kg	9.98	1.89	1
2-Methylnaphthalene	ND		ug/kg	9.98	2.12	1
2-Chloronaphthalene	ND		ug/kg	9.98	0.945	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	63		30-130
Pyrene-d10	72		30-130
Benzo(b)fluoranthene-d12	76		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-05	Date Collected:	10/28/13 16:07
Client ID:	PA-05-0.0-3.9	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 21:27	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	84%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	1.23	J	ug/kg	8.56	1.17	1
Acenaphthylene	ND		ug/kg	8.56	0.819	1
Acenaphthene	ND		ug/kg	8.56	0.998	1
Fluorene	ND		ug/kg	8.56	1.28	1
Phenanthrene	ND		ug/kg	8.56	1.63	1
Anthracene	ND		ug/kg	8.56	1.29	1
Fluoranthene	ND		ug/kg	8.56	1.08	1
Pyrene	ND		ug/kg	8.56	0.697	1
Benz(a)anthracene	ND		ug/kg	8.56	1.44	1
Chrysene	ND		ug/kg	8.56	0.797	1
Benzo(b)fluoranthene	ND		ug/kg	8.56	0.978	1
Benzo(k)fluoranthene	ND		ug/kg	8.56	1.01	1
Benzo(a)pyrene	ND		ug/kg	8.56	1.53	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	8.56	2.02	1
Dibenz(a,h)anthracene	ND		ug/kg	8.56	1.64	1
Benzo(g,h,i)perylene	ND		ug/kg	8.56	1.62	1
2-Methylnaphthalene	ND		ug/kg	8.56	1.82	1
2-Chloronaphthalene	ND		ug/kg	8.56	0.811	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	88		30-130
Pyrene-d10	93		30-130
Benzo(b)fluoranthene-d12	97		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-06	Date Collected:	10/28/13 17:12
Client ID:	PA-04-0.0-2.1	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 21:57	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	79%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	ND		ug/kg	9.76	1.33	1
Acenaphthylene	ND		ug/kg	9.76	0.933	1
Acenaphthene	ND		ug/kg	9.76	1.14	1
Fluorene	ND		ug/kg	9.76	1.46	1
Phenanthrene	ND		ug/kg	9.76	1.86	1
Anthracene	ND		ug/kg	9.76	1.47	1
Fluoranthene	ND		ug/kg	9.76	1.23	1
Pyrene	ND		ug/kg	9.76	0.795	1
Benz(a)anthracene	ND		ug/kg	9.76	1.65	1
Chrysene	ND		ug/kg	9.76	0.909	1
Benzo(b)fluoranthene	ND		ug/kg	9.76	1.11	1
Benzo(k)fluoranthene	ND		ug/kg	9.76	1.15	1
Benzo(a)pyrene	ND		ug/kg	9.76	1.75	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	9.76	2.31	1
Dibenz(a,h)anthracene	ND		ug/kg	9.76	1.87	1
Benzo(g,h,i)perylene	ND		ug/kg	9.76	1.85	1
2-Methylnaphthalene	ND		ug/kg	9.76	2.08	1
2-Chloronaphthalene	ND		ug/kg	9.76	0.924	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	79		30-130
Pyrene-d10	86		30-130
Benzo(b)fluoranthene-d12	90		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-07	Date Collected:	10/28/13 17:12
Client ID:	PA-04D-0.0-2.1	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 22:27	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	77%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	ND		ug/kg	10.4	1.42	1
Acenaphthylene	ND		ug/kg	10.4	0.996	1
Acenaphthene	ND		ug/kg	10.4	1.21	1
Fluorene	ND		ug/kg	10.4	1.56	1
Phenanthrene	ND		ug/kg	10.4	1.98	1
Anthracene	ND		ug/kg	10.4	1.57	1
Fluoranthene	ND		ug/kg	10.4	1.31	1
Pyrene	ND		ug/kg	10.4	0.848	1
Benz(a)anthracene	ND		ug/kg	10.4	1.76	1
Chrysene	ND		ug/kg	10.4	0.970	1
Benzo(b)fluoranthene	ND		ug/kg	10.4	1.19	1
Benzo(k)fluoranthene	ND		ug/kg	10.4	1.23	1
Benzo(a)pyrene	ND		ug/kg	10.4	1.87	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	10.4	2.46	1
Dibenz(a,h)anthracene	ND		ug/kg	10.4	2.00	1
Benzo(g,h,i)perylene	ND		ug/kg	10.4	1.98	1
2-Methylnaphthalene	ND		ug/kg	10.4	2.22	1
2-Chloronaphthalene	ND		ug/kg	10.4	0.987	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	83		30-130
Pyrene-d10	92		30-130
Benzo(b)fluoranthene-d12	95		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-08	Date Collected:	10/28/13 18:04
Client ID:	PA-VC023-1-1.5-3.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 22:57	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	59%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	1.40	J	ug/kg	6.75	0.923	1
Acenaphthylene	ND		ug/kg	6.75	0.645	1
Acenaphthene	ND		ug/kg	6.75	0.786	1
Fluorene	1.29	J	ug/kg	6.75	1.01	1
Phenanthrene	1.73	J	ug/kg	6.75	1.29	1
Anthracene	ND		ug/kg	6.75	1.01	1
Fluoranthene	2.51	J	ug/kg	6.75	0.851	1
Pyrene	1.67	J	ug/kg	6.75	0.550	1
Benz(a)anthracene	ND		ug/kg	6.75	1.14	1
Chrysene	1.23	J	ug/kg	6.75	0.628	1
Benzo(b)fluoranthene	1.12	J	ug/kg	6.75	0.771	1
Benzo(k)fluoranthene	ND		ug/kg	6.75	0.795	1
Benzo(a)pyrene	ND		ug/kg	6.75	1.21	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	6.75	1.60	1
Dibenz(a,h)anthracene	ND		ug/kg	6.75	1.29	1
Benzo(g,h,i)perylene	ND		ug/kg	6.75	1.28	1
2-Methylnaphthalene	ND		ug/kg	6.75	1.44	1
2-Chloronaphthalene	ND		ug/kg	6.75	0.639	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	74		30-130
Pyrene-d10	76		30-130
Benzo(b)fluoranthene-d12	65		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-09	Date Collected:	10/29/13 12:22
Client ID:	PA-ARCHY 8-1-3.2-7.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 23:27	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	68%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	1.28	J	ug/kg	5.45	0.745	1
Acenaphthylene	ND		ug/kg	5.45	0.521	1
Acenaphthene	ND		ug/kg	5.45	0.635	1
Fluorene	ND		ug/kg	5.45	0.816	1
Phenanthrene	1.27	J	ug/kg	5.45	1.04	1
Anthracene	ND		ug/kg	5.45	0.819	1
Fluoranthene	1.13	J	ug/kg	5.45	0.687	1
Pyrene	0.710	J	ug/kg	5.45	0.444	1
Benz(a)anthracene	ND		ug/kg	5.45	0.920	1
Chrysene	ND		ug/kg	5.45	0.507	1
Benzo(b)fluoranthene	0.636	J	ug/kg	5.45	0.622	1
Benzo(k)fluoranthene	ND		ug/kg	5.45	0.642	1
Benzo(a)pyrene	ND		ug/kg	5.45	0.977	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	5.45	1.29	1
Dibenz(a,h)anthracene	ND		ug/kg	5.45	1.04	1
Benzo(g,h,i)perylene	ND		ug/kg	5.45	1.03	1
2-Methylnaphthalene	ND		ug/kg	5.45	1.16	1
2-Chloronaphthalene	ND		ug/kg	5.45	0.516	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	83		30-130
Pyrene-d10	87		30-130
Benzo(b)fluoranthene-d12	86		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-10	Date Collected:	10/29/13 13:12
Client ID:	PA-ARCHY 9-1-0.0-3.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/11/13 01:28	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	80%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	1.46	J	ug/kg	9.75	1.33	1
Acenaphthylene	ND		ug/kg	9.75	0.932	1
Acenaphthene	ND		ug/kg	9.75	1.14	1
Fluorene	ND		ug/kg	9.75	1.46	1
Phenanthrene	ND		ug/kg	9.75	1.86	1
Anthracene	ND		ug/kg	9.75	1.46	1
Fluoranthene	ND		ug/kg	9.75	1.23	1
Pyrene	0.828	J	ug/kg	9.75	0.794	1
Benz(a)anthracene	ND		ug/kg	9.75	1.64	1
Chrysene	ND		ug/kg	9.75	0.908	1
Benzo(b)fluoranthene	ND		ug/kg	9.75	1.11	1
Benzo(k)fluoranthene	ND		ug/kg	9.75	1.15	1
Benzo(a)pyrene	ND		ug/kg	9.75	1.75	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	9.75	2.30	1
Dibenz(a,h)anthracene	ND		ug/kg	9.75	1.87	1
Benzo(g,h,i)perylene	ND		ug/kg	9.75	1.85	1
2-Methylnaphthalene	ND		ug/kg	9.75	2.08	1
2-Chloronaphthalene	ND		ug/kg	9.75	0.923	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	79		30-130
Pyrene-d10	85		30-130
Benzo(b)fluoranthene-d12	90		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-11	Date Collected:	10/29/13 13:46
Client ID:	PA-03-0.0-3.4	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/11/13 01:58	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	74%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	2.94	J	ug/kg	9.66	1.32	1
Acenaphthylene	ND		ug/kg	9.66	0.924	1
Acenaphthene	ND		ug/kg	9.66	1.12	1
Fluorene	ND		ug/kg	9.66	1.45	1
Phenanthrene	ND		ug/kg	9.66	1.84	1
Anthracene	ND		ug/kg	9.66	1.45	1
Fluoranthene	2.72	J	ug/kg	9.66	1.22	1
Pyrene	2.17	J	ug/kg	9.66	0.786	1
Benz(a)anthracene	ND		ug/kg	9.66	1.63	1
Chrysene	1.43	J	ug/kg	9.66	0.899	1
Benzo(b)fluoranthene	2.18	J	ug/kg	9.66	1.10	1
Benzo(k)fluoranthene	1.70	J	ug/kg	9.66	1.14	1
Benzo(a)pyrene	1.76	J	ug/kg	9.66	1.73	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	9.66	2.28	1
Dibenz(a,h)anthracene	ND		ug/kg	9.66	1.85	1
Benzo(g,h,i)perylene	2.08	J	ug/kg	9.66	1.83	1
2-Methylnaphthalene	ND		ug/kg	9.66	2.06	1
2-Chloronaphthalene	ND		ug/kg	9.66	0.915	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	88		30-130
Pyrene-d10	90		30-130
Benzo(b)fluoranthene-d12	96		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-12	Date Collected:	10/29/13 14:38
Client ID:	PA-02-0.0-2.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/11/13 02:29	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	79%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	3.17	J	ug/kg	9.84	1.34	1
Acenaphthylene	ND		ug/kg	9.84	0.941	1
Acenaphthene	ND		ug/kg	9.84	1.15	1
Fluorene	ND		ug/kg	9.84	1.47	1
Phenanthrene	ND		ug/kg	9.84	1.88	1
Anthracene	ND		ug/kg	9.84	1.48	1
Fluoranthene	ND		ug/kg	9.84	1.24	1
Pyrene	ND		ug/kg	9.84	0.801	1
Benz(a)anthracene	ND		ug/kg	9.84	1.66	1
Chrysene	ND		ug/kg	9.84	0.916	1
Benzo(b)fluoranthene	ND		ug/kg	9.84	1.12	1
Benzo(k)fluoranthene	ND		ug/kg	9.84	1.16	1
Benzo(a)pyrene	ND		ug/kg	9.84	1.76	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	9.84	2.33	1
Dibenz(a,h)anthracene	ND		ug/kg	9.84	1.89	1
Benzo(g,h,i)perylene	ND		ug/kg	9.84	1.87	1
2-Methylnaphthalene	ND		ug/kg	9.84	2.10	1
2-Chloronaphthalene	ND		ug/kg	9.84	0.932	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	90		30-130
Pyrene-d10	94		30-130
Benzo(b)fluoranthene-d12	99		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-13	Date Collected:	10/29/13 15:52
Client ID:	PA-01-0.0-3.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/11/13 02:59	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	80%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	ND		ug/kg	8.94	1.22	1
Acenaphthylene	ND		ug/kg	8.94	0.854	1
Acenaphthene	ND		ug/kg	8.94	1.04	1
Fluorene	ND		ug/kg	8.94	1.34	1
Phenanthrene	ND		ug/kg	8.94	1.70	1
Anthracene	ND		ug/kg	8.94	1.34	1
Fluoranthene	ND		ug/kg	8.94	1.13	1
Pyrene	ND		ug/kg	8.94	0.727	1
Benz(a)anthracene	ND		ug/kg	8.94	1.51	1
Chrysene	ND		ug/kg	8.94	0.832	1
Benzo(b)fluoranthene	ND		ug/kg	8.94	1.02	1
Benzo(k)fluoranthene	ND		ug/kg	8.94	1.05	1
Benzo(a)pyrene	ND		ug/kg	8.94	1.60	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	8.94	2.11	1
Dibenz(a,h)anthracene	ND		ug/kg	8.94	1.71	1
Benzo(g,h,i)perylene	ND		ug/kg	8.94	1.70	1
2-Methylnaphthalene	ND		ug/kg	8.94	1.90	1
2-Chloronaphthalene	ND		ug/kg	8.94	0.846	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	84		30-130
Pyrene-d10	89		30-130
Benzo(b)fluoranthene-d12	94		30-130

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-14	Date Collected:	10/23/13 10:00
Client ID:	PA-08-1.0-4.7	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8270D-SIM	Extraction Date:	12/02/13 14:39
Analytical Date:	12/11/13 03:29	Cleanup Method1:	EPA 3630
Analyst:	JT	Cleanup Date1:	12/10/13
Percent Solids:	70%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Mansfield Lab						
Naphthalene	ND		ug/kg	5.70	0.779	1
Acenaphthylene	ND		ug/kg	5.70	0.544	1
Acenaphthene	ND		ug/kg	5.70	0.664	1
Fluorene	ND		ug/kg	5.70	0.853	1
Phenanthrene	ND		ug/kg	5.70	1.08	1
Anthracene	ND		ug/kg	5.70	0.856	1
Fluoranthene	ND		ug/kg	5.70	0.718	1
Pyrene	ND		ug/kg	5.70	0.464	1
Benz(a)anthracene	ND		ug/kg	5.70	0.961	1
Chrysene	ND		ug/kg	5.70	0.530	1
Benzo(b)fluoranthene	ND		ug/kg	5.70	0.650	1
Benzo(k)fluoranthene	ND		ug/kg	5.70	0.670	1
Benzo(a)pyrene	ND		ug/kg	5.70	1.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	5.70	1.34	1
Dibenz(a,h)anthracene	ND		ug/kg	5.70	1.09	1
Benzo(g,h,i)perylene	ND		ug/kg	5.70	1.08	1
2-Methylnaphthalene	ND		ug/kg	5.70	1.21	1
2-Chloronaphthalene	ND		ug/kg	5.70	0.539	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	53		30-130
Pyrene-d10	56		30-130
Benzo(b)fluoranthene-d12	55		30-130

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 12/10/13 18:25
Analyst: JT

Extraction Method: EPA 3570
Extraction Date: 12/02/13 14:39
Cleanup Method1: EPA 3630
Cleanup Date1: 12/10/13

Parameter	Result	Qualifier	Units	RL	MDL
PAHs by GC/MS-SIM - Mansfield Lab for sample(s): 01-14 Batch: WG655350-1					
Naphthalene	1.12	J	ug/kg	8.00	1.09
Acenaphthylene	ND		ug/kg	8.00	0.765
Acenaphthene	ND		ug/kg	8.00	0.932
Fluorene	ND		ug/kg	8.00	1.20
Phenanthrene	ND		ug/kg	8.00	1.52
Anthracene	ND		ug/kg	8.00	1.20
Fluoranthene	ND		ug/kg	8.00	1.01
Pyrene	ND		ug/kg	8.00	0.651
Benz(a)anthracene	ND		ug/kg	8.00	1.35
Chrysene	ND		ug/kg	8.00	0.745
Benzo(b)fluoranthene	ND		ug/kg	8.00	0.914
Benzo(k)fluoranthene	ND		ug/kg	8.00	0.942
Benzo(a)pyrene	ND		ug/kg	8.00	1.43
Indeno(1,2,3-cd)pyrene	ND		ug/kg	8.00	1.89
Dibenz(a,h)anthracene	ND		ug/kg	8.00	1.53
Benzo(g,h,i)perylene	ND		ug/kg	8.00	1.52
2-Methylnaphthalene	ND		ug/kg	8.00	1.70
2-Chloronaphthalene	ND		ug/kg	8.00	0.758

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	93		30-130
Pyrene-d10	101		30-130
Benzo(b)fluoranthene-d12	108		30-130

Matrix Spike Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG655350-5 WG655350-6 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0												
Naphthalene	1.28J	686	582	85		592	82		40-140	2		30
Acenaphthylene	ND	686	544	79		549	76		40-140	1		30
Acenaphthene	ND	686	571	83		580	81		40-140	2		30
Fluorene	ND	686	579	84		595	83		40-140	3		30
Phenanthrene	1.27J	686	582	85		593	83		40-140	2		30
Anthracene	ND	686	568	83		581	81		40-140	2		30
Fluoranthene	1.13J	686	574	84		579	81		40-140	1		30
Pyrene	0.710J	686	596	87		606	84		40-140	2		30
Benz(a)anthracene	ND	686	594	87		606	84		40-140	2		30
Chrysene	ND	686	556	81		573	80		40-140	3		30
Benzo(b)fluoranthene	0.636J	686	624	91		653	91		40-140	5		30
Benzo(k)fluoranthene	ND	686	495	72		497	69		40-140	0		30
Benzo(a)pyrene	ND	686	592	86		613	85		40-140	3		30
Indeno(1,2,3-cd)pyrene	ND	686	586	85		612	85		40-140	4		30
Dibenz(a,h)anthracene	ND	686	565	82		587	82		40-140	4		30
Benzo(g,h,i)perylene	ND	686	558	81		576	80		40-140	3		30
2-Methylnaphthalene	ND	686	581	85		593	83		40-140	2		30
2-Chloronaphthalene	ND	686	566	83		583	81		40-140	3		30

Matrix Spike Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG655350-5 WG655350-6 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	84		81		30-130
Benzo(b)fluoranthene-d12	83		81		30-130
Pyrene-d10	86		84		30-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2(

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG655350-4 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0						
Naphthalene	1.28J	1.22J	ug/kg	NC		30
Acenaphthylene	ND	ND	ug/kg	NC		30
Acenaphthene	ND	ND	ug/kg	NC		30
Fluorene	ND	ND	ug/kg	NC		30
Phenanthrene	1.27J	ND	ug/kg	NC		30
Anthracene	ND	ND	ug/kg	NC		30
Fluoranthene	1.13J	0.906J	ug/kg	NC		30
Pyrene	0.710J	0.584J	ug/kg	NC		30
Benz(a)anthracene	ND	ND	ug/kg	NC		30
Chrysene	ND	0.556J	ug/kg	NC		30
Benzo(b)fluoranthene	0.636J	0.682J	ug/kg	NC		30
Benzo(k)fluoranthene	ND	ND	ug/kg	NC		30
Benzo(a)pyrene	ND	ND	ug/kg	NC		30
Indeno(1,2,3-cd)pyrene	ND	ND	ug/kg	NC		30
Dibenz(a,h)anthracene	ND	ND	ug/kg	NC		30
Benzo(g,h,i)perylene	ND	ND	ug/kg	NC		30
2-Methylnaphthalene	ND	ND	ug/kg	NC		30
2-Chloronaphthalene	ND	ND	ug/kg	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2(

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
PAHs by GC/MS-SIM - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG655350-4 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0					

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
2-Methylnaphthalene-d10	83		84		30-130
Pyrene-d10	87		86		30-130
Benzo(b)fluoranthene-d12	86		84		30-130

PCBS

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-01	Date Collected:	10/28/13 09:38
Client ID:	PA-07-0.0-3.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 14:13	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	89%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	16.0	16.0	1	A
Aroclor 1221	ND		ug/kg	16.0	16.0	1	A
Aroclor 1232	ND		ug/kg	16.0	16.0	1	A
Aroclor 1242	ND		ug/kg	16.0	16.0	1	A
Aroclor 1248	ND		ug/kg	16.0	16.0	1	A
Aroclor 1254	ND		ug/kg	16.0	16.0	1	A
Aroclor 1260	ND		ug/kg	16.0	16.0	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	80		30-150	A
Decachlorobiphenyl	79		30-150	A
Tetrachloro-meta-Xylene	83		30-150	B
Decachlorobiphenyl	78		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-02	Date Collected:	10/28/13 11:02
Client ID:	PA-VC025-1-0.0-3.3	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 14:45	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	86%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	16.7	16.7	1	A
Aroclor 1221	ND		ug/kg	16.7	16.7	1	A
Aroclor 1232	ND		ug/kg	16.7	16.7	1	A
Aroclor 1242	ND		ug/kg	16.7	16.7	1	A
Aroclor 1248	ND		ug/kg	16.7	16.7	1	A
Aroclor 1254	ND		ug/kg	16.7	16.7	1	A
Aroclor 1260	ND		ug/kg	16.7	16.7	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	86		30-150	A
Decachlorobiphenyl	79		30-150	A
Tetrachloro-meta-Xylene	87		30-150	B
Decachlorobiphenyl	79		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-03	Date Collected:	10/28/13 12:18
Client ID:	PA-VC024-1-2.6-4.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 15:16	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	81%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	19.7	19.7	1	A
Aroclor 1221	ND		ug/kg	19.7	19.7	1	A
Aroclor 1232	ND		ug/kg	19.7	19.7	1	A
Aroclor 1242	ND		ug/kg	19.7	19.7	1	A
Aroclor 1248	ND		ug/kg	19.7	19.7	1	A
Aroclor 1254	ND		ug/kg	19.7	19.7	1	A
Aroclor 1260	ND		ug/kg	19.7	19.7	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	80		30-150	A
Decachlorobiphenyl	77		30-150	A
Tetrachloro-meta-Xylene	85		30-150	B
Decachlorobiphenyl	76		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-04	Date Collected:	10/28/13 15:04
Client ID:	PA-06-0.0-2.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 15:46	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	80%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	17.3	17.3	1	A
Aroclor 1221	ND		ug/kg	17.3	17.3	1	A
Aroclor 1232	ND		ug/kg	17.3	17.3	1	A
Aroclor 1242	ND		ug/kg	17.3	17.3	1	A
Aroclor 1248	ND		ug/kg	17.3	17.3	1	A
Aroclor 1254	ND		ug/kg	17.3	17.3	1	A
Aroclor 1260	ND		ug/kg	17.3	17.3	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	82		30-150	A
Decachlorobiphenyl	79		30-150	A
Tetrachloro-meta-Xylene	85		30-150	B
Decachlorobiphenyl	78		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-05	Date Collected:	10/28/13 16:07
Client ID:	PA-05-0.0-3.9	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 16:16	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	84%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	18.3	18.3	1	A
Aroclor 1221	ND		ug/kg	18.3	18.3	1	A
Aroclor 1232	ND		ug/kg	18.3	18.3	1	A
Aroclor 1242	ND		ug/kg	18.3	18.3	1	A
Aroclor 1248	ND		ug/kg	18.3	18.3	1	A
Aroclor 1254	ND		ug/kg	18.3	18.3	1	A
Aroclor 1260	ND		ug/kg	18.3	18.3	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	82		30-150	A
Decachlorobiphenyl	75		30-150	A
Tetrachloro-meta-Xylene	84		30-150	B
Decachlorobiphenyl	75		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-06	Date Collected:	10/28/13 17:12
Client ID:	PA-04-0.0-2.1	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 16:47	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	79%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	19.8	19.8	1	A
Aroclor 1221	ND		ug/kg	19.8	19.8	1	A
Aroclor 1232	ND		ug/kg	19.8	19.8	1	A
Aroclor 1242	ND		ug/kg	19.8	19.8	1	A
Aroclor 1248	ND		ug/kg	19.8	19.8	1	A
Aroclor 1254	ND		ug/kg	19.8	19.8	1	A
Aroclor 1260	ND		ug/kg	19.8	19.8	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	91		30-150	A
Decachlorobiphenyl	87		30-150	A
Tetrachloro-meta-Xylene	96		30-150	B
Decachlorobiphenyl	86		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-07	Date Collected:	10/28/13 17:12
Client ID:	PA-04D-0.0-2.1	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 17:17	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	77%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	19.3	19.3	1	A
Aroclor 1221	ND		ug/kg	19.3	19.3	1	A
Aroclor 1232	ND		ug/kg	19.3	19.3	1	A
Aroclor 1242	ND		ug/kg	19.3	19.3	1	A
Aroclor 1248	ND		ug/kg	19.3	19.3	1	A
Aroclor 1254	ND		ug/kg	19.3	19.3	1	A
Aroclor 1260	ND		ug/kg	19.3	19.3	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	86		30-150	A
Decachlorobiphenyl	81		30-150	A
Tetrachloro-meta-Xylene	86		30-150	B
Decachlorobiphenyl	79		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-08	Date Collected:	10/28/13 18:04
Client ID:	PA-VC023-1-1.5-3.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 19:49	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	59%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	12.8	12.8	1	A
Aroclor 1221	ND		ug/kg	12.8	12.8	1	A
Aroclor 1232	ND		ug/kg	12.8	12.8	1	A
Aroclor 1242	ND		ug/kg	12.8	12.8	1	A
Aroclor 1248	ND		ug/kg	12.8	12.8	1	A
Aroclor 1254	ND		ug/kg	12.8	12.8	1	A
Aroclor 1260	ND		ug/kg	12.8	12.8	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	56		30-150	A
Decachlorobiphenyl	50		30-150	A
Tetrachloro-meta-Xylene	55		30-150	B
Decachlorobiphenyl	43		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-09	Date Collected:	10/29/13 12:22
Client ID:	PA-ARCHY 8-1-3.2-7.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 20:19	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	68%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	11.3	11.3	1	A
Aroclor 1221	ND		ug/kg	11.3	11.3	1	A
Aroclor 1232	ND		ug/kg	11.3	11.3	1	A
Aroclor 1242	ND		ug/kg	11.3	11.3	1	A
Aroclor 1248	ND		ug/kg	11.3	11.3	1	A
Aroclor 1254	ND		ug/kg	11.3	11.3	1	A
Aroclor 1260	ND		ug/kg	11.3	11.3	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	77		30-150	A
Decachlorobiphenyl	73		30-150	A
Tetrachloro-meta-Xylene	76		30-150	B
Decachlorobiphenyl	72		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-10	Date Collected:	10/29/13 13:12
Client ID:	PA-ARCHY 9-1-0.0-3.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 22:21	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	80%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	19.2	19.2	1	A
Aroclor 1221	ND		ug/kg	19.2	19.2	1	A
Aroclor 1232	ND		ug/kg	19.2	19.2	1	A
Aroclor 1242	ND		ug/kg	19.2	19.2	1	A
Aroclor 1248	ND		ug/kg	19.2	19.2	1	A
Aroclor 1254	ND		ug/kg	19.2	19.2	1	A
Aroclor 1260	ND		ug/kg	19.2	19.2	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	82		30-150	A
Decachlorobiphenyl	76		30-150	A
Tetrachloro-meta-Xylene	83		30-150	B
Decachlorobiphenyl	76		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-11	Date Collected:	10/29/13 13:46
Client ID:	PA-03-0.0-3.4	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 22:51	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	74%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	20.0	20.0	1	A
Aroclor 1221	ND		ug/kg	20.0	20.0	1	A
Aroclor 1232	ND		ug/kg	20.0	20.0	1	A
Aroclor 1242	ND		ug/kg	20.0	20.0	1	A
Aroclor 1248	ND		ug/kg	20.0	20.0	1	A
Aroclor 1254	ND		ug/kg	20.0	20.0	1	A
Aroclor 1260	ND		ug/kg	20.0	20.0	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	78		30-150	A
Decachlorobiphenyl	77		30-150	A
Tetrachloro-meta-Xylene	78		30-150	B
Decachlorobiphenyl	76		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-12	Date Collected:	10/29/13 14:38
Client ID:	PA-02-0.0-2.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 23:21	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	79%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	19.3	19.3	1	A
Aroclor 1221	ND		ug/kg	19.3	19.3	1	A
Aroclor 1232	ND		ug/kg	19.3	19.3	1	A
Aroclor 1242	ND		ug/kg	19.3	19.3	1	A
Aroclor 1248	ND		ug/kg	19.3	19.3	1	A
Aroclor 1254	ND		ug/kg	19.3	19.3	1	A
Aroclor 1260	ND		ug/kg	19.3	19.3	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	80		30-150	A
Decachlorobiphenyl	75		30-150	A
Tetrachloro-meta-Xylene	80		30-150	B
Decachlorobiphenyl	72		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-13	Date Collected:	10/29/13 15:52
Client ID:	PA-01-0.0-3.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 23:52	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	80%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	19.0	19.0	1	A
Aroclor 1221	ND		ug/kg	19.0	19.0	1	A
Aroclor 1232	ND		ug/kg	19.0	19.0	1	A
Aroclor 1242	ND		ug/kg	19.0	19.0	1	A
Aroclor 1248	ND		ug/kg	19.0	19.0	1	A
Aroclor 1254	ND		ug/kg	19.0	19.0	1	A
Aroclor 1260	ND		ug/kg	19.0	19.0	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	79		30-150	A
Decachlorobiphenyl	75		30-150	A
Tetrachloro-meta-Xylene	77		30-150	B
Decachlorobiphenyl	74		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-14	Date Collected:	10/23/13 10:00
Client ID:	PA-08-1.0-4.7	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8082A	Extraction Date:	12/02/13 14:39
Analytical Date:	12/11/13 00:22	Cleanup Method1:	EPA 3630
Analyst:	JS	Cleanup Date1:	12/09/13
Percent Solids:	70%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Mansfield Lab							
Aroclor 1016	ND		ug/kg	11.4	11.4	1	A
Aroclor 1221	ND		ug/kg	11.4	11.4	1	A
Aroclor 1232	ND		ug/kg	11.4	11.4	1	A
Aroclor 1242	ND		ug/kg	11.4	11.4	1	A
Aroclor 1248	ND		ug/kg	11.4	11.4	1	A
Aroclor 1254	ND		ug/kg	11.4	11.4	1	A
Aroclor 1260	ND		ug/kg	11.4	11.4	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	81		30-150	A
Decachlorobiphenyl	75		30-150	A
Tetrachloro-meta-Xylene	81		30-150	B
Decachlorobiphenyl	73		30-150	B

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 12/10/13 12:39
Analyst: JS

Extraction Method: EPA 3570
Extraction Date: 12/02/13 14:39
Cleanup Method1: EPA 3630
Cleanup Date1: 12/09/13
Cleanup Method2: - - - -
Cleanup Date2:

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Mansfield Lab for sample(s): 01-14 Batch: WG655355-1						
Aroclor 1016	ND		ug/kg	16.0	16.0	A
Aroclor 1221	ND		ug/kg	16.0	16.0	A
Aroclor 1232	ND		ug/kg	16.0	16.0	A
Aroclor 1242	ND		ug/kg	16.0	16.0	A
Aroclor 1248	ND		ug/kg	16.0	16.0	A
Aroclor 1254	ND		ug/kg	16.0	16.0	A
Aroclor 1260	ND		ug/kg	16.0	16.0	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	74		30-150	A
Decachlorobiphenyl	70		30-150	A
Tetrachloro-meta-Xylene	78		30-150	B
Decachlorobiphenyl	68		30-150	B

Matrix Spike Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG655355-5 WG655355-6 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0													
Aroclor 1016	ND	684	478	70		474	69		40-140	1		50	A
Aroclor 1260	ND	684	513	75		512	74		40-140	0		50	B

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
Decachlorobiphenyl	76		76		30-150	A
Tetrachloro-meta-Xylene	83		84		30-150	A
Decachlorobiphenyl	76		76		30-150	B
Tetrachloro-meta-Xylene	89		88		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013
Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Mansfield Lab Associated sample(s): 01-14 Batch: WG655355-2 WG655355-3									
Aroclor 1016	66		68		40-140	3		50	A
Aroclor 1260	83		86		40-140	4		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	76		79		30-150	A
Decachlorobiphenyl	76		79		30-150	A
Tetrachloro-meta-Xylene	77		78		30-150	B
Decachlorobiphenyl	75		70		30-150	B

Lab Duplicate Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2(

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Polychlorinated Biphenyls by GC - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG655355-4 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0							
Aroclor 1016	ND	ND	ug/kg	NC		50	A
Aroclor 1221	ND	ND	ug/kg	NC		50	A
Aroclor 1232	ND	ND	ug/kg	NC		50	A
Aroclor 1242	ND	ND	ug/kg	NC		50	A
Aroclor 1248	ND	ND	ug/kg	NC		50	A
Aroclor 1254	ND	ND	ug/kg	NC		50	A
Aroclor 1260	ND	ND	ug/kg	NC		50	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
Tetrachloro-meta-Xylene	77		84		30-150	A
Decachlorobiphenyl	73		78		30-150	A
Tetrachloro-meta-Xylene	76		83		30-150	B
Decachlorobiphenyl	72		77		30-150	B

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Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-01	Date Collected:	10/28/13 09:38
Client ID:	PA-07-0.0-3.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 16:32	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	89%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.401	0.401	1	A
alpha-Chlordane	ND		ug/kg	0.401	0.401	1	A
4,4'-DDE	ND		ug/kg	0.401	0.401	1	A
Dieldrin	ND		ug/kg	0.401	0.401	1	A
4,4'-DDD	ND		ug/kg	0.401	0.401	1	A
4,4'-DDT	ND		ug/kg	0.401	0.401	1	A
Mirex	ND		ug/kg	0.401	0.401	1	A
Technical Chlordane	ND		ug/kg	20.2	20.2	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	63		30-150	A
DCB - Surrogate	69		30-150	A
TMX - Surrogate	73		30-150	B
DCB - Surrogate	73		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-02	Date Collected:	10/28/13 11:02
Client ID:	PA-VC025-1-0.0-3.3	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 17:16	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	86%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.417	0.417	1	A
alpha-Chlordane	ND		ug/kg	0.417	0.417	1	A
4,4'-DDE	ND		ug/kg	0.417	0.417	1	A
Dieldrin	ND		ug/kg	0.417	0.417	1	A
4,4'-DDD	ND		ug/kg	0.417	0.417	1	A
4,4'-DDT	ND		ug/kg	0.417	0.417	1	A
Mirex	ND		ug/kg	0.417	0.417	1	A
Technical Chlordane	ND		ug/kg	21.0	21.0	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	66		30-150	A
DCB - Surrogate	70		30-150	A
TMX - Surrogate	76		30-150	B
DCB - Surrogate	73		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-03	Date Collected:	10/28/13 12:18
Client ID:	PA-VC024-1-2.6-4.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 18:00	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	81%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.492	0.492	1	A
alpha-Chlordane	ND		ug/kg	0.492	0.492	1	A
4,4'-DDE	ND		ug/kg	0.492	0.492	1	A
Dieldrin	ND		ug/kg	0.492	0.492	1	A
4,4'-DDD	ND		ug/kg	0.492	0.492	1	A
4,4'-DDT	ND		ug/kg	0.492	0.492	1	A
Mirex	ND		ug/kg	0.492	0.492	1	A
Technical Chlordane	ND		ug/kg	24.7	24.7	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	63		30-150	A
DCB - Surrogate	67		30-150	A
TMX - Surrogate	71		30-150	B
DCB - Surrogate	70		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-04	Date Collected:	10/28/13 15:04
Client ID:	PA-06-0.0-2.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 20:13	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	80%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.432	0.432	1	A
alpha-Chlordane	ND		ug/kg	0.432	0.432	1	A
4,4'-DDE	ND		ug/kg	0.432	0.432	1	A
Dieldrin	ND		ug/kg	0.432	0.432	1	A
4,4'-DDD	ND		ug/kg	0.432	0.432	1	A
4,4'-DDT	ND		ug/kg	0.432	0.432	1	A
Mirex	ND		ug/kg	0.432	0.432	1	A
Technical Chlordane	ND		ug/kg	21.7	21.7	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	63		30-150	A
DCB - Surrogate	67		30-150	A
TMX - Surrogate	73		30-150	B
DCB - Surrogate	70		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-05	Date Collected:	10/28/13 16:07
Client ID:	PA-05-0.0-3.9	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 20:57	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	84%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.458	0.458	1	A
alpha-Chlordane	ND		ug/kg	0.458	0.458	1	A
4,4'-DDE	ND		ug/kg	0.458	0.458	1	A
Dieldrin	ND		ug/kg	0.458	0.458	1	A
4,4'-DDD	ND		ug/kg	0.458	0.458	1	A
4,4'-DDT	ND		ug/kg	0.458	0.458	1	A
Mirex	ND		ug/kg	0.458	0.458	1	A
Technical Chlordane	ND		ug/kg	23.0	23.0	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	66		30-150	A
DCB - Surrogate	69		30-150	A
TMX - Surrogate	76		30-150	B
DCB - Surrogate	73		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-06	Date Collected:	10/28/13 17:12
Client ID:	PA-04-0.0-2.1	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 21:41	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	79%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.496	0.496	1	A
alpha-Chlordane	ND		ug/kg	0.496	0.496	1	A
4,4'-DDE	ND		ug/kg	0.496	0.496	1	A
Dieldrin	ND		ug/kg	0.496	0.496	1	A
4,4'-DDD	ND		ug/kg	0.496	0.496	1	A
4,4'-DDT	ND		ug/kg	0.496	0.496	1	A
Mirex	ND		ug/kg	0.496	0.496	1	A
Technical Chlordane	ND		ug/kg	24.9	24.9	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	72		30-150	A
DCB - Surrogate	76		30-150	A
TMX - Surrogate	82		30-150	B
DCB - Surrogate	81		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-07	Date Collected:	10/28/13 17:12
Client ID:	PA-04D-0.0-2.1	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 22:25	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	77%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.483	0.483	1	A
alpha-Chlordane	ND		ug/kg	0.483	0.483	1	A
4,4'-DDE	ND		ug/kg	0.483	0.483	1	A
Dieldrin	ND		ug/kg	0.483	0.483	1	A
4,4'-DDD	ND		ug/kg	0.483	0.483	1	A
4,4'-DDT	ND		ug/kg	0.483	0.483	1	A
Mirex	ND		ug/kg	0.483	0.483	1	A
Technical Chlordane	ND		ug/kg	24.2	24.2	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	64		30-150	A
DCB - Surrogate	70		30-150	A
TMX - Surrogate	75		30-150	B
DCB - Surrogate	74		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-08	Date Collected:	10/28/13 18:04
Client ID:	PA-VC023-1-1.5-3.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 23:10	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	59%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.320	0.320	1	A
alpha-Chlordane	ND		ug/kg	0.320	0.320	1	A
4,4'-DDE	ND		ug/kg	0.320	0.320	1	A
Dieldrin	ND		ug/kg	0.320	0.320	1	A
4,4'-DDD	ND		ug/kg	0.320	0.320	1	A
4,4'-DDT	ND		ug/kg	0.320	0.320	1	A
Mirex	ND		ug/kg	0.320	0.320	1	A
Technical Chlordane	ND		ug/kg	16.0	16.0	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	44		30-150	A
DCB - Surrogate	43		30-150	A
TMX - Surrogate	48		30-150	B
DCB - Surrogate	46		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-09	Date Collected:	10/29/13 12:22
Client ID:	PA-ARCHY 8-1-3.2-7.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 15:48	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	68%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.283	0.283	1	A
alpha-Chlordane	ND		ug/kg	0.283	0.283	1	A
4,4'-DDE	ND		ug/kg	0.283	0.283	1	A
Dieldrin	ND		ug/kg	0.283	0.283	1	A
4,4'-DDD	ND		ug/kg	0.283	0.283	1	A
4,4'-DDT	ND		ug/kg	0.283	0.283	1	A
Mirex	ND		ug/kg	0.283	0.283	1	A
Technical Chlordane	ND		ug/kg	14.2	14.2	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	63		30-150	A
DCB - Surrogate	67		30-150	A
TMX - Surrogate	71		30-150	B
DCB - Surrogate	70		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-10	Date Collected:	10/29/13 13:12
Client ID:	PA-ARCHY 9-1-0.0-3.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/10/13 23:54	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	80%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.480	0.480	1	A
alpha-Chlordane	ND		ug/kg	0.480	0.480	1	A
4,4'-DDE	ND		ug/kg	0.480	0.480	1	A
Dieldrin	ND		ug/kg	0.480	0.480	1	A
4,4'-DDD	ND		ug/kg	0.480	0.480	1	A
4,4'-DDT	ND		ug/kg	0.480	0.480	1	A
Mirex	ND		ug/kg	0.480	0.480	1	A
Technical Chlordane	ND		ug/kg	24.1	24.1	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	68		30-150	A
DCB - Surrogate	70		30-150	A
TMX - Surrogate	81		30-150	B
DCB - Surrogate	77		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-11	Date Collected:	10/29/13 13:46
Client ID:	PA-03-0.0-3.4	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/11/13 00:38	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	74%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.499	0.499	1	A
alpha-Chlordane	ND		ug/kg	0.499	0.499	1	A
4,4'-DDE	ND		ug/kg	0.499	0.499	1	A
Dieldrin	ND		ug/kg	0.499	0.499	1	A
4,4'-DDD	ND		ug/kg	0.499	0.499	1	A
4,4'-DDT	ND		ug/kg	0.499	0.499	1	A
Mirex	ND		ug/kg	0.499	0.499	1	A
Technical Chlordane	ND		ug/kg	25.0	25.0	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	63		30-150	A
DCB - Surrogate	67		30-150	A
TMX - Surrogate	75		30-150	B
DCB - Surrogate	72		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-12	Date Collected:	10/29/13 14:38
Client ID:	PA-02-0.0-2.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/11/13 01:22	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	79%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.483	0.483	1	A
alpha-Chlordane	ND		ug/kg	0.483	0.483	1	A
4,4'-DDE	ND		ug/kg	0.483	0.483	1	A
Dieldrin	ND		ug/kg	0.483	0.483	1	A
4,4'-DDD	ND		ug/kg	0.483	0.483	1	A
4,4'-DDT	ND		ug/kg	0.483	0.483	1	A
Mirex	ND		ug/kg	0.483	0.483	1	A
Technical Chlordane	ND		ug/kg	24.2	24.2	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	62		30-150	A
DCB - Surrogate	66		30-150	A
TMX - Surrogate	72		30-150	B
DCB - Surrogate	70		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-13	Date Collected:	10/29/13 15:52
Client ID:	PA-01-0.0-3.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/11/13 02:07	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	80%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.475	0.475	1	A
alpha-Chlordane	ND		ug/kg	0.475	0.475	1	A
4,4'-DDE	ND		ug/kg	0.475	0.475	1	A
Dieldrin	ND		ug/kg	0.475	0.475	1	A
4,4'-DDD	ND		ug/kg	0.475	0.475	1	A
4,4'-DDT	ND		ug/kg	0.475	0.475	1	A
Mirex	ND		ug/kg	0.475	0.475	1	A
Technical Chlordane	ND		ug/kg	23.8	23.8	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	59		30-150	A
DCB - Surrogate	64		30-150	A
TMX - Surrogate	69		30-150	B
DCB - Surrogate	68		30-150	B

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-14	Date Collected:	10/23/13 10:00
Client ID:	PA-08-1.0-4.7	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3570
Analytical Method:	1,8081B	Extraction Date:	12/02/13 14:39
Analytical Date:	12/11/13 02:51	Cleanup Method1:	EPA 3630
Analyst:	DP	Cleanup Date1:	12/09/13
Percent Solids:	70%	Cleanup Method2:	- - - -

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Mansfield Lab							
gamma-Chlordane	ND		ug/kg	0.284	0.284	1	A
alpha-Chlordane	ND		ug/kg	0.284	0.284	1	A
4,4'-DDE	ND		ug/kg	0.284	0.284	1	A
Dieldrin	ND		ug/kg	0.284	0.284	1	A
4,4'-DDD	ND		ug/kg	0.284	0.284	1	A
4,4'-DDT	ND		ug/kg	0.284	0.284	1	A
Mirex	ND		ug/kg	0.284	0.284	1	A
Technical Chlordane	ND		ug/kg	14.2	14.2	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	61		30-150	A
DCB - Surrogate	63		30-150	A
TMX - Surrogate	69		30-150	B
DCB - Surrogate	66		30-150	B

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 12/10/13 11:22
Analyst: DP

Extraction Method: EPA 3570
Extraction Date: 12/02/13 14:39
Cleanup Method1: EPA 3630
Cleanup Date1: 12/09/13
Cleanup Method2: - - - -
Cleanup Date2:

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Mansfield Lab for sample(s): 01-14 Batch: WG655353-1						
gamma-Chlordane	ND		ug/kg	0.400	0.400	A
alpha-Chlordane	ND		ug/kg	0.400	0.400	A
4,4'-DDE	ND		ug/kg	0.400	0.400	A
Dieldrin	ND		ug/kg	0.400	0.400	A
4,4'-DDD	ND		ug/kg	0.400	0.400	A
4,4'-DDT	ND		ug/kg	0.400	0.400	A
Mirex	ND		ug/kg	0.400	0.400	A
Technical Chlordane	ND		ug/kg	20.1	20.1	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	62		30-150	A
DCB - Surrogate	64		30-150	A
TMX - Surrogate	73		30-150	B
DCB - Surrogate	67		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-14 Batch: WG655353-2 WG655353-3									
Alpha-BHC	72		72		40-140	0		50	A
Hexachlorobenzene	63		64		40-140	2		50	A
Beta-BHC	63		63		40-140	0		50	A
gamma-BHC	74		75		40-140	1		50	A
Delta-BHC	70		71		40-140	1		50	A
Heptachlor	68		69		40-140	1		50	A
gamma-Chlordane	72		73		40-140	1		50	A
2,4'-DDE	70		72		40-140	3		50	A
Endosulfan I	70		71		40-140	1		50	A
alpha-Chlordane	71		72		40-140	1		50	A
trans-Nonachlor	69		71		40-140	3		50	A
4,4'-DDE	76		78		40-140	3		50	A
Dieldrin	73		74		40-140	1		50	A
2,4'-DDD	72		73		40-140	1		50	A
Endrin	71		72		40-140	1		50	A
Endosulfan II	69		71		40-140	3		50	A
4,4'-DDD	79		81		40-140	3		50	A
2,4'-DDT	113		74		40-140	42		50	A
Endrin aldehyde	52		56		40-140	7		50	A
Endosulfan sulfate	68		70		40-140	3		50	A
4,4'-DDT	78		80		40-140	3		50	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: PORT AMBROSE 2013

Project Number: PORT AMBROSE 2013

Lab Number: L1323606

Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-14 Batch: WG655353-2 WG655353-3								
Endrin ketone	79		81		40-140	3		50 A
Methoxychlor	71		72		40-140	1		50 A
Mirex	69		71		40-140	3		50 A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
TMX - Surrogate	68		68		30-150	A
DCB - Surrogate	71		71		30-150	A
TMX - Surrogate	79		79		30-150	B
DCB - Surrogate	75		75		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: PORT AMBROSE 2013

Project Number: PORT AMBROSE 2013

Lab Number: L1323606

Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-14 Batch: WG655353-2 WG655353-3									
Aldrin	78		78		40-140	0		50	B
Heptachlor epoxide	75		77		40-140	3		50	B
Oxychlordane	72		73		40-140	1		50	B

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
TMX - Surrogate	68		68		30-150	A
DCB - Surrogate	71		71		30-150	A
TMX - Surrogate	79		79		30-150	B
DCB - Surrogate	75		75		30-150	B

Matrix Spike Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG655353-5 WG655353-6 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0													
Alpha-BHC	ND	68.2	47.3	69		53.2	77		40-140	12		50	A
Hexachlorobenzene	ND	68.2	41.6	61		47.3	69		40-140	13		50	A
Beta-BHC	ND	68.2	41.2	60		45.1	66		40-140	9		50	A
gamma-BHC	ND	68.2	48.9	72		54.8	80		40-140	11		50	A
Delta-BHC	ND	68.2	45.5	67		50.4	73		40-140	10		50	A
Heptachlor	ND	68.2	44.7	66		51.4	75		40-140	14		50	A
Aldrin	ND	68.2	50.0	73		56.9	83		40-140	13		50	B
Heptachlor epoxide	ND	68.2	47.5	70		53.7	78		40-140	12		50	B
Oxychlordane	ND	68.2	46.2	68		52.6	76		40-140	13		50	B
gamma-Chlordane	ND	68.2	46.7	69		53.7	78		40-140	14		50	A
2,4'-DDE	ND	68.2	45.6	67		52.6	76		40-140	14		50	A
Endosulfan I	ND	68.2	45.2	66		50.7	74		40-140	11		50	A
alpha-Chlordane	ND	68.2	45.9	67		53.5	78		40-140	15		50	A
trans-Nonachlor	ND	68.2	45.2	66		52.0	76		40-140	14		50	A
4,4'-DDE	ND	68.2	49.9	73		57.0	83		40-140	13		50	A
Dieldrin	ND	68.2	47.0	69		53.5	78		40-140	13		50	A
2,4'-DDD	ND	68.2	46.1	68		53.0	77		40-140	14		50	A
Endrin	ND	68.2	46.6	68		51.8	75		40-140	11		50	A
Endosulfan II	ND	68.2	43.9	64		47.8	69		40-140	9		50	A
4,4'-DDD	ND	68.2	51.6	76		58.4	85		40-140	12		50	A
2,4'-DDT	ND	68.2	48.3	71		85.2P	124		40-140	**55**	Q	50	A

Matrix Spike Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG655353-5 WG655353-6 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0												
Endrin aldehyde	ND	68.2	34.4	50		28.7	42		40-140	18		50
Endosulfan sulfate	ND	68.2	43.1	63		46.1	67		40-140	7		50
4,4'-DDT	ND	68.2	51.5	76		56.2	82		40-140	9		50
Endrin ketone	ND	68.2	49.5	73		51.0	74		40-140	3		50
Methoxychlor	ND	68.2	45.7	67		42.0	61		40-140	8		50
Mirex	ND	68.2	45.1	66		52.5	76		40-140	15		50

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
DCB - Surrogate	65		68		30-150	A
TMX - Surrogate	64		72		30-150	A
DCB - Surrogate	68		69		30-150	B
TMX - Surrogate	72		79		30-150	B

Lab Duplicate Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2(

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Organochlorine Pesticides by GC - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG655353-4 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0							
gamma-Chlordane	ND	ND	ug/kg	NC		50	A
alpha-Chlordane	ND	ND	ug/kg	NC		50	A
4,4'-DDE	ND	ND	ug/kg	NC		50	A
Dieldrin	ND	ND	ug/kg	NC		50	A
4,4'-DDD	ND	ND	ug/kg	NC		50	A
4,4'-DDT	ND	ND	ug/kg	NC		50	A
Mirex	ND	ND	ug/kg	NC		50	A
Technical Chlordane	ND	ND	ug/kg	NC		50	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
TMX - Surrogate	63		67		30-150	A
DCB - Surrogate	67		65		30-150	A
TMX - Surrogate	71		75		30-150	B
DCB - Surrogate	70		68		30-150	B

METALS

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-01	Date Collected:	10/28/13 09:38
Client ID:	PA-07-0.0-3.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	89%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	7.86		mg/kg	0.033	0.004	2	12/03/13 18:00	12/06/13 17:11	EPA 3050B	1,6020A	PD
Cadmium, Total	0.010	J	mg/kg	0.013	0.002	2	12/03/13 18:00	12/06/13 17:11	EPA 3050B	1,6020A	PD
Copper, Total	1.23		mg/kg	0.130	0.007	2	12/03/13 18:00	12/06/13 17:11	EPA 3050B	1,6020A	PD
Lead, Total	2.16		mg/kg	0.039	0.013	2	12/03/13 18:00	12/06/13 17:11	EPA 3050B	1,6020A	PD
Mercury, Total	0.005	J	mg/kg	0.014	0.002	5	12/03/13 18:00	12/09/13 17:34	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-02	Date Collected:	10/28/13 11:02
Client ID:	PA-VC025-1-0.0-3.3	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	86%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	5.59		mg/kg	0.033	0.004	2	12/03/13 18:00	12/06/13 17:12	EPA 3050B	1,6020A	PD
Cadmium, Total	0.012	J	mg/kg	0.013	0.002	2	12/03/13 18:00	12/06/13 17:12	EPA 3050B	1,6020A	PD
Copper, Total	0.968		mg/kg	0.132	0.007	2	12/03/13 18:00	12/06/13 17:12	EPA 3050B	1,6020A	PD
Lead, Total	4.12		mg/kg	0.040	0.013	2	12/03/13 18:00	12/06/13 17:12	EPA 3050B	1,6020A	PD
Mercury, Total	0.003	J	mg/kg	0.015	0.002	5	12/03/13 18:00	12/09/13 17:37	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-03	Date Collected:	10/28/13 12:18
Client ID:	PA-VC024-1-2.6-4.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	81%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	0.958		mg/kg	0.033	0.004	2	12/03/13 18:00	12/06/13 16:45	EPA 3050B	1,6020A	PD
Cadmium, Total	0.011	J	mg/kg	0.013	0.002	2	12/03/13 18:00	12/06/13 16:45	EPA 3050B	1,6020A	PD
Copper, Total	6.23		mg/kg	0.131	0.007	2	12/03/13 18:00	12/06/13 16:45	EPA 3050B	1,6020A	PD
Lead, Total	3.96		mg/kg	0.196	0.063	10	12/03/13 18:00	12/06/13 17:15	EPA 3050B	1,6020A	PD
Mercury, Total	ND		mg/kg	0.016	0.002	5	12/03/13 18:00	12/09/13 17:39	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-04	Date Collected:	10/28/13 15:04
Client ID:	PA-06-0.0-2.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	80%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	3.79		mg/kg	0.032	0.004	2	12/03/13 18:00	12/06/13 16:48	EPA 3050B	1,6020A	PD
Cadmium, Total	0.015		mg/kg	0.013	0.002	2	12/03/13 18:00	12/06/13 16:48	EPA 3050B	1,6020A	PD
Copper, Total	3.50		mg/kg	0.130	0.007	2	12/03/13 18:00	12/06/13 16:48	EPA 3050B	1,6020A	PD
Lead, Total	4.36		mg/kg	0.039	0.013	2	12/03/13 18:00	12/06/13 16:48	EPA 3050B	1,6020A	PD
Mercury, Total	0.008	J	mg/kg	0.015	0.002	5	12/03/13 18:00	12/09/13 17:42	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-05	Date Collected:	10/28/13 16:07
Client ID:	PA-05-0.0-3.9	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	84%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	2.13		mg/kg	0.031	0.004	2	12/03/13 18:00	12/06/13 16:49	EPA 3050B	1,6020A	PD
Cadmium, Total	0.011	J	mg/kg	0.013	0.002	2	12/03/13 18:00	12/06/13 16:49	EPA 3050B	1,6020A	PD
Copper, Total	0.860		mg/kg	0.125	0.007	2	12/03/13 18:00	12/06/13 16:49	EPA 3050B	1,6020A	PD
Lead, Total	0.933		mg/kg	0.038	0.012	2	12/03/13 18:00	12/06/13 16:49	EPA 3050B	1,6020A	PD
Mercury, Total	0.002	J	mg/kg	0.015	0.002	5	12/03/13 18:00	12/09/13 17:44	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-06	Date Collected:	10/28/13 17:12
Client ID:	PA-04-0.0-2.1	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	79%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	1.13		mg/kg	0.035	0.004	2	12/03/13 18:00	12/06/13 16:51	EPA 3050B	1,6020A	PD
Cadmium, Total	0.005	J	mg/kg	0.014	0.002	2	12/03/13 18:00	12/06/13 16:51	EPA 3050B	1,6020A	PD
Copper, Total	1.38		mg/kg	0.140	0.008	2	12/03/13 18:00	12/06/13 16:51	EPA 3050B	1,6020A	PD
Lead, Total	0.655		mg/kg	0.042	0.014	2	12/03/13 18:00	12/06/13 16:51	EPA 3050B	1,6020A	PD
Mercury, Total	0.005	J	mg/kg	0.017	0.002	5	12/03/13 18:00	12/09/13 17:47	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-07	Date Collected:	10/28/13 17:12
Client ID:	PA-04D-0.0-2.1	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	77%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	1.15		mg/kg	0.035	0.004	2	12/03/13 18:00	12/06/13 16:52	EPA 3050B	1,6020A	PD
Cadmium, Total	0.007	J	mg/kg	0.014	0.002	2	12/03/13 18:00	12/06/13 16:52	EPA 3050B	1,6020A	PD
Copper, Total	1.50		mg/kg	0.139	0.008	2	12/03/13 18:00	12/06/13 16:52	EPA 3050B	1,6020A	PD
Lead, Total	0.723		mg/kg	0.042	0.013	2	12/03/13 18:00	12/06/13 16:52	EPA 3050B	1,6020A	PD
Mercury, Total	0.006	J	mg/kg	0.016	0.002	5	12/03/13 18:00	12/09/13 17:49	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-08	Date Collected:	10/28/13 18:04
Client ID:	PA-VC023-1-1.5-3.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	59%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	16.1		mg/kg	0.047	0.006	2	12/03/13 18:00	12/06/13 16:53	EPA 3050B	1,6020A	PD
Cadmium, Total	0.072		mg/kg	0.019	0.002	2	12/03/13 18:00	12/06/13 16:53	EPA 3050B	1,6020A	PD
Copper, Total	13.0		mg/kg	0.188	0.011	2	12/03/13 18:00	12/06/13 16:53	EPA 3050B	1,6020A	PD
Lead, Total	10.0		mg/kg	0.283	0.091	10	12/03/13 18:00	12/06/13 17:16	EPA 3050B	1,6020A	PD
Mercury, Total	0.017	J	mg/kg	0.022	0.003	5	12/03/13 18:00	12/09/13 17:52	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-09	Date Collected:	10/29/13 12:22
Client ID:	PA-ARCHY 8-1-3.2-7.0	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	68%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	4.96		mg/kg	0.040	0.005	2	12/03/13 18:00	12/06/13 16:54	EPA 3050B	1,6020A	PD
Cadmium, Total	0.040		mg/kg	0.016	0.002	2	12/03/13 18:00	12/06/13 16:54	EPA 3050B	1,6020A	PD
Copper, Total	5.49		mg/kg	0.161	0.009	2	12/03/13 18:00	12/06/13 16:54	EPA 3050B	1,6020A	PD
Lead, Total	2.78		mg/kg	0.048	0.016	2	12/03/13 18:00	12/06/13 16:54	EPA 3050B	1,6020A	PD
Mercury, Total	0.005	J	mg/kg	0.018	0.002	5	12/03/13 18:00	12/09/13 18:00	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-10	Date Collected:	10/29/13 13:12
Client ID:	PA-ARCHY 9-1-0.0-3.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	80%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	9.84		mg/kg	0.037	0.005	2	12/03/13 18:00	12/06/13 17:02	EPA 3050B	1,6020A	PD
Cadmium, Total	0.025		mg/kg	0.015	0.002	2	12/03/13 18:00	12/06/13 17:02	EPA 3050B	1,6020A	PD
Copper, Total	2.64		mg/kg	0.147	0.008	2	12/03/13 18:00	12/06/13 17:02	EPA 3050B	1,6020A	PD
Lead, Total	4.73		mg/kg	0.044	0.014	2	12/03/13 18:00	12/06/13 17:02	EPA 3050B	1,6020A	PD
Mercury, Total	ND		mg/kg	0.016	0.002	5	12/03/13 18:00	12/09/13 18:12	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-11	Date Collected:	10/29/13 13:46
Client ID:	PA-03-0.0-3.4	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	74%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	2.89		mg/kg	0.036	0.004	2	12/03/13 18:00	12/06/13 17:03	EPA 3050B	1,6020A	PD
Cadmium, Total	0.034		mg/kg	0.015	0.002	2	12/03/13 18:00	12/06/13 17:03	EPA 3050B	1,6020A	PD
Copper, Total	4.53		mg/kg	0.145	0.008	2	12/03/13 18:00	12/06/13 17:03	EPA 3050B	1,6020A	PD
Lead, Total	4.77		mg/kg	0.044	0.014	2	12/03/13 18:00	12/06/13 17:03	EPA 3050B	1,6020A	PD
Mercury, Total	0.011	J	mg/kg	0.017	0.002	5	12/03/13 18:00	12/09/13 18:15	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-12	Date Collected:	10/29/13 14:38
Client ID:	PA-02-0.0-2.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	79%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	7.96		mg/kg	0.035	0.004	2	12/03/13 18:00	12/06/13 17:04	EPA 3050B	1,6020A	PD
Cadmium, Total	0.052		mg/kg	0.014	0.002	2	12/03/13 18:00	12/06/13 17:04	EPA 3050B	1,6020A	PD
Copper, Total	1.63		mg/kg	0.139	0.008	2	12/03/13 18:00	12/06/13 17:04	EPA 3050B	1,6020A	PD
Lead, Total	3.93		mg/kg	0.042	0.013	2	12/03/13 18:00	12/06/13 17:04	EPA 3050B	1,6020A	PD
Mercury, Total	0.003	J	mg/kg	0.016	0.002	5	12/03/13 18:00	12/09/13 18:17	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-13	Date Collected:	10/29/13 15:52
Client ID:	PA-01-0.0-3.5	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	80%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	3.65		mg/kg	0.033	0.004	2	12/03/13 18:00	12/06/13 17:05	EPA 3050B	1,6020A	PD
Cadmium, Total	0.009	J	mg/kg	0.013	0.002	2	12/03/13 18:00	12/06/13 17:05	EPA 3050B	1,6020A	PD
Copper, Total	0.985		mg/kg	0.134	0.008	2	12/03/13 18:00	12/06/13 17:05	EPA 3050B	1,6020A	PD
Lead, Total	3.73		mg/kg	0.040	0.013	2	12/03/13 18:00	12/06/13 17:05	EPA 3050B	1,6020A	PD
Mercury, Total	0.006	J	mg/kg	0.016	0.002	5	12/03/13 18:00	12/09/13 18:20	EPA 7474	1,7474	AK

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

SAMPLE RESULTS

Lab ID:	L1323606-14	Date Collected:	10/23/13 10:00
Client ID:	PA-08-1.0-4.7	Date Received:	11/01/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	70%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	7.12		mg/kg	0.040	0.005	2	12/03/13 18:00	12/06/13 17:07	EPA 3050B	1,6020A	PD
Cadmium, Total	0.125		mg/kg	0.016	0.002	2	12/03/13 18:00	12/06/13 17:07	EPA 3050B	1,6020A	PD
Copper, Total	6.95		mg/kg	0.160	0.009	2	12/03/13 18:00	12/06/13 17:07	EPA 3050B	1,6020A	PD
Lead, Total	6.48		mg/kg	0.239	0.077	10	12/03/13 18:00	12/06/13 17:17	EPA 3050B	1,6020A	PD
Mercury, Total	0.007	J	mg/kg	0.018	0.002	5	12/03/13 18:00	12/09/13 18:22	EPA 7474	1,7474	AK

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

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): 01-14 Batch: WG655883-1										
Arsenic, Total	0.022	J	mg/kg	0.050	0.006	2	12/03/13 18:00	12/06/13 16:40	1,6020A	PD
Cadmium, Total	ND		mg/kg	0.020	0.003	2	12/03/13 18:00	12/06/13 16:40	1,6020A	PD
Copper, Total	0.036	J	mg/kg	0.200	0.011	2	12/03/13 18:00	12/06/13 16:40	1,6020A	PD
Lead, Total	ND		mg/kg	0.060	0.019	2	12/03/13 18:00	12/06/13 16:40	1,6020A	PD

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-14 Batch: WG655885-1										
Mercury, Total	ND		mg/kg	0.013	0.002	5	12/03/13 18:00	12/09/13 17:29	1,7474	AK

Prep Information

Digestion Method: EPA 7474

Lab Control Sample Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-14 Batch: WG655883-2 SRM Lot Number: A2METSPIKE								
Arsenic, Total	101		-		75-125	-		20
Cadmium, Total	105		-		75-125	-		20
Copper, Total	102		-		75-125	-		20
Lead, Total	102		-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-14 Batch: WG655885-2 SRM Lot Number: HPHGAF								
Mercury, Total	96		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

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): 01-14 QC Batch ID: WG655883-4 WG655883-5 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0												
Arsenic, Total	4.96	162	168	100		172	103		75-125	2		20
Cadmium, Total	0.040	81.2	81.3	100		82.4	102		75-125	1		20
Copper, Total	5.49	162	165	98		165	99		75-125	0		20
Lead, Total	2.78	162	136	82		139	84		75-125	2		20
Total Metals - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG655885-4 WG655885-5 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0												
Mercury, Total	0.005J	0.923	0.929	101		0.933	100		80-120	0		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2(

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG655883-3 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0						
Arsenic, Total	4.96	4.52	mg/kg	9		20
Cadmium, Total	0.040	0.036	mg/kg	10		20
Copper, Total	5.49	5.33	mg/kg	3		20
Lead, Total	2.78	2.70	mg/kg	3		20
Total Metals - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG655885-3 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0						
Mercury, Total	0.005J	0.004J	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-01
Client ID: PA-07-0.0-3.0
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 09:38
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.140		%	0.010	0.010	1	-	12/12/13 17:08	1,9060	SS
Total Organic Carbon (Rep2)	0.121		%	0.010	0.010	1	-	12/12/13 17:08	1,9060	SS
General Chemistry - Mansfield Lab										
Solids, Total	88.5		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-02
Client ID: PA-VC025-1-0.0-3.3
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 11:02
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.072		%	0.010	0.010	1	-	12/12/13 18:05	1,9060	SS
Total Organic Carbon (Rep2)	0.078		%	0.010	0.010	1	-	12/12/13 18:05	1,9060	SS
General Chemistry - Mansfield Lab										
Solids, Total	85.7		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-03
Client ID: PA-VC024-1-2.6-4.5
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 12:18
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.040		%	0.010	0.010	1	-	12/12/13 17:31	1,9060	SS
Total Organic Carbon (Rep2)	0.043		%	0.010	0.010	1	-	12/12/13 17:31	1,9060	SS
General Chemistry - Mansfield Lab										
Solids, Total	81.2		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-04
Client ID: PA-06-0.0-2.5
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 15:04
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.063		%	0.010	0.010	1	-	12/13/13 11:25	1,9060	JK
Total Organic Carbon (Rep2)	0.075		%	0.010	0.010	1	-	12/13/13 11:25	1,9060	JK
General Chemistry - Mansfield Lab										
Solids, Total	80.0		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-05
Client ID: PA-05-0.0-3.9
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 16:07
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.089		%	0.010	0.010	1	-	12/13/13 11:36	1,9060	JK
Total Organic Carbon (Rep2)	0.100		%	0.010	0.010	1	-	12/13/13 11:36	1,9060	JK
General Chemistry - Mansfield Lab										
Solids, Total	83.7		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-06
Client ID: PA-04-0.0-2.1
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 17:12
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.011		%	0.010	0.010	1	-	12/13/13 11:47	1,9060	JK
Total Organic Carbon (Rep2)	0.014		%	0.010	0.010	1	-	12/13/13 11:47	1,9060	JK
General Chemistry - Mansfield Lab										
Solids, Total	78.8		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-07
Client ID: PA-04D-0.0-2.1
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 17:12
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	ND		%	0.010	0.010	1	-	12/13/13 12:21	1,9060	JK
Total Organic Carbon (Rep2)	ND		%	0.010	0.010	1	-	12/13/13 12:21	1,9060	JK
General Chemistry - Mansfield Lab										
Solids, Total	76.6		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-08
Client ID: PA-VC023-1-1.5-3.0
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 18:04
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	1.74		%	0.010	0.010	1	-	12/13/13 12:33	1,9060	JK
Total Organic Carbon (Rep2)	1.70		%	0.010	0.010	1	-	12/13/13 12:33	1,9060	JK
General Chemistry - Mansfield Lab										
Solids, Total	58.6		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-09
Client ID: PA-ARCHY 8-1-3.2-7.0
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/29/13 12:22
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.404		%	0.010	0.010	1	-	12/13/13 12:50	1,9060	JK
Total Organic Carbon (Rep2)	0.467		%	0.010	0.010	1	-	12/13/13 12:50	1,9060	JK
General Chemistry - Mansfield Lab										
Solids, Total	67.7		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-10
Client ID: PA-ARCHY 9-1-0.0-3.5
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/29/13 13:12
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.285		%	0.010	0.010	1	-	12/13/13 13:58	1,9060	JK
Total Organic Carbon (Rep2)	0.291		%	0.010	0.010	1	-	12/13/13 13:58	1,9060	JK
General Chemistry - Mansfield Lab										
Solids, Total	79.5		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-11
Client ID: PA-03-0.0-3.4
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/29/13 13:46
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.134		%	0.010	0.010	1	-	12/13/13 14:09	1,9060	JK
Total Organic Carbon (Rep2)	0.132		%	0.010	0.010	1	-	12/13/13 14:09	1,9060	JK
General Chemistry - Mansfield Lab										
Solids, Total	74.2		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-12
Client ID: PA-02-0.0-2.5
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/29/13 14:38
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.080		%	0.010	0.010	1	-	12/13/13 14:15	1,9060	JK
Total Organic Carbon (Rep2)	0.136		%	0.010	0.010	1	-	12/13/13 14:15	1,9060	JK
General Chemistry - Mansfield Lab										
Solids, Total	78.6		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-13
Client ID: PA-01-0.0-3.5
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/29/13 15:52
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.071		%	0.010	0.010	1	-	12/13/13 14:32	1,9060	JK
Total Organic Carbon (Rep2)	0.080		%	0.010	0.010	1	-	12/13/13 14:32	1,9060	JK
General Chemistry - Mansfield Lab										
Solids, Total	79.5		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

SAMPLE RESULTS

Lab ID: L1323606-14
Client ID: PA-08-1.0-4.7
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/23/13 10:00
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab										
Total Organic Carbon (Rep1)	0.704		%	0.010	0.010	1	-	12/13/13 15:06	1,9060	JK
Total Organic Carbon (Rep2)	0.499		%	0.010	0.010	1	-	12/13/13 15:06	1,9060	JK
General Chemistry - Mansfield Lab										
Solids, Total	69.6		%	0.100	0.100	1	-	11/25/13 15:30	30,2540G	EA

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Organic Carbon - Mansfield Lab for sample(s): 01-03 Batch: WG658635-1										
Total Organic Carbon (Rep1)	ND		%	0.010	0.010	1	-	12/12/13 12:44	1,9060	SS
Total Organic Carbon (Rep2)	ND		%	0.010	0.010	1	-	12/12/13 12:44	1,9060	SS
Total Organic Carbon - Mansfield Lab for sample(s): 04-14 Batch: WG658910-1										
Total Organic Carbon (Rep1)	ND		%	0.010	0.010	1	-	12/13/13 11:19	1,9060	JK
Total Organic Carbon (Rep2)	ND		%	0.010	0.010	1	-	12/13/13 11:19	1,9060	JK

Matrix Spike Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Organic Carbon - Mansfield Lab Associated sample(s): 04-14 QC Batch ID: WG658910-4 WG658910-5 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0												
Total Organic Carbon (Rep1)	0.404	1	1.42	108		1.34	102		75-125	6		25
Total Organic Carbon (Rep2)	0.467	1	1.56	106		1.70	98		75-125	9		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2(

Lab Number: L1323606
Report Date: 12/13/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01-14 QC Batch ID: WG654402-1 QC Sample: L1323606-01 Client ID: PA-07-0.0-3.0						
Solids, Total	88.5	91.3	%	3		10
Total Organic Carbon - Mansfield Lab Associated sample(s): 04-14 QC Batch ID: WG658910-3 QC Sample: L1323606-09 Client ID: PA-ARCHY 8-1-3.2-7.0						
Total Organic Carbon (Rep1)	0.404	0.440	%	9		25
Total Organic Carbon (Rep2)	0.467	0.580	%	22		25

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

S.R.M. Standard Quality Control

Standard Reference Material (SRM): WG658635-2

Parameter	% Recovery	Qual	QC Criteria
Total Organic Carbon (Rep1)	90		75-125
Total Organic Carbon (Rep2)	97		75-125

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606

Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

S.R.M. Standard Quality Control

Standard Reference Material (SRM): WG658910-2

Parameter	% Recovery	Qual	QC Criteria
Total Organic Carbon (Rep1)	101		75-125
Total Organic Carbon (Rep2)	100		75-125

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 11/01/2013 15:40

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1323606-01A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-01B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-01C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-01D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-02A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-02B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-02C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-02D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-03A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-03B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-03C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-03D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-04A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-04B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-04C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)

*Values in parentheses indicate holding time in days

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1323606-04D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-05A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-05B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-05C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-05D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-06A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-06B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-06C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-06D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-07A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-07B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-07C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-07D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-08A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-08B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-08C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-08D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-09A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-09B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)

*Values in parentheses indicate holding time in days

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1323606-09C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-09D	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-09E	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-09F	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-09G	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-09H	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-10A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-10B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-10C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-10D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-11A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-11B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-11C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-11D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-12A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-12B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-12C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-12D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-13A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)

*Values in parentheses indicate holding time in days

Project Name: PORT AMBROSE 2013
Project Number: PORT AMBROSE 2013

Lab Number: L1323606
Report Date: 12/13/13

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1323606-13B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-13C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-13D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)
L1323606-14A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-14B	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-14C	Vial water preserved	A	N/A	4.7	Y	Absent	NYTCL-8260HLW-BTEX(14)
L1323606-14D	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-PB-6020T(180),A2-PEST-8081(14),A2-HG-7474T(28),A2-PCB-8082(14),A2-TS(7),A2-AS-6020T(180),A2-PAH-8270SIM(14),A2-CD-6020T(180),A2-TOC-9060-2REPS(28),A2-CU-6020T(180)

Container Comments

L1323606-12B

L1323606-14B

*Values in parentheses indicate holding time in days

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

GLOSSARY

Acronyms

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).
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.
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.
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.
NI	- Not Ignitable.
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.

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.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
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.
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.
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.

Report Format: DU Report with 'J' Qualifiers

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1323606
Project Number:	PORT AMBROSE 2013	**Report Date:**	12/13/13

Data Qualifiers

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

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.

Report Format: DU Report with 'J' Qualifiers

Project Name: PORT AMBROSE 2013 **Lab Number:** L1323606
Project Number: PORT AMBROSE 2013 **Report Date:** 12/13/13

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

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

Last revised December 11, 2013

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

Westborough Facility
EPA 524.2: Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.
EPA 8260C: 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.
EPA 8330A/B: PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.
EPA 8270D: 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 625: 4-Chloroaniline, 4-Methylphenol.
SM4500: Soil: Total Phosphorus, TKN, NO2, NO3.
EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility
EPA 8270D: Biphenyl.
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.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water
EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;
EPA 300.0: 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**
EPA 332: Perchlorate.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water
EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;
EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;
EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F,**
EPA 353.2: Nitrate-N**, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

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

Serial No:12131317:47

L1523606

2 of 2

~~L1322168~~

AECOM

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1
Cooler # 1 of 2

Task:	Port Ambrose 2013
Total # of Samples: 11	Event Complete?
TAT	standard
Rush	

Notes: F= Field Filtered , H= Hold

Lab Information:		Project Information:		Other Information:	
Lab:	Alpha Analytical	Site ID #:	Port Ambrose 2013	Send Data/Invoice	James Blake
Address:	320 Forbes Blvd, Mansfield, MA 02048	Project #		Address:	89 Water Street
		Site Address		City/State.	Woods Hole, MA 02543 Phone #: 508-457-7900
Lab PM:	Elizabeth Porta	City	State, Zip	PO #	
Phone/Fax:	508-844-4124	PM Name	James Blake	Send EDD to	N/A
PM email	eporta@alphalab.com	Phone/Fax:	508-457-7900	CC Hardcopy to	
Lab Quote #:		PM Email:	james.blake@aecom.com	CC Hardcopy to	

ITEM #	Field Sample No. /identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis / Preservative / Lab Notes	Metals (As, Cd, Pb, Hg)	Total PCB Aroclor	Pesticides	PAHs	Volatiles (BTX)	Grain size (#4, 10, 40, 200)	TOC	Dioxin/Furans
01	PA-07-0.0-3.0	SE	G	10/28/2013 0938AM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X	X	X	X	X	1	X	X
02	PA-VCO25-1-0.0-3.3	SE	G	10/28/2013 1102 AM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X	X	X	X	X	1	X	X
	PA-VCO24-1-0.0-2.6	SE	G	10/28/2013 1218 PM	1								1		
03	PA-VCO24-1-2.6-4.5	SE	G	10/28/2013 1218 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X	X	X	X	X	1	X	X
	PA-VC024-1-4.5-6.2	SE	G	10/28/2013 1218 PM	1								1		
04	PA-06-0.0-2.5	SE	G	10/28/2013 1504 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X	X	X	X	X	1	X	X
05	PA-05-0.0-3.9	SE	G	10/28/2013 1607 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X	X	X	X	X	1	X	X
06	PA-04-0.0-2.1	SE	G	10/28/2013 1712 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X	X	X	X	X	1	X	X
07	PA-04D-0.0-2.1	SE	G	10/28/2013 1712 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X	X	X	X	X	1	X	X
	PA-VCO23-1-0.0-1.5	SE	G	10/28/2013 1804 PM	1								1		
08	PA-VC023-1-1.5-3.0	SE	G	10/28/2013 1804 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X	X	X	X	X	1	X	X

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] AECOM	11/1/13	1350	[signature]	11/1/13	1350
[signature]	11/1/13	1525	[signature]	11/1/13	15:25

CARRIER:	COURIER	DATE/TIME:	
TRACKING #:			

Sample Receipt Conditions

Temp in 0C	Samples on Ice?	Sample intact?	Trip Blank?
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

Pa

1 of 2

AECOM

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1
Cooler # 2 of 2

Task: Port Ambrose 2013
Total # of Samples: 6
Event Complete?

TAT: standard | Rush:

Notes: F= Field Filtered , H= Hold

Lab Information:

Lab:	Alpha Analytical
Address:	320 Forbes Blvd, Mansfield, MA 02048
Lab PM:	Elizabeth Porta
Phone/Fax:	508-844-4124
PM email	eports@alphalab.com
Lab Quote #:	

Project Information:

Site ID #:	Port Ambrose 2013
Project #	
Site Address	
City	State, Zip
PM Name	James Blake
Phone/Fax:	508-457-7900
PM Email:	james.blake@aecom.com

Other Information:

Send Data/Invoice	James Blake
Address:	89 Water Street
City/State.	Woods Hole, MA 02543
Phone #:	508-457-7900
PO #	
Send EDD to	N/A
CC Hardcopy to	
CC Hardcopy to	

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Metals (As, Cd, Pb, Hg)	Total PCB Aroclor	Pesticides	PAHs	Volatiles (BTX)	Grain size (#4, 10, 40, 200)	TOC	Dioxin/Furans
[redacted]	PA-Archy 8-1-0.0-3.2	SE	G	10/29/2013 1222	1							1		
-09 [redacted]	PA-Archy 8-1-3.2-7.0	SE	G	10/29/2013 1222	6	MS/MSD HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
-10 [redacted]	PA-Archy 9-1-0.0-3.5	SE	G	10/29/2013 1312	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
-11 [redacted]	PA-03-0.0-3.4	SE	G	10/29/2013 1346	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
-12 [redacted]	PA-02-0.0-2.5	SE	G	10/29/2013 1438	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
-13 [redacted]	PA-01-0.0-3.5	SE	G	10/29/2013 1552	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X

10/31/13

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
AECOM	11/1/13	1350		11/1/13	1350
	11/1/13	1523		11/1/13	15:23

Sample Receipt Conditions			
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
Temp in OC	Samples on Ice?	Sample intact?	Trip Blank?

CARRIER:	COURIER	DATE/TIME:	
TRACKING #:			

LF3235606

[redacted]

AECOM (1)

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1
Cooler # of

Task:	Port Ambrose 2013
Total # of Samples: 2	Event Complete?
TAT	standard
Rush	

Notes: F= Field Filtered , H= Hold

Lab Information:		Project Information:		Other Information:	
Lab:	Alpha Analytical	Site ID #:	Port Ambrose 2013	Send Data/Invoice	James Blake
Address:	320 Forbes Blvd, Mansfield, MA 02048	Project #		Address:	89 Water Street
		Site Address		City/State.	Woods Hole, MA 02643
				Phone #:	508-457-7900
Lab PM:	Elizabeth Porta	City	State, Zip	PO #	
Phone/Fax:	508-644-4124	PM Name	James Blake	Send EDD to	N/A
PM email	eporta@alphalab.com	Phone/Fax:	508-457-7900	CC Hardcopy to	
Lab Quote #:		PM Email:	james.blake@aecom.com	CC Hardcopy to	

Lab Notes

Preservative

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Metals (As, Cd, Pb, Hg)	Total PCB Aroclor	Pesticides	PAHs	Volatiles (BTX)	Grain size (#4, 10, 40, 200)	TOC	Dioxin/Furans
1	PA-08-0.0-1.0	SE	G	10/23/2013 1000 AM	1								1		
-14	PA-08-1.0-4.7	SE	G	10/23/2013 1000 AM	1	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X	X	X	X	X	1	X	X

10/25/13

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature]	10/25/13	1645	[signature]	10/25/13	1645
[signature]	10/25/13	1745	[signature]	10/25/13	1750
[signature]	10/25/13	1845	[signature]	10/25/13	1845

CARRIER:	COURIER	DATE/TIME:	
TRACKING #:	N/A		

Sample Receipt Conditions

Temp in 0C	Samples on Ice?	Sample intact?	Trip Blank?
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

L1323606

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AECOM

CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 1
Cooler # 1 of 2

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

Task:	Port Ambrose 2013
Total # of Samples: 11	Event Complete?
TAT	standard
Rush	

Notes: F= Field Filtered , H= Hold

Lab Information:		Project Information:		Other Information:	
Lab:	Alpha Analytical	Site ID #:	Port Ambrose 2013	Send Data/Invoice	James Blake
Address:	320 Forbes Blvd, Mansfield, MA 02048	Project #		Address:	89 Water Street
		Site Address		City/State.	Woods Hole, MA 02543 Phone #: 508-457-7900
Lab PM:	Elizabeth Porta	City	State, Zip	PO #	
Phone/Fax:	508-644-4124	PM Name	James Blake	Send EDD to	N/A
PM email	eporta@alphalab.com	Phone/Fax:	508-457-7900	CC Hardcopy to	
Lab Quote #:		PM Email:	james.blake@aecom.com	CC Hardcopy to	

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Volatiles (BTX)
01	PA-07-0.0-3.0	SE	G	10/28/2013 0938AM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	[redacted]	X
02	PA-VCO25-1-0.0-3.3	SE	G	10/28/2013 1102 AM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	[redacted]	X
	PA-VCO24-1-0.0-2.6	SE	G	10/28/2013 1218 PM	1		[redacted]	
03	PA-VCO24-1-2.6-4.5	SE	G	10/28/2013 1218 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	[redacted]	X
	PA-VC024-1-4.5-6.2	SE	G	10/28/2013 1218 PM	1		[redacted]	
04	PA-06-0.0-2.5	SE	G	10/28/2013 1504 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	[redacted]	X
05	PA-05-0.0-3.9	SE	G	10/28/2013 1607 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	[redacted]	X
06	PA-04-0.0-2.1	SE	G	10/28/2013 1712 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	[redacted]	X
07	PA-04D-0.0-2.1	SE	G	10/28/2013 1712 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	[redacted]	X
	PA-VCO23-1-0.0-1.5	SE	G	10/28/2013 1804 PM	1		[redacted]	
08	PA-VC023-1-1.5-3.0	SE	G	10/28/2013 1804 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	[redacted]	X

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature]	11/1/13	1350	[signature]	11/1/13	1355
[signature]	11/1/13	1505	[signature]	11/1/13	15:25
[signature]	11/21/13	11:50	MCM	11/21/13	1315

Sample Receipt Conditions	Temp in 0C	Samples on Ice?	Sample intact?	Trip Blank?
		Y/N	Y/N	Y/N
		Y/N	Y/N	Y/N
		Y/N	Y/N	Y/N
		Y/N	Y/N	Y/N

CARRIER:	COURIER REL MCM	11/21/13	DATE/TIME: 1620
TRACKING #:	[signature]	11/21/13 16:20	

L1323606

1 of 2

AECOM

CHAIN-OF-CUSTODY / Analytical Request Document

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Page: 1 of 1
Cooler # 2 of 2

Task:	Port Ambrose 2013
Total # of Samples: 6	Event Complete?
TAT	standard
Rush	

Notes: F= Field Filtered , H= Hold

Lab Information:		Project Information:		Other Information:	
Lab:	Alpha Analytical	Site ID #:	Port Ambrose 2013	Send Data/Invoice	James Blake
Address:	320 Forbes Blvd, Mansfield, MA 02048	Project #		Address:	89 Water Street
		Site Address		City/State,	Woods Hole, MA 02543 Phone #: 508-457-7900
Lab PM:	Elizabeth Porta	City	State, Zip	PO #	
Phone/Fax:	508-844-4124	PM Name	James Blake	Send EDD to	N/A
PM email	eports@alphalab.com	Phone/Fax:	508-457-7900	CC Hardcopy to	
Lab Quote #:		PM Email:	james.blake@aecom.com	CC Hardcopy to	

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis	Volatiles (BTX)
	PA-Archy 8-1-0.0-3.2	SE	G	10/29/2013 1222	1			
-09	PA-Archy 8-1-3.2-7.0	SE	G	10/29/2013 1222	6	MS/MSD HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X
-10	PA-Archy 9-1-0.0-3.5	SE	G	10/29/2013 1312	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X
-11	PA-03-0.0-3.4	SE	G	10/29/2013 1346	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X
-12	PA-02-0.0-2.5	SE	G	10/29/2013 1438	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X
-13	PA-01-0.0-3.5	SE	G	10/29/2013 1552	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL		X

10/31/13

11/1/13

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[illegible]	[illegible]	1350	[illegible]	11/1/13	1350
[illegible]	[illegible]	[illegible]	1525 [illegible]	11/1/13	1525
[illegible]	11/21/13	11:50	[illegible]	11/21/13	1315

Sample Receipt Conditions			
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
Temp in DC	Samples on Ice?	Sample intact?	Trip Blank?

CARRIER: COURIER REL [illegible] 11/21/13 DATE/TIME: 1620

TRACKING #: [illegible] 11/21/13 16:20

1323606

AECOM (1)

CHAIN-OF-CUSTODY / Analytical Request Document

[redacted]

Page: 1 of 1
Cooler # of

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

Task: Port Ambrose 2013
Total # of Samples: 2 Event Complete?

Lab Information:
Lab: Alpha Analytical
Address: 320 Forbes Blvd, Mansfield, MA 02048
Lab PM: Elizabeth Porta
Phone/Fax: 508-844-4124
PM email: eporta@alphalab.com
Lab Quote #:

Project Information:
Site ID #: Port Ambrose 2013
Project #
Site Address
City State, Zip
PM Name: James Blake
Phone/Fax: 508-457-7900
PM Email: james.blake@aecom.com

Other Information:
Send Data/Invoice: James Blake
Address: 89 Water Street
City/State: Woods Hole, MA 02543 Phone #: 508-457-7900
PO #
Send EDD to: N/A
CC Hardcopy to
CC Hardcopy to

TAT: standard Rush

Notes: F= Field Filtered, H= Hold

Lab Notes

Preservative

Analysis: [redacted] Volatiles (BTX)

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	[redacted]	[redacted]	[redacted]	[redacted]	Volatiles (BTX)	[redacted]	[redacted]	[redacted]
1	PA-08-0.0-1.0	SE	G	10/23/2013 1000 AM	1									
2	PA-08-1.0-4.7	SE	G	10/23/2013 1000 AM	1	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL					X			

10/25/13

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[illegible]	10/25/13	1645	[illegible]	10/25/13	1645
[illegible]	10/25/13	1745	[illegible]	10/25/13	1750
[illegible]	10/25/13	1845	[illegible]	10/25/13	1845
[illegible]	11/21/13	1150	[illegible]	11/21/13	12[illegible]

Sample Receipt Conditions	Temp in OC	Samples on Ice?	Sample intact?	Trip Blank?
	Y/N	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N	Y/N

CARRIER: COURIER REC 11/21/13 DATE/TIME: 1620

TRACKING #: [illegible] 11/21/13 16:20

APPENDIX D
CHEMISTRY RESULTS: DIOXIN-FURANS DATA AND QA/QC

12 December 2013

Liz Porta
Alpha Analytical
320 Forbes Blvd
Mansfield, MA 02048

Ph.: 508-844-4124
Fax: 508-822-3288
Email: eporta@alphalab.com

Subject: Certificate of Results

Dear Liz;

Attached to this narrative are the analytical results you requested on the samples submitted for the determination of polychlorinated dibenzo-p-dioxins and dibenzofurans. The insert below summarizes the relevant information pertaining to your project. In particular, QC annotations bring to your attention specific analytical observations and assessments made during the sample handling and data interpretation phases. Results reported relate only to the items tested.

Project Information Summary	When applicable, see QC Annotations for details
Client Project No.	L1323611
AP Project #	**A6211**
Analytical Protocol	Method 1613B
No. Samples Submitted	14
No. Samples Analyzed	14 plus MS/MSD
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
No. Outstanding Samples	0
Date Received	22-Nov-2013
Condition Received	good
Temperature upon Receipt (C)	3
Extraction within Holding Time	yes
Analysis within Holding Time	yes
Data meet QA/QC Requirements	yes
Exceptions	none
Analytical Difficulties	none

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QC Annotations:

Please see Appendix A & B attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Analytical Perspectives Certification IDs:

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SGS Analytical Perspectives remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please do not hesitate to contact us.

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Sincerely,

Amy J. Boehm
Senior Project Manager

APPENDIX A: DATA QUALIFIERS / DATA ATTRIBUTES	
>	Indicates high recoveries. Shown with the numeric value at the top of the range.[1]
B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve).
EMPC	Represents an Estimated Maximum Possible Concentration. EMPC's arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
ETH	Indicates the presence of a diphenyl ether that appears to interfere with the quantitation of a furan. The reported concentration is the maximum.
H/h	If the standard recovery is below the method or SOP specified value "H" is assigned. If the obtained value is less than half the specified value "h" is assigned.[1]
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve).
ND	Indicates a non-detect.
NR	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes "Single Ion Mode" and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.[1]
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.
X	Indicates results reported from reinjection, refractionation, or repeat analyses.
APPENDIX B: LAB ID IDENTIFIERS	
AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

[1]Denotes data qualifiers/attributes whose use will be phased out over time

Sample ID: PA-07-0.0-3.0 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.09 g	Lab Sample ID	A6211_11635_DF_001	Date Extracted:	03-Dec-2013
Date Collected:	28-Oct-2013	% Solids:	89.9 %	QC Batch No:	11635	Date Analyzed:	08-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	20:54:11

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.179			ES 2378-TCDD	55.3	
12378-PeCDD	ND	0.171			ES 12378-PeCDD	50.5	
123478-HxCDD	ND	0.245			ES 123478-HxCDD	49.7	
123678-HxCDD	ND	0.26			ES 123678-HxCDD	50.2	
123789-HxCDD	ND	0.256			ES 123789-HxCDD	50.4	
1234678-HpCDD	1.1			J B	ES 1234678-HpCDD	40.7	
OCDD	14				ES OCDD	42.1	
2378-TCDF	ND	0.129			ES 2378-TCDF	55.7	
12378-PeCDF	ND	0.106			ES 12378-PeCDF	51	
23478-PeCDF	ND	0.104			ES 23478-PeCDF	51.3	
123478-HxCDF	ND	0.151			ES 123478-HxCDF	40.3	
123678-HxCDF	ND	0.15			ES 123678-HxCDF	41.8	
234678-HxCDF	ND	0.165			ES 234678-HxCDF	42.6	
123789-HxCDF	ND	0.208			ES 123789-HxCDF	43.4	
1234678-HpCDF	0.415			J	ES 1234678-HpCDF	39.7	
1234789-HpCDF	ND	0.158			ES 1234789-HpCDF	40.4	
OCDF	EMPC		0.465	J	ES OCDF	40.8	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	59.8	
Total TCDD	2.07		2.07		CS 12347-PeCDD	55.1	
Total PeCDD	ND	0.171	ND		CS 12346-PeCDF	53.4	
Total HxCDD	0.748		1.12		CS 123469-HxCDF	50.7	
Total HpCDD	3.44		3.44		CS 1234689-HpCDF	41.2	
					AS 1368-TCDD	57.6	
Total TCDF	ND	0.129	ND		AS 1368-TCDF	52.7	
Total PeCDF	ND	0.105	ND				
Total HxCDF	0.225		0.225				
Total HpCDF	0.653		0.653				
Total PCDD/Fs	**21.1**		**22**				
WHO-2005 TEQs							
TEQ: ND=0	0.0193		0.0194				
TEQ: ND=DL/2	0.29	0.273	0.291				
TEQ: ND=DL	0.562	0.547	0.562				

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Sample ID: PA-VC025-1-0.0-.3.3 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.05 g	Lab Sample ID	A6211_11635_DF_002	Date Extracted:	03-Dec-2013
Date Collected:	28-Oct-2013	% Solids:	83.9 %	QC Batch No:	11635	Date Analyzed:	08-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	21:43:56

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.0994			ES 2378-TCDD	90.8	
12378-PeCDD	ND	0.109			ES 12378-PeCDD	83.7	
123478-HxCDD	ND	0.105			ES 123478-HxCDD	78.6	
123678-HxCDD	ND	0.109			ES 123678-HxCDD	80	
123789-HxCDD	ND	0.108			ES 123789-HxCDD	77.2	
1234678-HpCDD	1.11			J B	ES 1234678-HpCDD	69.9	
OCDD	15.4				ES OCDD	58.1	
2378-TCDF	ND	0.0669			ES 2378-TCDF	93	
12378-PeCDF	ND	0.0734			ES 12378-PeCDF	83.5	
23478-PeCDF	ND	0.0798			ES 23478-PeCDF	84.2	
123478-HxCDF	ND	0.0806			ES 123478-HxCDF	64.5	
123678-HxCDF	ND	0.078			ES 123678-HxCDF	66.4	
234678-HxCDF	ND	0.0779			ES 234678-HxCDF	66.9	
123789-HxCDF	ND	0.102			ES 123789-HxCDF	67.1	
1234678-HpCDF	0.314			J	ES 1234678-HpCDF	61.7	
1234789-HpCDF	ND	0.0961			ES 1234789-HpCDF	63.9	
OCDF	ND	0.209			ES OCDF	58.5	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	92.9	
Total TCDD	0.18		0.18		CS 12347-PeCDD	88	
Total PeCDD	ND		0.153		CS 12346-PeCDF	81.4	
Total HxCDD	1.6		1.6		CS 123469-HxCDF	73	
Total HpCDD	3.83		3.83		CS 1234689-HpCDF	61.7	
					AS 1368-TCDD	96.6	
Total TCDF	ND	0.0669	ND		AS 1368-TCDF	86.9	
Total PeCDF	ND	0.0766	ND				
Total HxCDF	0.1		0.1				
Total HpCDF	0.314		0.314				
Total PCDD/Fs	**21.4**		**21.6**				
WHO-2005 TEQs							
TEQ: ND=0	0.0188		0.0188				
TEQ: ND=DL/2	0.173	0.155	0.173				
TEQ: ND=DL	0.327	0.311	0.327				

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Sample ID: PA-VC024-1-2.6-4.5 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.01 g	Lab Sample ID	A6211_11635_DF_003	Date Extracted:	03-Dec-2013
Date Collected:	28-Oct-2013	% Solids:	86.7 %	QC Batch No:	11635	Date Analyzed:	08-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	22:33:41

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.0994			ES 2378-TCDD	68.9	
12378-PeCDD	ND	0.139			ES 12378-PeCDD	64.9	
123478-HxCDD	ND	0.127			ES 123478-HxCDD	56.1	
123678-HxCDD	ND	0.132			ES 123678-HxCDD	59.3	
123789-HxCDD	ND	0.119			ES 123789-HxCDD	59.3	
1234678-HpCDD	2.31			J	ES 1234678-HpCDD	48.7	
OCDD	24.6				ES OCDD	42.7	
2378-TCDF	ND	0.0812			ES 2378-TCDF	76.2	
12378-PeCDF	ND	0.0853			ES 12378-PeCDF	66.5	
23478-PeCDF	ND	0.0839			ES 23478-PeCDF	67.9	
123478-HxCDF	ND	0.112			ES 123478-HxCDF	45.9	
123678-HxCDF	ND	0.112			ES 123678-HxCDF	47.8	
234678-HxCDF	ND	0.0987			ES 234678-HxCDF	51.7	
123789-HxCDF	ND	0.127			ES 123789-HxCDF	53.9	
1234678-HpCDF	EMPC		0.31	J	ES 1234678-HpCDF	43.4	
1234789-HpCDF	ND	0.157			ES 1234789-HpCDF	45.8	
OCDF	0.586			J	ES OCDF	41	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	75.5	
Total TCDD	ND		1.82		CS 12347-PeCDD	69.4	
Total PeCDD	2.88		3.2		CS 12346-PeCDF	70.3	
Total HxCDD	5.99		5.99		CS 123469-HxCDF	60	
Total HpCDD	8.29		8.29		CS 1234689-HpCDF	48.2	
					AS 1368-TCDD	73.8	
Total TCDF	0.189		0.189		AS 1368-TCDF	68	
Total PeCDF	ND	0.0845	ND				
Total HxCDF	ND		0.129				
Total HpCDF	ND		0.31				
Total PCDD/Fs	**42.5**		**45.1**				
WHO-2005 TEQs							
TEQ: ND=0	0.0306		0.0337				
TEQ: ND=DL/2	0.211	0.181	0.213				
TEQ: ND=DL	0.391	0.362	0.392				

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Sample ID: PA-06-0.0-2.5 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.03 g	Lab Sample ID	A6211_11635_DF_004	Date Extracted:	03-Dec-2013
Date Collected:	28-Oct-2013	% Solids:	82.6 %	QC Batch No:	11635	Date Analyzed:	08-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	23:23:21

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.102			ES 2378-TCDD	92.1	
12378-PeCDD	ND	0.12			ES 12378-PeCDD	86.1	
123478-HxCDD	ND	0.121			ES 123478-HxCDD	79.6	
123678-HxCDD	EMPC		0.199	J	ES 123678-HxCDD	77.5	
123789-HxCDD	EMPC		0.227	J	ES 123789-HxCDD	76.9	
1234678-HpCDD	3.38				ES 1234678-HpCDD	63.5	
OCDD	33.4				ES OCDD	60.8	
2378-TCDF	EMPC		0.12	J	ES 2378-TCDF	94.9	
12378-PeCDF	ND	0.0849			ES 12378-PeCDF	85.4	
23478-PeCDF	ND	0.0774			ES 23478-PeCDF	87.3	
123478-HxCDF	EMPC		0.123	J	ES 123478-HxCDF	63.8	
123678-HxCDF	EMPC		0.157	J	ES 123678-HxCDF	64.1	
234678-HxCDF	EMPC		0.142	J	ES 234678-HxCDF	66.4	
123789-HxCDF	ND	0.0825			ES 123789-HxCDF	68.4	
1234678-HpCDF	1.83			J	ES 1234678-HpCDF	61.6	
1234789-HpCDF	0.217			J	ES 1234789-HpCDF	58.7	
OCDF	EMPC		1.1	J	ES OCDF	59.8	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	99.9	
Total TCDD	0.843		1.02		CS 12347-PeCDD	91.3	
Total PeCDD	ND		0.652		CS 12346-PeCDF	90	
Total HxCDD	ND		3.25		CS 123469-HxCDF	78.6	
Total HpCDD	8.81		8.81		CS 1234689-HpCDF	64.2	
					AS 1368-TCDD	95.9	
Total TCDF	0.106		0.466		AS 1368-TCDF	89.3	
Total PeCDF	0.143		0.293				
Total HxCDF	0.164		1.16				
Total HpCDF	2.05		2.51				
Total PCDD/Fs	**45.5**		**52.7**				
WHO-2005 TEQs							
TEQ: ND=0	0.0643		0.161				
TEQ: ND=DL/2	0.224	0.162	0.295				
TEQ: ND=DL	0.384	0.324	0.429				

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Sample ID: PA-05-0.0-3.9 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.09 g	Lab Sample ID	A6211_11635_DF_005	Date Extracted:	03-Dec-2013
Date Collected:	28-Oct-2013	% Solids:	87.4 %	QC Batch No:	11635	Date Analyzed:	09-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	00:13:06

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.119			ES 2378-TCDD	93.4	
12378-PeCDD	ND	0.132			ES 12378-PeCDD	85.8	
123478-HxCDD	ND	0.194			ES 123478-HxCDD	81.3	
123678-HxCDD	ND	0.202			ES 123678-HxCDD	77.7	
123789-HxCDD	ND	0.194			ES 123789-HxCDD	80.5	
1234678-HpCDD	1.02			J B	ES 1234678-HpCDD	69.4	
OCDD	10.5				ES OCDD	64.5	
2378-TCDF	ND	0.0885			ES 2378-TCDF	93.1	
12378-PeCDF	ND	0.0854			ES 12378-PeCDF	87.5	
23478-PeCDF	ND	0.0785			ES 23478-PeCDF	86.7	
123478-HxCDF	ND	0.0912			ES 123478-HxCDF	64.9	
123678-HxCDF	ND	0.0839			ES 123678-HxCDF	68.3	
234678-HxCDF	ND	0.0932			ES 234678-HxCDF	66.5	
123789-HxCDF	ND	0.105			ES 123789-HxCDF	66.2	
1234678-HpCDF	EMPC		0.154	J	ES 1234678-HpCDF	61.7	
1234789-HpCDF	ND	0.12			ES 1234789-HpCDF	61.3	
OCDF	ND	0.243			ES OCDF	57.8	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	97.3	
Total TCDD	0.457		0.899		CS 12347-PeCDD	91.2	
Total PeCDD	ND		2		CS 12346-PeCDF	91.5	
Total HxCDD	2.58		3.01		CS 123469-HxCDF	77.5	
Total HpCDD	3.64		3.64		CS 1234689-HpCDF	66.9	
					AS 1368-TCDD	92.4	
Total TCDF	ND	0.0885	ND		AS 1368-TCDF	85.3	
Total PeCDF	ND	0.0819	ND				
Total HxCDF	ND	0.0926	ND				
Total HpCDF	ND		0.154				
Total PCDD/Fs	**17.2**		**20.2**				
WHO-2005 TEQs							
TEQ: ND=0	0.0134		0.0149				
TEQ: ND=DL/2	0.206	0.193	0.207				
TEQ: ND=DL	0.398	0.387	0.399				

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Sample ID: PA-04-0.0-2.1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.02 g	Lab Sample ID	A6211_11635_DF_006	Date Extracted:	03-Dec-2013
Date Collected:	28-Oct-2013	% Solids:	82.5 %	QC Batch No:	11635	Date Analyzed:	09-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	01:02:51

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.0802			ES 2378-TCDD	91	
12378-PeCDD	ND	0.0678			ES 12378-PeCDD	84.3	
123478-HxCDD	ND	0.079			ES 123478-HxCDD	77.3	
123678-HxCDD	ND	0.0808			ES 123678-HxCDD	78.2	
123789-HxCDD	ND	0.0799			ES 123789-HxCDD	77.6	
1234678-HpCDD	0.373			J B	ES 1234678-HpCDD	67.7	
OCDD	5.55				ES OCDD	64.1	
2378-TCDF	ND	0.0685			ES 2378-TCDF	90.9	
12378-PeCDF	ND	0.0583			ES 12378-PeCDF	83.8	
23478-PeCDF	ND	0.0579			ES 23478-PeCDF	83.8	
123478-HxCDF	ND	0.0715			ES 123478-HxCDF	65.9	
123678-HxCDF	ND	0.0749			ES 123678-HxCDF	66.4	
234678-HxCDF	ND	0.0726			ES 234678-HxCDF	66.6	
123789-HxCDF	ND	0.0851			ES 123789-HxCDF	65.5	
1234678-HpCDF	0.116			J	ES 1234678-HpCDF	65.2	
1234789-HpCDF	ND	0.0715			ES 1234789-HpCDF	63.1	
OCDF	ND	0.162			ES OCDF	59.1	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	95.5	
Total TCDD	0.86		0.996		CS 12347-PeCDD	85.8	
Total PeCDD	0.154		0.6		CS 12346-PeCDF	83.2	
Total HxCDD	ND		1.14		CS 123469-HxCDF	75.7	
Total HpCDD	0.373		1.11		CS 1234689-HpCDF	64.3	
					AS 1368-TCDD	96.6	
Total TCDF	ND	0.0685	ND		AS 1368-TCDF	85.9	
Total PeCDF	ND	0.0581	ND				
Total HxCDF	ND	0.0756	ND				
Total HpCDF	0.116		0.116				
Total PCDD/Fs	**7.06**		**9.52**				
WHO-2005 TEQs							
TEQ: ND=0	0.00655		0.00655				
TEQ: ND=DL/2	0.121	0.116	0.121				
TEQ: ND=DL	0.236	0.231	0.236				

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Sample ID: PA-04D-0.0-2.1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.01 g	Lab Sample ID	A6211_11635_DF_007	Date Extracted:	03-Dec-2013
Date Collected:	28-Oct-2013	% Solids:	82.5 %	QC Batch No:	11635	Date Analyzed:	09-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	01:52:37

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.127			ES 2378-TCDD	84.1	
12378-PeCDD	ND	0.207			ES 12378-PeCDD	71.3	
123478-HxCDD	ND	0.17			ES 123478-HxCDD	71.5	
123678-HxCDD	ND	0.171			ES 123678-HxCDD	73.6	
123789-HxCDD	ND	0.185			ES 123789-HxCDD	70.4	
1234678-HpCDD	EMPC		0.541	J B	ES 1234678-HpCDD	52.4	
OCDD	4.84			J	ES OCDD	39.3	
2378-TCDF	ND	0.0937			ES 2378-TCDF	82.5	
12378-PeCDF	ND	0.106			ES 12378-PeCDF	74.1	
23478-PeCDF	ND	0.116			ES 23478-PeCDF	70.4	
123478-HxCDF	ND	0.131			ES 123478-HxCDF	62.3	
123678-HxCDF	ND	0.125			ES 123678-HxCDF	65.3	
234678-HxCDF	ND	0.128			ES 234678-HxCDF	59.6	
123789-HxCDF	ND	0.155			ES 123789-HxCDF	61.9	
1234678-HpCDF	EMPC		0.273	J	ES 1234678-HpCDF	53.9	
1234789-HpCDF	ND	0.158			ES 1234789-HpCDF	46.9	
OCDF	ND	0.428			ES OCDF	38.3	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	90	
Total TCDD	0.557		0.557		CS 12347-PeCDD	71.3	
Total PeCDD	ND	0.207	ND		CS 12346-PeCDF	75.6	
Total HxCDD	ND		0.704		CS 123469-HxCDF	71.9	
Total HpCDD	1.19		1.73		CS 1234689-HpCDF	53	
					AS 1368-TCDD	96.1	
Total TCDF	ND	0.0937	ND		AS 1368-TCDF	76.8	
Total PeCDF	ND	0.111	ND				
Total HxCDF	ND	0.134	ND				
Total HpCDF	ND		0.273				
Total PCDD/Fs	**6.58**		**8.1**				
WHO-2005 TEQs							
TEQ: ND=0	0.00145		0.00959				
TEQ: ND=DL/2	0.248	0.247	0.254				
TEQ: ND=DL	0.495	0.494	0.499				

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Sample ID: PA-VC023-1-1.5-3.0 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.06 g	Lab Sample ID	A6211_11635_DF_008	Date Extracted:	03-Dec-2013
Date Collected:	28-Oct-2013	% Solids:	63.7 %	QC Batch No:	11635	Date Analyzed:	09-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	05:21:26

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.131			ES 2378-TCDD	87.8	
12378-PeCDD	EMPC		0.605	J	ES 12378-PeCDD	75.5	
123478-HxCDD	1.02			J	ES 123478-HxCDD	77.7	
123678-HxCDD	1.49			J	ES 123678-HxCDD	77.5	
123789-HxCDD	2.54				ES 123789-HxCDD	76.3	
1234678-HpCDD	34.3				ES 1234678-HpCDD	66.8	
OCDD	561				ES OCDD	61.7	
2378-TCDF	ND	0.0858			ES 2378-TCDF	87.8	
12378-PeCDF	EMPC		0.0886	J	ES 12378-PeCDF	77.8	
23478-PeCDF	ND	0.071			ES 23478-PeCDF	74.7	
123478-HxCDF	EMPC		0.111	J	ES 123478-HxCDF	60.8	
123678-HxCDF	0.101			J	ES 123678-HxCDF	63.9	
234678-HxCDF	ND	0.0968			ES 234678-HxCDF	61.7	
123789-HxCDF	ND	0.107			ES 123789-HxCDF	64.7	
1234678-HpCDF	EMPC		0.442	J	ES 1234678-HpCDF	60.8	
1234789-HpCDF	ND	0.115			ES 1234789-HpCDF	60.2	
OCDF	EMPC		0.492	J	ES OCDF	55.6	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	93.2	
Total TCDD	3.39		4.12		CS 12347-PeCDD	78.6	
Total PeCDD	9.13		11.1		CS 12346-PeCDF	81.5	
Total HxCDD	51.7		52.5		CS 123469-HxCDF	74	
Total HpCDD	114		114		CS 1234689-HpCDF	65.2	
					AS 1368-TCDD	88.9	
Total TCDF	3.65		6.39		AS 1368-TCDF	81.4	
Total PeCDF	0.244		0.622				
Total HxCDF	0.101		0.439				
Total HpCDF	ND		0.442				
Total PCDD/Fs	**743**		**750**				
WHO-2005 TEQs							
TEQ: ND=0	1.03		1.65				
TEQ: ND=DL/2	1.16	0.173	1.74				
TEQ: ND=DL	1.3	0.347	1.83				

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Sample ID: PA-ARCHY 8-1-3.2-7.0 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.04 g	Lab Sample ID	A6211_11635_DF_009	Date Extracted:	03-Dec-2013
Date Collected:	29-Oct-2013	% Solids:	78.7 %	QC Batch No:	11635	Date Analyzed:	09-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	06:11:06

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.155			ES 2378-TCDD	75.4	
12378-PeCDD	ND	0.186			ES 12378-PeCDD	69.6	
123478-HxCDD	ND	0.179			ES 123478-HxCDD	67.8	
123678-HxCDD	EMPC		0.199	J	ES 123678-HxCDD	70.3	
123789-HxCDD	EMPC		0.185	J	ES 123789-HxCDD	69.2	
1234678-HpCDD	4.61				ES 1234678-HpCDD	58.5	
OCDD	84.7				ES OCDD	47.1	
2378-TCDF	ND	0.0817			ES 2378-TCDF	80.6	
12378-PeCDF	ND	0.105			ES 12378-PeCDF	69.2	
23478-PeCDF	ND	0.0983			ES 23478-PeCDF	69.4	
123478-HxCDF	ND	0.111			ES 123478-HxCDF	56.6	
123678-HxCDF	ND	0.0924			ES 123678-HxCDF	58.7	
234678-HxCDF	ND	0.0997			ES 234678-HxCDF	59.7	
123789-HxCDF	ND	0.122			ES 123789-HxCDF	58.5	
1234678-HpCDF	EMPC		0.21	J	ES 1234678-HpCDF	52.7	
1234789-HpCDF	ND	0.15			ES 1234789-HpCDF	50.3	
OCDF	ND	0.282			ES OCDF	46.6	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	83.7	
Total TCDD	0.819		1.11		CS 12347-PeCDD	74.3	
Total PeCDD	1.74		1.74		CS 12346-PeCDF	72.8	
Total HxCDD	7.53		7.91		CS 123469-HxCDF	69.1	
Total HpCDD	18.8		18.8		CS 1234689-HpCDF	57.9	
					AS 1368-TCDD	87.2	
Total TCDF	ND		0.51		AS 1368-TCDF	77.5	
Total PeCDF	ND	0.102	ND				
Total HxCDF	ND	0.105	ND				
Total HpCDF	ND		0.21				
Total PCDD/Fs	**114**		**115**				
WHO-2005 TEQs							
TEQ: ND=0	0.0715		0.112				
TEQ: ND=DL/2	0.312	0.242	0.334				
TEQ: ND=DL	0.553	0.483	0.556				

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Sample ID: PA-ARCHY 8-1-3.2-7.0-MS — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.07 g	Lab Sample ID	A6211_11635_DF_009MS	Date Extracted:	03-Dec-2013
Date Collected:	29-Oct-2013	% Solids:	78.7 %	QC Batch No:	11635	Date Analyzed:	09-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	07:00:50

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	18.7				ES 2378-TCDD	89.4	
12378-PeCDD	94.1				ES 12378-PeCDD	81.7	
123478-HxCDD	95.6				ES 123478-HxCDD	78.9	
123678-HxCDD	101				ES 123678-HxCDD	78.6	
123789-HxCDD	91.4				ES 123789-HxCDD	77.2	
1234678-HpCDD	105				ES 1234678-HpCDD	66	
OCDD	296				ES OCDD	57	
2378-TCDF	20				ES 2378-TCDF	89.2	
12378-PeCDF	92.6				ES 12378-PeCDF	81.6	
23478-PeCDF	95.4				ES 23478-PeCDF	81.6	
123478-HxCDF	98.9				ES 123478-HxCDF	64.5	
123678-HxCDF	102				ES 123678-HxCDF	64.8	
234678-HxCDF	102				ES 234678-HxCDF	65.5	
123789-HxCDF	99.2				ES 123789-HxCDF	67.3	
1234678-HpCDF	113				ES 1234678-HpCDF	63.7	
1234789-HpCDF	107				ES 1234789-HpCDF	62.1	
OCDF	207				ES OCDF	58.6	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	94.9	
Total TCDD	19.6		20		CS 12347-PeCDD	84.6	
Total PeCDD	95.4		96.5		CS 12346-PeCDF	81.9	
Total HxCDD	294		296		CS 123469-HxCDF	76.5	
Total HpCDD	122		122		CS 1234689-HpCDF	67	
					AS 1368-TCDD	98.3	
Total TCDF	20.6		21		AS 1368-TCDF	83.8	
Total PeCDF	192		192				
Total HxCDF	402		402				
Total HpCDF	220		220				
Total PCDD/Fs	**1870**		**1870**				
WHO-2005 TEQs							
TEQ: ND=0	218		218				
TEQ: ND=DL/2	218	0.149	218				
TEQ: ND=DL	218	0.298	218				

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Sample ID: PA-ARCHY 8-1-3.2-7.0-MSD — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.09 g	Lab Sample ID	A6211_11635_DF_009MSD	Date Extracted:	03-Dec-2013
Date Collected:	29-Oct-2013	% Solids:	78.7 %	QC Batch No:	11635	Date Analyzed:	09-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	07:50:33

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	18.7				ES 2378-TCDD	92.2	
12378-PeCDD	95.4				ES 12378-PeCDD	84.8	
123478-HxCDD	94.7				ES 123478-HxCDD	85	
123678-HxCDD	99.7				ES 123678-HxCDD	82.4	
123789-HxCDD	91.6				ES 123789-HxCDD	83.1	
1234678-HpCDD	106				ES 1234678-HpCDD	74.3	
OCDD	289				ES OCDD	67.8	
2378-TCDF	20.2				ES 2378-TCDF	97.2	
12378-PeCDF	91.4				ES 12378-PeCDF	88.3	
23478-PeCDF	95.4				ES 23478-PeCDF	87.3	
123478-HxCDF	99.5				ES 123478-HxCDF	71.6	
123678-HxCDF	99.6				ES 123678-HxCDF	74	
234678-HxCDF	103				ES 234678-HxCDF	72.2	
123789-HxCDF	100				ES 123789-HxCDF	72.8	
1234678-HpCDF	107				ES 1234678-HpCDF	73.7	
1234789-HpCDF	104				ES 1234789-HpCDF	71.4	
OCDF	200				ES OCDF	65.8	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	95.6	
Total TCDD	20.3		20.4		CS 12347-PeCDD	86.3	
Total PeCDD	97.2		97.9		CS 12346-PeCDF	87.4	
Total HxCDD	295		295		CS 123469-HxCDF	85.2	
Total HpCDD	123		123		CS 1234689-HpCDF	71.8	
					AS 1368-TCDD	94.9	
Total TCDF	21		21.3		AS 1368-TCDF	88.3	
Total PeCDF	191		191				
Total HxCDF	403		403				
Total HpCDF	210		210				
Total PCDD/Fs	**1850**		**1850**				
WHO-2005 TEQs							
TEQ: ND=0	220		220				
TEQ: ND=DL/2	220	0.175	220				
TEQ: ND=DL	220	0.351	220				

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MS/MSD Comparison

ANALYTICAL PERSPECTIVES

Method 1613

Sample ID: PA-ARCHY 8-1-3.2-7.0

Analyte	Native Conc.	MS Spike	MS Conc.	MS Rec.	MSD Spike	MSD Conc.	MSD Rec.	RPD
	(pg/g)	(pg/g)	(pg/g)	%	(pg/g)	(pg/g)	%	
2,3,7,8-TCDD	ND	19.9	18.7	94	19.8	18.7	94.4	0%
1,2,3,7,8-PeCDD	ND	99.3	94.1	94.8	99.1	95.4	96.3	2%
1,2,3,4,7,8-HxCDD	ND	99.3	95.6	96.3	99.1	94.7	95.6	1%
1,2,3,6,7,8-HxCDD	0.199	99.3	101	102	99.1	99.7	100	2%
1,2,3,7,8,9-HxCDD	0.185	99.3	91.4	91.9	99.1	91.6	92.2	0%
1,2,3,4,6,7,8-HpCDD	4.61	99.3	105	101	99.1	106	102	1%
OCDD	84.7	199	296	106	198	289	103	3%
2,3,7,8-TCDF	ND	19.9	20	101	19.8	20.2	102	1%
1,2,3,7,8-PeCDF	ND	99.3	92.6	93.3	99.1	91.4	92.2	1%
2,3,4,7,8-PeCDF	ND	99.3	95.4	96.1	99.1	95.4	96.3	0%
1,2,3,4,7,8-HxCDF	ND	99.3	98.9	99.6	99.1	99.5	100	0%
1,2,3,6,7,8-HxCDF	ND	99.3	102	103	99.1	99.6	101	2%
2,3,4,6,7,8-HxCDF	ND	99.3	102	103	99.1	103	104	1%
1,2,3,7,8,9-HxCDF	ND	99.3	99.2	99.9	99.1	100	101	1%
1,2,3,4,6,7,8-HpCDF	0.21	99.3	113	114	99.1	107	108	5%
1,2,3,4,7,8,9-HpCDF	ND	99.3	107	108	99.1	104	105	3%
OCDF	ND	199	207	104	198	200	101	3%

% Recovery limits for MS and MSD: 70-130% of expected value, if native < RL
RPD limit for MS vs. MSD recoveries: +/- 20%, if native < RL

By Amy Boehm at 2:51 pm, Dec 12, 2013

Sample ID: PA-ARCHY 9-1-0.0-3.5 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.01 g	Lab Sample ID	A6211_11635_DF_010	Date Extracted:	03-Dec-2013
Date Collected:	29-Oct-2013	% Solids:	82.1 %	QC Batch No:	11635	Date Analyzed:	09-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	08:40:17

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.112			ES 2378-TCDD	91.6	
12378-PeCDD	ND	0.154			ES 12378-PeCDD	82.6	
123478-HxCDD	ND	0.124			ES 123478-HxCDD	83.3	
123678-HxCDD	0.153			J	ES 123678-HxCDD	83.6	
123789-HxCDD	0.226			J	ES 123789-HxCDD	83.9	
1234678-HpCDD	1.25			J B	ES 1234678-HpCDD	72.2	
OCDD	16.1				ES OCDD	63.2	
2378-TCDF	ND	0.0599			ES 2378-TCDF	96.3	
12378-PeCDF	ND	0.0647			ES 12378-PeCDF	86.5	
23478-PeCDF	ND	0.065			ES 23478-PeCDF	83.8	
123478-HxCDF	ND	0.102			ES 123478-HxCDF	67.9	
123678-HxCDF	ND	0.0938			ES 123678-HxCDF	70.2	
234678-HxCDF	ND	0.0996			ES 234678-HxCDF	70	
123789-HxCDF	ND	0.118			ES 123789-HxCDF	72.8	
1234678-HpCDF	0.436			J	ES 1234678-HpCDF	71.7	
1234789-HpCDF	ND	0.103			ES 1234789-HpCDF	66.3	
OCDF	0.495			J	ES OCDF	60.6	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	97.5	
Total TCDD	0.629		1.26		CS 12347-PeCDD	88.3	
Total PeCDD	0.536		1.99		CS 12346-PeCDF	88.7	
Total HxCDD	4.21		4.21		CS 123469-HxCDF	82.6	
Total HpCDD	4.5		4.5		CS 1234689-HpCDF	71.8	
					AS 1368-TCDD	103	
Total TCDF	ND	0.0599	ND		AS 1368-TCDF	90.3	
Total PeCDF	ND	0.0648	ND				
Total HxCDF	0.12		0.12				
Total HpCDF	0.436		0.436				
Total PCDD/Fs	**27**		**29.1**				
WHO-2005 TEQs							
TEQ: ND=0	0.0597		0.0597				
TEQ: ND=DL/2	0.234	0.188	0.234				
TEQ: ND=DL	0.408	0.377	0.408				

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Sample ID: PA-03-0.0-3.4 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.00 g	Lab Sample ID	A6211_11635_DF_011	Date Extracted:	03-Dec-2013
Date Collected:	29-Oct-2013	% Solids:	76.7 %	QC Batch No:	11635	Date Analyzed:	09-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	09:30:00

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.116			ES 2378-TCDD	92.4	
12378-PeCDD	ND	0.152			ES 12378-PeCDD	83.7	
123478-HxCDD	ND	0.156			ES 123478-HxCDD	76.9	
123678-HxCDD	0.289			J	ES 123678-HxCDD	78	
123789-HxCDD	0.28			J	ES 123789-HxCDD	75	
1234678-HpCDD	3.32				ES 1234678-HpCDD	68.4	
OCDD	36.2				ES OCDD	60.3	
2378-TCDF	EMPC		0.152	J	ES 2378-TCDF	93.6	
12378-PeCDF	EMPC		0.0779	J	ES 12378-PeCDF	88.7	
23478-PeCDF	0.15			J	ES 23478-PeCDF	86.5	
123478-HxCDF	EMPC		0.141	J	ES 123478-HxCDF	65.2	
123678-HxCDF	EMPC		0.118	J	ES 123678-HxCDF	66.9	
234678-HxCDF	0.132			J	ES 234678-HxCDF	67.1	
123789-HxCDF	ND	0.103			ES 123789-HxCDF	66.9	
1234678-HpCDF	1.06			J	ES 1234678-HpCDF	65.6	
1234789-HpCDF	ND	0.139			ES 1234789-HpCDF	64.5	
OCDF	EMPC		1.29	J	ES OCDF	58	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	100	
Total TCDD	4.54		5.93		CS 12347-PeCDD	88.3	
Total PeCDD	2.79		3.82		CS 12346-PeCDF	91.9	
Total HxCDD	8.25		8.5		CS 123469-HxCDF	79.2	
Total HpCDD	10.8		10.8		CS 1234689-HpCDF	68.7	
					AS 1368-TCDD	101	
Total TCDF	0.635		1.13		AS 1368-TCDF	90	
Total PeCDF	0.339		0.927				
Total HxCDF	0.908		1.31				
Total HpCDF	1.64		1.64				
Total PCDD/Fs	**66.1**		**71.5**				
WHO-2005 TEQs							
TEQ: ND=0	0.17		0.214				
TEQ: ND=DL/2	0.33	0.195	0.361				
TEQ: ND=DL	0.49	0.389	0.509				

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Sample ID: PA-02-0.0-2.5 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.03 g	Lab Sample ID	A6211_11635_DF_012	Date Extracted:	03-Dec-2013
Date Collected:	29-Oct-2013	% Solids:	81.6 %	QC Batch No:	11635	Date Analyzed:	09-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	10:19:48

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.107			ES 2378-TCDD	90.3	
12378-PeCDD	ND	0.0853			ES 12378-PeCDD	79.8	
123478-HxCDD	ND	0.101			ES 123478-HxCDD	79.7	
123678-HxCDD	ND	0.106			ES 123678-HxCDD	81.7	
123789-HxCDD	0.186			J	ES 123789-HxCDD	81.1	
1234678-HpCDD	1.22			J B	ES 1234678-HpCDD	68.4	
OCDD	18.5				ES OCDD	66.4	
2378-TCDF	ND	0.0686			ES 2378-TCDF	92.3	
12378-PeCDF	ND	0.0544			ES 12378-PeCDF	83.2	
23478-PeCDF	ND	0.0536			ES 23478-PeCDF	83.6	
123478-HxCDF	ND	0.0731			ES 123478-HxCDF	64.3	
123678-HxCDF	ND	0.0682			ES 123678-HxCDF	67	
234678-HxCDF	ND	0.071			ES 234678-HxCDF	67.6	
123789-HxCDF	ND	0.0851			ES 123789-HxCDF	69.9	
1234678-HpCDF	0.245			J	ES 1234678-HpCDF	68.3	
1234789-HpCDF	ND	0.112			ES 1234789-HpCDF	65.8	
OCDF	EMPC		0.711	J	ES OCDF	62.2	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	95.1	
Total TCDD	0.138		0.305		CS 12347-PeCDD	82.8	
Total PeCDD	0.571		0.8		CS 12346-PeCDF	83.6	
Total HxCDD	2.49		2.49		CS 123469-HxCDF	78.3	
Total HpCDD	4.72		4.72		CS 1234689-HpCDF	68.9	
					AS 1368-TCDD	97	
Total TCDF	ND	0.0686	ND		AS 1368-TCDF	84.9	
Total PeCDF	ND	0.054	ND				
Total HxCDF	ND		0.104				
Total HpCDF	0.245		0.245				
Total PCDD/Fs	**26.7**		**27.9**				
WHO-2005 TEQs							
TEQ: ND=0	0.0388		0.039				
TEQ: ND=DL/2	0.173	0.141	0.173				
TEQ: ND=DL	0.307	0.282	0.308				

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Sample ID: PA-01-0.0-3.5 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.05 g	Lab Sample ID	A6211_11635_DF_013	Date Extracted:	03-Dec-2013
Date Collected:	29-Oct-2013	% Solids:	81.8 %	QC Batch No:	11635	Date Analyzed:	09-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	11:09:35

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.129			ES 2378-TCDD	89.5	
12378-PeCDD	ND	0.129			ES 12378-PeCDD	82.1	
123478-HxCDD	ND	0.187			ES 123478-HxCDD	76.8	
123678-HxCDD	0.311			J	ES 123678-HxCDD	79.1	
123789-HxCDD	0.332			J	ES 123789-HxCDD	77.7	
1234678-HpCDD	4.43				ES 1234678-HpCDD	62.2	
OCDD	79.2				ES OCDD	58.8	
2378-TCDF	ND	0.089			ES 2378-TCDF	90.8	
12378-PeCDF	ND	0.0859			ES 12378-PeCDF	82	
23478-PeCDF	ND	0.0895			ES 23478-PeCDF	81.3	
123478-HxCDF	ND	0.0851			ES 123478-HxCDF	65.1	
123678-HxCDF	ND	0.0949			ES 123678-HxCDF	64.8	
234678-HxCDF	ND	0.0867			ES 234678-HxCDF	63.9	
123789-HxCDF	ND	0.118			ES 123789-HxCDF	68.1	
1234678-HpCDF	0.512			J	ES 1234678-HpCDF	63.2	
1234789-HpCDF	ND	0.166			ES 1234789-HpCDF	57.3	
OCDF	EMPC		0.381	J	ES OCDF	56.2	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	93.6	
Total TCDD	ND		0.167		CS 12347-PeCDD	84.2	
Total PeCDD	ND		1.33		CS 12346-PeCDF	82.4	
Total HxCDD	2.6		6.67		CS 123469-HxCDF	72.4	
Total HpCDD	16.1		16.1		CS 1234689-HpCDF	60.1	
					AS 1368-TCDD	95.9	
Total TCDF	0.252		0.345		AS 1368-TCDF	83.1	
Total PeCDF	ND	0.0877	ND				
Total HxCDF	0.224		0.224				
Total HpCDF	0.676		0.676				
Total PCDD/Fs	**99**		**105**				
WHO-2005 TEQs							
TEQ: ND=0	0.137		0.138				
TEQ: ND=DL/2	0.315	0.199	0.315				
TEQ: ND=DL	0.493	0.398	0.493				

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Sample ID: PA-08-1.0-4.7 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	22-Nov-2013
Project ID:	L1323611	Weight/Volume:	10.05 g	Lab Sample ID	A6211_11635_DF_014	Date Extracted:	03-Dec-2013
Date Collected:	23-Oct-2013	% Solids:	69.7 %	QC Batch No:	11635	Date Analyzed:	09-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	11:59:21

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.092			ES 2378-TCDD	85.9	
12378-PeCDD	0.379			J	ES 12378-PeCDD	76	
123478-HxCDD	0.704			J	ES 123478-HxCDD	74.8	
123678-HxCDD	1.2			J	ES 123678-HxCDD	75.3	
123789-HxCDD	2.08			J	ES 123789-HxCDD	74.7	
1234678-HpCDD	32.5				ES 1234678-HpCDD	65.4	
OCDD	752				ES OCDD	52.5	
2378-TCDF	ND	0.0662			ES 2378-TCDF	88.7	
12378-PeCDF	ND	0.0754			ES 12378-PeCDF	77	
23478-PeCDF	ND	0.0698			ES 23478-PeCDF	79.9	
123478-HxCDF	EMPC		0.11	J	ES 123478-HxCDF	61.5	
123678-HxCDF	ND	0.0928			ES 123678-HxCDF	63	
234678-HxCDF	0.17			J	ES 234678-HxCDF	63.7	
123789-HxCDF	ND	0.122			ES 123789-HxCDF	63.8	
1234678-HpCDF	0.791			J	ES 1234678-HpCDF	61.2	
1234789-HpCDF	ND	0.105			ES 1234789-HpCDF	60.8	
OCDF	EMPC		0.367	J	ES OCDF	51.3	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	95.1	
Total TCDD	20		20.9		CS 12347-PeCDD	82.6	
Total PeCDD	25.3		27		CS 12346-PeCDF	87.1	
Total HxCDD	95.3		96.7		CS 123469-HxCDF	80.1	
Total HpCDD	149		149		CS 1234689-HpCDF	68.6	
					AS 1368-TCDD	90.8	
Total TCDF	0.287		1.39		AS 1368-TCDF	81	
Total PeCDF	ND	0.0725	ND				
Total HxCDF	0.6		0.71				
Total HpCDF	0.791		0.924				
Total PCDD/Fs	**1040**		**1050**				
WHO-2005 TEQs							
TEQ: ND=0	1.35		1.36				
TEQ: ND=DL/2	1.43	0.203	1.44				
TEQ: ND=DL	1.51	0.406	1.51				

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Sample ID: Method Blank A6211 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Alpha Analytical	Matrix:	Solids	Lab Project ID:	A6211	Date Received:	n/a
Project ID:	L1323611	Weight/Volume:	10.00 g	Lab Sample ID	MB1_11635_DF_SDS	Date Extracted:	03-Dec-2013
Date Collected:	n/a	% Solids:	100.0 %	QC Batch No:	11635	Date Analyzed:	08-Dec-2013
		Split:	-	Dilution:	-	Time Analyzed:	20:04:31

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.0725			ES 2378-TCDD	84.6	
12378-PeCDD	ND	0.0974			ES 12378-PeCDD	77.1	
123478-HxCDD	ND	0.122			ES 123478-HxCDD	70.3	
123678-HxCDD	ND	0.123			ES 123678-HxCDD	73	
123789-HxCDD	ND	0.117			ES 123789-HxCDD	74.1	
1234678-HpCDD	EMPC		0.157	J	ES 1234678-HpCDD	62.6	
OCDD	0.366			J	ES OCDD	56	
2378-TCDF	ND	0.0762			ES 2378-TCDF	85.5	
12378-PeCDF	ND	0.0681			ES 12378-PeCDF	76.1	
23478-PeCDF	ND	0.069			ES 23478-PeCDF	75.2	
123478-HxCDF	ND	0.0663			ES 123478-HxCDF	57.5	
123678-HxCDF	ND	0.0593			ES 123678-HxCDF	60.5	
234678-HxCDF	ND	0.0702			ES 234678-HxCDF	58.4	
123789-HxCDF	ND	0.082			ES 123789-HxCDF	63.1	
1234678-HpCDF	ND	0.113			ES 1234678-HpCDF	55.2	
1234789-HpCDF	ND	0.109			ES 1234789-HpCDF	58.5	
OCDF	ND	0.173			ES OCDF	53.7	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	94.5	
Total TCDD	ND	0.0725	ND		CS 12347-PeCDD	83.8	
Total PeCDD	ND	0.0974	ND		CS 12346-PeCDF	80.4	
Total HxCDD	ND	0.12	ND		CS 123469-HxCDF	75.1	
Total HpCDD	ND		0.157		CS 1234689-HpCDF	58.3	
					AS 1368-TCDD	88	
Total TCDF	ND	0.0762	ND		AS 1368-TCDF	79	
Total PeCDF	ND	0.0685	ND				
Total HxCDF	ND	0.0689	ND				
Total HpCDF	ND	0.111	ND				
Total PCDD/Fs	**0.366**		**0.522**				
WHO-2005 TEQs							
TEQ: ND=0	0.00011		0.00168				
TEQ: ND=DL/2	0.134	0.134	0.135				
TEQ: ND=DL	0.268	0.268	0.268				

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METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS Analytical Perspectives		
Initial Calibration:	ICAL: MM1_DF_11012012A_18SEPT2013		
Instrument ID:	MM1	GC Column ID:	ZB-5ms
VER Data Filename:	131208P2-02	Analysis Date:	08-DEC-2013 18:25:21
Lab ID:	OPR1_11635_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	9.81	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	47.3	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	49.9	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	47.4	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	46.8	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	51.8	35	-	70	Y
OCDD	100	105	78	-	144	Y
2,3,7,8-TCDF	10	10.3	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	46.9	40	-	67	Y
2,3,4,7,8-PeCDF	50	47.8	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	49.8	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	49.9	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	49.9	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	50.3	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	54.9	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	52.7	39	-	69	Y
OCDF	100	105	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 10 Dec 2013 09:53 Analyst: MC

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS Analytical Perspectives		
Initial Calibration:	ICAL: MM1_DF_11012012A_18SEPT2013		
Instrument ID:	MM1	GC Column ID:	ZB-5ms
VER Data Filename:	131208P2-02	Analysis Date:	08-DEC-2013 18:25:21
Lab ID:	OPR1_11635_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	88.6	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	86.6	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	78.5	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	84.4	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	78.6	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	67.3	26	-	166	Y
13C-OCDD	200	113	26	-	397	Y
13C-2,3,7,8-TCDF	100	93.4	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	84.5	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	86.8	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	65	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	67.2	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	67	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	68.1	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	65.2	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	62.2	20	-	186	Y
13C-OCDF	200	115	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	37.3	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 10 Dec 2013 09:53 Analyst: MC

Sample Receipt Notification

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Project Manager:	*Amy Boehm*
Receipt Date & Time:	*22-Nov-13 at 10:30*
AP Project name:	*A6211*
Requested TAT:	*21 days*
Projected due date:	*13-Dec-13*
Matrix:	*Sediment*
Phone#:	*910-794-1613*
Email Address:	*Amy.Boehm@sgs.com*

Company Contact:	*Liz Porta*
Company:	*Alpha Analytical*
Project Name & Site:	*PORT AMBROSE 2013*
Project PO#:	L1323611
QAAP/Contract #:	
Requested Analysis:	*1613B*
Phone#:	*508.844.4124*
Email Address:	*eporta@alphalab.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp	Container #	Shipping #
PA-07-0.0-3.0	A6211_001	L1323611-01	1	4oz amber	28-Oct-13	09:38	3	1	1Z 19E 18E 01 4766 3842
PA-VC025-1-0.0-.3.3	A6211_002	L1323611-02	1	4oz amber	28-Oct-13	11:02	3	1	1Z 19E 18E 01 4766 3842
PA-VC024-1-2.6-4.5	A6211_003	L1323611-03	1	4oz amber	28-Oct-13	12:18	3	1	1Z 19E 18E 01 4766 3842
PA-06-0.0-2.5	A6211_004	L1323611-04	1	4oz amber	28-Oct-13	15:04	3	1	1Z 19E 18E 01 4766 3842
PA-05-0.0-3.9	A6211_005	L1323611-05	1	4oz amber	28-Oct-13	16:07	3	1	1Z 19E 18E 01 4766 3842
PA-04-0.0-2.1	A6211_006	L1323611-06	1	4oz amber	28-Oct-13	17:12	3	1	1Z 19E 18E 01 4766 3842
PA-04D-0.0-2.1	A6211_007	L1323611-07	1	4oz amber	28-Oct-13	17:12	3	1	1Z 19E 18E 01 4766 3842
PA-VC023-1-1.5-3.0	A6211_008	L1323611-08	1	4oz amber	28-Oct-13	18:04	3	1	1Z 19E 18E 01 4766 3842
PA-ARCHY 8-1-3.2-7.0	A6211_009	L1323611-09 - MS/MSD	2	4oz amber	29-Oct-13	12:22	3	1	1Z 19E 18E 01 4766 3842
PA-ARCHY 9-1-0.0-3.5	A6211_010	L1323611-10	1	4oz amber	29-Oct-13	13:12	3	1	1Z 19E 18E 01 4766 3842
PA-03-0.0-3.4	A6211_011	L1323611-11	1	4oz amber	29-Oct-13	13:46	3	1	1Z 19E 18E 01 4766 3842
PA-02-0.0-2.5	A6211_012	L1323611-12	1	4oz amber	29-Oct-13	14:38	3	1	1Z 19E 18E 01 4766 3842
PA-01-0.0-3.5	A6211_013	L1323611-13	1	4oz amber	29-Oct-13	15:52	3	1	1Z 19E 18E 01 4766 3842
PA-08-1.0-4.7	A6211_014	L1323611-14	1	4oz amber	23-Oct-13	10:00	3	1	1Z 19E 18E 01 4766 3842

Preservation Type: Ice - Good Condition **Sample Seals:** No

Notes/Comments:

Samples received intact

M1613 17 + Homologs
WHO - TBF's ~~NEG~~

PR

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Barbara Hager *Logged in by: Barbara Hager*

QC'ed by:
SGS Analytical Perspectives

Sub (UPS): SGS

a0211

Date Rec'd in Lab:

ALPHA Job #: L1323611

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Alpha Analytical, Inc

Address: 320 Forbes Blvd

Mansfield, MA 02048

Phone: 508-844-4124

Fax:

Email:reporting@alphalab.com,eporta@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: PORT AMBROSE 2013

Project Location:

Project #:

Project Manager: Liz Porta

ALPHA Quote #:

Turn-Around Time

Standard Rush (ONLY IF PRE-APPROVED)

Due Date: 12/10/13 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

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job #L1323611 on Report.

ANALYSIS

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	Dioxin by EPA 1613B	(17 isomers and TEQ)			MS/MSD								Sample Specific Comments	
	PA-07-0.0-3.0	10/28/13	9:38	SE		☒	☐											L1323611-01	1
	PA-VC025-1-0.0-3.3	10/28/13	11:02	SE		☒	☐											L1323611-02	1
	PA-VC024-1-2.6-4.5	10/28/13	12:18	SE		☒	☐											L1323611-03	1
	PA-06-0.0-2.5	10/28/13	15:04	SE		☒	☐											L1323611-04	1
	PA-05-0.0-3.9	10/28/13	16:07	SE		☒	☐											L1323611-05	1
	PA-04-0.0-2.1	10/28/13	17:12	SE		☒	☐											L1323611-06	1
	PA-04D-0.0-2.1	10/28/13	17:12	SE		☒	☐											L1323611-07	1
	PA-VC023-1-1.5-3.0	10/28/13	18:04	SE		☒	☐											L1323611-08	1
	PA-ARCHY 8-1-3.2-7.0	10/29/13	12:22	SE		☒	☐			☒								L1323611-09	2
	PA-ARCHY 9-1-0.0-3.5	10/29/13	13:12	SE		☒	☐											L1323611-10	1
					Container Type	A			-	-	-	-	-	-	-	-	-		
					Preservative	A			-	-	-	-	-	-	-	-	-		

PLEASE ANSWER QUESTIONS ABOVE!

S YOUR PROJECT
MA MCP *or* CT RCP?

FORM NO: 01-01(I)
(rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	11/21/13 12:10	UPS	
		Barbara Hagen	22 Nov 13 1030

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 Paymer Terms.

Sub (UPS): SGS

a6211

Date Rec'd in Lab:

ALPHA Job #: L1323611

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

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

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

- ☐ Yes ☐ No — Are MCP Analytical Methods Required?
- ☐ Yes ☐ No — Are CT RCP (Reasonable Confidence Protocols) Required?

Client Information

Client: Alpha Analytical, Inc
Address: 320 Forbes Blvd
Mansfield, MA 02048
Phone: 508-844-4124
Fax:
Email:reporting@alphalab.com,eporta@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name: PORT AMBROSE 2013
Project Location:
Project #:
Project Manager: Liz Porta
ALPHA Quote #:

Turn-Around Time

Standard Rush (ONLY IF PRE-APPROVED)

Due Date: 12/10/13 Time:

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job #L1323611 on Report.

ANALYSIS

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	Dioxin by EPA 1613B	(17 isomers and TEQ)											Sample Specific Comments	
	PA-03-0.0-3.4	10/29/13	13:46	SE		☒	☐											L1323611-11	1
	PA-02-0.0-2.5	10/29/13	14:38	SE		☒	☐											L1323611-12	1
	PA-01-0.0-3.5	10/29/13	15:52	SE		☒	☐											L1323611-13	1
	PA-08-1.0-4.7	10/23/13	10:00	SE		☒	☐											L1323611-14	1
						☐	☐												
						☐	☐												
						☐	☐												
						☐	☐												
						☐	☐												
						☐	☐												
						☐	☐												

Container Type	A			-	-	-	-	-	-	-	-	-
Preservative	A			-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

S YOUR PROJECT
MA MCP or CT RCP?

FORM NO: 01-01(I)
(rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	11/21/13 12:10	UPS	
		Barbara Hager	22-NOV-13 10:30

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 Payment Terms.

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **Alpha** Work Order No.: **A6211**

Notes:

1. X Shipped
   ___ Hand Delivered

2. X COC Present on Receipt
   ___ No COC
   ___ Additional Transmittal Forms

3. X Custody Tape on Container
   ___ No Custody Tape

4. X Samples Intact
   ___ Samples Broken / Leaking

5. X Chilled on Receipt Actual Temp.(s) in °C: 3 Thermometer ID#: ThermoTrace
   ___ Ambient on Receipt
   ___ Walk-in on Ice; Coming down to temp.
   ___ Temperature Blank Present

6. X Sufficient Sample Submitted
   ___ Insufficient Sample Submitted

7. ___ Chlorine absent
   ___ HNO3 < 2
   ___ HCL < 2
   ___ Additional Preservatives verified (see notes)

8. X Received Within Holding Time
   ___ Not Received Within Holding Time

9. X No Discrepancies Noted
   ___ Discrepancies Noted
   ___ NCDENR notified of Discrepancies*

10. ___ No Headspace present in VOC vials
    ___ Headspace present in VOC vials >6mm

Comments:

Inspected and Logged in by: BAH
Date: Fri-11/22/13 00:00

*NCDENR must be notified when collection, holding time or preservation requirements are not met.

APPENDIX E
GRAIN-SIZE DATA
(IN TWO PARTS)

ANALYTICAL REPORT

Lab Number:	L1321691
Client:	AECOM Environment, Marine & Cosatal Center 89 Water Street Woods Hole, MA 02543
ATTN:	James Blake
Phone:	(508) 457-7900
Project Name:	PORT AMBROSE 2013
Project Number:	Not Specified
Report Date:	11/08/13

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), PA (68-02089), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), DOD (L2217.01), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1321691
Report Date: 11/08/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1321691-01	PA-08-0.0-1.0	Not Specified	10/23/13 10:00
L1321691-02	PA-08-1.0-4.7	Not Specified	10/23/13 10:00

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1321691
Project Number:	Not Specified	**Report Date:**	11/08/13

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 all of the requirements of NELAC, for all NELAC accredited parameters. 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. 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. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1321691
Project Number:	Not Specified	**Report Date:**	11/08/13

Case Narrative (continued)

Grain Size

The WG650579-1 Laboratory Duplicate RPD, performed on sample L1321691-01, is outside the acceptance criteria for Fines (35%). The elevated RPD has been attributed to the non-homogeneous nature of the sample utilized for the laboratory duplicate.

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: Elizabeth Porta

Title: Technical Director/Representative

Date: 11/08/13

INORGANICS
&
MISCELLANEOUS

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1321691
Report Date: 11/08/13

SAMPLE RESULTS

Lab ID: L1321691-01
Client ID: PA-08-0.0-1.0
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/23/13 10:00
Date Received: 10/25/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE
% Fine Gravel	2.31		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE
% Coarse Sand	2.89		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE
% Medium Sand	23.9		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE
% Fine Sand	70.0		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE
% Total Fines	0.870		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1321691
Report Date: 11/08/13

SAMPLE RESULTS

Lab ID: L1321691-02
Client ID: PA-08-1.0-4.7
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/23/13 10:00
Date Received: 10/25/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE
% Fine Gravel	0.230		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE
% Coarse Sand	5.21		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE
% Medium Sand	23.1		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE
% Fine Sand	55.1		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE
% Total Fines	16.3		%	0.100	NA	1	-	11/08/13 00:00	12,D422	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1321691
Report Date: 11/08/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size Analysis - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG650579-1 QC Sample: L1321691-01 Client ID: PA-08-0.0-1.0						
Cobbles	ND	ND	%	NC		20
% Coarse Gravel	ND	ND	%	NC		20
% Fine Gravel	2.31	2.30	%	0		20
% Coarse Sand	2.89	2.82	%	2		20
% Medium Sand	23.9	23.9	%	0		20
% Fine Sand	70.0	69.8	%	0		20
% Total Fines	0.870	1.24	%	**35**	Q	20

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1321691
Report Date: 11/08/13

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 10/28/2013 18:08

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1321691-01A	Bag	A	N/A	4.7	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1321691-02A	Vial MeOH preserved	A	N/A	4.7	Y	Absent	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1321691-02B	Vial unpreserved	A	N/A	4.7	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1321691-02C	Vial unpreserved	A	N/A	4.7	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1321691-02D	Plastic 8oz unpreserved for Grai	A	N/A	4.7	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1321691-02E	Amber 120ml unpreserved	A	N/A	4.7	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1321691
Report Date: 11/08/13

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1321691-02F	Amber 250ml unpreserved	A	N/A	4.7	Y	Absent	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1321691
Project Number:	Not Specified	**Report Date:**	11/08/13

GLOSSARY

Acronyms

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).
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.
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.
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.
NI	- Not Ignitable.
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.

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.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
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.
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.
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.

Report Format: Data Usability Report

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1321691
Project Number:	Not Specified	**Report Date:**	11/08/13

Data Qualifiers

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

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. (American Society for Testing and Materials) ASTM International.

LIMITATION OF LIABILITIES

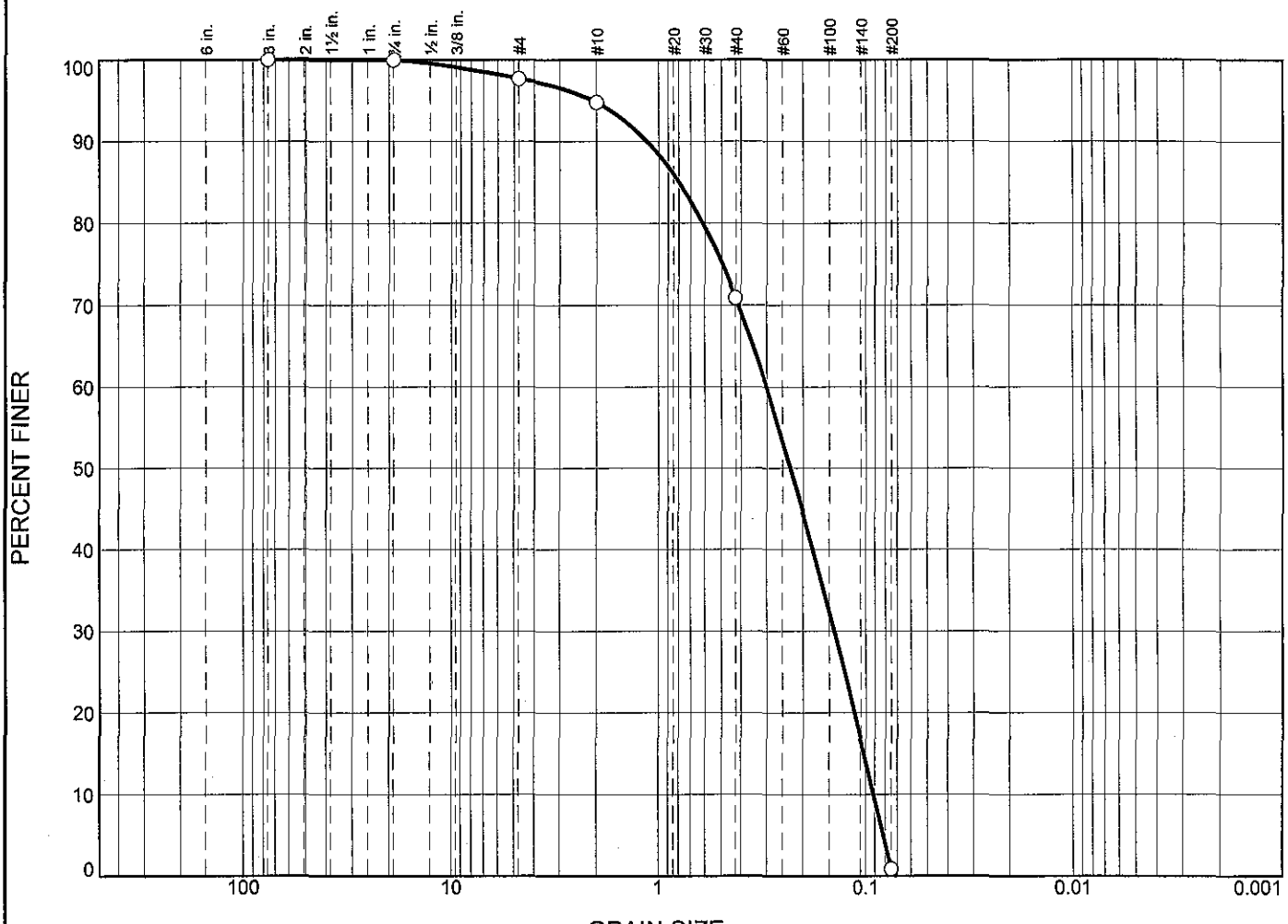
Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held 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.

ASTM D422-63

GRAIN SIZE ANALYSIS

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	2.31	2.89	23.92	70.01	0.87	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8007	0.3014	0.2299	0.1422	0.1018	0.0914	0.73	3.30

	Material Description	USCS	AASHTO
○		SP	

Project No. **Client:**

Project:

○ **Source of Sample:** PA-08-0.0-1.0 **Sample Number:** L1321691-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/8/2013

Location: PA-08-0.0-1.0
Sample Number: L1321691-01
USCS Classification: SP

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 245.73
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
245.73	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	5.67	0.00	97.69
		#10	7.10	0.00	94.80
		#40	58.78	0.00	70.88
		#200	172.05	0.00	0.87

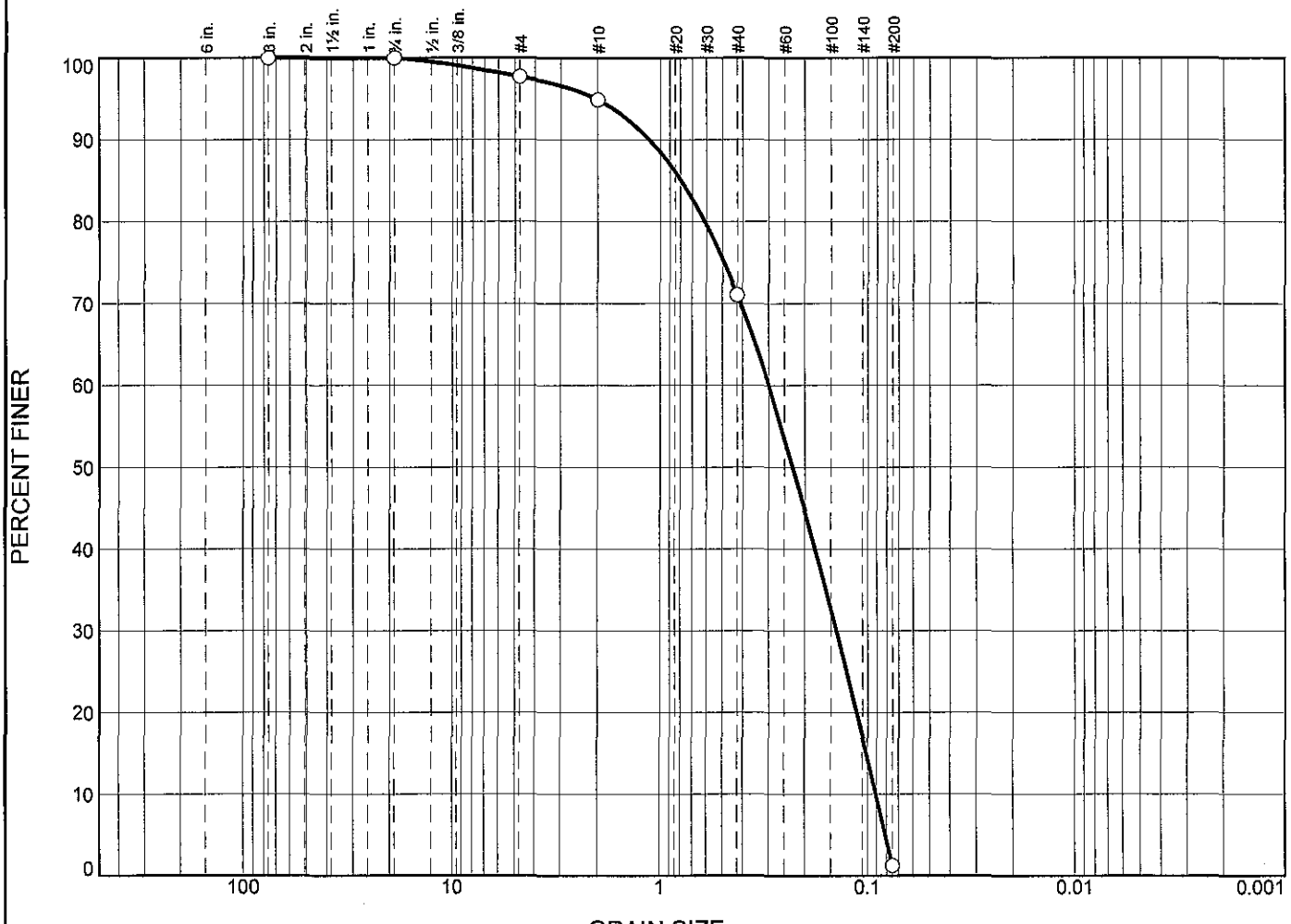
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	2.31	2.31	2.89	23.92	70.01	96.82			0.87

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0914	0.1018	0.1137	0.1422	0.2299	0.3014	0.6149	0.8007	1.1394	2.0713

Fineness Modulus	C_u	C_c
1.46	3.30	0.73

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	2.30	2.82	23.86	69.78	1.24	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7955	0.3000	0.2287	0.1413	0.1011	0.0907	0.73	3.31

	Material Description	USCS	AASHTO
○		SP	

Project No. **Client:**

Project:

○ **Source of Sample:** PA-08-0.0-1.0 **Sample Number:** WG650579-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/8/2013

Location: PA-08-0.0-1.0
Sample Number: WG650579-1
USCS Classification: SP

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 245.73
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
245.73	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	5.65	0.00	97.70
		#10	6.94	0.00	94.88
		#40	58.62	0.00	71.02
		#200	171.47	0.00	1.24

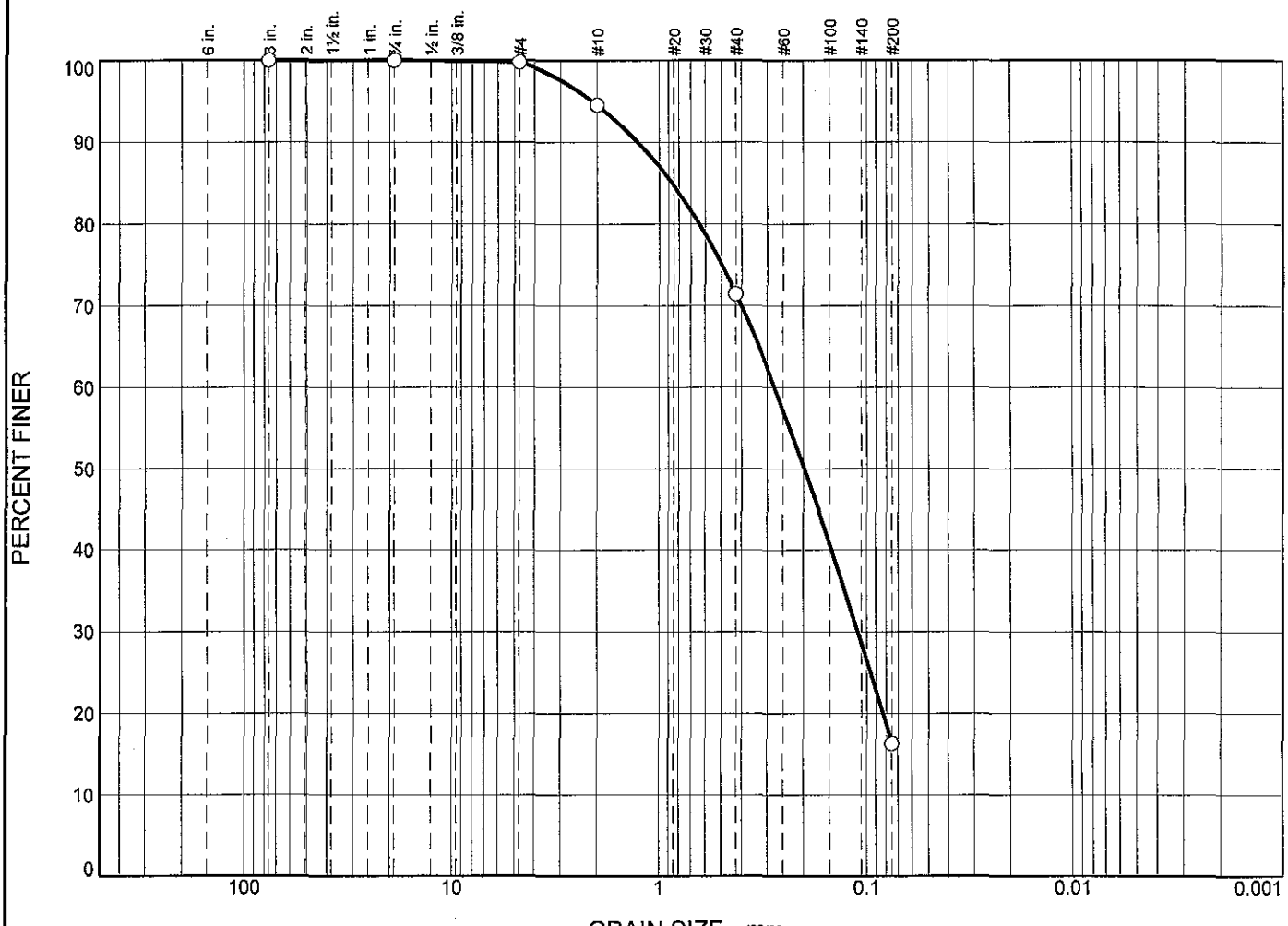
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	2.30	2.30	2.82	23.86	69.78	96.46			1.24

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0907	0.1011	0.1129	0.1413	0.2287	0.3000	0.6115	0.7955	1.1299	2.0446

Fineness Modulus	C_u	C_c
1.45	3.31	0.73

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	0.23	5.21	23.12	55.12	16.32	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8669	0.2756	0.1986	0.1101				

	Material Description	USCS	AASHTO
○			

Project No. **Client:**

Project:

○ **Source of Sample:** PA-08-1.0-4.7 **Sample Number:** L1321691-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

Certificate/Approval Program Summary

Last revised October 1, 2013 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable). Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Titanium, Vanadium, Zinc, Total Organic Carbon, Corrosivity, TCLP 1311, SPLP 1312. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020A, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

Solid & Chemical Materials (Inorganic Parameters: EPA 1311, 3050B, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

Biological Tissue (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

Air & Emissions (EPA TO-15.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 180.1, 1631E, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B, 3020A, . Organic Parameters: EPA 3510C, 3630C, 3640A, 3660B, 8081B, 8082A, 8270C, 8270D, 8015D.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 1311, 3050B, 3051A, 6020A, 7471B, 9040B, 9045C. Organic Parameters: SW-846 3540C, 3580A, 3630C, 3640A, 3660B, 3665A, 8270C, 8015D, 8082A, 8081B.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3020A, SM2320B, SM2540D, 2540G, 4500H-B, EPA 180.1, 1631E, SW-846 7470A, 9040C, 6020A, 9050A. Organic Parameters: SW-846 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 8015D, 8081B, 8082A, 8270C, 8270D)

Solid & Chemical Materials (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 6020A, 7471B, 7474, 9040B, 9040C, 9045C, 9045D, 9060, 9060A. Organic Parameters: SW-846 3540C, 3570, 3580A, 3630C, 3640A, 3660B, 3665A, 8081B, 8082A, 8270C, 8270D, 8015D.)

Atmospheric Organic Parameters (EPA 3C, TO-15, TO-10A, TO-13A-SIM.)

Biological Tissue (Inorganic Parameters: SW-846 6020A. Organic Parameters: SW-846 8270C, 8270D, 3510C, 3570, 3610C, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, SM2540D, 6020A, 1631E, 7470A, 9050A, EPA 180.1, 3020A. Organic Parameters: EPA 8270C, 8270D, 8081B, 8082A, 3510C.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 6020A, 7471B, 7474, 9040C, 9045D, 9060A. Organic Parameters: EPA 8270C, 8270D, 8081B, 8082A, 1311, 3050B, 3580A, 3570, 3051A.)

Air & Emissions (EPA TO-15, TO-10A.)

Pennsylvania Certificate/Lab ID: 68-02089 ***NELAP Accredited***

Non-Potable Water (Inorganic Parameters: 1312, 1631E, 180.1, 3020A, 6020A, 7470A, 9040B, 9050A, 2320B, 2540D, 2540G, SM4500H+-B. Organic Parameters: 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 8015D, 8081B, 8082A, 8270C, 8270D .)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 3051A, 6020A, 7471B, 7474 9040B, 9045C, 9060. Organic Parameters: EPA3050B, 3540C, 3570, 3580A, 3630C, 3640A, 3660B, 3665A, 8270C, 8270D, 8081B, 8015D, 8082A.)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via NJ-DEP.***

Refer to NJ-DEP Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8081, 8082.)

Air (Organic Parameters: EPA TO-15)

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID:460194. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters:EPA 3020A, 6020A, 245.7, 9040B. Organic Parameters: EPA 3510C, 3640A, 3660B, 3665A, 8270C, 8270D, 8082A, 8081B, 8015D.)

Solid & Chemical Materials (Inorganic Parameters: EPA 6020A,7470A,7471B,9040B,9045C,3050B,3051, 9060. Organic Parameters: EPA 3540C, 3580A, 3630C, 3640A, 3660B, 3665A, 3570, 8270C, 8270D, 8081B, 8082A, 8015D.)

Washington State Department of Ecology Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 180.1, 1631E.)

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 7474, 9045C, 9050A, 9060. Organic Parameters: EPA 8081, 8082, 8015, 8270.)

U.S. Army Corps of Engineers

Department of Defense, L-A-B Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 8270C, 8270D, 8270C-ALK-PAH, 8270D-ALK-PAH, 8082A, 8081B, 8015D-SHC, 8015D.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 8270C, 8270D, 8270C-ALK-PAH, 8270D-ALK-PAH 8082A, 8081B, 8015D-SHC, 8015D.

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP

Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl. **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, 2-Methylnaphthalene, 1-Methylnaphthalene.

L1321691 Serial_No:11081318:55

AECOM (1)

CHAIN-OF-CUSTODY / Analytical Request Document

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

Task:	Port Ambrose 2013
Total # of Samples: 2	Event Complete?
TAT	standard / Rush

Notes: F= Field Filtered , H= Hold

Lab Information:

Lab:	Alpha Analytical
Address:	320 Forbes Blvd, Mansfield, MA 02048
Lab PM:	Elizabeth Porta
Phone/Fax:	508-844-4124
PM email	eporta@alphalab.com
Lab Quote #:	

Project Information:

Site ID #:	Port Ambrose 2013
Project #	
Site Address	
City	State, Zip
PM Name	James Blake
Phone/Fax:	508-457-7900
PM Email:	james.blake@aecom.com

Other Information:

Send Data/Invoice	James Blake
Address:	89 Water Street
City/State.	Woods Hole, MA 02543
Phone #:	508-457-7900
PO #	
Send EDD to	N/A
CC Hardcopy to	
CC Hardcopy to	

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Metals (As, Cd, Pb, Hg)	Total PCB Aroclor	Pesticides	PAHs	Volatiles (BTX)	Grain size (#4, 10, 40, 200)	TOC	Dioxin/Furans
01	PA-08-0.0-1.0	SE	G	10/23/2013 1000 AM	1							1		
02	PA-08-1.0-4.7	SE	G	10/23/2013 1000 AM	1	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X

Preservative

Lab Notes

10/25/13

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[illegible]	10/25/13	1845	[illegible]	10/25/13	1845
[illegible]	10/25/13	1740	[illegible]	10/25/13	1740
[illegible]	10/25/13	1845	[illegible]	10/25/13	1845

Sample Receipt Conditions			
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
Temp in OC	Samples on Ice?	Sample intact?	Trip Blank?

CARRIER:	COURIER	DATE/TIME:	
TRACKING #:	N/A		

ANALYTICAL REPORT

Lab Number:	L1322168
Client:	AECOM Environment, Marine & Cosatal Center 89 Water Street Woods Hole, MA 02543
ATTN:	James Blake
Phone:	(508) 457-7900
Project Name:	PORT AMBROSE 2013
Project Number:	Not Specified
Report Date:	11/15/13

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), PA (68-02089), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), DOD (L2217.01), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1322168-01	PA-07-0.0-3.0	Not Specified	10/28/13 09:38
L1322168-02	PA-VC025-1-0.0-3.3	Not Specified	10/28/13 11:02
L1322168-03	PA-VC024-1-0.0-2.6	Not Specified	10/28/13 12:18
L1322168-04	PA-VC024-1-2.6-4.5	Not Specified	10/28/13 12:18
L1322168-05	PA-VC024-1-4.5-6.2	Not Specified	10/28/13 12:18
L1322168-06	PA-06-0.0-2.5	Not Specified	10/28/13 15:04
L1322168-07	PA-05-0.0-3.9	Not Specified	10/28/13 16:07
L1322168-08	PA-04-0.0-2.1	Not Specified	10/28/13 17:12
L1322168-09	PA-04D-0.0-2.1	Not Specified	10/28/13 17:12
L1322168-10	PA-VC023-1-0.0-1.5	Not Specified	10/28/13 18:04
L1322168-11	PA-VC023-1-1.5-3.0	Not Specified	10/28/13 18:04
L1322168-12	PA-ARCHY 8-1-0.0-3.2	Not Specified	10/29/13 12:22
L1322168-13	PA-ARCHY 8-1-3.2-7.0	Not Specified	10/29/13 12:22
L1322168-14	PA-ARCHY 9-1-0.0-3.5	Not Specified	10/29/13 13:12
L1322168-15	PA-03-0.0-3.4	Not Specified	10/29/13 13:46
L1322168-16	PA-02-0.0-2.5	Not Specified	10/29/13 14:38
L1322168-17	PA-01-0.0-3.5	Not Specified	10/29/13 15:52

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1322168
Project Number:	Not Specified	**Report Date:**	11/15/13

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 all of the requirements of NELAC, for all NELAC accredited parameters. 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. 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. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1322168
Project Number:	Not Specified	**Report Date:**	11/15/13

Case Narrative (continued)

Grain Size

The WG652130-1 Laboratory Duplicate RPD, performed on sample L1322168-09, is outside the acceptance criteria for % Coarse sand (28%). The elevated RPD has been attributed to the non-homogeneous nature of the sample utilized for the laboratory duplicate.

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: Elizabeth Porta

Title: Technical Director/Representative

Date: 11/15/13

INORGANICS
&
MISCELLANEOUS

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-01
Client ID: PA-07-0.0-3.0
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 09:38
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	27.3		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	17.2		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	27.3		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	16.8		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	11.4		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-02
Client ID: PA-VC025-1-0.0-3.3
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 11:02
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	9.53		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	16.1		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	27.7		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	30.0		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	16.7		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-03
Client ID: PA-VC024-1-0.0-2.6
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 12:18
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	11.8		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	7.22		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	19.8		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	44.6		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	16.6		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-04
Client ID: PA-VC024-1-2.6-4.5
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 12:18
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	0.150		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	5.83		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	47.4		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	46.6		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-05
Client ID: PA-VC024-1-4.5-6.2
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 12:18
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	0.340		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	0.980		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	14.3		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	61.8		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	22.6		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-06
Client ID: PA-06-0.0-2.5
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 15:04
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	3.85		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	5.74		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	13.7		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	49.8		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	26.9		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-07
Client ID: PA-05-0.0-3.9
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 16:07
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	25.9		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	11.3		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	23.5		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	28.6		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	10.7		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-08
Client ID: PA-04-0.0-2.1
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 17:12
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	0.470		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	1.41		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	10.4		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	66.0		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	21.8		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-09
Client ID: PA-04D-0.0-2.1
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 17:12
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	0.430		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	1.18		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	10.8		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	66.9		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	20.7		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-10
Client ID: PA-VC023-1-0.0-1.5
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 18:04
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	0.460		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	1.42		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	12.8		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	62.0		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	23.4		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-11
Client ID: PA-VC023-1-1.5-3.0
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/28/13 18:04
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	1.84		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	1.97		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	6.62		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	19.2		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	70.4		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-12
Client ID: PA-ARCHY 8-1-0.0-3.2
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/29/13 12:22
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	18.2		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	10.8		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	27.1		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	26.8		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	17.0		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-13
Client ID: PA-ARCHY 8-1-3.2-7.0
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/29/13 12:22
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	0.420		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	0.420		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	3.19		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	56.9		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	39.0		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-14
Client ID: PA-ARCHY 9-1-0.0-3.5
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/29/13 13:12
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	2.34		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	7.72		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	21.0		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	47.6		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	21.3		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-15
Client ID: PA-03-0.0-3.4
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/29/13 13:46
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	2.12		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	2.16		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	6.10		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	61.5		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	28.1		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-16
Client ID: PA-02-0.0-2.5
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/29/13 14:38
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	3.84		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	6.03		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	13.5		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	55.3		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	21.4		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

SAMPLE RESULTS

Lab ID: L1322168-17
Client ID: PA-01-0.0-3.5
Sample Location: Not Specified
Matrix: Soil

Date Collected: 10/29/13 15:52
Date Received: 11/01/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Grain Size Analysis - Mansfield Lab										
Cobbles	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Gravel	ND		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Gravel	10.1		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Coarse Sand	6.05		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Medium Sand	24.1		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Fine Sand	41.0		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE
% Total Fines	18.8		%	0.100	NA	1	-	11/15/13 00:00	12,D422	SE

Lab Duplicate Analysis
Batch Quality Control

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Grain Size Analysis - Mansfield Lab Associated sample(s): 01-17 QC Batch ID: WG652130-1 QC Sample: L1322168-09 Client ID: PA-04D-0.0-2.1						
Cobbles	ND	ND	%	NC		20
% Coarse Gravel	ND	ND	%	NC		20
% Fine Gravel	0.430	0.460	%	7		20
% Coarse Sand	1.18	1.57	%	**28**	Q	20
% Medium Sand	10.8	11.1	%	3		20
% Fine Sand	66.9	68.1	%	2		20
% Total Fines	20.7	18.8	%	10		20

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 11/01/2013 15:30

Cooler Information	Custody Seal
Cooler	
A	Present/Intact

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1322168-01A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1322168-01B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-01C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-01D	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-01E	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-01F	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1322168-02A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1322168-02B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-02C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-02D	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-02E	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-02F	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-03A	Bag	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-04A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)

*Values in parentheses indicate holding time in days

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1322168-04B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-04C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-04D	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-04E	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-04F	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-05A	Bag	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-06A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1322168-06B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1322168-06C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-06D	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-06E	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-06F	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-07A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1322168-07B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-07C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-07D	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

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Project Number: Not Specified

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1322168-07E	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-07F	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-08A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1322168-08B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-08C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-08D	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-08E	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-08F	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

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Project Number: Not Specified

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1322168-09A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1322168-09B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-09C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-09D	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-09E	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-09F	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-10A	Bag	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-11A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)

*Values in parentheses indicate holding time in days

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Project Number: Not Specified

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1322168-11B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-11C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-11D	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-11E	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-11F	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-12A	Bag	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-13A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1322168-13B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

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Project Number: Not Specified

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1322168-13C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-13D	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1322168-13E	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-13F	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-13G	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-13H	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-13I	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-13J	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

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Project Number: Not Specified

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1322168-13K	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-13L	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-14A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1322168-14B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-14C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-14D	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-14E	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-14F	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

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Project Number: Not Specified

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1322168-15A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1322168-15B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-15C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-15D	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-15E	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-15F	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-16A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1322168-16B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

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Project Number: Not Specified

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Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1322168-16C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-16D	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-16E	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-16F	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-17A	Vial MeOH preserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-FSAND(0),A2-HYDRO-MSAND(0),A2-HYDRO-CSAND(0),A2-HYDRO-COBBLES(0),A2-HYDRO-FGRAVEL(0),A2-HYDRO-CGRAVEL(0),A2-HYDRO-TFINE(0)
L1322168-17B	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-17C	Vial unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-17D	Plastic 8oz unpreserved for Grai	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

Project Name: PORT AMBROSE 2013
Project Number: Not Specified

Lab Number: L1322168
Report Date: 11/15/13

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1322168-17E	Amber 120ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()
L1322168-17F	Amber 250ml unpreserved	A	N/A	4.2	Y	Present/Intact	A2-HYDRO-TFINE(),A2-HYDRO-CGRAVEL(),A2-HYDRO-FSAND(),A2-HYDRO-MSAND(),A2-HYDRO-CSAND(),A2-HYDRO-COBBLES(),A2-HYDRO-FGRAVEL()

*Values in parentheses indicate holding time in days

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1322168
Project Number:	Not Specified	**Report Date:**	11/15/13

GLOSSARY

Acronyms

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).
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.
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.
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.
NI	- Not Ignitable.
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.

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.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
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.
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.
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.

Report Format: Data Usability Report

Project Name:	PORT AMBROSE 2013	**Lab Number:**	L1322168
Project Number:	Not Specified	**Report Date:**	11/15/13

Data Qualifiers

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

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

12 Annual Book of ASTM Standards. (American Society for Testing and Materials) ASTM International.

LIMITATION OF LIABILITIES

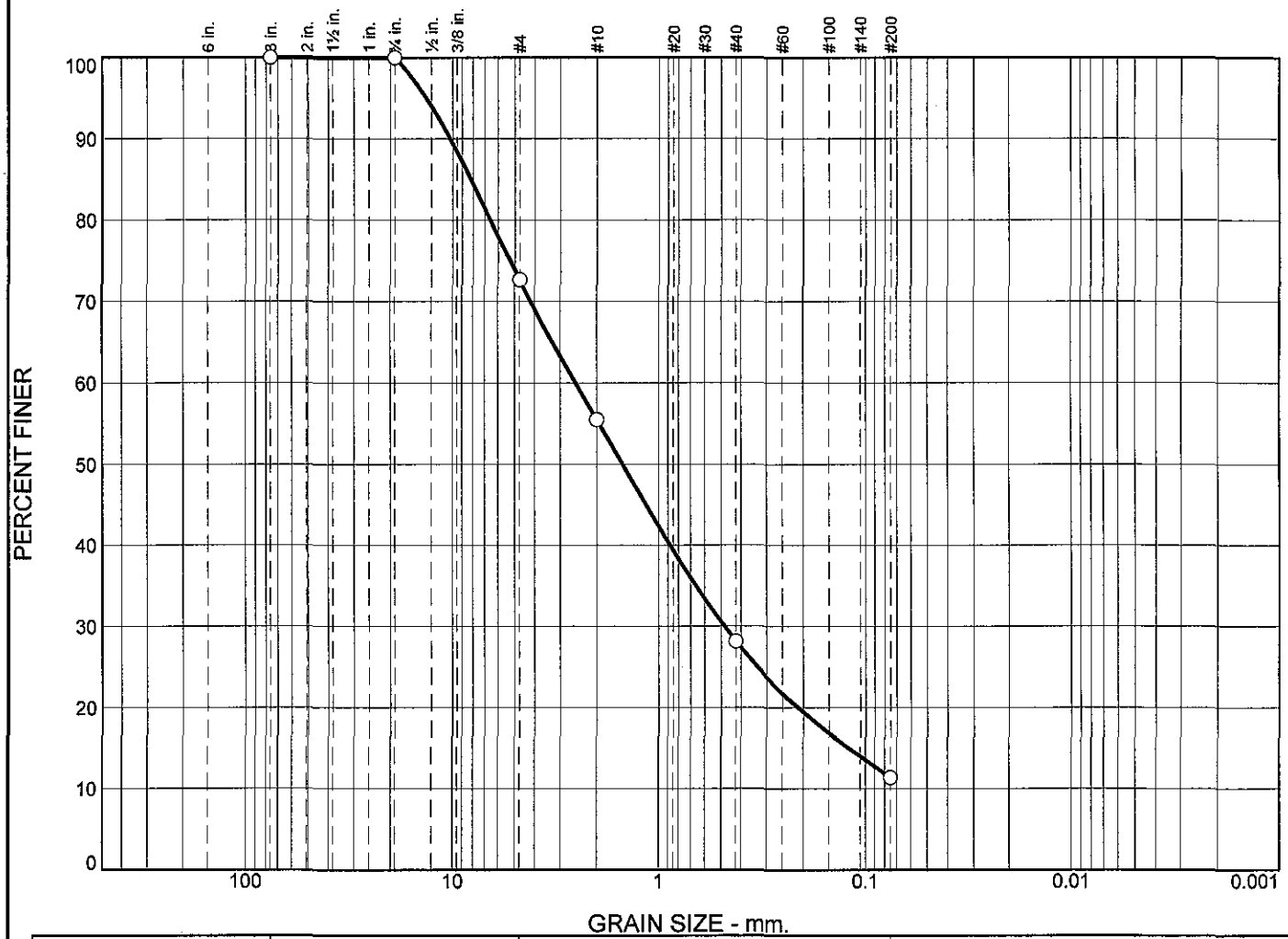
Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held 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.

ASTM D422-63

GRAIN SIZE ANALYSIS

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	27.32	17.20	27.29	16.79	11.40	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			8.1914	2.5336	1.5027	0.4819	0.1199			

Material Description	USCS	AASHTO
○		

Project No. **Client:**

Project:

○ **Source of Sample:** PA-07-0.0-3.0 **Sample Number:** L1322168-01

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-07-0.0-3.0

Sample Number: L1322168-01

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 146.07
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
146.07	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	39.90	0.00	72.68
		#10	25.13	0.00	55.48
		#40	39.87	0.00	28.19
		#200	24.52	0.00	11.40

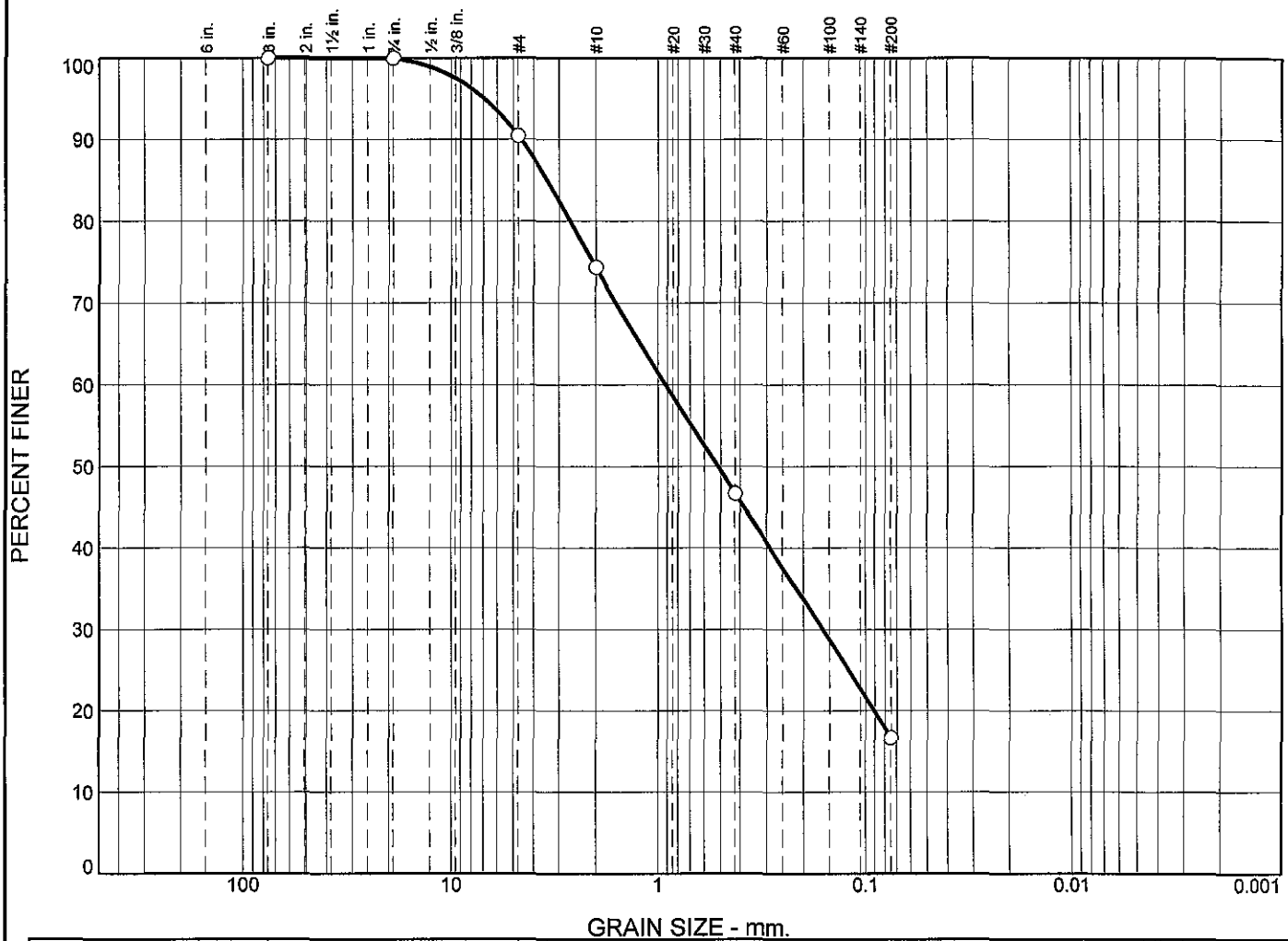
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	27.32	27.32	17.20	27.29	16.79	61.28			11.40

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.1199	0.2116	0.4819	1.5027	2.5336	6.5729	8.1914	10.3238	13.4044

Fineness Modulus
3.61

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	9.53	16.10	27.68	30.01	16.68	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.4329	0.9210	0.5159	0.1614				

	Material Description	USCS	AASHTO
○			

Project No. **Client:**

Project:

○ **Source of Sample:** pa-vc025-1-0.0-3.3 **Sample Number:** I1322168-02

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: pa-vc025-1-0.0-3.3

Sample Number: I1322168-02

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 176.97
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
176.97	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	16.86	0.00	90.47
		#10	28.50	0.00	74.37
		#40	48.98	0.00	46.69
		#200	53.12	0.00	16.68

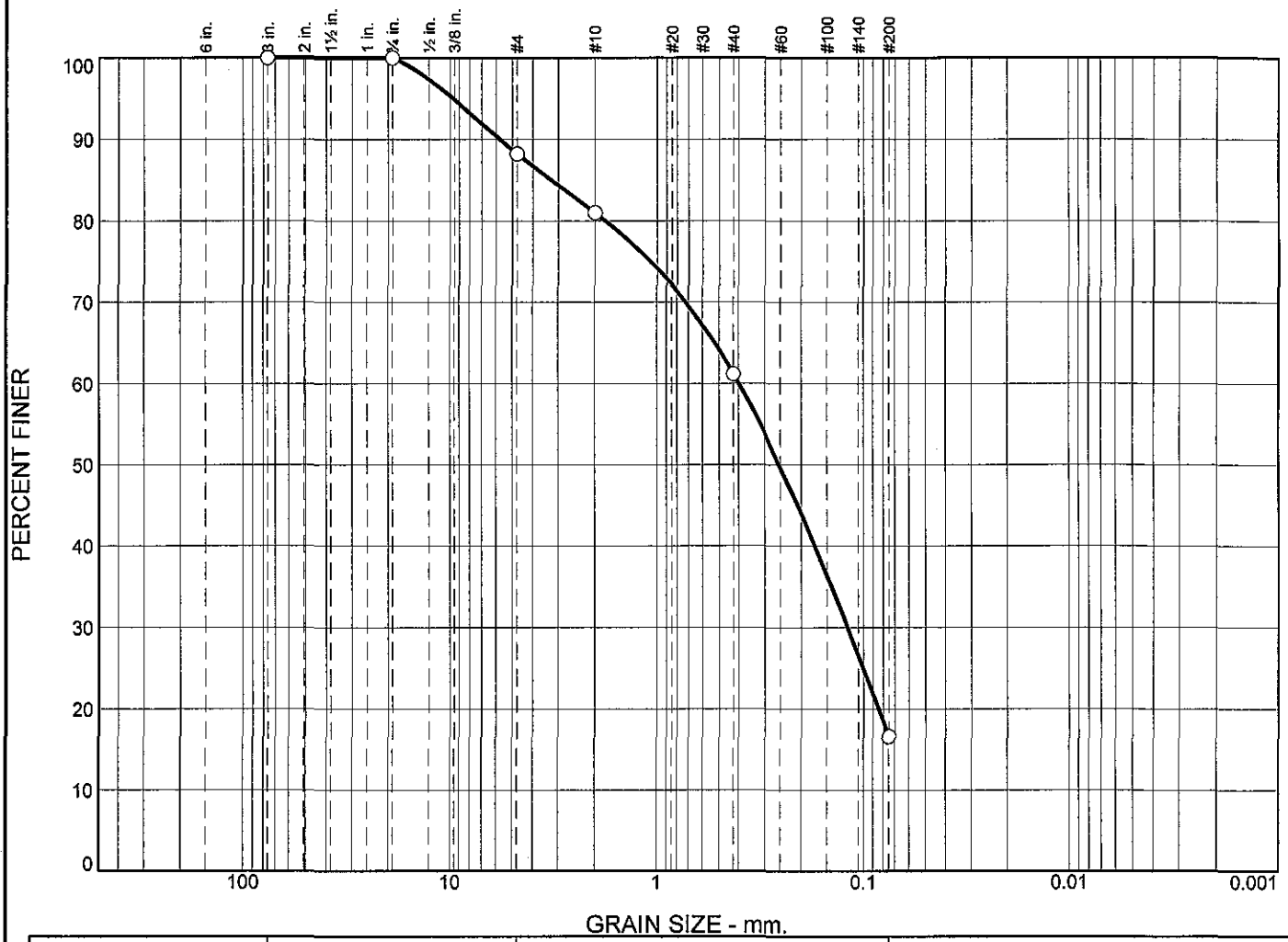
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	9.53	9.53	16.10	27.68	30.01	73.79			16.68

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0908	0.1614	0.5159	0.9210	2.6516	3.4329	4.6025	6.9051

Fineness Modulus
2.48

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	11.78	7.22	19.81	44.56	16.63	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.2556	0.3999	0.2544	0.1195				

Material Description	USCS	AASHTO
○		

Project No. **Client:**

Project:

○ **Source of Sample:** PA-VC024-0.0-2.6 **Sample Number:** L1322168-03

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-VC024-0.0-2.6

Sample Number: L1322168-03

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 132.03
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
132.03	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	15.55	0.00	88.22
		#10	9.54	0.00	81.00
		#40	26.15	0.00	61.19
		#200	58.84	0.00	16.63

Fractional Components

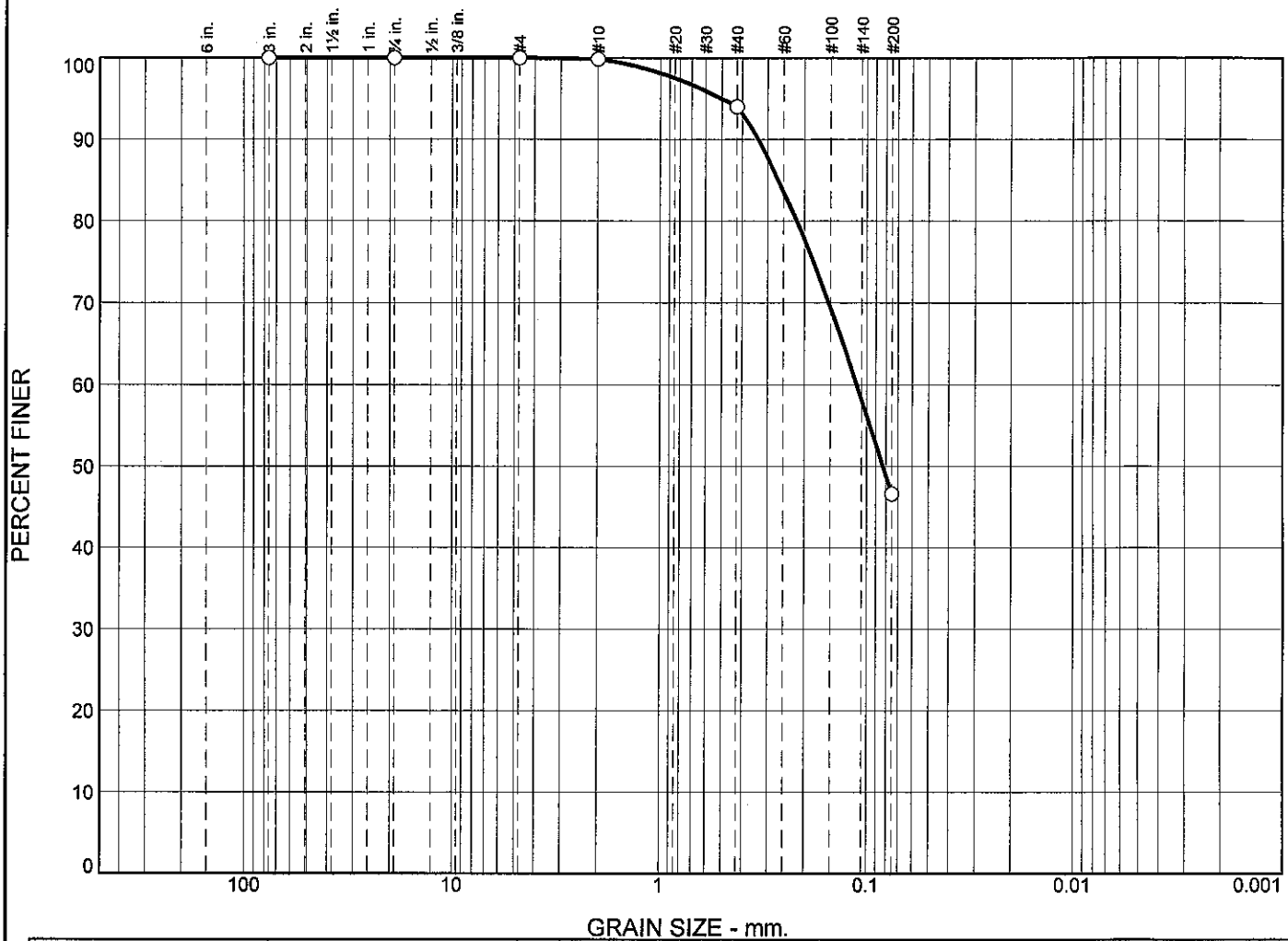
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	11.78	11.78	7.22	19.81	44.56	71.59			16.63

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0843	0.1195	0.2544	0.3999	1.7840	3.2556	5.7425	9.6424

Fineness Modulus
2.01

Alpha Analytical

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	0.00	0.15	5.83	47.41	46.61	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2659	0.1120	0.0829					

Material Description	USCS	AASHTO
○		

Project No. **Client:**

Project:

○ **Source of Sample:** PA-VC024-2.6-4.5 **Sample Number:** L1322168-04

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-VC024-2.6-4.5

Sample Number: L1322168-04

Sieve Test Data

Post #200 Wash Test Weights (grams): **Dry Sample and Tare =** 140.23
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
140.23	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	0.00	0.00	100.00
		#10	0.21	0.00	99.85
		#40	8.17	0.00	94.02
		#200	66.49	0.00	46.61

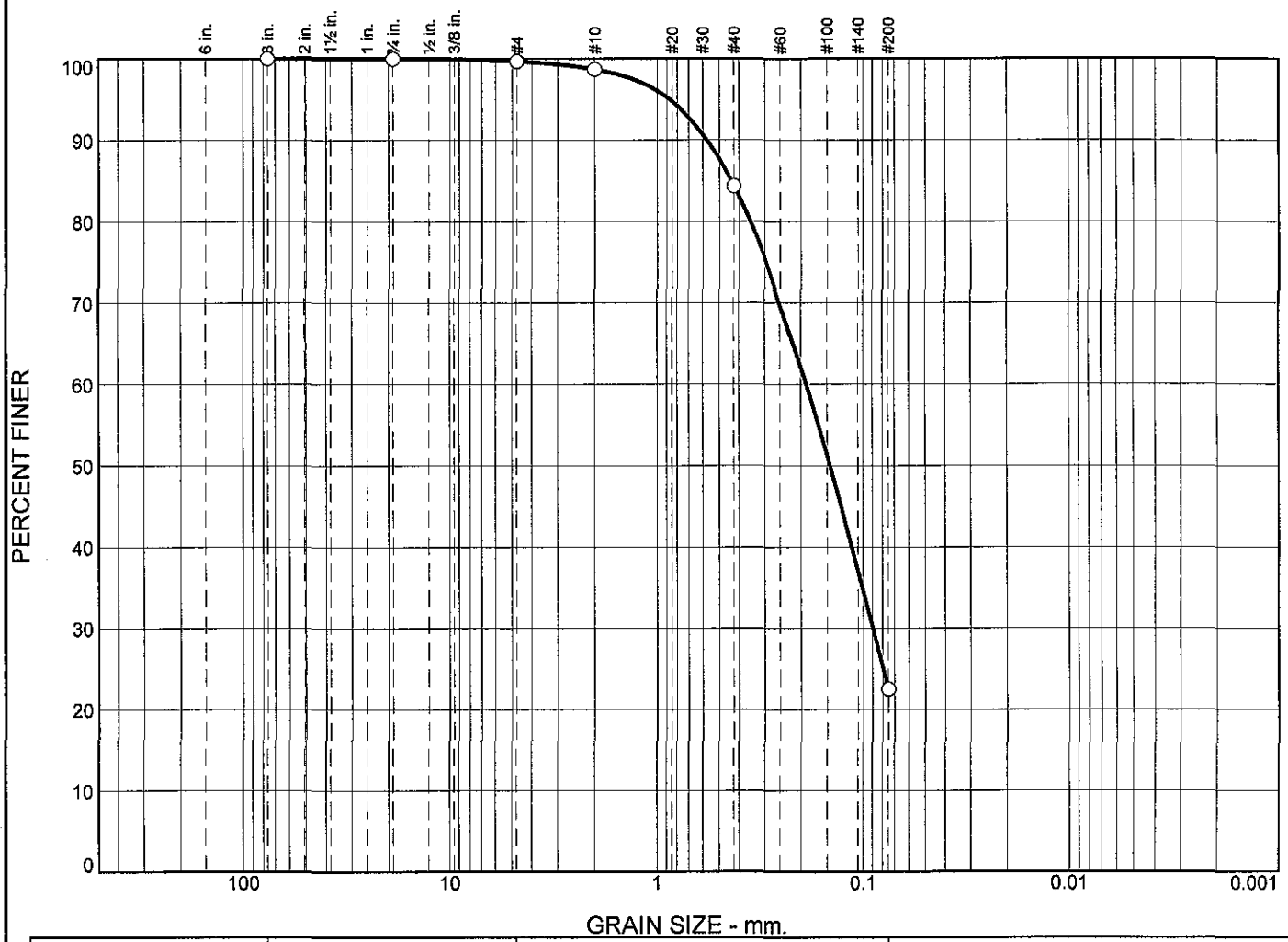
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	0.00	0.00	0.15	5.83	47.41	53.39			46.61

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0829	0.1120	0.2177	0.2659	0.3354	0.5027

Fineness Modulus
0.48

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	0.34	0.98	14.30	61.83	22.55	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4373	0.1890	0.1454	0.0894				

Material Description	USCS	AASHTO
○		

Project No. **Client:**

Project:

○ **Source of Sample:** PA-VC024-4.5-6.2 **Sample Number:** L1322168-05

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-VC024-4.5-6.2

Sample Number: L1322168-05

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 120.57
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
120.57	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	0.41	0.00	99.66
		#10	1.18	0.00	98.68
		#40	17.24	0.00	84.38
		#200	74.55	0.00	22.55

Fractional Components

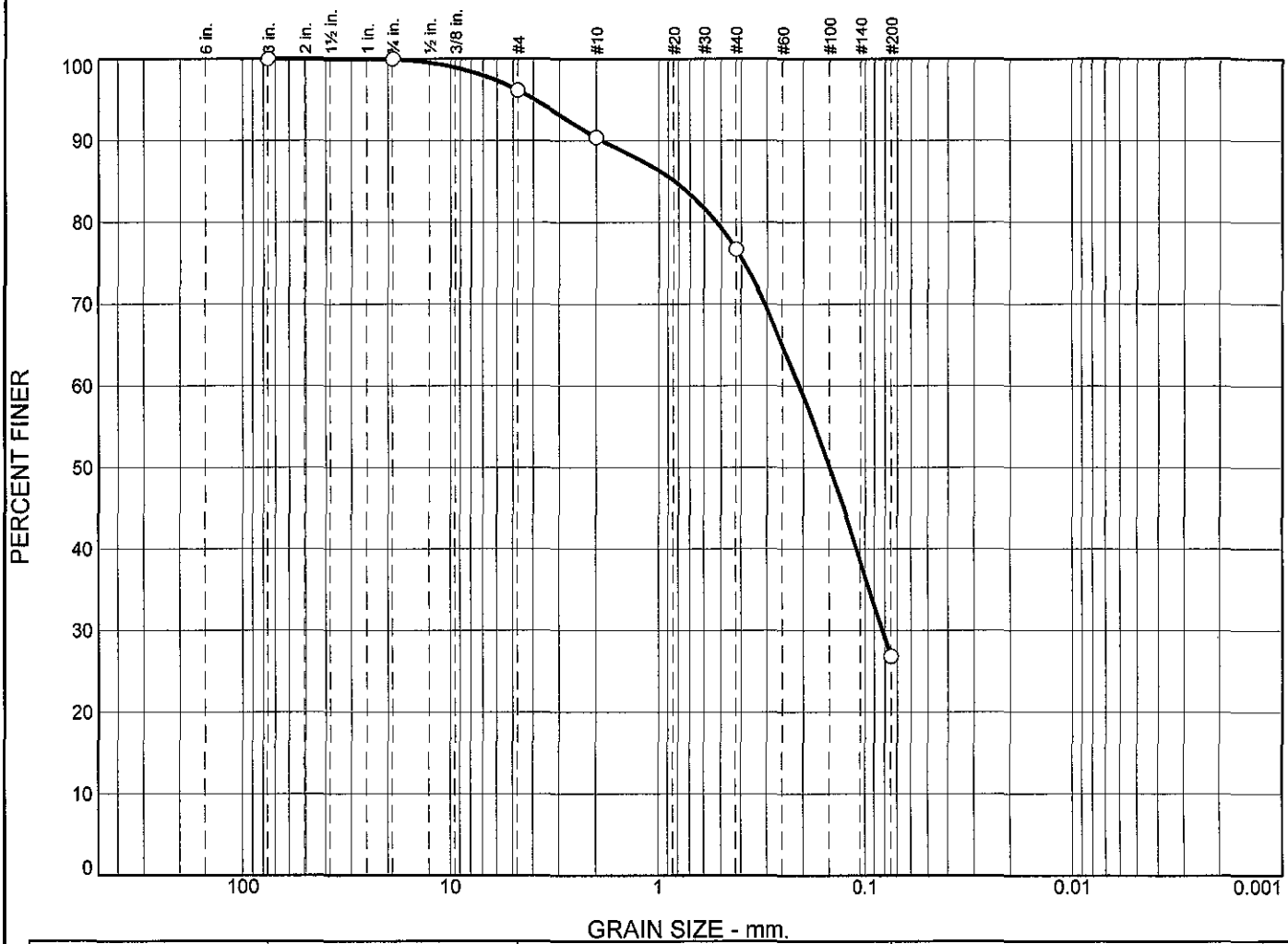
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	0.34	0.34	0.98	14.30	61.83	77.11			22.55

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0894	0.1454	0.1890	0.3543	0.4373	0.5741	0.8756

Fineness Modulus
0.87

Alpha Analytical

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	3.85	5.74	13.73	49.82	26.86	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8350	0.2091	0.1500	0.0822				

	Material Description	USCS	AASHTO
○			

Project No. **Client:**
Project:

○ **Source of Sample:** PA-06-0.0-2.5 **Sample Number:** L1322168-06

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-06-0.0-2.5

Sample Number: L1322168-06

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 146.86
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
146.86	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	5.66	0.00	96.15
		#10	8.42	0.00	90.41
		#40	20.17	0.00	76.68
		#200	73.16	0.00	26.86

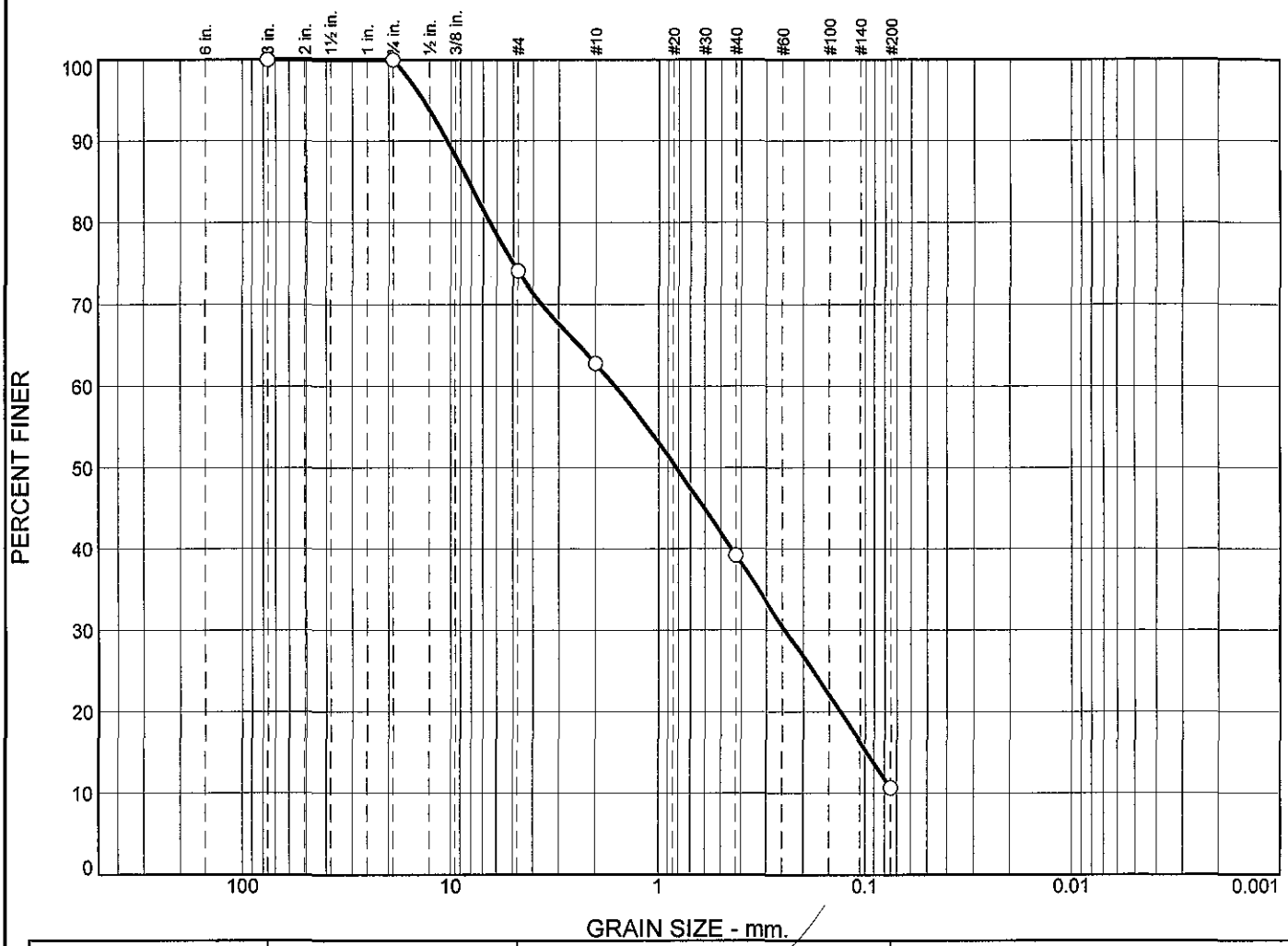
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	3.85	3.85	5.74	13.73	49.82	69.29			26.86

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0822	0.1500	0.2091	0.5249	0.8350	1.8676	3.9394

Fineness Modulus
1.25

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	25.93	11.30	23.54	28.56	10.67	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			8.2471	1.6139	0.8214	0.2430	0.0976			

	Material Description	USCS	AASHTO
○			

Project No. **Client:**

Project:

○ **Source of Sample:** PA-05-0.0-3.9 **Sample Number:** L1322168-07

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-05-0.0-3.9

Sample Number: L1322168-07

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 150.03
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
150.03	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	38.90	0.00	74.07
		#10	16.95	0.00	62.77
		#40	35.32	0.00	39.23
		#200	42.85	0.00	10.67

Fractional Components

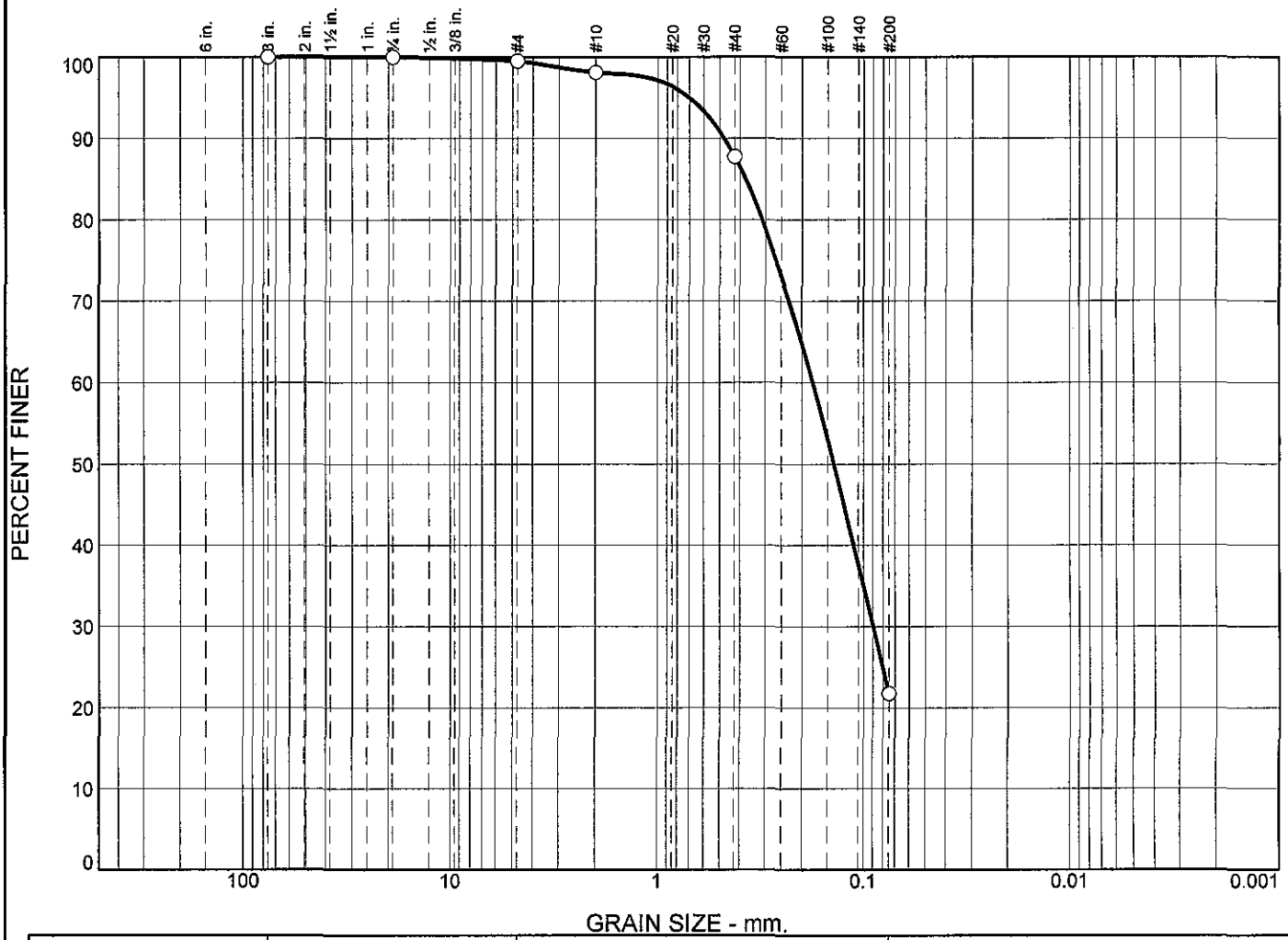
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	25.93	25.93	11.30	23.54	28.56	63.40			10.67

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0976	0.1324	0.2430	0.8214	1.6139	6.5002	8.2471	10.4626	13.5646

Fineness Modulus
3.17

Alpha Analytical

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	0.47	1.41	10.39	65.95	21.78	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3769	0.1772	0.1396	0.0895				

	Material Description	USCS	AASHTO
○			

Project No. **Client:**

Project:

○ **Source of Sample:** PA-04-0.0-2.1 **Sample Number:** L1322168-08

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-04-0.0-2.1

Sample Number: L1322168-08

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 167.83
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
167.83	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	0.79	0.00	99.53
		#10	2.37	0.00	98.12
		#40	17.43	0.00	87.73
		#200	110.69	0.00	21.78

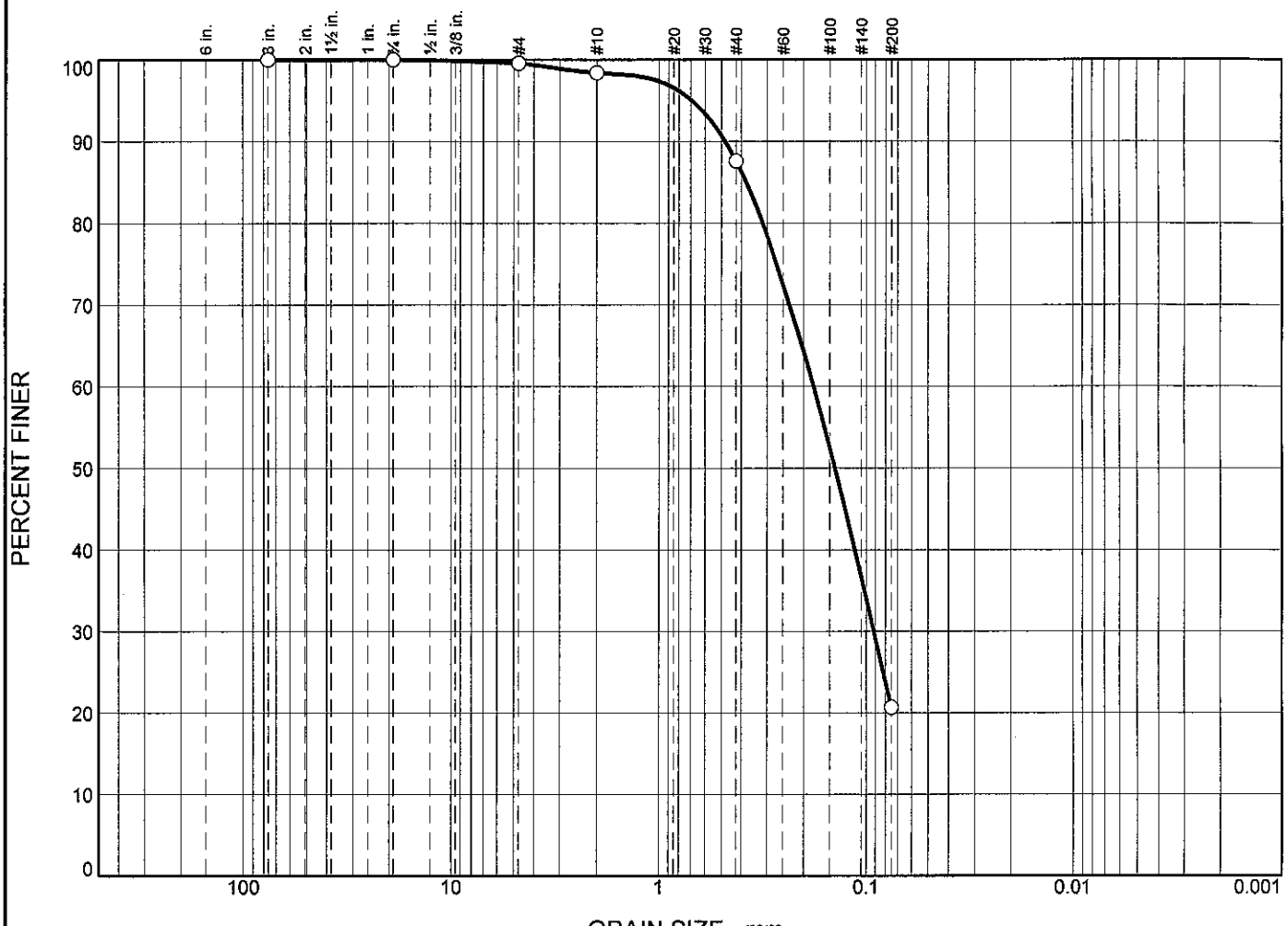
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	0.47	0.47	1.41	10.39	65.95	77.75			21.78

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0895	0.1396	0.1772	0.3128	0.3769	0.4780	0.7017

Fineness Modulus
0.80

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	0.43	1.18	10.77	66.91	20.71	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3795	0.1797	0.1418	0.0914				

	Material Description	USCS	AASHTO
○			

Project No. **Client:**

Project:

○ **Source of Sample:** PA-04D-0.0-2.1 **Sample Number:** L1322168-09

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-04D-0.0-2.1

Sample Number: L1322168-09

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 140.44
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
140.44	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	0.60	0.00	99.57
		#10	1.66	0.00	98.39
		#40	15.13	0.00	87.62
		#200	93.96	0.00	20.71

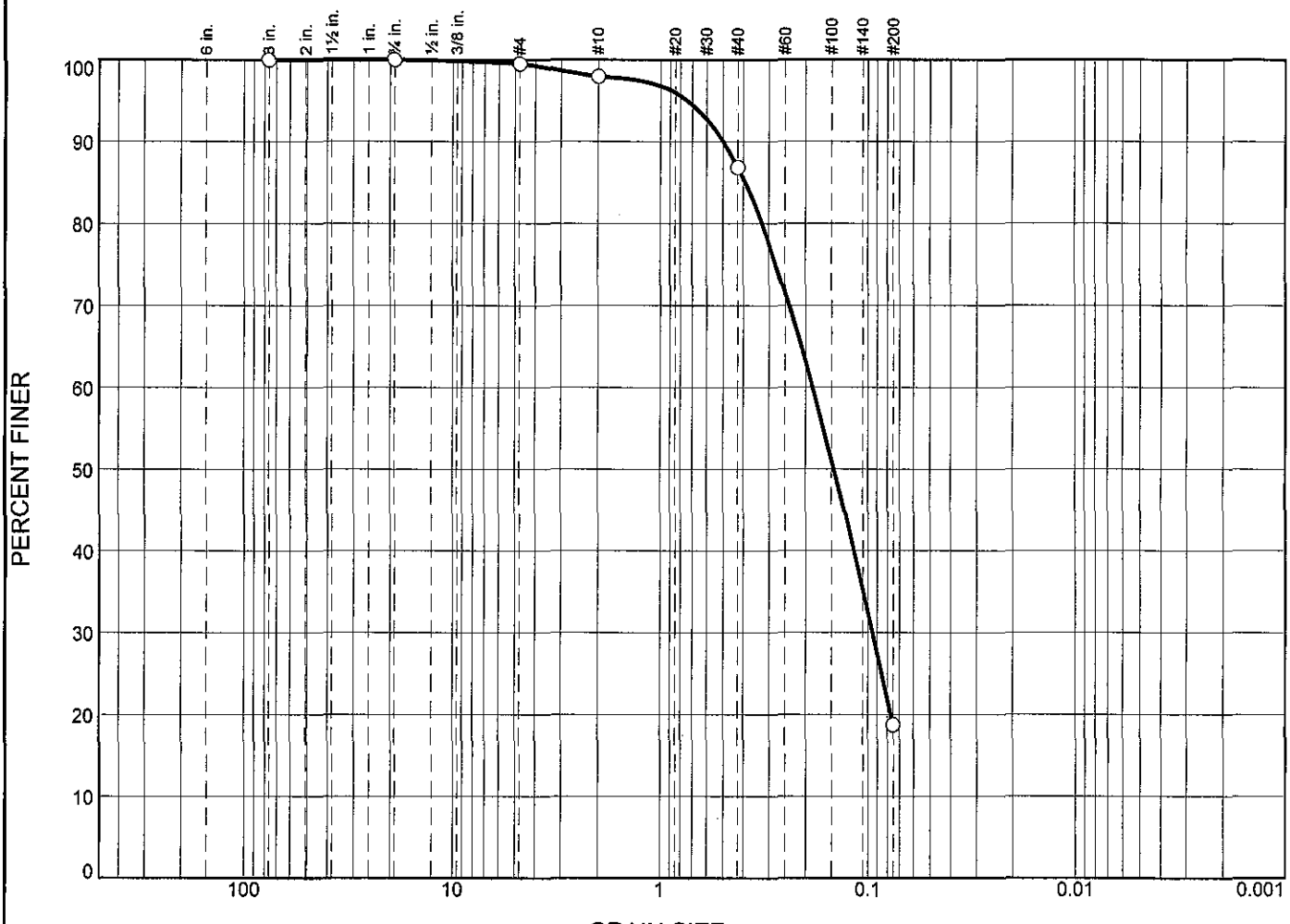
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	0.43	0.43	1.18	10.77	66.91	78.86			20.71

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0914	0.1418	0.1797	0.3157	0.3795	0.4795	0.6937

Fineness Modulus
0.80

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	0.46	1.57	11.10	68.10	18.77	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3919	0.1852	0.1464	0.0949				

	Material Description	USCS	AASHTO
○			

Project No. **Client:**
Project:

○ **Source of Sample:** PA-04D-0.0-2.1 **Sample Number:** WG652130-1

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-04D-0.0-2.1

Sample Number: WG652130-1

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 141.16
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
141.16	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	0.65	0.00	99.54
		#10	2.22	0.00	97.97
		#40	15.67	0.00	86.87
		#200	96.13	0.00	18.77

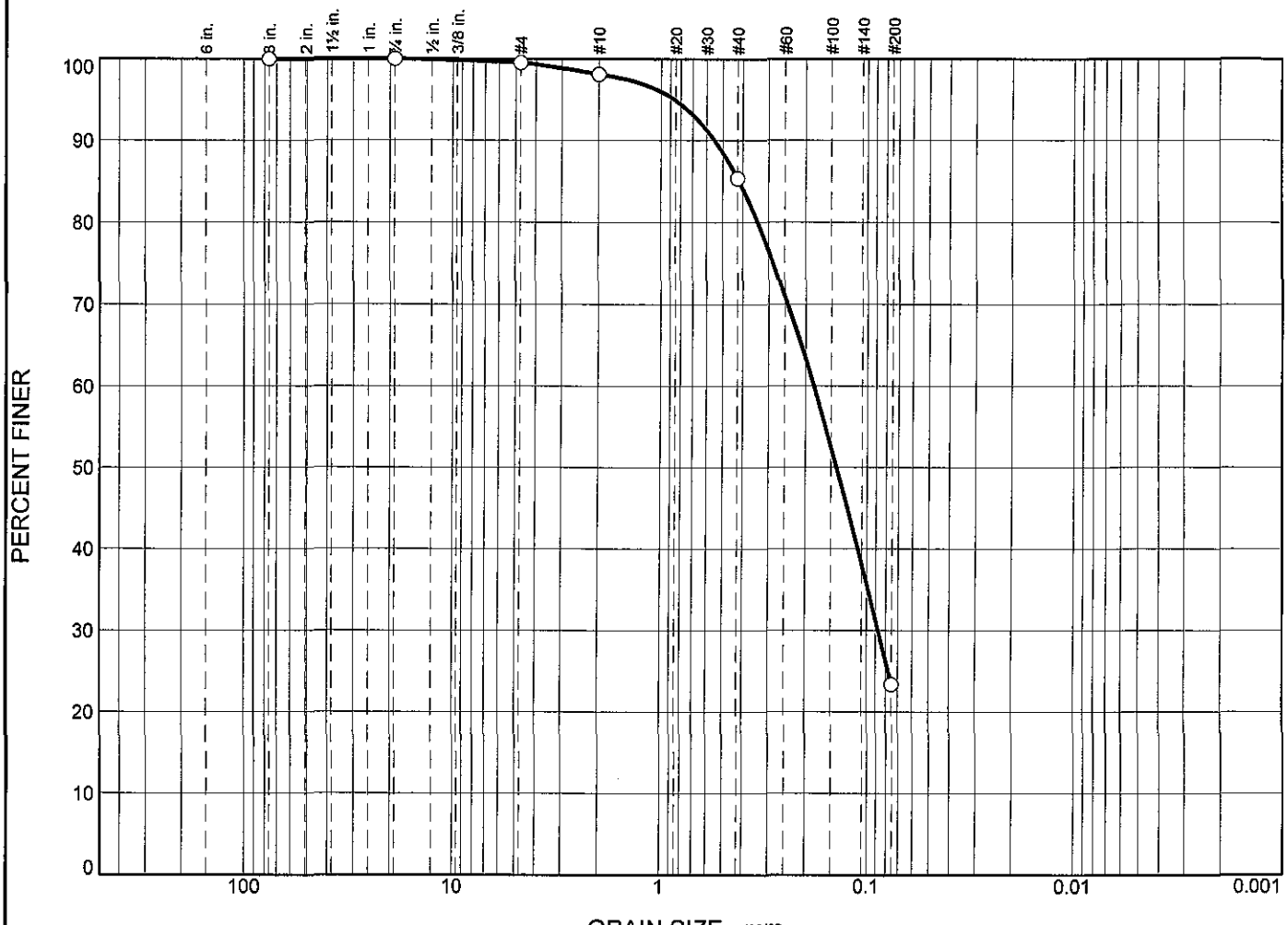
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	0.46	0.46	1.57	11.10	68.10	80.77			18.77

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0770	0.0949	0.1464	0.1852	0.3252	0.3919	0.4991	0.7443

Fineness Modulus
0.84

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	0.46	1.42	12.77	61.95	23.40	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.4180	0.1829	0.1413	0.0875				

Material Description	USCS	AASHTO
○		

Project No. **Client:**

Project:

○ **Source of Sample:** PA-VC023-1-0.0-1.5 **Sample Number:** L1322168-10

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-VC023-1-0.0-1.5
Sample Number: L1322168-10

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 133.48
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
133.48	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	0.62	0.00	99.54
		#10	1.89	0.00	98.12
		#40	17.04	0.00	85.35
		#200	82.70	0.00	23.40

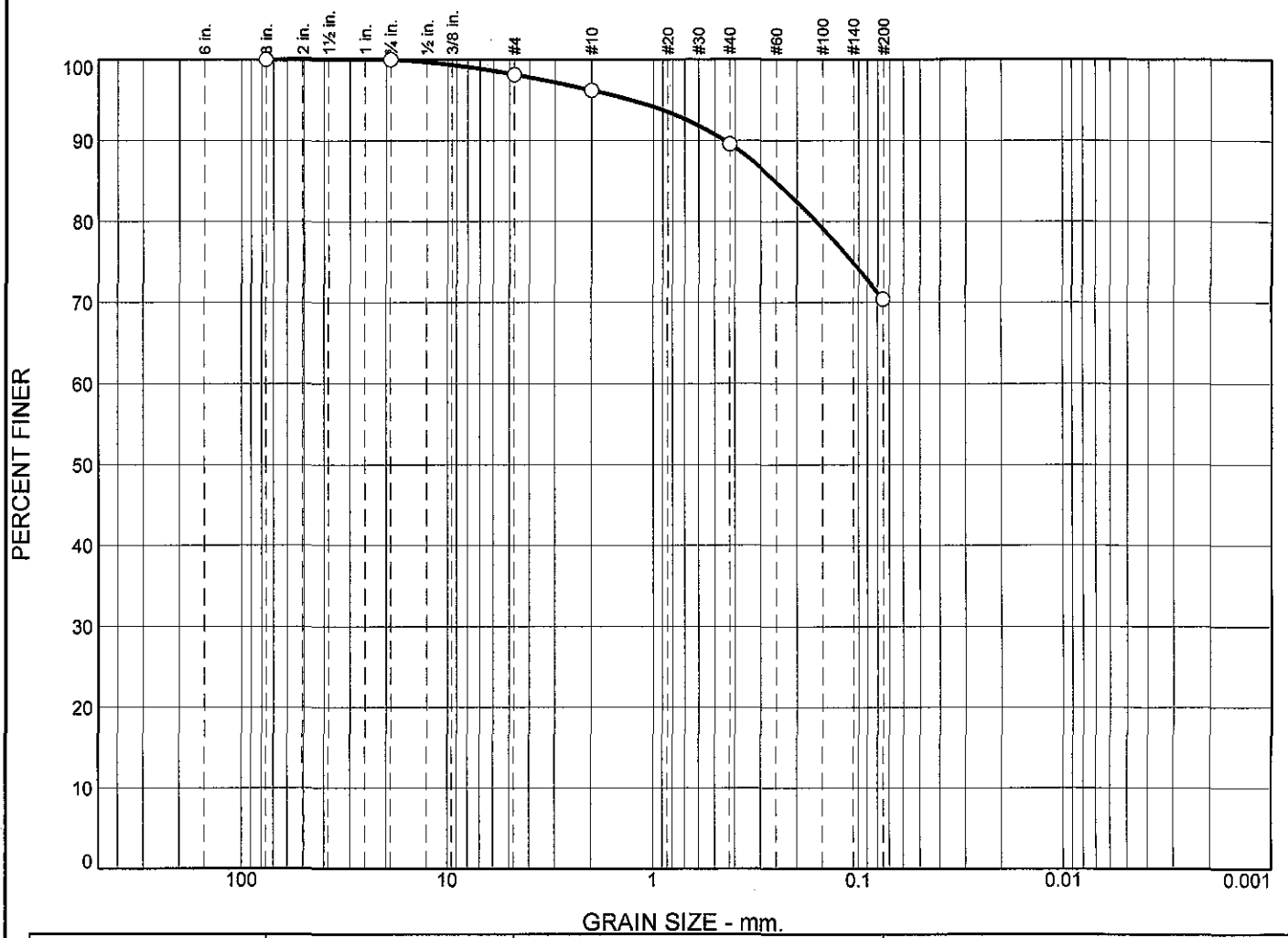
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	0.46	0.46	1.42	12.77	61.95	76.14			23.40

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0875	0.1413	0.1829	0.3396	0.4180	0.5491	0.8613

Fineness Modulus
0.85

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	1.84	1.97	6.62	19.17	70.40	

☒	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2549							

	Material Description	USCS	AASHTO
○			

Project No. **Client:**

Project:

○ **Source of Sample:** PA-VC023-1-1.5-3.0 **Sample Number:** L1322168-11

Remarks:

Alpha Analytical

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Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-VC023-1-1.5-3.0
Sample Number: L1322168-11

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 110.61
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
110.61	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	2.04	0.00	98.16
		#10	2.17	0.00	96.19
		#40	7.33	0.00	89.57
		#200	21.20	0.00	70.40

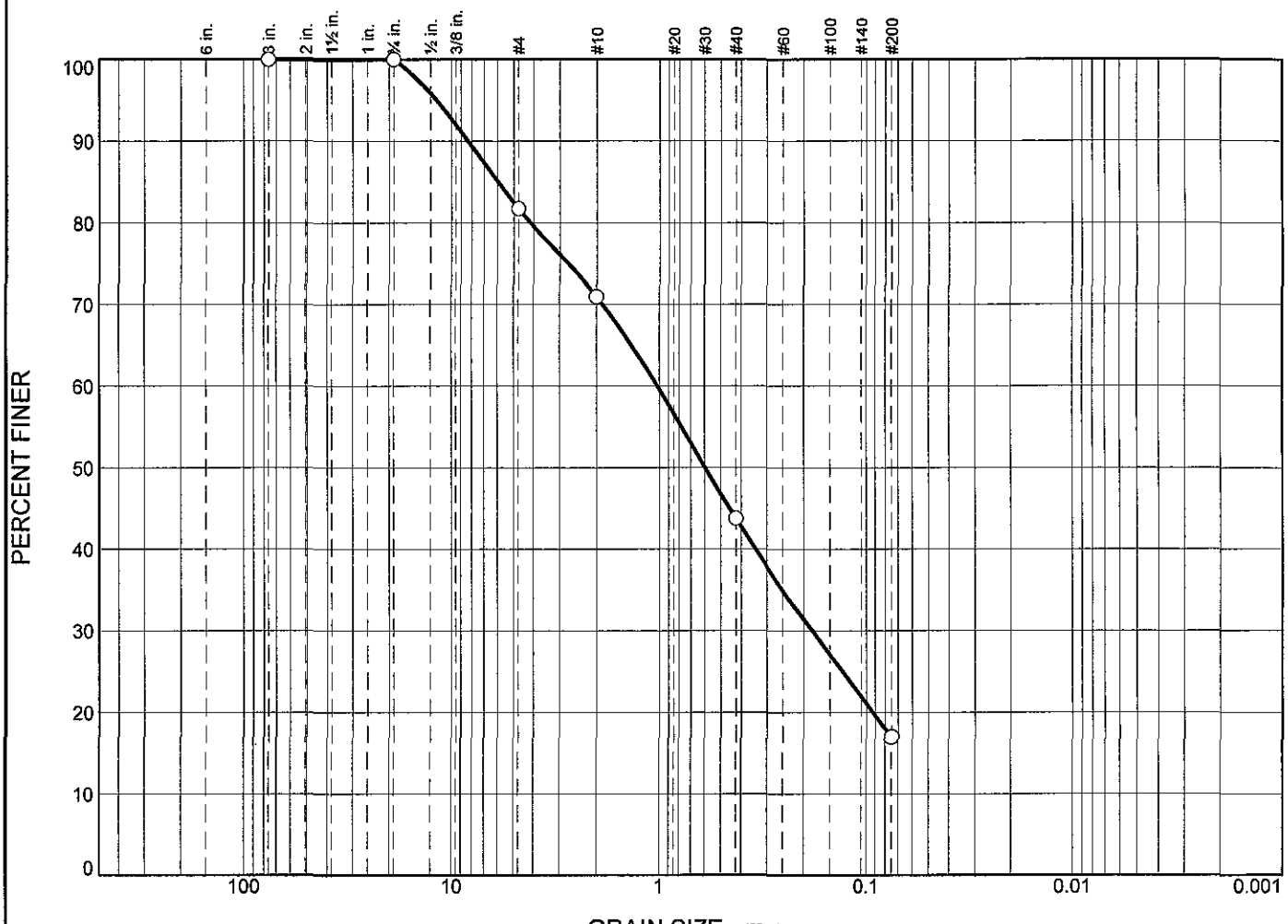
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	1.84	1.84	1.97	6.62	19.17	27.76			70.40

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
						0.1620	0.2549	0.4508	1.2866

Fineness Modulus
0.54

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	18.23	10.83	27.14	26.76	17.04	

☒	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			5.9735	1.0239	0.5970	0.1825				

	Material Description	USCS	AASHTO
○			

Project No. **Client:**
Project:

○ **Source of Sample:** PA-ARCHY8-1-0.0-3.2 **Sample Number:** L1322168-12

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-ARCHY8-1-0.0-3.2

Sample Number: L1322168-12

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 178.26
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
178.26	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	32.50	0.00	81.77
		#10	19.31	0.00	70.94
		#40	48.38	0.00	43.80
		#200	47.70	0.00	17.04

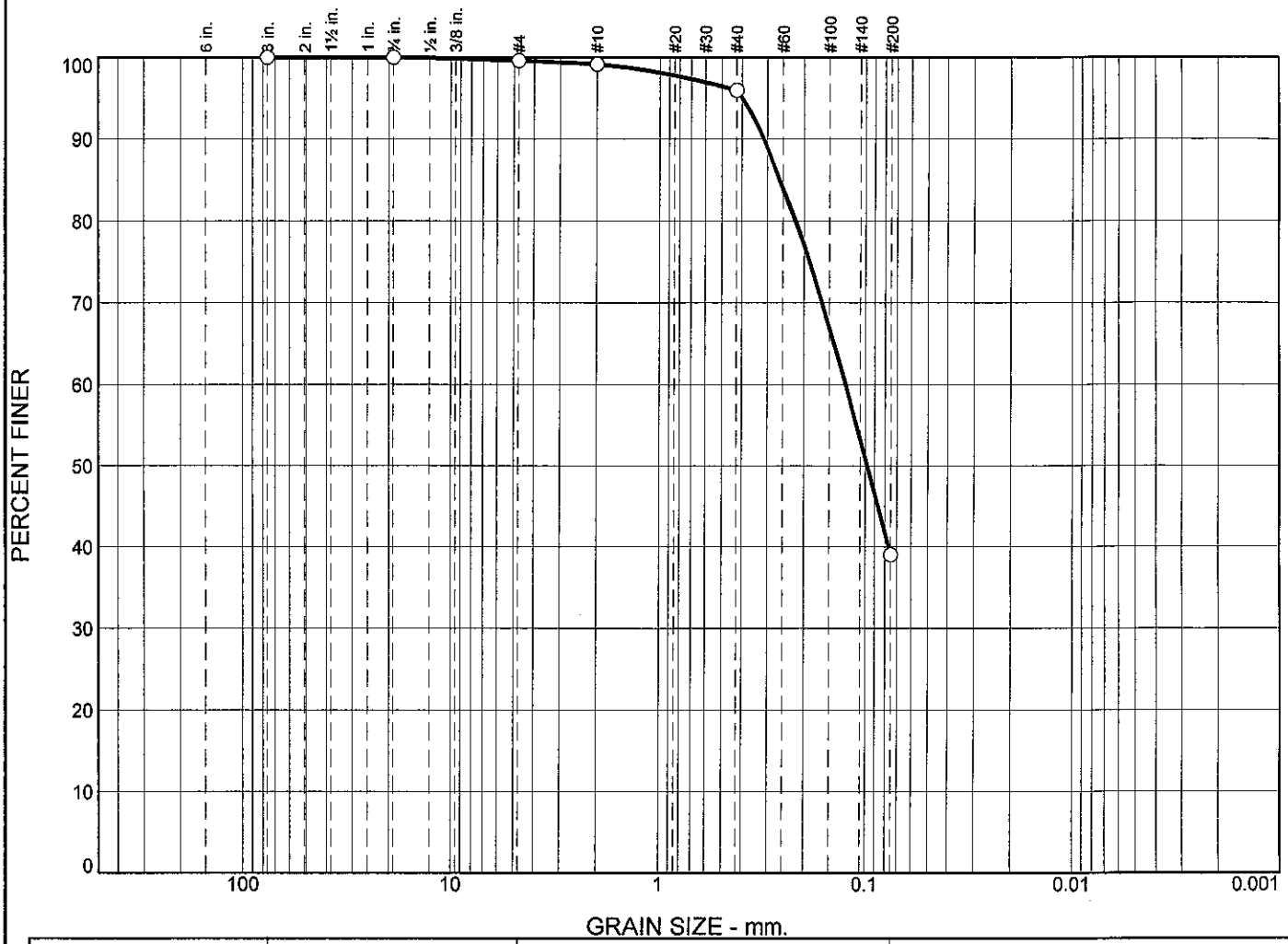
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	18.23	18.23	10.83	27.14	26.76	64.73			17.04

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0923	0.1825	0.5970	1.0239	4.1436	5.9735	8.3480	11.8760

Fineness Modulus
2.76

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	0.42	0.42	3.19	56.93	39.04	

☒	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2593	0.1255	0.0978					

Material Description	USCS	AASHTO
○		

Project No. **Client:**

Project:

○ **Source of Sample:** PA-ARCHY8-1-3.2-7.0 **Sample Number:** L1322168-13

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-ARCHY8-1-3.2-7.0

Sample Number: L1322168-13

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 123.94
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
123.94	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	0.52	0.00	99.58
		#10	0.52	0.00	99.16
		#40	3.96	0.00	95.97
		#200	70.55	0.00	39.04

Fractional Components

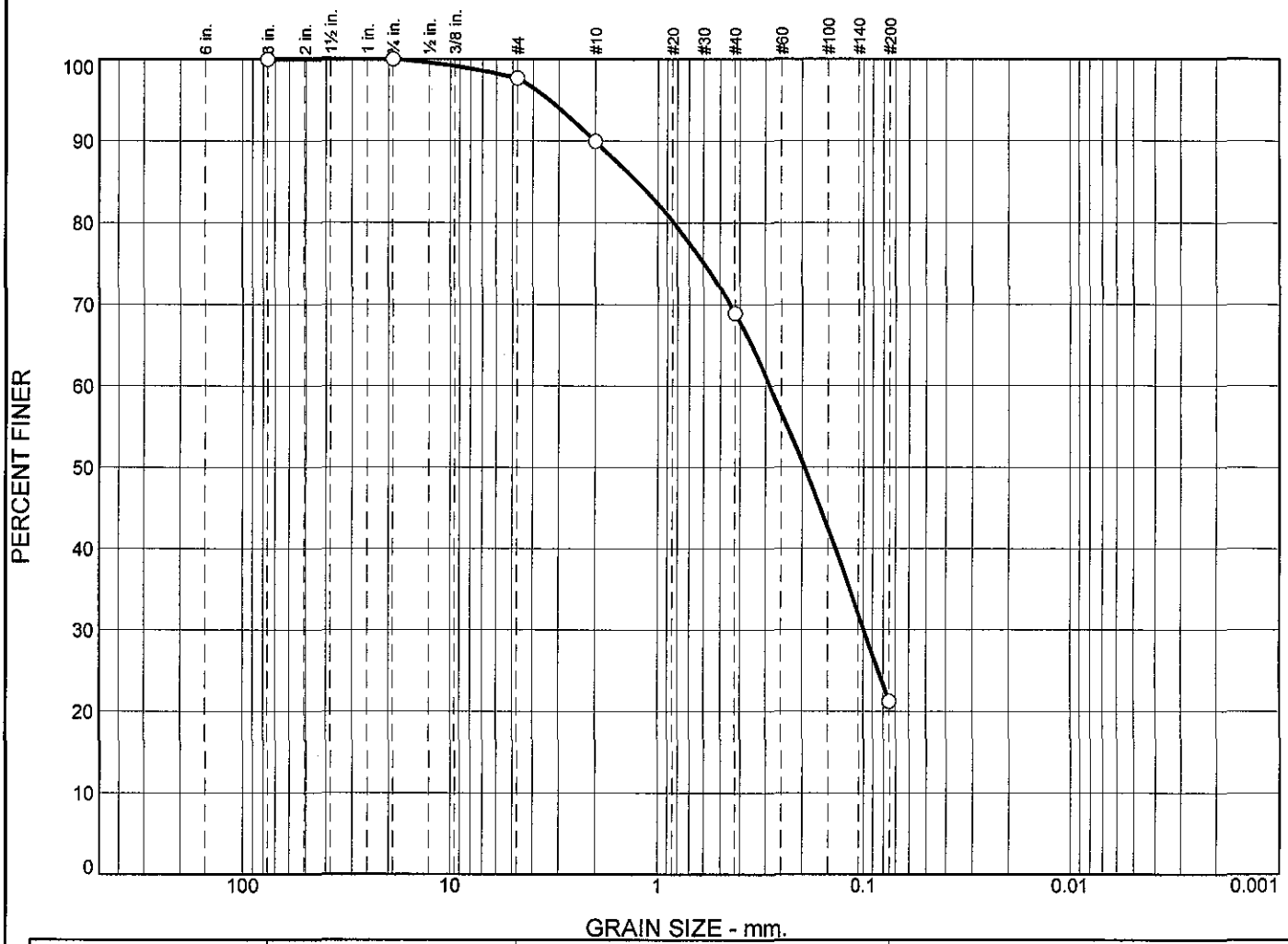
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	0.42	0.42	0.42	3.19	56.93	60.54			39.04

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
				0.0978	0.1255	0.2193	0.2593	0.3142	0.4006

Fineness Modulus
0.50

Alpha Analytical

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	2.34	7.72	21.03	47.65	21.26	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.2558	0.2858	0.1953	0.0994				

	Material Description	USCS	AASHTO
○			

Project No. **Client:**

Project:

○ **Source of Sample:** PA-ARCHY9-0.0-3.5 **Sample Number:** L1322168-14

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-ARCHY9-0.0-3.5

Sample Number: L1322168-14

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 148.28
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
148.28	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	3.47	0.00	97.66
		#10	11.45	0.00	89.94
		#40	31.18	0.00	68.91
		#200	70.66	0.00	21.26

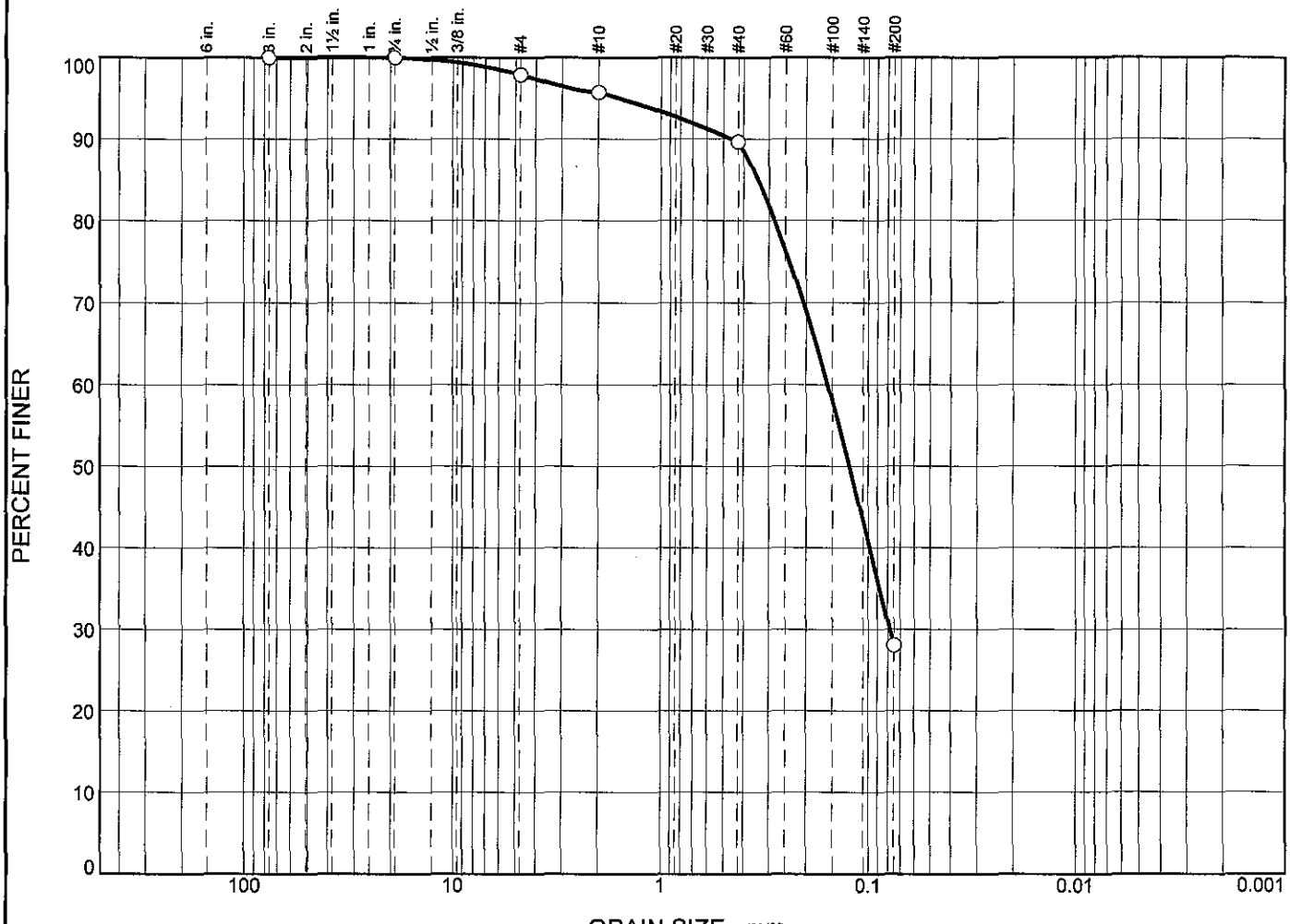
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	2.34	2.34	7.72	21.03	47.65	76.40			21.26

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0994	0.1953	0.2858	0.8335	1.2558	2.0121	3.3455

Fineness Modulus
1.49

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	2.12	2.16	6.10	61.52	28.10	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.3407	0.1582	0.1239	0.0783				

	Material Description	USCS	AASHTO
○			

Project No. **Client:**

Project:

○ **Source of Sample:** PA-03-0.0-3.4 **Sample Number:** L1322168-15

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-03-0.0-3.4

Sample Number: L1322168-15

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 123.35
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
123.35	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	2.61	0.00	97.88
		#10	2.67	0.00	95.72
		#40	7.52	0.00	89.62
		#200	75.89	0.00	28.10

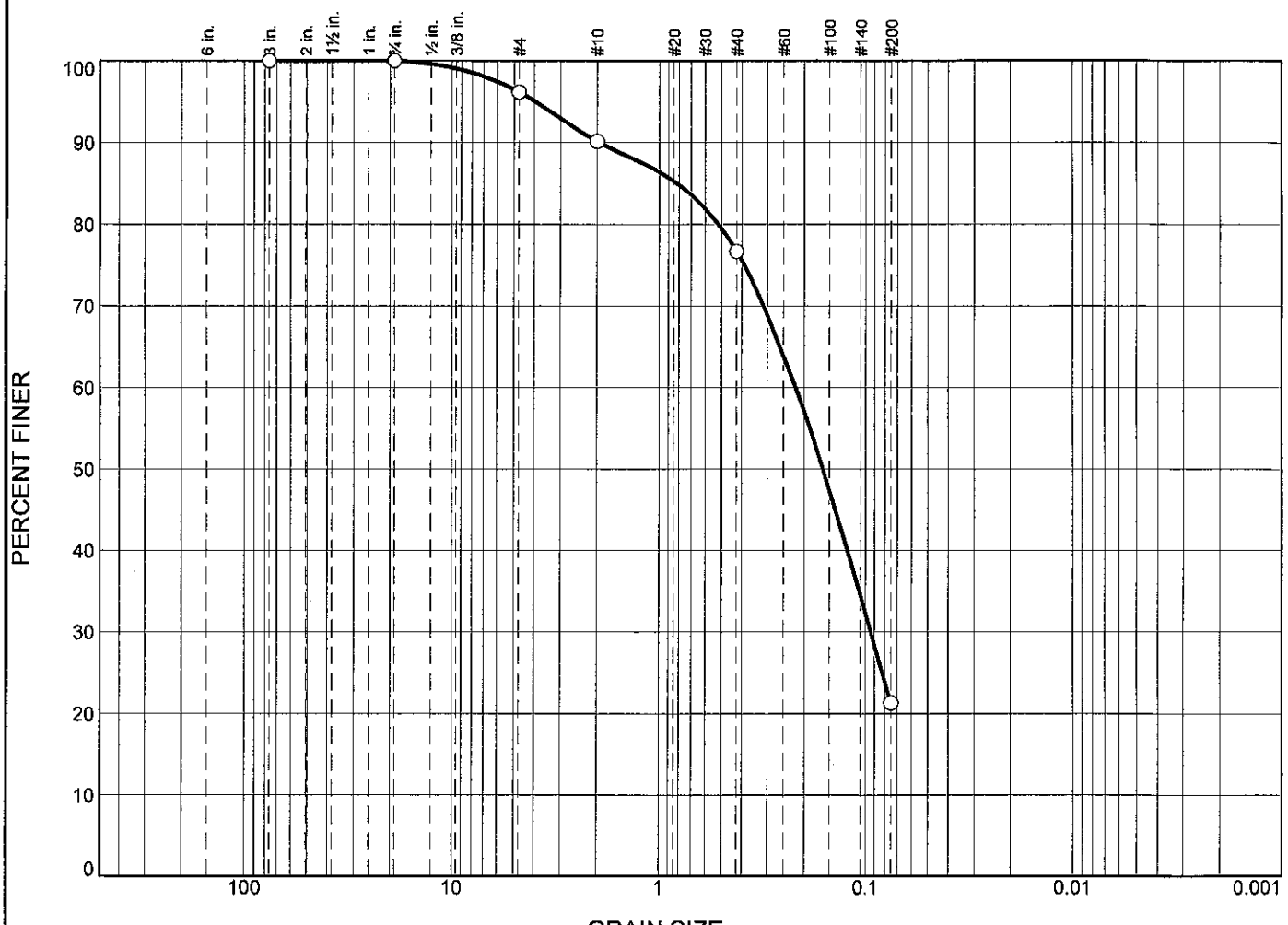
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	2.12	2.12	2.16	6.10	61.52	69.78			28.10

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0783	0.1239	0.1582	0.2820	0.3407	0.4597	1.5918

Fineness Modulus
0.82

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	3.84	6.03	13.46	55.31	21.36	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.8205	0.2199	0.1622	0.0940				

	Material Description	USCS	AASHTO
○			

Project No. **Client:**

Project:

○ **Source of Sample:** PA-02-0.0-2.5 **Sample Number:** L1322168-16

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-02-0.0-2.5

Sample Number: L1322168-16

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 148.42
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
148.42	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	5.70	0.00	96.16
		#10	8.95	0.00	90.13
		#40	19.98	0.00	76.67
		#200	82.09	0.00	21.36

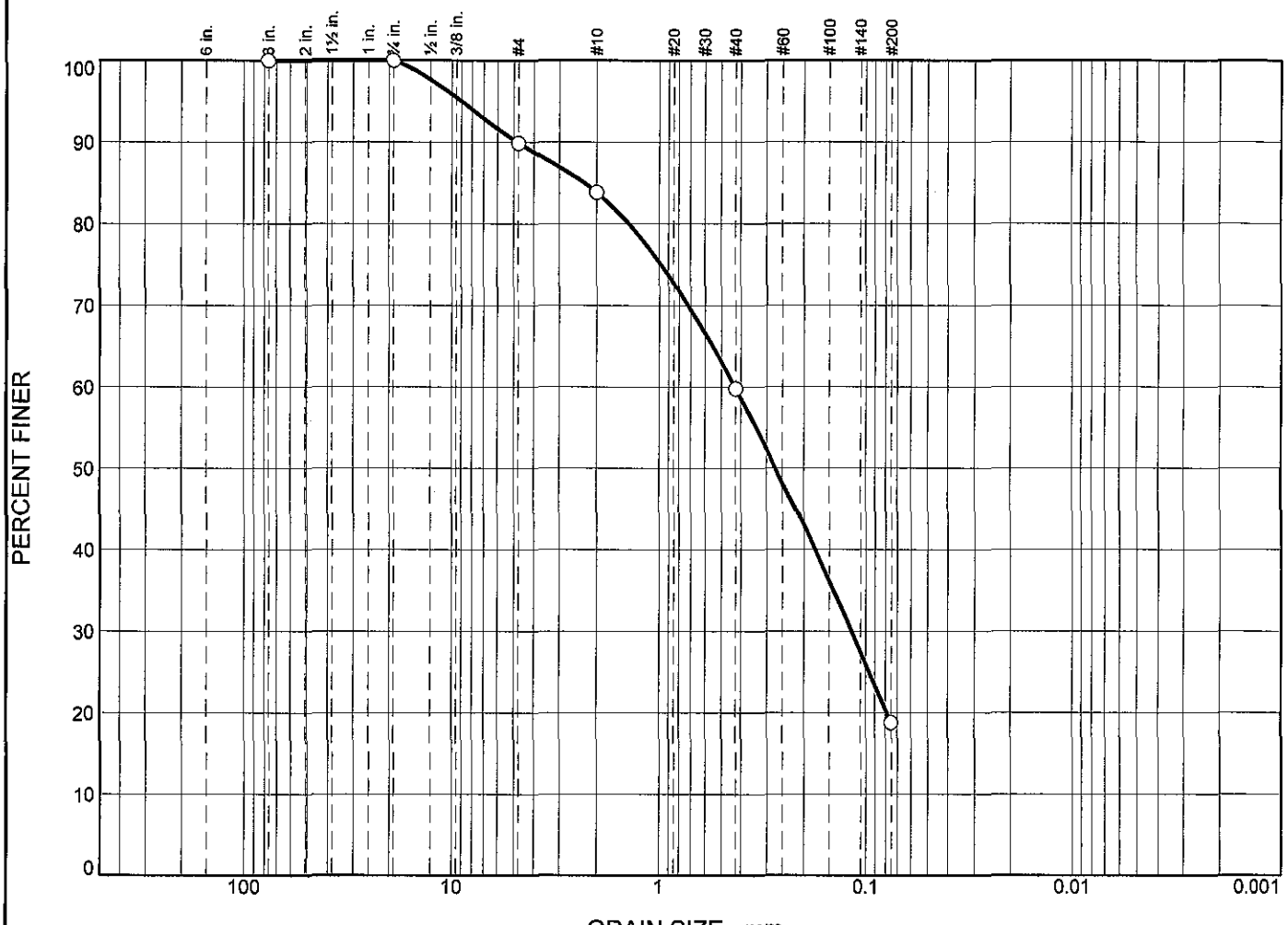
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	3.84	3.84	6.03	13.46	55.31	74.80			21.36

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0940	0.1622	0.2199	0.5193	0.8205	1.9574	3.9769

Fineness Modulus
1.28

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.00	0.00	10.11	6.05	24.07	40.95	18.82	

☒	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.2927	0.4297	0.2711	0.1174				

Material Description	USCS	AASHTO
○		

Project No. **Client:**

Project:

○ **Source of Sample:** PA-01-0.0-3.5 **Sample Number:** L1322168-17

Remarks:

Alpha Analytical

Mansfield, MA

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

11/15/2013

Location: PA-01-0.0-3.5

Sample Number: L1322168-17

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 136.75
Tare Wt. = 0.00
Minus #200 from wash = 0.0%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
136.75	0.00	3	0.00	0.00	100.00
		.75	0.00	0.00	100.00
		#4	13.82	0.00	89.89
		#10	8.28	0.00	83.84
		#40	32.91	0.00	59.77
		#200	56.00	0.00	18.82

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.00	0.00	10.11	10.11	6.05	24.07	40.95	71.07			18.82

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0786	0.1174	0.2711	0.4297	1.4024	2.2927	4.8217	9.0172

Fineness Modulus
1.97

Certificate/Approval Program Summary

Last revised October 1, 2013 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable). Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Titanium, Vanadium, Zinc, Total Organic Carbon, Corrosivity, TCLP 1311, SPLP 1312. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020A, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

Solid & Chemical Materials (Inorganic Parameters: EPA 1311, 3050B, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

Biological Tissue (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

Air & Emissions (EPA TO-15.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 180.1, 1631E, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B, 3020A, . Organic Parameters: EPA 3510C, 3630C, 3640A, 3660B, 8081B, 8082A, 8270C, 8270D, 8015D.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 1311, 3050B, 3051A, 6020A, 7471B, 9040B, 9045C. Organic Parameters: SW-846 3540C, 3580A, 3630C, 3640A, 3660B, 3665A, 8270C, 8015D, 8082A, 8081B.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3020A, SM2320B, SM2540D, 2540G, 4500H-B, EPA 180.1, 1631E, SW-846 7470A, 9040C, 6020A, 9050A. Organic Parameters: SW-846 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 8015D, 8081B, 8082A, 8270C, 8270D)

Solid & Chemical Materials (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 6020A, 7471B, 7474, 9040B, 9040C, 9045C, 9045D, 9060, 9060A. Organic Parameters: SW-846 3540C, 3570, 3580A, 3630C, 3640A, 3660B, 3665A, 8081B, 8082A, 8270C, 8270D, 8015D.)

Atmospheric Organic Parameters (EPA 3C, TO-15, TO-10A, TO-13A-SIM.)

Biological Tissue (Inorganic Parameters: SW-846 6020A. Organic Parameters: SW-846 8270C, 8270D, 3510C, 3570, 3610C, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, SM2540D, 6020A, 1631E, 7470A, 9050A, EPA 180.1, 3020A. Organic Parameters: EPA 8270C, 8270D, 8081B, 8082A, 3510C.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 6020A, 7471B, 7474, 9040C, 9045D, 9060A. Organic Parameters: EPA 8270C, 8270D, 8081B, 8082A, 1311, 3050B, 3580A, 3570, 3051A.)

Air & Emissions (EPA TO-15, TO-10A.)

Pennsylvania Certificate/Lab ID: 68-02089 ***NELAP Accredited***

Non-Potable Water (Inorganic Parameters: 1312, 1631E, 180.1, 3020A, 6020A, 7470A, 9040B, 9050A, 2320B, 2540D, 2540G, SM4500H+-B. Organic Parameters: 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 8015D, 8081B, 8082A, 8270C, 8270D .)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 3051A, 6020A, 7471B, 7474 9040B, 9045C, 9060. Organic Parameters: EPA3050B, 3540C, 3570, 3580A, 3630C, 3640A, 3660B, 3665A, 8270C, 8270D, 8081B, 8015D, 8082A.)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via NJ-DEP.***

Refer to NJ-DEP Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8081, 8082.)

Air (Organic Parameters: EPA TO-15)

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID:460194. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters:EPA 3020A, 6020A, 245.7, 9040B. Organic Parameters: EPA 3510C, 3640A, 3660B, 3665A, 8270C, 8270D, 8082A, 8081B, 8015D.)

Solid & Chemical Materials (Inorganic Parameters: EPA 6020A,7470A,7471B,9040B,9045C,3050B,3051, 9060. Organic Parameters: EPA 3540C, 3580A, 3630C, 3640A, 3660B, 3665A, 3570, 8270C, 8270D, 8081B, 8082A, 8015D.)

Washington State Department of Ecology Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 180.1, 1631E.)

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 7474, 9045C, 9050A, 9060. Organic Parameters: EPA 8081, 8082, 8015, 8270.)

U.S. Army Corps of Engineers

Department of Defense, L-A-B Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 8270C, 8270D, 8270C-ALK-PAH, 8270D-ALK-PAH, 8082A, 8081B, 8015D-SHC, 8015D.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 8270C, 8270D, 8270C-ALK-PAH, 8270D-ALK-PAH 8082A, 8081B, 8015D-SHC, 8015D.

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP

Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl. **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, 2-Methylnaphthalene, 1-Methylnaphthalene.

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L1322168

Serial_No:11151316:49

AECOM

CHAIN-OF-CUSTODY / Analytical Request Document

Page: 1 of 1
Cooler # 1 of 2

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

Task:	Port Ambrose 2013
Total # of Samples: 11	Event Complete?
TAT	standard
Rush	

Notes: F= Field Filtered , H= Hold

Lab Information:		Project Information:		Other Information:	
Lab:	Alpha Analytical	Site ID #:	Port Ambrose 2013	Send Data/Invoice	James Blake
Address:	320 Forbes Blvd, Mansfield, MA 02048	Project #		Address:	89 Water Street
		Site Address		City/State.	Woods Hole, MA 02543
				Phone #:	508-457-7900
Lab PM:	Elizabeth Porta	City	State, Zip	PO #	
Phone/Fax:	508-844-4124	PM Name	James Blake	Send EDD to	N/A
PM email	eporta@alphalab.com	Phone/Fax:	508-457-7900	CC Hardcopy to	
Lab Quote #:		PM Email:	james.blake@aecom.com	CC Hardcopy to	

Lab Notes

Preservative

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Analysis: Metals (As, Cd, Pb, Hg)	Total PCB Aroclor	Pesticides	PAHs	Volatiles (BTX)	Grain size (#4, 10, 40, 200)	TOC	Dioxin/Furans
01	PA-07-0.0-3.0	SE	G	10/28/2013 0938AM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
02	PA-VCO25-1-0.0-3.3	SE	G	10/28/2013 1102 AM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
03	PA-VCO24-1-0.0-2.6	SE	G	10/28/2013 1218 PM	1							1		
04	PA-VCO24-1-2.6-4.5	SE	G	10/28/2013 1218 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
05	PA-VC024-1-4.5-6.2	SE	G	10/28/2013 1218 PM	1							1		
06	PA-06-0.0-2.5	SE	G	10/28/2013 1504 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
07	PA-05-0.0-3.9	SE	G	10/28/2013 1607 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
08	PA-04-0.0-2.1	SE	G	10/28/2013 1712 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
09	PA-04D-0.0-2.1	SE	G	10/28/2013 1712 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
10	PA-VCO23-1-0.0-1.5	SE	G	10/28/2013 1804 PM	1							1		
11	PA-VC023-1-1.5-3.0	SE	G	10/28/2013 1804 PM	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] AECOM	11/1/13	1350	[signature]	11/1/13	1350
[signature]	11/1/13	1505	[signature]	11/1/13	15:25

Sample Receipt Conditions

Temp in 0C	Samples on Ice?	Sample intact?	Trip Blank?
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

CARRIER:	COURIER	DATE/TIME:	
TRACKING #:			

1 of 2

L1322168 Serial_No:11151316:49

AECOM

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1
Cooler # 2 ~~1~~ of ~~1~~ 2

Task: Port Ambrose 2013
Total # of Samples: 6
Event Complete?

Lab Information:

Lab:	Alpha Analytical
Address:	320 Forbes Blvd, Mansfield, MA 02048
Lab PM:	Elizabeth Porta
Phone/Fax:	508-844-4124
PM email	eporta@alphalab.com
Lab Quote #:	

Project Information:

Site ID #:	Port Ambrose 2013
Project #	
Site Address	
City	State, Zip
PM Name	James Blake
Phone/Fax:	508-457-7900
PM Email:	james.blake@aecom.com

Other Information:

Send Data/Invoice	James Blake		
Address:	89 Water Street		
City/State.	Woods Hole, MA 02543	Phone #:	508-457-7900
PO #			
Send EDD to	N/A		
CC Hardcopy to			
CC Hardcopy to			

TAT	standard	Rush	

Notes: F= Field Filtered , H= Hold

Lab Notes

Preservative

ITEM #	Field Sample No. /Identification	MATRIX CODE	G=GRAB C=COMP	SAMPLE DATE	#OF CONTAINERS	Comment	Metals (As, Cd, Pb, Hg)	Total PCB Aroclor	Pesticides	PAHs	Volatiles (BTX)	Grain size (#4, 10, 40, 200)	TOC	Dioxin/Furans
-12	PA-Archy 8-1-0.0-3.2	SE	G	10/29/2013 1222	1							1		
-13	PA-Archy 8-1-3.2-7.0	SE	G	10/29/2013 1222	6	MS/MSD HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
-14	PA-Archy 9-1-0.0-3.5	SE	G	10/29/2013 1312	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
-15	PA-03-0.0-3.4	SE	G	10/29/2013 1346	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
-16	PA-02-0.0-2.5	SE	G	10/29/2013 1438	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X
-17	PA-01-0.0-3.5	SE	G	10/29/2013 1552	6	HOLD ALL ANALYSES EXCEPT GRAIN-SIZE - RUN ALL IF GS RESULTS SHOW LESS THAN 90% SAND/GRAVEL	X	X	X	X	X	1	X	X

10/31/13

Additional Comments/Special Instructions:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	11/1/13	1350		11/1/13	1350
	11/1/13	1525		11/1/13	1525

CARRIER:	COURIER	DATE/TIME:	
TRACKING #:			

Sample Receipt Conditions

Temp in OC	Samples on Ice?	Sample intact?	Trip Blank?
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N