

Asbestos and Hazardous Materials Assessment

**Project #1 – Center Loop Steam and Condensate Repairs
Portsmouth Naval Shipyard
FY16 eMMRP Energy Projects
Kittery, York County, Maine**

August 20, 2015

Terracon Project No. J3147111



Prepared for:

Joint Venture Casco Bay Engineering/CLD Consulting Engineers, LLC
Portland, Maine

Prepared by:

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Terracon

Environmental



Facilities



Geotechnical



Materials

August 20, 2015



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Re: Asbestos and Hazardous Materials Assessment
Project #1 – Center Loop Steam and Condensate Repairs
Portsmouth Naval Shipyard
FY16 eMMRP Energy Projects
Kittery, York County, Maine
Terracon Project Number: J3147111

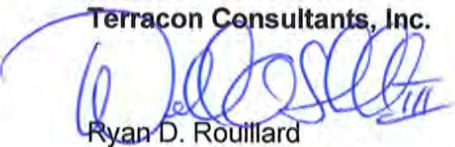
Dear Ms. Bird:

Terracon Consultants, Inc. (Terracon) is pleased to submit the attached report for the above referenced site to Joint Venture (JV) Casco Bay Engineering/CLD Consulting Engineers, LLC (JV Casco Bay). The purpose of this report is to present the results of an asbestos survey, lead-containing paint (LCP) sampling, and polychlorinated biphenyls (PCB)-containing materials sampling activities for the Center Loop system/corridor, performed on June 24, and July 13, 2015, at the Portsmouth Navy Shipyard (PNS) located in Kittery, Maine. This survey was conducted in general accordance with Exhibit 7 (Environmental and Hazardous Material Sampling and Testing Requirements), and the scope of work presented in our June 24, 2015 submission for Geotechnical and Environmental Services.

Terracon appreciates the opportunity to provide this service to JV Casco Bay Engineering/CLD Consultants, LLC. If you have any questions regarding this report, please contact the undersigned.

Sincerely,

Terracon Consultants, Inc.


Ryan D. Rouillard
Senior Project Manager


Adrian D. Stanca
N.E. Building Sciences Manager


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Senior Industrial Hygienist

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EXECUTIVE SUMMARY

Terracon Consultants, Inc. (Terracon) conducted an asbestos-containing materials (ACM), lead-containing paint (LCP), and polychlorinated biphenyls (PCB) materials survey at the Portsmouth Navy Shipyard (PNS) located in Kittery, Maine. Terracon's survey included sampling of accessible, below-grade utilities and materials within the Center Loop system/corridor (Project #1). Manholes/vaults were not sampled at depths beyond arms-length from the surface, unless an alternative sampling method was used, as Terracon personnel did not enter manholes due to the Occupational Safety and Health Agency (OSHA) requirements that indicate shut down of the active lines would be necessary (e.g., lockout/tagout). Testing was performed in conjunction with the project's Accident Prevention Plan (APP) and associated Activity Hazard Analysis (AHA) sheets dated June 2, 2015, conforming to rules/regulations and policies set forth by the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic via work order number 1362123 via project number N40085-15-D-6012 for FY16 UEM eMMRP Energy Projects for replacement of below-grade utilities at the Portsmouth Naval Station. The Statement of Architect-Engineer Services, dated October 24, 2014, was provided to Terracon by JV Casco Bay, which identifies the hazardous materials survey and testing required for this project. No other testing of building or Site materials was conducted as part of this scope of work.

The asbestos and hazardous materials survey was conducted on June 24, and July 13, 2015 by Mr. Ryan D. Rouillard and Mr. Keith Allard; both Maine-licensed asbestos inspectors. Collected samples were delivered under chain of custody (COC) to an independent, accredited laboratory for analysis by polarized light microscopy, non-friable, organically-bound (PLM-NOB) for asbestos. Terracon collected 17 suspect ACM bulk samples and 3 suspect LCP samples from various pipes within vault areas associated with the Center Loop corridor.

Asbestos was not identified in the following materials tested:

- Adhesive on foam insulation
- Concrete
- Blue pipe thread caulk
- Soil
- Cloth
- White hard-packed insulation

Visual assessment indicated pipes/fittings and valves in inaccessible corridors that contained suspect ACM/LCP/PCB materials. At the time of remediation, should suspect materials be uncovered and accessible, additional testing should be performed to characterize the existing materials appropriately for removal and disposal.

Asbestos and Hazardous Materials Assessment

PNS FY16 eMMRP Project #1 Center Loop ■ Kittery, Maine

August 20, 2015 ■ Terracon Project # J3147111



A summary of asbestos analytical results are presented in Appendix A.

Suspect lead paint samples were collected from three surfaces; one sample had a lead concentration above the laboratory detection limit. Lead is defined by the U.S. Environmental Protection Agency (USEPA) and the State of Maine as containing concentrations greater than 1.0 milligram per square centimeter (mg/cm^2), 5,000 milligrams per kilogram (mg/kg), or 0.5% by weight (wt). The sample is as follows:

- 02 - Cream paint on concrete, 0.13% wt.

OSHA construction rules do not specify safe or acceptable levels of lead in paint for the purposes of occupational exposures. Construction work involving LCP must be completed in accordance with OSHA regulations, not limited to the lead standard, 29 Code of Federal Regulations (CFR) 1926.62. Contractors completing work in areas found to contain lead, or where it is reasonable to assume lead may be present, should be notified of the presence (and potential presence) of lead and proper work protocols should be used.

A summary of lead analytical results are presented in Appendix B.

Terracon did not collect samples in Project #1 for laboratory analysis of PCBs.

ASBESTOS AND HAZARDOUS MATERIALS ASSESSMENT
Project #1 Center Loop Steam and Condensate Repairs
Portsmouth Naval Shipyard
Kittery, Maine
Terracon Project Number: J3147111
August 20, 2015

1.0 INTRODUCTION

The Portsmouth Naval Shipyard (PNS) plans to replace below-grade utilities of the Center Loop (Project #1) at the shipyard located in Kittery, Maine. Terracon Consultants, Inc. (Terracon) has been retained by Joint Venture Casco Bay Engineering-CLD Consulting Engineers, LLC (JV Casco Bay) to perform environmental sampling along the proposed corridor. Figure 1 in Appendix D presents a Site sketch of the appropriate corridor and associated field notes of the planned work within Project #1.

We understand that replacement utilities in vaults and corridors will require pipe/fitting removal for possible off-site disposal (including associated sediment/soil from manholes, vaults, and corridors). There are no abatement records documenting the regulated removal of the known pre-existing asbestos-containing materials (ACMs), lead-containing paint (LCP), or polychlorinated biphenyl (PCB) materials. Thus, contamination at the proposed vault and corridor locations may exist. This Asbestos and Hazardous Materials Assessment has been prepared to summarize sampling and testing activities for the proposed repairs.

At a federal naval facility, which is subject to federal abatement regulations, the State of Maine Department of Environmental Protection (MEDEP) rules and regulations for asbestos control also apply. Additionally, site work that disturbs confirmed ACMs will conform to the U.S. Environmental Protection Agency (USEPA) 40 Code of Federal Regulations (CFR) Part 61 National Emission Standards for Hazardous Pollutants (NESHAP).

1.1 Reliance

This report is for the exclusive use of JV Casco Bay Engineering/CLD Consulting Engineers, LLC for the project being discussed. Reliance by any other party on this report is prohibited without written authorization of Terracon and JV Casco Bay Engineering/CLD Consulting Engineers, LLC.

2.0 SAMPLING AREA DESCRIPTION

PNS plans to replace below-grade steam and condensate lines in the Center Loop system/corridor (Project #1) at the shipyard located in Kittery, Maine. As part of the hazardous materials assessment, Terracon performed visual assessment and sampling of underground

pipings, fittings, and other materials located in manholes and vaults within the project area. Corridor areas between the manholes and vaults were not observed.

3.0 SCOPE OF WORK

The objective of this survey was to identify the hazardous materials associated with the utilities for the development of appropriate field procedures to be used during replacement activities. Terracon understands the Survey was requested to identify and quantify suspect/presumed ACMs, LCPs, and PCBs for eventual remediation purposes.

Terracon's survey included sampling of accessible, below-grade utilities and materials within the Center Loop system/corridor (Project #1). Manholes/vaults were not sampled at depths beyond arms-length from the surface, unless an alternative sampling method was used, as Terracon personnel did not enter manholes due to the Occupational Safety and Health Agency (OSHA) requirements that indicate shut down of the active lines would be necessary (e.g., lockout/tagout).

The known inaccessible areas included the following:

- Subsurface vaults and corridor locations associated with underground steam/condensate pipe/fittings (i.e., below-grade utilities) within the Center Loop. The suspect materials/debris were tested in ONLY surficial vault locations; no entry of vaults/tunnels was performed by Terracon.

The primary requirements of the proposed work were as follows:

- Terracon identified proposed sampling locations, arranged for Dig Safe (as needed), and coordinated with the Navy to complete the underground utilities pre-screening.
- Terracon coordinated and organized traffic outages as necessary to accomplish the hazardous materials testing.
- Terracon identified pipe/fitting insulation and associated debris in sediment/soils from the proposed remediation project (Center Loop). Unless materials within the various vaults are homogeneous in nature (i.e., same color, texture, and size per federal and state regulations), assumption of hazardous materials contamination is made for inaccessible vaults and corridors.
- Terracon personnel removed/restored vault covers of the surface to pre-testing conditions, as practical.

3.1 Asbestos Survey

Asbestos survey activities were initiated with visual observation of the vaults/manholes to identify homogeneous areas of suspect ACM. A homogeneous area consists of suspect materials that appear similar throughout in terms of color and texture with consideration given to the date of installation. The assessment was conducted in visually accessible areas of the vaults proposed for utility replacement activities. The following manholes, vaults, and associated corridors were not accessible at the time of the Site survey, as unauthorized persons were not allowed in the construction area:

- Vault 352-E, 352-F, 356, 358, 359-A.

3.1.1 Physical Assessment

A physical assessment of each accessible homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. A friable material is defined by the USEPA as a material that can be crumbled, pulverized, or reduced to powder by hand pressure when dry. Friability was unable to be assessed by physically touching all suspect materials due to lack of accessibility.

3.1.2 Sample Collection

Based on results of the visual observation, bulk samples of suspect ACM were not able to be collected in general accordance with USEPA sampling protocols. However, samples of suspect materials were collected from randomly selected locations in each homogeneous area. Bulk samples were collected using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

Terracon collected 17 bulk samples of suspect ACM. A summary of suspect ACM samples collected during the survey is included as Appendix A.

3.1.3 Sample Analysis

Bulk samples were submitted under chain of custody to EMSL Analytical, Inc. (EMSL) of Salem, New Hampshire for analysis by polarized light microscopy (PLM) with dispersion staining techniques per USEPA's *Method for the Determination of Asbestos in Bulk Building Materials* (600/R-93/116), non-friable, organically-bound (PLM-NOB) for asbestos. EMSL Analytical, Inc. is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) Accreditation No. 201051-0.

The laboratory was instructed to analyze samples from each homogeneous area until the first sample containing asbestos was identified (stop positive). The laboratory report for this project is included in Appendix A.

3.2 Lead-Containing Paint Sampling

Terracon visually assessed the pipe/fittings/valves proposed for renovation in vaults and manholes performed limited LCP sampling that consisted of collecting paint chip samples from various painted components for laboratory analysis. Observed paint coated surfaces of the site included various painted metal components/surfaces. Terracon collected three paint chip samples from three homogenous painted surfaces. The paint chip samples were submitted to EMSL of Cinnaminson, New Jersey, a laboratory accredited by AIHA under the Environmental Lead Laboratory Accreditation Program (ELLAP) for lead content analysis via USEPA Method SW 846 3050B/7000B using flame atomic absorption spectrophotometry (flame AAS).

The LCP sampling was limited to visible and accessible surfaces described herein. Terracon cannot guarantee a building or property to be lead free, as the possibility exists that LCP coated surfaces may be hidden from sight or in inaccessible locations, or the homogeneous construction areas identified may not be truly homogeneous. It should be understood that in accordance with regulation, the LCP sampling is not considered comprehensive in nature, and the results are not intended to be used to determine lead hazards, develop abatement plans, or prepare detailed cost estimates for abatement. At the time of remediation, should suspect materials be uncovered and accessible, additional testing should be performed to characterize the existing materials appropriately for worker safety, removal, and disposal.

3.3 Polychlorinated Biphenyls Sampling

At the direction of JV Casco Bay's Project Manager, Terracon visually assessed various suspect PCB materials within the Site locations. Suspect materials were beyond arms-length at the time of the assessment, thus unable to be sampled.

4.0 REGULATORY OVERVIEW

4.1 Asbestos

The asbestos NESHAP (40 CFR Part 61, Subpart M) regulates asbestos fiber emissions and asbestos waste disposal practices. The asbestos NESHAP regulation also requires the identification and classification of existing ACM according to friability prior to demolition or renovation activity. Friable ACM is a material containing more than 1% asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. All friable ACM is considered regulated asbestos-containing material (RACM).

The asbestos NESHAP regulation classifies ACM as friable, Category I nonfriable ACM, or Category II nonfriable ACM. RACM includes all friable ACM, along with Category I and Category II nonfriable ACMs that have become friable; will be or have been subjected to sanding, grinding, cutting, or abrading; have a high probability of becoming or have become crumbled, pulverized, or reduced to powder in the course of renovation or demolition activity. Category I nonfriable ACM

are exclusively asbestos-containing packings, gaskets, resilient floor coverings, resilient floor covering mastics, and asphalt roofing products that contain more than 1% asbestos. Category II nonfriable ACM are all other nonfriable materials other than Category I nonfriable ACM that contain more than 1% asbestos.

The MEDEP enforces provisions of the asbestos NESHAP. The owner or operator must provide MEDEP with written notification at least 10 working days prior to the commencement of asbestos abatement activities that will disturb RACM in amounts greater than 25 square feet or 10 linear feet.

The OSHA asbestos standard for construction (29 CFR 1926.1101) regulates workplace exposure to asbestos. The OSHA standard requires that employee exposure to airborne asbestos fibers be maintained below the permissible exposure limits (PELs) of 0.1 asbestos fiber per cubic centimeter of air (0.1 f/cc) as an 8-hour time-weighted average (TWA) or 1.0 f/cc as a 30-minute excursion limit. The OSHA standard classifies construction and maintenance activities that could disturb ACM, and specifies work practices and precautions that employers must follow when engaging in each class of regulated work.

4.2 Lead-Containing Paint

Lead is regulated by the USEPA, MEDEP, and OSHA. The USEPA and MEDEP regulate lead use, removal, and disposal, and OSHA regulates lead exposure to workers. The USEPA and MEDEP define lead-based paint (LBP) as paint, varnish, stain, or other applied coating that contains lead equal to or greater than 1.0 milligram per square centimeter (mg/cm^2), 5,000 milligrams per kilogram (mg/kg), or 0.5% by dry weight as determined by laboratory analysis; however, OSHA construction rules do not specify acceptable levels of lead in paint for the purposes of occupational exposures. For the purpose of the OSHA lead standard, lead includes metallic lead, all inorganic lead compounds, and organic lead soaps. A synopsis of the OSHA regulations (29 CFR 1926.62) and the applicability are as follows:

OSHA construction rules do not specify acceptable levels of lead within LCP for the purposes of occupational exposures. Construction work involving LCP must be completed in accordance with OSHA regulations, not limited to the lead standard, 29 CFR 1926.62. Contractors completing work in areas found to contain lead, or where it is reasonable to assume lead may be present, should be notified of the presence (and potential presence) of lead and proper work protocols should be used. The Maine Hazardous Waste regulations require that wastes be characterized prior to disposal. The toxicity characteristic leaching procedure (TCLP), which is the appropriate method for characterizing materials/debris for lead content, involves the collection of samples from representative materials and the analysis of the materials by an accredited laboratory. If the sample results are less than 5.0 milligrams per liter (mg/L) lead, then the waste can be disposed of as non-hazardous construction debris. If the sample results are greater than or equal to 5.0 mg/L lead, then the waste must be disposed of as a hazardous waste.

The OSHA lead standard for construction (29 CFR 1926.62) applies to all construction work where an employee may be occupationally exposed to lead. All work related to construction, alteration, or replacement (including painting and decorating) is included. The lead standard applies to any detectable concentration of lead in paint, as even small concentrations of lead can result in unacceptable employee exposures depending upon on the method of removal and other workplace conditions. Under this standard, construction includes, but is not limited to, the following:

- Demolition or salvage of structures where lead or materials containing lead are present;
- Removal or encapsulation of materials containing lead;
- New construction, alteration, replace, or renovation of structures, substrates, or portions containing lead, or materials containing lead;
- Installation of products containing lead;
- Lead contamination/emergency clean-up;
- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and
- Maintenance operations associated with construction activities described above.

4.3 Polychlorinated Biphenyls

PCBs are currently prohibited from being used in caulk and other commodities (USEPA, 40 CFR 761-PCs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions). However, prior to 1977, PCBs were present in some materials used in the construction of schools and other buildings. Studies have shown that concentrations of PCB can exceed 1%, or 10,000 parts per million (ppm) by weight in some caulk materials.

EPA regulates the disposal of PCB materials, as well as soil and other materials contaminated with PCBs, if the concentration of PCBs exceeds 1 ppm. Such materials must be disposed at an appropriate approved or permitted facility. Please note that the material must go to an appropriate asbestos landfill if identified as asbestos-containing.

The Toxic Substances Control Act (TSCA) regulations at 40 CFR 761 provide disposal and cleanup requirements for PCBs. The disposal and cleanup requirements for PCB-contaminated materials depend on whether the material is classified as a PCB bulk product waste or PCB remediation waste. PCB remediation waste is waste containing PCBs as a result of a spill or release such as from a caulk/paint material (date and concentration limits apply), e.g., PCB-contaminated soil, sediments, and concrete. PCB bulk product waste is waste derived from products manufactured to contain PCBs in a non-liquid state at 50 ppm or greater. Typical examples are caulk, paint, and sealants.

PCB contamination in remaining materials must be cleaned down to a concentration of 1 ppm for an unrestricted use and if the concentrations of PCBs in the remediation waste are greater than

50 ppm, the remediation waste must be disposed in a TSCA-permitted facility. However, PCB bulk product waste, even at concentrations of PCBs greater than 50 ppm, can be disposed in a non-hazardous solid waste facility, as long as this disposal is permitted by that state's solid waste regulations.

Since TSCA authority has not been delegated to any of the states, both USEPA and state regulations apply. Knowing your specific state requirements for PCB management is essential if you want to remain in compliance with applicable federal and state regulations.

USEPA regulation 40 CFR 761 defines PCB remediation waste to include contaminated soil, and specifies a clean-up level of less than (<) 1 ppm without further conditions for unrestricted use in high occupancy areas (i.e., areas where individuals may be present for 335 hours or more per year). PCB caulk is defined as a PCB bulk product waste, and its disposal is subject to USEPA regulations under the TSCA (40 CFR 761.62).

In order to dispose of PCB bulk product waste in a state-permitted municipal landfill or non-municipal non-hazardous waste landfill, there may be additional sampling, recordkeeping and performance requirements that must be satisfied. Be sure to review 40 CFR 761.62 for specific requirements.

Remediation waste may be managed as bulk product waste *only if the material tested is attached* to the contaminated abutting material at the time the material is designated for disposal. If the material (i.e., caulk or paint) has been removed from the vault/manhole material, the substrate would be considered a PCB remediation waste subject to strict management and disposal requirements at concentrations down to 1 ppm.

5.0 FINDINGS

5.1 Suspect Asbestos-Containing Materials

As stated above, asbestos was not identified in the following materials tested:

- Adhesive on foam insulation
- Concrete
- Blue pipe thread caulk
- Soil
- Cloth
- White hard-packed insulation

The selected contractor should properly characterize, remove and dispose of the identified hazardous materials, including materials in inaccessible vaults and corridors.

A summary of asbestos analytical results are presented in Appendix A, and a Site Plan depicting the Project #1 corridor is provided in Appendix D.

5.2 Suspect Lead-Containing Paint

A summary of the paint chip analysis results are presented in the following table. A copy of the laboratory report for the paint chip samples is attached in Appendix B.

Summary of Paint Chip Analysis

Sample ID	Color	Substrate	Component	Location	Analytical Result (% wt.)
02	Cream	Concrete	Concrete	Center Loop	0.13% wt.
03	Blue	Metal	Column support	Center Loop	<0.010% wt.
04	Red	Metal	4" Condensate line	Center Loop	<0.010% wt.

As summarized above, lead was detected in one painted component/surface at concentrations above the laboratory detection limits.

5.3 Suspect Polychlorinated Biphenyls

Terracon did not collect samples for laboratory analysis of PCBs due to inaccessibility.

6.0 LIMITATIONS/GENERAL COMMENTS

Terracon did not perform sampling which required demolition or destructive activities such as dismantling of equipment or removal of protective coverings, as the systems were energized at the time of the Site survey. Reasonable efforts to access suspect materials within known areas of restricted access (e.g., beneath vault covers and corridors between access points) were made; however, as previously described, confined spaces or areas which may pose a health or safety risk to Terracon personnel were not sampled. Sampling did not include suspect materials that could not be safely reached from the surface.

The findings presented in this report are based on conditions observed during our survey of the PNS Project #1 vaults only. The information contained in this report is relevant to the date on which this survey was performed, and should not be relied upon to represent conditions at a later date. This report has been prepared on behalf of and exclusively for use by JV Casco Bay Engineering/CLD Consulting Engineers, LLC for specific application to their project as discussed. This report is not a bidding document. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. Terracon does not warrant the work of regulatory agencies, laboratories, or other third parties supplying information that may have been used in the preparation of this report. No warranty, express or implied is made.

APPENDIX A

ASBESTOS ANALYTICAL LABORATORY DATA



EMSL Analytical, Inc.

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EMSL Order ID: 621501381
Customer ID: JAWO50
Customer PO: J3147112/7116
Project ID:

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Proj: J3147112/7116
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Fax: (603) 647-4432
Collected: 7/27/2015
Received: 7/28/2015
Analyzed: 8/03/2015

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 01A **Lab Sample ID:** 621501381-0001
Sample Description: Manhole #26 | Soil

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Brown	0%	100%	None Detected	

Client Sample ID: 01B **Lab Sample ID:** 621501381-0002
Sample Description: Manhole #24 | Soil

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Brown	0%	100%	None Detected	

Client Sample ID: 02A **Lab Sample ID:** 621501381-0003
Sample Description: Concrete Adjacent to Manhole #25 | White Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 02B **Lab Sample ID:** 621501381-0004
Sample Description: Concrete Adjacent to Manhole #25 | White Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 02C **Lab Sample ID:** 621501381-0005
Sample Description: Concrete Adjacent to Manhole #25 | White Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 03A **Lab Sample ID:** 621501381-0006
Sample Description: Concrete Adjacent to Manhole #25/Light Gray Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 03B **Lab Sample ID:** 621501381-0007
Sample Description: Concrete Adjacent to Manhole #25/Light Gray Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	



EMSL Analytical, Inc.

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EMSL Order ID: 621501381
Customer ID: JAWO50
Customer PO: J3147112/7116
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 03C **Lab Sample ID:** 621501381-0008
Sample Description: Concrete Adjacent to Manhole #25/Light Gray Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 04A **Lab Sample ID:** 621501381-0009
Sample Description: Concrete Adjacent to Manhole #25/Dark Gray Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 04B **Lab Sample ID:** 621501381-0010
Sample Description: Concrete Adjacent to Manhole #25/Dark Gray Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 04C **Lab Sample ID:** 621501381-0011
Sample Description: Concrete Adjacent to Manhole #25/Dark Gray Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 05A **Lab Sample ID:** 621501381-0012
Sample Description: Manhole #24 | Adhesive on Metal

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Yellow	27.7%	72.3%	None Detected	

Client Sample ID: 05B **Lab Sample ID:** 621501381-0013
Sample Description: Manhole #24 | Adhesive on Metal

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Yellow	1.1%	98.9%	None Detected	

Client Sample ID: 05C **Lab Sample ID:** 621501381-0014
Sample Description: Manhole #24 | Adhesive on Metal

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Yellow	22.6%	77.4%	None Detected	

Client Sample ID: 06A **Lab Sample ID:** 621501381-0015
Sample Description: Manhole #27 | Paper Beneath Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Brown	90%	10%	None Detected	



EMSL Analytical, Inc.

161 John Roberts Road South Portland, ME 04106
Phone/Fax: (207) 517-6921 / (207) 517-6922
<http://www.EMSL.com> / portlandlab@emsl.com

EMSL Order ID: 621501381
Customer ID: JAWO50
Customer PO: J3147112/7116
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 06B **Lab Sample ID:** 621501381-0016
Sample Description: Manhole #27 | Paper Beneath Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Tan	90%	10%	None Detected	

Client Sample ID: 06C **Lab Sample ID:** 621501381-0017
Sample Description: Manhole #27 | Paper Beneath Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Tan	90%	10%	None Detected	

Client Sample ID: 07A **Lab Sample ID:** 621501381-0018
Sample Description: Manhole #26/Adhesive Between Metal Jacket and Foam

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Yellow	0.0%	100%	None Detected	

Client Sample ID: 07B **Lab Sample ID:** 621501381-0019
Sample Description: Manhole #26/Adhesive Between Metal Jacket and Foam

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Yellow	0.0%	100%	None Detected	

Client Sample ID: 07C **Lab Sample ID:** 621501381-0020
Sample Description: Manhole #26/Adhesive Between Metal Jacket and Foam

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Yellow	0.0%	100%	None Detected	

Client Sample ID: 08A **Lab Sample ID:** 621501381-0021
Sample Description: Manhole #28 | White Wrap Under Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Brown/Gray	45%	55%	None Detected	

Client Sample ID: 08B **Lab Sample ID:** 621501381-0022
Sample Description: Manhole #28 | White Wrap Under Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Brown/Gray	40%	60%	None Detected	

Client Sample ID: 08C **Lab Sample ID:** 621501381-0023
Sample Description: Manhole #28 | White Wrap Under Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Brown/Gray	25%	75%	None Detected	



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EMSL Order ID: 621501381
Customer ID: JAWO50
Customer PO: J3147112/7116
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 09A **Lab Sample ID:** 621501381-0024
Sample Description: Manhole #24 | Silver Coating on End-Cap

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Black/Silver	0.0%	100%	None Detected	

Client Sample ID: 09B **Lab Sample ID:** 621501381-0025
Sample Description: Manhole #24 | Silver Coating on End-Cap

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Black/Silver	0.0%	100%	None Detected	

Client Sample ID: 09C **Lab Sample ID:** 621501381-0026
Sample Description: Manhole #24 | Silver Coating on End-Cap

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Black/Silver	0.0%	100%	None Detected	

Client Sample ID: 10A **Lab Sample ID:** 621501381-0027
Sample Description: Concrete Adjacent to Manhole #1 and #2/Black Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Black	0.0%	100%	None Detected	

Client Sample ID: 10B **Lab Sample ID:** 621501381-0028
Sample Description: Concrete Adjacent to Manhole #1 and #2/Black Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Black	0.0%	100%	None Detected	

Client Sample ID: 10C **Lab Sample ID:** 621501381-0029
Sample Description: Concrete Adjacent to Manhole #1 and #2/Black Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Black	0.0%	100%	None Detected	

Client Sample ID: 11A **Lab Sample ID:** 621501381-0030
Sample Description: Manhole #39 | Adhesive on Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Yellow	0.0%	100%	None Detected	

Client Sample ID: 11B **Lab Sample ID:** 621501381-0031
Sample Description: Manhole #39 | Adhesive on Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Yellow	0.0%	100%	None Detected	



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161 John Roberts Road South Portland, ME 04106
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<http://www.EMSL.com> / portlandlab@emsl.com

EMSL Order ID: 621501381
Customer ID: JAWO50
Customer PO: J3147112/7116
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 11C **Lab Sample ID:** 621501381-0032
Sample Description: Manhole #39 | Adhesive on Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Yellow	0.0%	100%	None Detected	

Client Sample ID: 12A **Lab Sample ID:** 621501381-0033
Sample Description: Manhole #352-D | Adhesive on Foam Insulation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Brown	0.0%	100%	None Detected	

Client Sample ID: 12B **Lab Sample ID:** 621501381-0034
Sample Description: Manhole #352-D | Adhesive on Foam Insulation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Brown	0.0%	100%	None Detected	

Client Sample ID: 12C **Lab Sample ID:** 621501381-0035
Sample Description: Manhole #352-D | Adhesive on Foam Insulation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Brown	0.0%	100%	None Detected	

Client Sample ID: 13A **Lab Sample ID:** 621501381-0036
Sample Description: Manhole #352 | Concrete

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Gray/Tan	0%	100%	None Detected	

Client Sample ID: 13B **Lab Sample ID:** 621501381-0037
Sample Description: Manhole #352 | Concrete

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Gray	0%	100%	None Detected	

Client Sample ID: 13C **Lab Sample ID:** 621501381-0038
Sample Description: Manhole #352 | Concrete

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Gray	0%	100%	None Detected	

Client Sample ID: 14A **Lab Sample ID:** 621501381-0039
Sample Description: Manhole #352-C | Blue Pipe Thread Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	



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EMSL Order ID: 621501381
Customer ID: JAWO50
Customer PO: J3147112/7116
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 14B **Lab Sample ID:** 621501381-0040
Sample Description: Manhole #352-C | Blue Pipe Thread Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 14C **Lab Sample ID:** 621501381-0041
Sample Description: Manhole #352-C | Blue Pipe Thread Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 15A **Lab Sample ID:** 621501381-0042
Sample Description: Manhole #356-A | Soil

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Brown	0%	100%	None Detected	

Client Sample ID: 16A **Lab Sample ID:** 621501381-0043
Sample Description: Manhole #352-D | Soil

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Brown	0%	100%	None Detected	

Client Sample ID: 17A **Lab Sample ID:** 621501381-0044
Sample Description: Manhole #352-B | Cloth

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Tan	93%	7%	None Detected	

Client Sample ID: 17B **Lab Sample ID:** 621501381-0045
Sample Description: Manhole #352-B | Cloth

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Tan	93%	7%	None Detected	

Client Sample ID: 17C **Lab Sample ID:** 621501381-0046
Sample Description: Manhole #352-B | Cloth

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Tan	90%	10%	None Detected	

Client Sample ID: 18A **Lab Sample ID:** 621501381-0047
Sample Description: Manhole #352-B | White Hard-Packed Insulation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	White	3%	97%	None Detected	



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<http://www.EMSL.com> / portlandlab@emsl.com

EMSL Order ID: 621501381
Customer ID: JAWO50
Customer PO: J3147112/7116
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 18B **Lab Sample ID:** 621501381-0048
Sample Description: Manhole #352-B | White Hard-Packed Insulation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	White	5%	95%	None Detected	

Client Sample ID: 18C **Lab Sample ID:** 621501381-0049
Sample Description: Manhole #352-B | White Hard-Packed Insulation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	White	2%	98%	None Detected	

PLM: ME CERT # BA-0166 (DL) ME CERT # BA-0155 (JS) ME CERT # BA-0150 (AM)
PLM EPA NOB: ME CERT # BA-0166 (DL) ME CERT # BA-0155 (JS) ME CERT # BA-0150 (AM)

Analyst(s):

- Alexander Maxinoski PLM (9)
- Desiree Lunt PLM (10)
PLM Grav. Reduction (20)
- Joshua Snyder PLM Grav. Reduction (10)

Reviewed and approved by:

Christina Walker, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. This test report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government. EMSL bears no responsibility for sample collection activities or analytical method limitations. The laboratory is not responsible for the accuracy of results when requested to physically separate and analyze layered samples. PLM alone is not consistently reliable in detecting asbestos in floor coverings and similar NOBs

Samples analyzed by EMSL Analytical, Inc. South Portland, ME NVLAP Lab Code 500094-0

Initial report from: 08/03/2015 08:16:12



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

621501381

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Company : Terracon Consultants, Inc.		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small>	
Street: 77 Sundial Avenue, Suite 401W		<i>Third Party Billing requires written authorization from third party</i>	
City: Manchester	State/Province: NH	Zip/Postal Code: 03103	Country: US
Report To (Name): Ryan Rouillard		Telephone #: 781 603-5375	
Email Address: ryan.rouillard@terracon.com		Fax #: 603 647-4432	Purchase Order:
Project Name/Number: J3147112/7116		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
U.S. State Samples Taken: ME		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	

Turnaround Time (TAT) Options* – Please Check

3 Hour
 6 Hour
 24 Hour
 48 Hour
 72 Hour
 96 Hour
 1 Week
 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PLM - Bulk (reporting limit)	TEM - Bulk
<input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input checked="" type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NIOSH 9002 (<1%) <input type="checkbox"/> NY ELAP Method 198.1 (friable in NY) <input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY) <input type="checkbox"/> OSHA ID-191 Modified <input type="checkbox"/> Standard Addition Method	<input type="checkbox"/> TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1 <input type="checkbox"/> NY ELAP Method 198.4 (TEM) <input type="checkbox"/> Chatfield Protocol (semi-quantitative) <input type="checkbox"/> TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2 <input type="checkbox"/> TEM Qualitative via Filtration Prep Technique <input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique <p style="text-align: center;"><u>Other</u></p> <input type="checkbox"/>

Check For Positive Stop – Clearly Identify Homogenous Group Date Sampled: _____

Samplers Name: Ryan Rouillard Samplers Signature:

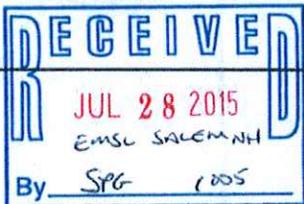
Sample #	HA #	Sample Location	Material Description

Client Sample # (s): 01 - 18 Total # of Samples: 49

Relinquished (Client): Date: _____ Time: _____

Received (Lab): Date: 7-29-15 Time: 10am

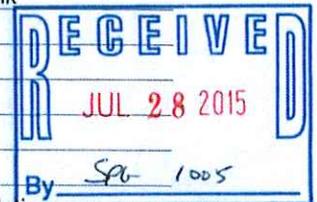
Comments/Special Instructions: _____



Fed Ex
7741 4011 1431

621501381

Sample ID	Sample Location	Sample Description
01A	Manhole # 26	Soil
01B	Manhole # 24	Soil
02A	Concrete adjacent to Manhole # 25	White caulk
02B	Concrete adjacent to Manhole # 25	White caulk
02C	Concrete adjacent to Manhole # 25	White caulk
03A	Concrete adjacent to Manhole # 25	Light gray caulk
03B	Concrete adjacent to Manhole # 25	Light gray caulk
03C	Concrete adjacent to Manhole # 25	Light gray caulk
04A	Concrete adjacent to Manhole # 25	Dark gray caulk
04B	Concrete adjacent to Manhole # 25	Dark gray caulk
04C	Concrete adjacent to Manhole # 25	Dark gray caulk
05A	Manhole # 24	Adhesive on metal
05B	Manhole # 24	Adhesive on metal
05C	Manhole # 24	Adhesive on metal
06A	Manhole # 27	Paper beneath metal jacket
06B	Manhole # 27	Paper beneath metal jacket
06C	Manhole # 27	Paper beneath metal jacket
07A	Manhole # 26	Adhesive between metal jacket and foam
07B	Manhole # 26	Adhesive between metal jacket and foam
07C	Manhole # 26	Adhesive between metal jacket and foam
08A	Manhole # 28	White wrap under metal jacket
08B	Manhole # 28	White wrap under metal jacket
08C	Manhole # 28	White wrap under metal jacket
09A	Manhole # 24	Silver coating on end-cap
09B	Manhole # 24	Silver coating on end-cap
09C	Manhole # 24	Silver coating on end-cap
10A	Concrete adjacent to Manhole # 1 and 2	Black caulk
10B	Concrete adjacent to Manhole # 1 and 2	Black caulk
10C	Concrete adjacent to Manhole # 1 and 2	Black caulk
11A	Manhole # 39	Adhesive on metal jacket
11B	Manhole # 39	Adhesive on metal jacket
11C	Manhole # 39	Adhesive on metal jacket
12A	Manhole # 352-D	Adhesive on foam insulation
12B	Manhole # 352-D	Adhesive on foam insulation
12C	Manhole # 352-D	Adhesive on foam insulation
13A	Manhole # 352	Concrete
13B	Manhole # 352	Concrete
13C	Manhole # 352	Concrete
14A	Manhole # 352-C	Blue pipe thread caulk
14B	Manhole # 352-C	Blue pipe thread caulk
14C	Manhole # 352-C	Blue pipe thread caulk
15A	Manhole # 356-A	Soil
16A	Manhole # 352-D	Soil
17A	Manhole # 352-B	Cloth
17B	Manhole # 352-B	Cloth
17C	Manhole # 352-B	Cloth
18A	Manhole # 352-B	White hard-packed insulation
18B	Manhole # 352-B	White hard-packed insulation
18C	Manhole # 352-B	White hard-packed insulation



APPENDIX B

LEAD/PCB ANALYTICAL LABORATORY DATA

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (856) 303-2500 / (856) 786-5974

<http://www.EMSL.com>cinnaminsonleadlab@emsl.com

EMSL Order: 201509075

CustomerID: JAWO50

CustomerPO:

ProjectID:

Attn: **Keith Allard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone: (603) 647-9700
 Fax: (603) 647-4432
 Received: 07/29/15 10:28 AM
 Collected:

Project: J3157111

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
02 Site: Manhole #356-A Desc: Cream paint	201509075-0001	8/4/2015	8/4/2015	0.13 % wt
03 Site: Manhole #352-A Desc: Blue paint	201509075-0002	8/4/2015	8/4/2015	<0.010 % wt
04 Site: Manhole #352-B Desc: 4" condensate line	201509075-0003	8/4/2015	8/4/2015	<0.010 % wt
05 Site: Manhole #38-1 Desc: Blue paint	201509075-0004	8/4/2015	8/4/2015	<0.010 % wt

Julie Smith - Laboratory Director
 NJ-NELAP Accredited:03036
 or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, AIHA-LAP, LLC ELLAP 100194, A2LA 2845.01

Initial report from 08/05/2015 11:44:58



Lead (Pb) Chain of Custody
EMSL Order ID (Lab Use Only).

201509075

EMSL ANALYTICAL, INC
 200 ROUTE 130 NORTH
 CINNAMINSON, NJ 08077
 PHONE: (800) 220-3675
 FAX (856) 786-5974

Company: Terracon Consultants, Inc.		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**	
Street: 77 Sundial Avenue, Suite 401W		Third Party Billing requires written authorization from third party	
City: Manchester	State/Province: NH	Zip/Postal Code: 03103	Country: US
Report To (Name): Keith Allard		Telephone #: 603 289-1951	
Email Address: Keith.Allard@terracon.com		Fax #: 603 647-4432	Purchase Order:
Project Name/Number: J3157111		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
U.S. State Samples Taken: ME		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	

Turnaround Time (TAT) Options* - Please Check

3 Hour
 6 Hour
 24 Hour
 48 Hour
 72 Hour
 96 Hour
 1 Week
 2 Week

*Analysis completed in accordance with EMSL's Terms and Conditions located in the Price Guide

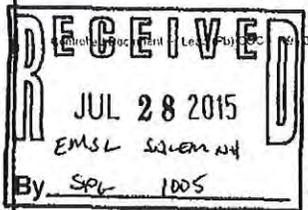
Matrix	Method	Instrument	Reporting Limit	Check
Chips <input checked="" type="checkbox"/> % by wt. <input type="checkbox"/> mg/cm ² <input type="checkbox"/> ppm	SW846-7000B	Flame Atomic Absorption	0.01%	<input checked="" type="checkbox"/>
Air	NIOSH 7082	Flame Atomic Absorption	4 µg/filter	<input type="checkbox"/>
	NIOSH 7105	Graphite Furnace AA	0.03 µg/filter	<input type="checkbox"/>
	NIOSH 7300 modified	ICP-AES/ICP-MS	0.5 µg/filter	<input type="checkbox"/>
Wipe* ASTM <input type="checkbox"/> non ASTM <input type="checkbox"/> *if no box is checked, non-ASTM Wipe is assumed	SW846-7000B	Flame Atomic Absorption	10 µg/wipe	<input type="checkbox"/>
	SW846-6010B or C	ICP-AES	1.0 µg/wipe	<input type="checkbox"/>
TCLP	SW846-1311/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	SW846-1131/SW846-6010B or C	ICP-AES	0.1 mg/L (ppm)	<input type="checkbox"/>
Soil	SW846-7000B	Flame Atomic Absorption	40 mg/kg (ppm)	<input type="checkbox"/>
	SW846-6010B or C	ICP-AES	2 mg/kg (ppm)	<input type="checkbox"/>
Wastewater Unpreserved <input type="checkbox"/> Preserved with HNO₃ pH < 2 <input type="checkbox"/>	SM3111B/SW846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.7	ICP-AES	0.020 mg/L (ppm)	<input type="checkbox"/>
Drinking Water Unpreserved <input type="checkbox"/> Preserved with HNO₃ pH < 2 <input type="checkbox"/>	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.8	ICP-MS	0.001 mg/L (ppm)	<input type="checkbox"/>
TSP/SPM Filter	40 CFR Part 50 (2013)	ICP-MS	1.2 µg/filter	<input type="checkbox"/>
Other:				<input type="checkbox"/>

Name of Sampler: Keith Allard Signature of Sampler: *[Signature]*

Sample #	Location	Volume/Area	Date/Time Sampled
02	Manhole # 356-A	Cream paint	
03	Manhole # 352-A	Blue paint	
04	Manhole # 352-B	4" condensate line	
05	Manhole # 38-1	Blue paint	

Client Sample #'s: 02 - 05 Total # of Samples: 4

Relinquished (Client): *[Signature]* Date: _____ Time: _____
 Received (Lab): *[Signature]* Date: 7/29/15 Time: 10:28A EMSL
 Comments:



only Pb or analysis for lead in this

APPENDIX C

LICENSES AND CERTIFICATIONS



This is to certify that
Ryan D Rouillard

State of Maine
Asbestos Abatement Program
Ryan D. Rouillard

Air Analyst

Cert 1: AA-0461
Trn.Exp.Date 12/19/2015

Air Monitor

Cert 2: AM-0435
Trn.2.Exp.Date 12/19/2015

Expiration Date 12/31/2015

This is not a legal form of official identification



*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Project Monitor Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

*For course participants seeking New York State certification or New York State training reciprocity, the official record of successful completion is the DOH 2832
Certificate of Completion of Asbestos Safety Training.*

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

December 19, 2014

Course Dates

14-9197-174-226296

Certificate Number

December 19, 2014

Examination Date

December 19, 2015

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887

Telephone 978.658.5272

www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION



This is to certify that
Ryan D Rouillard

State of Maine
Asbestos Abatement Program
Ryan D. Rouillard

Inspector

Cert 1: AI-0495
Trn.Exp.Date 11/20/2015

Management Planner

Cert 2: MP-0194
Trn.2.Exp.Date 11/20/2015

Expiration Date 11/30/2015

This is not a legal form of official identification



*has completed the requisite training, and has passed an examination for
reaccreditation as:*

Asbestos Inspector Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

*For course participants seeking New York State certification or New York State training reciprocity, the official record of successful completion is the DOH 2832
Certificate of Completion of Asbestos Safety Training.*

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

November 20, 2014

Course Dates

14-9104-106-226296

Certificate Number

November 20, 2014

Examination Date

November 20, 2015

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887

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INSTITUTE FOR ENVIRONMENTAL EDUCATION



State of Maine
Asbestos Abatement Program



Ryan D. Rouillard

Design Consultant

Cert No. DC-0285

Trn.Exp.Date 10/30/2015

Expiration Date 10/31/2015

This is not a legal form of official identification



This is to certify that
Ryan D Rouillard

*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Designer Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

October 30, 2014

Course Dates

14-9099-128-226296

Certificate Number

October 30, 2014

Examination Date

October 30, 2015

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887

Telephone 978.658.5272

www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION



This is to certify that
Ryan D Rouillard

State of Maine
Asbestos Abatement Program

Ryan D. Rouillard

Inspector

Cert 1: AI-0495
Trn.Exp.Date 11/20/2015

Management Planner

Cert 2: MP-0194
Trn.2.Exp.Date 11/20/2015

Expiration Date 11/30/2015

This is not a legal form of official identification



*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Management Planner Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

November 20, 2014136

Course Dates

14-9114-136-226296

Certificate Number

November 20, 2014

Examination Date

November 20, 2015

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887

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INSTITUTE FOR ENVIRONMENTAL EDUCATION



State of Maine
Asbestos Abatement Program

Keith D. Allard



Air Analyst

Cert No. AA-0462
Trn.Exp.Date 12/31/2015

Expiration Date 12/31/2015

This is not a legal form of official identification



Keith D Allard

State of Maine
Asbestos Abatement Program

Keith D. Allard

Inspector

Cert 1: AI-0676
Trn.Exp.Date 03/30/2016

Air Monitor

Cert 2: AM-0555
Trn.2.Exp.Date 03/13/2016

Expiration Date 03/31/2016

This is not a legal form of official identification



*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Project Monitor Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

March 13, 2015

Course Dates

15-0112-174-258428

Certificate Number

March 13, 2015

Examination Date

March 13, 2016

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887

Telephone 978.658.5272

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INSTITUTE FOR ENVIRONMENTAL EDUCATION



State of Maine
Asbestos Abatement Program



Keith D. Allard

Management Planner

Cert No. MP-0195
Trn.Exp.Date 03/30/2016

Expiration Date 03/31/2016

This is not a legal form of official identification



This is to certify that
Keith D Allard



*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Management Planner Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

March 30, 2015

Course Dates

15-0136-136-258428

Certificate Number

March 30, 2015

Examination Date

March 30, 2016

Expiration Date

Training Director

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INSTITUTE FOR ENVIRONMENTAL EDUCATION



This is to certify that
Keith D Allard

*has completed the requisite training, and has passed an examination for
reaccreditation as:*
Asbestos Inspector Refresher
pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

March 30, 2015

Course Dates

15-0138-106-258428

Certificate Number

March 30, 2015

Examination Date

March 30, 2016

Expiration Date

Training Director

State of Maine
Asbestos Abatement Program

Keith D. Allard

Inspector

Cert 1: AI-0676
Trn.Exp.Date 03/30/2016

Air Monitor

Cert 2: AM-0555
Trn.2.Exp.Date 03/13/2016

Expiration Date 03/31/2016

This is not a legal form of official identification



16 Upton Drive, Wilmington, MA 01887

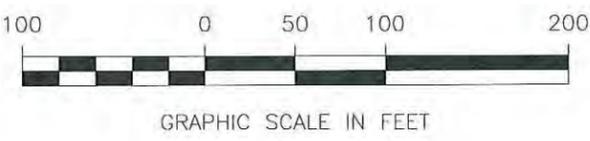
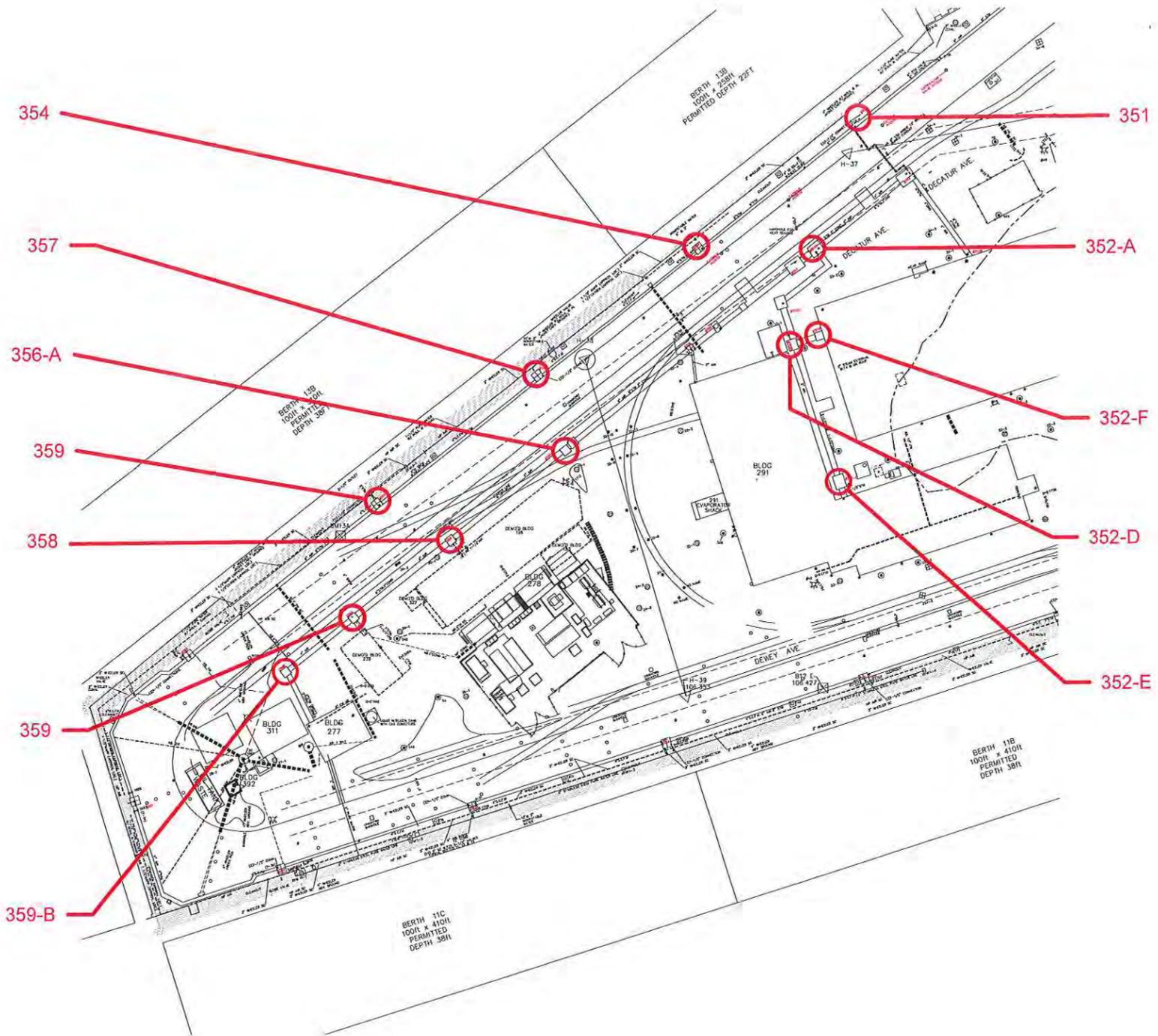
Telephone 978.658.5272

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INSTITUTE FOR ENVIRONMENTAL EDUCATION

APPENDIX D

SITE PLAN – PROJECT #1



Location	Notes
Vault 351	Tested concrete and suspect ACM Blue paint associated with valve and handle - beyond "arms-length", thus not sampled 2 steam lines and 1 condensate (no insulation), debris in bottom of encasement
Vault 352-B	White hard-packed insulation on 6-inch steam line and debris in soil White cloth wrap associated with steam pavement penetration Red paint associated with 4-inch condensate line - beyond "arms-length", thus not sampled
Vault 352	Rotted crossmembers 6-inch steam line - no insulation 4-inch condensate - black wrapped line - beyond "arms-length", thus not sampled 4-feet of water inside manhole Concrete encasement - elect. Inside with sump
Vault 352-A	Column support paint (blue) LCP&PCB
Vault 352-C	Blue pipe thread caulk - sampled Steam line and condensate lines continue
Vault 352-D	Soil tested - ACM (wet) Adhesive on foam insul. Debris tested - suspect ACM Steam and condensate lines continue
Vault 352-E&F	Not accessible "No unauthorized persons"
Vault 356	Not accessible "Construction area"
Vault 356-A	Cream paint on concrete supports - sampled Soil sampled at base of vault - suspect ACM Concrete sampled - suspect ACM Steam and condensate lines continue
Vault 358	Not accessible "Construction area", thus Terracon did not view or sample from this location.
Vault 359-A to End	Not accessible "Construction area", thus Terracon did not view or sample from this location.

Notes: ACM = Asbestos Containing Material; PCB = Poly-Chlorinated Biphenyls; & LCP = Lead Containing Paint.

Prepared For: Joint venture - Casco Bay Engineering/CLD Consulting Engineers, Inc.	Project Mngr: GLG	Project No. J3147111	 <small>4 Thomas Drive, Suite 3 Westbrook, ME 04092 PH: (207)828-5374 Fax: (207)828-5374</small>
	Drawn By: MCR	Scale: As shown	
	Checked By: GLG	File No. PSNY total map.dwg	
	Approved By: GLG	Date: August 2015	
PROJECT #1 CENTER LOOP eMMRP ENERGY PROJECTS PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE			EXHIBIT

Asbestos and Hazardous Materials Assessment

**Project #2 – Buildings 180 to 300 Steam and Condensate Repairs
Portsmouth Naval Shipyard
FY16 eMMRP Energy Projects
Kittery, York County, Maine**

August 20, 2015
Terracon Project No. J3147112



Prepared for:
Joint Venture Casco Bay Engineering/CLD Consulting Engineers, LLC
Portland, Maine

Prepared by:
Terracon Consultants, Inc.
Westbrook, Maine

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

August 20, 2015



Joint Venture Casco Bay Engineering/CLD Consulting Engineers, LLC
540 Commercial St (South Entry)
Manchester, NH 03101

Attn: Mrs. Carolyn C. Bird, PE
P: (207) 842 2800 x202
E: Carolynb@cascobayengineering.com

Re: Asbestos and Hazardous Materials Assessment
Project #2 – Building 180 to 300 Steam and Condensate Repairs
Portsmouth Naval Shipyard
FY16 eMMRP Energy Projects
Kittery, York County, Maine
Terracon Project Number: J3147112

Dear Ms. Bird:

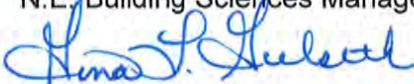
Terracon Consultants, Inc. (Terracon) is pleased to submit the attached report for the above referenced site to Joint Venture (JV) Casco Bay Engineering/CLD Consulting Engineers, LLC (JV Casco Bay). The purpose of this report is to present the results of an asbestos survey, lead-containing paint (LCP) sampling, and polychlorinated biphenyls (PCB)-containing materials sampling activities for the Steam and Condensate system/corridor repairs between Buildings 180 and 300, performed on June 24, and July 31, 2015, at the Portsmouth Navy Shipyard (PNS) located in Kittery, Maine. This survey was conducted in general accordance with Exhibit 7 (Environmental and Hazardous Material Sampling and Testing Requirements), and the scope of work presented in our June 24, 2015 submission for Geotechnical and Environmental Services.

Terracon appreciates the opportunity to provide this service to JV Casco Bay Engineering/CLD Consultants, LLC. If you have any questions regarding this report, please contact the undersigned.

Sincerely,
Terracon Consultants, Inc.


Ryan D. Rouillard
Senior Project Manager


Adrian D. Stanca
N.E. Building Sciences Manager


Cindy A. Baldwin, CIH, FAIHA
Senior Industrial Hygienist

Terracon Consultants, Inc. 4 Thomas Drive, Suite 3 Westbrook, ME 04092
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EXECUTIVE SUMMARY

Terracon Consultants, Inc. (Terracon) conducted an asbestos-containing materials (ACM), lead-containing paint (LCP), and polychlorinated biphenyls (PCB) materials survey at the Portsmouth Naval Shipyard (PNS) located in Kittery, Maine. Terracon's survey included sampling of accessible, below-grade utilities and materials within the Buildings 180 to 300 system/corridor (Project #2). Manholes/vaults were not sampled at depths beyond arms-length from the surface, unless an alternative sampling method was used, as Terracon personnel did not enter manholes due to the Occupational Safety and Health Agency (OSHA) requirements that indicate shut down of the active lines would be necessary (e.g., lockout/tagout). Testing was performed in conjunction with the project's Accident Prevention Plan (APP) and associated Activity Hazard Analysis (AHA) sheets dated June 2, 2015, conforming to rules/regulations and policies set forth by the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic via work order number 1362123 via project number N40085-15-D-6012 for FY16 UEM eMMRP Energy Projects for replacement of below-grade utilities at the Portsmouth Naval Station. The Statement of Architect-Engineer Services, dated October 24, 2014, was provided to Terracon by JV Casco Bay, which identifies the hazardous materials survey and testing required for this project. No other testing of building or Site materials was conducted as part of this scope of work.

The asbestos and hazardous materials survey was conducted on June 24, and July 31, 2015 by Mr. Ryan D. Rouillard and Mr. Keith Allard; both Maine-licensed asbestos inspectors. Collected samples were delivered under chain of custody (COC) to an independent, accredited laboratory for analysis by polarized light microscopy, non-friable, organically-bound (PLM-NOB) for asbestos. Terracon collected 29 suspect ACM bulk samples and 5 suspect PCB samples from various pipes within accessible manhole locations associated with the Buildings 180 to 300 project.

Visual assessment indicated pipes/fittings and valves in inaccessible corridors that contained suspect ACM/LCP/PCB materials. At the time of remediation, should suspect materials be uncovered and accessible, additional testing should be performed to characterize the existing materials appropriately for removal and disposal.

Asbestos was not identified in the following materials tested:

- Caulks associated with concrete slabs (white, light gray, and dark gray)
- Adhesive on metal
- Paper beneath metal jacket
- Adhesive between metal jacket and foam
- White wrap under metal jacket
- Silver coating on end-cap
- Soil

A summary of asbestos analytical results are presented in Appendix A.

Project # 2 – Steam/Condensate Between Buildings 180 & 300

Portsmouth Naval Shipyard ■ Kittery, Maine

August 20, 2015 ■ Terracon Project # J3147112



Suspect lead in painted surfaces/components was identified in various manholes at the time of the Site survey. However, due to the inaccessibility of the vaults and corridors for this project, as described above, no samples of LCP were collected.

The U.S. Environmental Protection Agency (USEPA) has issued a number of fact sheets indicating that PCBs may be present in caulk, paint, and other sealant materials used in buildings constructed in the period from 1950 through approximately 1980. PCBs were a common additive to caulk because of their water and chemical resistance, durability, and elasticity. PCBs were added as a plasticizer in caulking used to seal joints between masonry units and around windows. PCBs were used in building materials such as paints, caulks, adhesives, mastics, sealants, and specialty coatings. PCBs are a hazardous substance whose management is regulated by the federal Toxic Substances Control Act (TSCA). Testing included the collection of five samples obtained from limited areas of the Site to determine whether PCBs are present in caulks, coatings, paint, or soils. The composite samples and bulk samples were analyzed for PCBs and percent solids.

Analysis was performed by Alpha Analytical, Inc., a Maine-licensed laboratory for PCB analysis using USEPA method 8082. PCBs were not identified above laboratory reporting limits. The laboratory report is provided in Appendix B.

ASBESTOS AND HAZARDOUS MATERIALS ASSESSMENT
Project #2 Buildings 180 to 300 Steam and Condensate Repairs
Portsmouth Naval Shipyard
Kittery, Maine
Terracon Project Number: J3147112
August 20, 2015

1.0 INTRODUCTION

The Portsmouth Naval Shipyard (PNS) plans to replace below-grade utilities of the area between Buildings 180 and 300 (Project #2) at the shipyard located in Kittery, Maine. Terracon Consultants, Inc. (Terracon) has been retained by Joint Venture Casco Bay Engineering-CLD Consulting Engineers, LLC (JV Casco Bay) to perform environmental sampling along the proposed corridor. Figure 1 in Appendix D presents a Site sketch of the appropriate corridor and associated field notes of the planned work within Project #2.

We understand that replacement utilities in vaults and corridors will require pipe/fitting removal for possible off-site disposal (including associated sediment/soil from manholes, vaults, and corridors). There are no abatement records documenting the regulated removal of the known pre-existing asbestos-containing materials (ACMs), lead-containing paint (LCP), or polychlorinated biphenyl (PCB) materials. Thus, contamination at the proposed vault and corridor locations may exist. This Asbestos and Hazardous Materials Assessment has been prepared to summarize sampling and testing activities for the proposed repairs.

At a federal naval facility, which is subject to federal abatement regulations, the State of Maine Department of Environmental Protection (MEDEP) rules and regulations for asbestos control also apply. Additionally, site work that disturbs confirmed ACMs will conform to the U.S. Environmental Protection Agency (USEPA) 40 Code of Federal Regulations (CFR) Part 61 National Emission Standards for Hazardous Pollutants (NESHAP).

1.1 Reliance

This report is for the exclusive use of JV Casco Bay Engineering/CLD Consulting Engineers, LLC for the project being discussed. Reliance by any other party on this report is prohibited without written authorization of Terracon and JV Casco Bay Engineering/CLD Consulting Engineers, LLC.

2.0 SAMPLING AREA DESCRIPTION

PNS plans to replace below-grade steam and condensate lines in the system/corridor of the area between Buildings 180 and 300 (Project #2) at the shipyard located in Kittery, Maine. As part of the hazardous materials assessment, Terracon performed visual assessment and sampling of

underground piping, fittings, and other materials located in manholes and vaults within the project area. Corridor areas between the manholes and vaults were not observed.

3.0 SCOPE OF WORK

The objective of this survey was to identify the hazardous materials associated with the utilities for the development of appropriate field procedures to be used during replacement activities. Terracon understands the Survey was requested to identify and quantify suspect/presumed ACMs, LCPs, and PCBs for eventual remediation purposes.

Terracon's survey included sampling of accessible, below-grade utilities and materials within the area between Buildings 180 and 300 (Project #2). Manholes/vaults were not sampled at depths beyond arms-length from the surface, unless an alternative sampling method was used, as Terracon personnel did not enter manholes due to the Occupational Safety and Health Agency (OSHA) requirements that indicate shut down of the active lines would be necessary (e.g., lockout/tagout).

The known inaccessible areas included the following:

- Subsurface vaults and corridor locations associated with underground steam/condensate pipe/fittings (i.e., below-grade utilities) within the area between Buildings 180 and 300. The suspect materials/debris were tested in ONLY surficial vault locations; no entry to vaults/tunnels was performed by Terracon.

The primary requirements of the proposed work were as follows:

- Terracon identified proposed sampling locations, arranged for Dig Safe (as needed), and coordinated with the Navy to complete the underground utilities pre-screening.
- Terracon coordinated and organized traffic outages as necessary to accomplish the hazardous materials testing.
- Terracon identified pipe/fitting insulation and associated debris in sediment/soils from the proposed remediation project (Buildings 180 to 300). Unless materials within the various vaults are homogeneous in nature (i.e., same color, texture, and size per federal and state regulations), assumption of hazardous materials contamination is made for inaccessible vaults and corridors.
- Terracon personnel removed/restored vault covers of the surface to pre-testing conditions, as practical.

3.1 Asbestos Survey

Asbestos survey activities were initiated with visual observation of the vaults/manholes to identify homogeneous areas of suspect ACM. A homogeneous area consists of suspect materials that appear similar throughout in terms of color and texture with consideration given to the date of installation. The assessment was conducted in visually accessible areas of the vaults proposed for utility replacement activities.

3.1.1 Physical Assessment

A physical assessment of each accessible homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. A friable material is defined by the USEPA as a material that can be crumbled, pulverized, or reduced to powder by hand pressure when dry. Friability was unable to be assessed by physically touching suspect materials due to lack of accessibility.

3.1.2 Sample Collection

Based on results of the visual observation, bulk samples of suspect materials were collected from randomly selected locations in each homogeneous area. Bulk samples were collected using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

Terracon collected 29 bulk samples of suspect ACM. A summary of suspect ACM samples collected during the survey is included as Appendix A.

3.1.3 Sample Analysis

Bulk samples were submitted under chain of custody to EMSL Analytical, Inc. (EMSL) of Salem, New Hampshire for analysis by polarized light microscopy (PLM) with dispersion staining techniques per USEPA's *Method for the Determination of Asbestos in Bulk Building Materials* (600/R-93/116), non-friable, organically-bound (PLM-NOB) for asbestos. EMSL Analytical, Inc. is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) Accreditation No. 201051-0.

The laboratory was instructed to analyze samples from each homogeneous area until the first sample containing asbestos was identified (stop positive). The laboratory report for this project is included in Appendix A.

3.2 Lead-Containing Paint Sampling

Terracon visually assessed the pipe/fittings/valves proposed for renovation in vaults and manholes and performed LCP sampling that consisted of collecting paint chip samples from various painted components for laboratory analysis. Due to the vaults and corridors being inaccessible, no paint chip samples were collected or submitted for lead content analysis from these locations. Observed paint coated surfaces of the site included various painted metal components/surfaces.

The LCP sampling was limited as described herein. Terracon cannot guarantee a building or property to be lead free, as the possibility exists that LCP coated surfaces may be hidden from sight or in inaccessible locations, or the homogeneous construction areas identified may not be truly homogeneous. It should be understood that in accordance with regulation, the LCP sampling is not considered comprehensive in nature, and the results are not intended to be used to determine lead hazards, develop abatement plans, or prepare detailed cost estimates for abatement. At the time of remediation, should suspect materials be uncovered and accessible, additional testing should be performed to characterize the existing materials appropriately for worker safety, removal, and disposal.

3.3 Polychlorinated Biphenyls Sampling

Terracon visually assessed various suspect PCB materials within the project area and collected five suspect PCB samples from various caulk and adhesive, within accessible Site vault locations.

Each sample was assigned an identification number representative of the location from which it was collected. The material type, location of sample, and descriptors of the material sampled were recorded on field data sheets during the sampling (i.e., chain of custody). In addition, photographs were made of each location sampled to provide a visual record of the sealant materials sampled and their locations within the project area. The samples were placed on ice in coolers and submitted to Alpha Analytical, Inc. (Alpha) for analysis of PCBs by USEPA method 8082 utilizing the manual Soxhlet extraction method (USEPA Method 3540C). Quality Assurance/Quality Control (QA/QC) analytical summaries were provided with the laboratory analytical reports for all samples collected at the Site during this project. These packages included the results of analyses of a duplicate sample, laboratory control samples (LCS), laboratory control duplicate sample (LSCD) and Site-specific matrix spike (MS) and matrix spike duplicate (MSD) samples. A QA/QC Certification Form along with a laboratory Case Narrative summarizing the results of the quality control performance tests employed by the laboratory during the sample analyses is presented at the end of the laboratory reports.

4.0 REGULATORY OVERVIEW

4.1 Asbestos

The asbestos NESHAP (40 CFR Part 61, Subpart M) regulates asbestos fiber emissions and asbestos waste disposal practices. The asbestos NESHAP regulation also requires the identification and classification of existing ACM according to friability prior to demolition or renovation activity. Friable ACM is a material containing more than 1% asbestos that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. All friable ACM is considered regulated asbestos-containing material (RACM).

The asbestos NESHAP regulation classifies ACM as friable, Category I nonfriable ACM or Category II nonfriable ACM. RACM includes all friable ACM, along with Category I and Category II nonfriable ACMs that have become friable; will be or have been subjected to sanding, grinding, cutting, or abrading; or have a high probability of becoming or have become crumbled, pulverized, or reduced to powder in the course of renovation or demolition activity. Category I nonfriable ACM are exclusively asbestos-containing packings, gaskets, resilient floor coverings, resilient floor covering mastics and asphalt roofing products that contain more than 1% asbestos. Category II nonfriable ACM are all other nonfriable materials other than Category I nonfriable ACM that contain more than 1% asbestos.

The MEDEP enforces provisions of the asbestos NESHAP. The owner or operator must provide MEDEP with written notification at least 10 working days prior to the commencement of asbestos abatement activities that will disturb RACM in amounts greater than 25 square feet or 10 linear feet.

The OSHA asbestos standard for construction (29 CFR 1926.1101) regulates workplace exposure to asbestos. The OSHA standard requires that employee exposure to airborne asbestos fibers be maintained below the permissible exposure limits (PELs) of 0.1 asbestos fiber per cubic centimeter of air (0.1 f/cc) as an 8-hour time-weighted average (TWA) or 1.0 f/cc as a 30-minute excursion limit. The OSHA standard classifies construction and maintenance activities that could disturb ACM, and specifies work practices and precautions that employers must follow when engaging in each class of regulated work.

4.2 Lead-Containing Paint

Lead is regulated by the USEPA, MEDEP, and OSHA. The USEPA and MEDEP regulate lead use, removal, and disposal, and OSHA regulates lead exposure to workers. The USEPA and MEDEP defines lead-based paint (LBP) as paint, varnish, stain, or other applied coating that contains lead equal to or greater than 1.0 milligram per square centimeter (mg/cm²), 5,000 milligrams per kilogram (mg/kg), or 0.5% by dry weight as determined by laboratory analysis; however, OSHA construction rules do not specify safe or acceptable levels of lead in paint for the purposes of occupational exposures. For the purpose of the OSHA lead standard, lead includes metallic lead, all inorganic lead compounds, and organic lead soaps. A synopsis of the OSHA regulations (29 CFR 1926.62) and the applicability are as follows:

OSHA construction rules do not specify acceptable levels of lead within LCP for the purposes of occupational exposures. Construction work involving LCP must be completed in accordance with OSHA regulations, not limited to the lead standard, 29 CFR 1926.62. Contractors completing work in areas found to contain lead, or where it is reasonable to assume lead may be present, should be notified of the presence (and potential presence) of lead and proper work protocols should be used. The Maine Hazardous Waste regulations require that wastes be characterized prior to disposal. The toxicity characteristic leaching procedure (TCLP), which is the appropriate method for characterizing materials/debris for lead content, involves the collection of samples

from representative materials and the analysis of the materials by an accredited laboratory. If the sample results are less than 5.0 milligrams per liter (mg/L) lead, then the waste can be disposed of as non-hazardous construction debris. If the sample results are greater than or equal to 5.0 mg/L lead, then the waste must be disposed of as a hazardous waste.

The OSHA lead standard for construction (29 CFR 1926.62) applies to all construction work where an employee may be occupationally exposed to lead. All work related to construction, alteration, or replace (including painting and decorating) is included. The lead standard applies to any detectable concentration of lead in paint, as even small concentrations of lead can result in unacceptable employee exposures depending upon on the method of removal and other workplace conditions. Under this standard, construction includes, but is not limited to, the following:

- Demolition or salvage of structures where lead or materials containing lead are present;
- Removal or encapsulation of materials containing lead;
- New construction, alteration, replace, or renovation of structures, substrates, or portions containing lead, or materials containing lead;
- Installation of products containing lead;
- Lead contamination/emergency clean-up;
- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and,
- Maintenance operations associated with construction activities described above.

4.3 Polychlorinated Biphenyls

PCBs are currently prohibited from being used in caulk and other commodities (USEPA, 40 CFR 761-PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions). However, prior to 1977, PCBs were present in some materials used in the construction of schools and other buildings. Studies have shown that concentrations of PCB can exceed 1%, or 10,000 parts per million (ppm) by weight in some caulk materials.

USEPA regulates the disposal of PCB materials, as well as soil and other materials contaminated with PCBs, if the concentration of PCBs exceeds 1 ppm. Such materials must be disposed at an appropriate approved or permitted facility. Please note that, the material must go to an appropriate asbestos landfill if identified as asbestos-containing.

The Toxic Substances Control Act (TSCA) regulations at 40 CFR 761 provide disposal and cleanup requirements for PCBs. The disposal and cleanup requirements for PCB-contaminated materials depend on whether the material is classified as a PCB bulk product waste or PCB remediation waste. PCB remediation waste is waste containing PCBs as a result of a spill or release such as from a caulk/paint material (date and concentration limits apply), e.g., PCB-

contaminated soil, sediments, and concrete. PCB bulk product waste is waste derived from products manufactured to contain PCBs in a non-liquid state at 50 ppm or greater. Typical examples are caulk, paint, and sealants.

PCB contamination in remaining materials must be cleaned down to a concentration of 1 ppm for an unrestricted use and if the concentrations of PCBs in the remediation waste are greater than 50 ppm, the remediation waste must be disposed in a TSCA-permitted facility. However, PCB bulk product waste, even at concentrations of PCBs greater than 50 ppm, can be disposed in a non-hazardous solid waste facility, as long as this disposal is permitted by that state's solid waste regulations.

Since TSCA authority has not been delegated to any of the states, both USEPA and state regulations apply. Knowing your specific state requirements for PCB management is essential if you want to remain in compliance with applicable federal and state regulations.

USEPA regulation 40 CFR 761 defines PCB remediation waste to include contaminated soil, and specifies a clean-up level of less than (<) 1 ppm without further conditions for unrestricted use in high occupancy areas (i.e., areas where individuals may be present for 335 hours or more per year). PCB caulk is defined as a PCB bulk product waste, and its disposal is subject to USEPA regulations under the TSCA (40 CFR 761.62).

In order to dispose of PCB bulk product waste in a state-permitted municipal landfill or non-municipal non-hazardous waste landfill, there may be additional sampling, recordkeeping and performance requirements that must be satisfied. Be sure to review 40 CFR 761.62 for specific requirements.

Remediation waste may be managed as bulk product waste *only if the material tested is attached* to the contaminated abutting material at the time the material is designated for disposal. If the material (i.e., caulk or paint) has been removed from the vault/manhole material, the substrate would be considered a PCB remediation waste subject to strict management and disposal requirements at concentrations down to 1 ppm.

5.0 FINDINGS

5.1 Suspect Asbestos-Containing Materials

As stated above, asbestos was not identified in the following materials tested:

- Caulks associated with concrete slabs (white, light gray, and dark gray)
- Adhesive on metal
- Paper beneath metal jacket
- Adhesive between metal jacket and foam

Project #2 – Steam/Condensate Between Buildings 180 & 300

Portsmouth Naval Shipyard ■ Kittery, Maine

August 20, 2015 ■ Terracon Project # J3147112



- White wrap under metal jacket
- Silver coating on end-cap
- Soil

The selected contractor should properly characterize, remove and dispose of the identified hazardous materials, including materials in inaccessible vaults and corridors. A summary of asbestos analytical results is presented in Appendix A, and a Site Plan depicting the Project #2 corridor is provided in Appendix D.

5.2 Suspect Lead-Containing Paint

Terracon did not collect samples for laboratory analysis of LCP.

5.3 Suspect Polychlorinated Biphenyls

Terracon collected five samples from pipe/fitting adhesives and surficial concrete masonry caulk. As shown in the laboratory report (Appendix B), PCBs were not identified above laboratory reporting limits.

6.0 LIMITATIONS/GENERAL COMMENTS

Terracon did not perform sampling which required demolition or destructive activities such as dismantling of equipment or removal of protective coverings, as the systems were energized at the time of the Site survey. Reasonable efforts to access suspect materials within known areas of restricted access (e.g., beneath vault covers and corridors between access points) were made; however, as previously described, confined spaces or areas that may pose a health or safety risk to Terracon personnel were not sampled. Sampling did not include suspect materials that could not be safely reached from the surface.

The findings presented in this report are based on conditions observed during our survey of the PNS Project #2 vaults only. The information contained in this report is relevant to the date on which this survey was performed, and should not be relied upon to represent conditions at a later date. This report has been prepared on behalf of and exclusively for use by JV Casco Bay Engineering/CLD Consulting Engineers, LLC for specific application to their project as discussed. This report is not a bidding document. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. Terracon does not warrant the work of regulatory agencies, laboratories, or other third parties supplying information that may have been used in the preparation of this report. No warranty, express or implied is made.

APPENDIX A

ASBESTOS ANALYTICAL LABORATORY DATA



EMSL Analytical, Inc.

161 John Roberts Road South Portland, ME 04106
Phone/Fax: (207) 517-6921 / (207) 517-6922
<http://www.EMSL.com> / portlandlab@emsl.com

EMSL Order ID: 621501381
Customer ID: JAWO50
Customer PO: J3147112/7116
Project ID:

Attn: Ryan Rouillard
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone: (603) 647-9700
Fax: (603) 647-4432
Collected: 7/27/2015
Received: 7/28/2015
Analyzed: 8/03/2015

Proj: J3147112/7116

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 01A

Lab Sample ID: 621501381-0001

Sample Description: Manhole #26 | Soil

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Brown	0%	100%	None Detected	

Client Sample ID: 01B

Lab Sample ID: 621501381-0002

Sample Description: Manhole #24 | Soil

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Brown	0%	100%	None Detected	

Client Sample ID: 02A

Lab Sample ID: 621501381-0003

Sample Description: Concrete Adjacent to Manhole #25 | White Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 02B

Lab Sample ID: 621501381-0004

Sample Description: Concrete Adjacent to Manhole #25 | White Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 02C

Lab Sample ID: 621501381-0005

Sample Description: Concrete Adjacent to Manhole #25 | White Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 03A

Lab Sample ID: 621501381-0006

Sample Description: Concrete Adjacent to Manhole #25/Light Gray Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 03B

Lab Sample ID: 621501381-0007

Sample Description: Concrete Adjacent to Manhole #25/Light Gray Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	



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EMSL Order ID: 621501381
Customer ID: JAW050
Customer PO: J3147112/7116
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 03C Lab Sample ID: 621501381-0008

Sample Description: Concrete Adjacent to Manhole #25/Light Gray Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 04A Lab Sample ID: 621501381-0009

Sample Description: Concrete Adjacent to Manhole #25/Dark Gray Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 04B Lab Sample ID: 621501381-0010

Sample Description: Concrete Adjacent to Manhole #25/Dark Gray Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 04C Lab Sample ID: 621501381-0011

Sample Description: Concrete Adjacent to Manhole #25/Dark Gray Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 05A Lab Sample ID: 621501381-0012

Sample Description: Manhole #24 | Adhesive on Metal

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Yellow	27.7%	72.3%	None Detected	

Client Sample ID: 05B Lab Sample ID: 621501381-0013

Sample Description: Manhole #24 | Adhesive on Metal

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Yellow	1.1%	98.9%	None Detected	

Client Sample ID: 05C Lab Sample ID: 621501381-0014

Sample Description: Manhole #24 | Adhesive on Metal

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Yellow	22.6%	77.4%	None Detected	

Client Sample ID: 06A Lab Sample ID: 621501381-0015

Sample Description: Manhole #27 | Paper Beneath Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Brown	90%	10%	None Detected	



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EMSL Order ID: 621501381
Customer ID: JAWO50
Customer PO: J3147112/7116
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 06B **Lab Sample ID:** 621501381-0016

Sample Description: Manhole #27 | Paper Beneath Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Tan	90%	10%	None Detected	

Client Sample ID: 06C **Lab Sample ID:** 621501381-0017

Sample Description: Manhole #27 | Paper Beneath Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Tan	90%	10%	None Detected	

Client Sample ID: 07A **Lab Sample ID:** 621501381-0018

Sample Description: Manhole #26/Adhesive Between Metal Jacket and Foam

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Yellow	0.0%	100%	None Detected	

Client Sample ID: 07B **Lab Sample ID:** 621501381-0019

Sample Description: Manhole #26/Adhesive Between Metal Jacket and Foam

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Yellow	0.0%	100%	None Detected	

Client Sample ID: 07C **Lab Sample ID:** 621501381-0020

Sample Description: Manhole #26/Adhesive Between Metal Jacket and Foam

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Yellow	0.0%	100%	None Detected	

Client Sample ID: 08A **Lab Sample ID:** 621501381-0021

Sample Description: Manhole #28 | White Wrap Under Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Brown/Gray	45%	55%	None Detected	

Client Sample ID: 08B **Lab Sample ID:** 621501381-0022

Sample Description: Manhole #28 | White Wrap Under Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Brown/Gray	40%	60%	None Detected	

Client Sample ID: 08C **Lab Sample ID:** 621501381-0023

Sample Description: Manhole #28 | White Wrap Under Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Brown/Gray	25%	75%	None Detected	



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EMSL Order ID: 621501381
Customer ID: JAW050
Customer PO: J3147112/7116
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 09A **Lab Sample ID:** 621501381-0024

Sample Description: Manhole #24 | Silver Coating on End-Cap

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Black/Silver	0.0%	100%	None Detected	

Client Sample ID: 09B **Lab Sample ID:** 621501381-0025

Sample Description: Manhole #24 | Silver Coating on End-Cap

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Black/Silver	0.0%	100%	None Detected	

Client Sample ID: 09C **Lab Sample ID:** 621501381-0026

Sample Description: Manhole #24 | Silver Coating on End-Cap

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Black/Silver	0.0%	100%	None Detected	

Client Sample ID: 10A **Lab Sample ID:** 621501381-0027

Sample Description: Concrete Adjacent to Manhole #1 and #2/Black Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Black	0.0%	100%	None Detected	

Client Sample ID: 10B **Lab Sample ID:** 621501381-0028

Sample Description: Concrete Adjacent to Manhole #1 and #2/Black Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Black	0.0%	100%	None Detected	

Client Sample ID: 10C **Lab Sample ID:** 621501381-0029

Sample Description: Concrete Adjacent to Manhole #1 and #2/Black Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Black	0.0%	100%	None Detected	

Client Sample ID: 11A **Lab Sample ID:** 621501381-0030

Sample Description: Manhole #39 | Adhesive on Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Yellow	0.0%	100%	None Detected	

Client Sample ID: 11B **Lab Sample ID:** 621501381-0031

Sample Description: Manhole #39 | Adhesive on Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Yellow	0.0%	100%	None Detected	



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EMSL Order ID: 621501381
Customer ID: JAWO50
Customer PO: J3147112/7116
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 11C **Lab Sample ID:** 621501381-0032
Sample Description: Manhole #39 | Adhesive on Metal Jacket

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Yellow	0.0%	100%	None Detected	

Client Sample ID: 12A **Lab Sample ID:** 621501381-0033
Sample Description: Manhole #352-D | Adhesive on Foam Insulation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Brown	0.0%	100%	None Detected	

Client Sample ID: 12B **Lab Sample ID:** 621501381-0034
Sample Description: Manhole #352-D | Adhesive on Foam Insulation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Brown	0.0%	100%	None Detected	

Client Sample ID: 12C **Lab Sample ID:** 621501381-0035
Sample Description: Manhole #352-D | Adhesive on Foam Insulation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Brown	0.0%	100%	None Detected	

Client Sample ID: 13A **Lab Sample ID:** 621501381-0036
Sample Description: Manhole #352 | Concrete

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Gray/Tan	0%	100%	None Detected	

Client Sample ID: 13B **Lab Sample ID:** 621501381-0037
Sample Description: Manhole #352 | Concrete

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Gray	0%	100%	None Detected	

Client Sample ID: 13C **Lab Sample ID:** 621501381-0038
Sample Description: Manhole #352 | Concrete

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Gray	0%	100%	None Detected	

Client Sample ID: 14A **Lab Sample ID:** 621501381-0039
Sample Description: Manhole #352-C | Blue Pipe Thread Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	



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EMSL Order ID: 621501381
Customer ID: JAW050
Customer PO: J3147112/7116
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 14B **Lab Sample ID:** 621501381-0040
Sample Description: Manhole #352-C | Blue Pipe Thread Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 14C **Lab Sample ID:** 621501381-0041
Sample Description: Manhole #352-C | Blue Pipe Thread Caulk

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/31/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: 15A **Lab Sample ID:** 621501381-0042
Sample Description: Manhole #356-A | Soil

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Brown	0%	100%	None Detected	

Client Sample ID: 16A **Lab Sample ID:** 621501381-0043
Sample Description: Manhole #352-D | Soil

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Brown	0%	100%	None Detected	

Client Sample ID: 17A **Lab Sample ID:** 621501381-0044
Sample Description: Manhole #352-B | Cloth

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Tan	93%	7%	None Detected	

Client Sample ID: 17B **Lab Sample ID:** 621501381-0045
Sample Description: Manhole #352-B | Cloth

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	Tan	93%	7%	None Detected	

Client Sample ID: 17C **Lab Sample ID:** 621501381-0046
Sample Description: Manhole #352-B | Cloth

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	Tan	90%	10%	None Detected	

Client Sample ID: 18A **Lab Sample ID:** 621501381-0047
Sample Description: Manhole #352-B | White Hard-Packed Insulation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	White	3%	97%	None Detected	



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EMSL Order ID: 621501381
Customer ID: JAWO50
Customer PO: J3147112/7116
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116 Method via Polarized Light Microscopy

Client Sample ID: 18B

Lab Sample ID: 621501381-0048

Sample Description: Manhole #352-B | White Hard-Packed Insulation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2015	White	5%	95%	None Detected	

Client Sample ID: 18C

Lab Sample ID: 621501381-0049

Sample Description: Manhole #352-B | White Hard-Packed Insulation

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	8/03/2015	White	2%	98%	None Detected	

PLM: ME CERT # BA-0166 (DL) ME CERT # BA-0155 (JS) ME CERT # BA-0150 (AM)
PLM EPA NOB: ME CERT # BA-0166 (DL) ME CERT # BA-0155 (JS) ME CERT # BA-0150 (AM)

Analyst(s):

Alexander Maxinoski	PLM (9)
Desiree Lunt	PLM (10) PLM Grav. Reduction (20)
Joshua Snyder	PLM Grav. Reduction (10)

Reviewed and approved by:

Christina Walker, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. This test report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government. EMSL bears no responsibility for sample collection activities or analytical method limitations. The laboratory is not responsible for the accuracy of results when requested to physically separate and analyze layered samples. PLM alone is not consistently reliable in detecting asbestos in floor coverings and similar NOBs

Samples analyzed by EMSL Analytical, Inc. South Portland, ME NVLAP Lab Code 500094-0

Initial report from: 08/03/2015 08:16:12

APPENDIX B

LEAD/PCB ANALYTICAL LABORATORY DATA



ANALYTICAL REPORT

Lab Number:	L1517311
Client:	Terracon Consultants 77 Sundial Avenue Suite 401 West Manchester, NH 03103
ATTN:	Keith Allard
Phone:	(603) 647-9700
Project Name:	Not Specified
Project Number:	J3147112/7116
Report Date:	08/03/15

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: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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



Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1517311-01	01	SOLID	KITTERY, ME	07/23/15 00:00	07/24/15
L1517311-02	02	SOLID	KITTERY, ME	07/23/15 00:00	07/24/15
L1517311-03	03	SOLID	KITTERY, ME	07/23/15 00:00	07/24/15
L1517311-04	04	SOLID	KITTERY, ME	07/23/15 00:00	07/24/15
L1517311-05	05	SOLID	KITTERY, ME	07/23/15 00:00	07/24/15
L1517311-06	06	SOLID	KITTERY, ME	07/23/15 00:00	07/24/15
L1517311-07	07	SOLID	KITTERY, ME	07/23/15 00:00	07/24/15

Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC 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. 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: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

Case Narrative (continued)

PCBs

L1517311-04: The sample has elevated detection limits due to limited sample volume available for analysis. The WG807518-1 Method Blank, associated with L1517311-03, -05, -06, and -07, has a concentration above the reporting limit for aroclor 1260. Since the samples were non-detect for this target analyte, no further actions were taken. The results of the original analysis are reported.

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:  Cristin Walker

Title: Technical Director/Representative

Date: 08/03/15

ORGANICS

PCBS

Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

SAMPLE RESULTS

Lab ID: L1517311-01
Client ID: 01
Sample Location: KITTERY, ME
Matrix: Solid
Analytical Method: 1,8082A
Analytical Date: 07/31/15 17:57
Analyst: JW
Percent Solids: 99%

Date Collected: 07/23/15 00:00
Date Received: 07/24/15
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 07/29/15 23:22
Cleanup Method: EPA 3665A
Cleanup Date: 07/31/15
Cleanup Method: EPA 3660B
Cleanup Date: 07/31/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	93.0	--	1	A
Aroclor 1221	ND		ug/kg	93.0	--	1	A
Aroclor 1232	ND		ug/kg	93.0	--	1	A
Aroclor 1242	ND		ug/kg	93.0	--	1	A
Aroclor 1248	ND		ug/kg	93.0	--	1	A
Aroclor 1254	ND		ug/kg	93.0	--	1	A
Aroclor 1260	ND		ug/kg	93.0	--	1	A
Aroclor 1262	ND		ug/kg	93.0	--	1	A
Aroclor 1268	ND		ug/kg	93.0	--	1	A
PCBs, Total	ND		ug/kg	93.0	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	78		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	84		30-150	B



Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

SAMPLE RESULTS

Lab ID: L1517311-02
Client ID: 02
Sample Location: KITTERY, ME
Matrix: Solid
Analytical Method: 1,8082A
Analytical Date: 07/31/15 18:13
Analyst: JW
Percent Solids: 18%

Date Collected: 07/23/15 00:00
Date Received: 07/24/15
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 07/29/15 23:22
Cleanup Method: EPA 3665A
Cleanup Date: 07/31/15
Cleanup Method: EPA 3660B
Cleanup Date: 07/31/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	541	--	1	A
Aroclor 1221	ND		ug/kg	541	--	1	A
Aroclor 1232	ND		ug/kg	541	--	1	A
Aroclor 1242	ND		ug/kg	541	--	1	A
Aroclor 1248	ND		ug/kg	541	--	1	A
Aroclor 1254	ND		ug/kg	541	--	1	A
Aroclor 1260	ND		ug/kg	541	--	1	A
Aroclor 1262	ND		ug/kg	541	--	1	A
Aroclor 1268	ND		ug/kg	541	--	1	A
PCBs, Total	ND		ug/kg	541	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	50		30-150	A
Decachlorobiphenyl	58		30-150	A
2,4,5,6-Tetrachloro-m-xylene	57		30-150	B
Decachlorobiphenyl	63		30-150	B

Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

SAMPLE RESULTS

Lab ID: L1517311-03
 Client ID: 03
 Sample Location: KITTERY, ME
 Matrix: Solid
 Analytical Method: 1,8082A
 Analytical Date: 08/01/15 18:34
 Analyst: BT
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 07/23/15 00:00
 Date Received: 07/24/15
 Field Prep: Not Specified
 Extraction Method: EPA 3540C
 Extraction Date: 07/30/15 17:46
 Cleanup Method: EPA 3630
 Cleanup Date: 08/01/15
 Cleanup Method: EPA 3665A
 Cleanup Date: 08/01/15
 Cleanup Method: EPA 3660B
 Cleanup Date: 08/01/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	810	--	1	A
Aroclor 1221	ND		ug/kg	810	--	1	A
Aroclor 1232	ND		ug/kg	810	--	1	A
Aroclor 1242	ND		ug/kg	405	--	1	A
Aroclor 1248	ND		ug/kg	810	--	1	A
Aroclor 1254	ND		ug/kg	810	--	1	A
Aroclor 1260	ND		ug/kg	810	--	1	B
Aroclor 1262	ND		ug/kg	810	--	1	A
Aroclor 1268	ND		ug/kg	405	--	1	A
PCBs, Total	ND		ug/kg	405	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	90		30-150	A
Decachlorobiphenyl	42		30-150	A
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	65		30-150	B



Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

SAMPLE RESULTS

Lab ID: L1517311-04
Client ID: 04
Sample Location: KITTERY, ME
Matrix: Solid
Analytical Method: 1,8082A
Analytical Date: 07/31/15 18:30
Analyst: JW
Percent Solids: 98%

Date Collected: 07/23/15 00:00
Date Received: 07/24/15
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 07/29/15 23:22
Cleanup Method: EPA 3665A
Cleanup Date: 07/31/15
Cleanup Method: EPA 3660B
Cleanup Date: 07/31/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	643	--	1	A
Aroclor 1221	ND		ug/kg	643	--	1	A
Aroclor 1232	ND		ug/kg	643	--	1	A
Aroclor 1242	ND		ug/kg	643	--	1	A
Aroclor 1248	ND		ug/kg	643	--	1	A
Aroclor 1254	ND		ug/kg	643	--	1	A
Aroclor 1260	ND		ug/kg	643	--	1	A
Aroclor 1262	ND		ug/kg	643	--	1	A
Aroclor 1268	ND		ug/kg	643	--	1	A
PCBs, Total	ND		ug/kg	643	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	48		30-150	A
Decachlorobiphenyl	53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	51		30-150	B
Decachlorobiphenyl	68		30-150	B



Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

SAMPLE RESULTS

Lab ID: L1517311-05
Client ID: 05
Sample Location: KITTERY, ME
Matrix: Solid
Analytical Method: 1,8082A
Analytical Date: 08/01/15 18:46
Analyst: BT
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 07/23/15 00:00
Date Received: 07/24/15
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 07/30/15 17:46
Cleanup Method: EPA 3630
Cleanup Date: 08/01/15
Cleanup Method: EPA 3665A
Cleanup Date: 08/01/15
Cleanup Method: EPA 3660B
Cleanup Date: 08/01/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	922	--	1	A
Aroclor 1221	ND		ug/kg	922	--	1	A
Aroclor 1232	ND		ug/kg	922	--	1	A
Aroclor 1242	ND		ug/kg	461	--	1	A
Aroclor 1248	ND		ug/kg	922	--	1	A
Aroclor 1254	ND		ug/kg	922	--	1	A
Aroclor 1260	ND		ug/kg	922	--	1	A
Aroclor 1262	ND		ug/kg	922	--	1	A
Aroclor 1268	ND		ug/kg	461	--	1	A
PCBs, Total	ND		ug/kg	461	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	92		30-150	A
Decachlorobiphenyl	45		30-150	A
2,4,5,6-Tetrachloro-m-xylene	86		30-150	B
Decachlorobiphenyl	68		30-150	B



Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

SAMPLE RESULTS

Lab ID: L1517311-06
Client ID: 06
Sample Location: KITTERY, ME
Matrix: Solid
Analytical Method: 1,8082A
Analytical Date: 08/01/15 18:59
Analyst: BT
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 07/23/15 00:00
Date Received: 07/24/15
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 07/30/15 17:46
Cleanup Method: EPA 3630
Cleanup Date: 08/01/15
Cleanup Method: EPA 3665A
Cleanup Date: 08/01/15
Cleanup Method: EPA 3660B
Cleanup Date: 08/01/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	930	--	1	A
Aroclor 1221	ND		ug/kg	930	--	1	A
Aroclor 1232	ND		ug/kg	930	--	1	A
Aroclor 1242	ND		ug/kg	465	--	1	A
Aroclor 1248	ND		ug/kg	930	--	1	A
Aroclor 1254	ND		ug/kg	930	--	1	A
Aroclor 1260	ND		ug/kg	930	--	1	A
Aroclor 1262	ND		ug/kg	930	--	1	A
Aroclor 1268	ND		ug/kg	465	--	1	A
PCBs, Total	ND		ug/kg	465	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	88		30-150	A
Decachlorobiphenyl	45		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		30-150	B
Decachlorobiphenyl	69		30-150	B



Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

SAMPLE RESULTS

Lab ID: L1517311-07
Client ID: 07
Sample Location: KITTERY, ME
Matrix: Solid
Analytical Method: 1,8082A
Analytical Date: 08/01/15 19:11
Analyst: BT
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 07/23/15 00:00
Date Received: 07/24/15
Field Prep: Not Specified
Extraction Method: EPA 3540C
Extraction Date: 07/30/15 17:46
Cleanup Method: EPA 3630
Cleanup Date: 08/01/15
Cleanup Method: EPA 3665A
Cleanup Date: 08/01/15
Cleanup Method: EPA 3660B
Cleanup Date: 08/01/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	957	--	1	A
Aroclor 1221	ND		ug/kg	957	--	1	A
Aroclor 1232	ND		ug/kg	957	--	1	A
Aroclor 1242	ND		ug/kg	478	--	1	A
Aroclor 1248	ND		ug/kg	957	--	1	A
Aroclor 1254	ND		ug/kg	957	--	1	A
Aroclor 1260	ND		ug/kg	957	--	1	A
Aroclor 1262	ND		ug/kg	957	--	1	A
Aroclor 1268	ND		ug/kg	478	--	1	A
PCBs, Total	ND		ug/kg	478	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	94		30-150	A
Decachlorobiphenyl	50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	88		30-150	B
Decachlorobiphenyl	75		30-150	B



Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 07/31/15 16:00
Analyst: JW

Extraction Method: EPA 3540C
Extraction Date: 07/29/15 23:22
Cleanup Method: EPA 3665A
Cleanup Date: 07/31/15
Cleanup Method: EPA 3660B
Cleanup Date: 07/31/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
PCB by GC - Westborough Lab for sample(s): 01-02,04 Batch: WG807234-1						
Aroclor 1016	ND		ug/kg	87.4	--	A
Aroclor 1221	ND		ug/kg	87.4	--	A
Aroclor 1232	ND		ug/kg	87.4	--	A
Aroclor 1242	ND		ug/kg	87.4	--	A
Aroclor 1248	ND		ug/kg	87.4	--	A
Aroclor 1254	ND		ug/kg	87.4	--	A
Aroclor 1260	ND		ug/kg	87.4	--	A
Aroclor 1262	ND		ug/kg	87.4	--	A
Aroclor 1268	ND		ug/kg	87.4	--	A
PCBs, Total	ND		ug/kg	87.4	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	64		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	82		30-150	B

Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

**Method Blank Analysis
 Batch Quality Control**

Analytical Method: 1,8082A
Analytical Date: 08/01/15 19:23
Analyst: BT

Extraction Method: EPA 3540C
Extraction Date: 07/30/15 17:46
Cleanup Method: EPA 3630
Cleanup Date: 08/01/15
Cleanup Method: EPA 3665A
Cleanup Date: 08/01/15
Cleanup Method: EPA 3660B
Cleanup Date: 08/01/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
PCB by GC - Westborough Lab for sample(s): 03,05-07 Batch: WG807518-1						
Aroclor 1016	ND		ug/kg	730	--	A
Aroclor 1221	ND		ug/kg	730	--	A
Aroclor 1232	ND		ug/kg	730	--	A
Aroclor 1242	ND		ug/kg	365	--	A
Aroclor 1248	ND		ug/kg	730	--	A
Aroclor 1254	ND		ug/kg	730	--	A
Aroclor 1262	ND		ug/kg	730	--	A
Aroclor 1268	ND		ug/kg	365	--	A
PCBs, Total	1160		ug/kg	365	--	A
Aroclor 1260	1160		ug/kg	730	--	B

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	97		30-150	A
Decachlorobiphenyl	53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	90		30-150	B
Decachlorobiphenyl	78		30-150	B

Lab Control Sample Analysis Batch Quality Control

Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits	Column
	%Recovery	Qual	%Recovery	Qual					
PCB by GC - Westborough Lab Associated sample(s): 01-02,04 Batch: WG807234-2 WG807234-3									
Aroclor 1016	53		62		40-140	16		50	A
Aroclor 1260	48		58		40-140	19		50	A

Surrogate	LCS		LCSD		Acceptance Criteria	Column
	%Recovery	Qual	%Recovery	Qual		
2,4,5,6-Tetrachloro-m-xylene	61		72		30-150	A
Decachlorobiphenyl	64		76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		79		30-150	B
Decachlorobiphenyl	78		86		30-150	B

Lab Control Sample Analysis Batch Quality Control

Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits	Column
	%Recovery	Qual	%Recovery	Qual					
PCB by GC - Westborough Lab Associated sample(s): 03,05-07 Batch: WG807518-2 WG807518-3									
Aroclor 1016	116		88		40-140	27		50	A
Aroclor 1260	81		73		40-140	10		50	A

Surrogate	LCS		LCSD		Acceptance Criteria	Column
	%Recovery	Qual	%Recovery	Qual		
2,4,5,6-Tetrachloro-m-xylene	111		83		30-150	A
Decachlorobiphenyl	63		48		30-150	A
2,4,5,6-Tetrachloro-m-xylene	103		78		30-150	B
Decachlorobiphenyl	93		72		30-150	B



INORGANICS & MISCELLANEOUS

Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

SAMPLE RESULTS

Lab ID: L1517311-01
Client ID: 01
Sample Location: KITTERY, ME
Matrix: Solid

Date Collected: 07/23/15 00:00
Date Received: 07/24/15
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	99.0		%	0.100	NA	1	-	07/28/15 22:18	30,2540G	RT



Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

SAMPLE RESULTS

Lab ID: L1517311-02
Client ID: 02
Sample Location: KITTERY, ME
Matrix: Solid

Date Collected: 07/23/15 00:00
Date Received: 07/24/15
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	17.6		%	0.100	NA	1	-	07/28/15 22:18	30,2540G	RT



Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

SAMPLE RESULTS

Lab ID: L1517311-04
Client ID: 04
Sample Location: KITTERY, ME
Matrix: Solid

Date Collected: 07/23/15 00:00
Date Received: 07/24/15
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	98.4		%	0.100	NA	1	-	07/28/15 22:18	30,2540G	RT



Lab Duplicate Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01-02,04	QC Batch ID: WG806832-1	QC Sample: L1517049-01	Client ID: DUP	Sample	
Solids, Total	92.9	92.8	%	0		20



Project Name: Not Specified
 Project Number: J3147112/7116

Lab Number: L1517311
 Report Date: 08/03/15

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1517311-01A	Glass 60mL/2oz unpreserved	A	N/A	3.5	Y	Absent	TS(7),PCB-8082-3540C(14)
L1517311-01B	Bag	A	N/A	3.5	Y	Absent	TS(7)
L1517311-02A	Glass 60mL/2oz unpreserved	A	N/A	3.5	Y	Absent	TS(7),PCB-8082-3540C(14)
L1517311-02B	Bag	A	N/A	3.5	Y	Absent	TS(7)
L1517311-03A	Glass 60mL/2oz unpreserved	A	N/A	3.5	Y	Absent	PCB-8082-CAULK(14),TS100()
L1517311-03B	Bag	A	N/A	3.5	Y	Absent	PCB-8082-CAULK(14)
L1517311-04A	Glass 60mL/2oz unpreserved	A	N/A	3.5	Y	Absent	TS(7),PCB-8082-3540C(14)
L1517311-05A	Glass 60mL/2oz unpreserved	A	N/A	3.5	Y	Absent	PCB-8082-CAULK(14),TS100()
L1517311-06A	Glass 60mL/2oz unpreserved	A	N/A	3.5	Y	Absent	PCB-8082-CAULK(14),TS100()
L1517311-07A	Glass 60mL/2oz unpreserved	A	N/A	3.5	Y	Absent	-

*Values in parentheses indicate holding time in days

Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

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.
- NP** - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
- 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.
- TIC** - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

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

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. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

Report Format: Data Usability Report



Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

Data Qualifiers

- 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.
- 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



Project Name: Not Specified
Project Number: J3147112/7116

Lab Number: L1517311
Report Date: 08/03/15

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 16, 2014

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 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 2540D: TSS

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, SM4500CI-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, **LCHAT 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.

APPENDIX C

LICENSES AND CERTIFICATIONS



This is to certify that
Ryan D Rouillard

State of Maine
Asbestos Abatement Program

Ryan D. Rouillard



Design Consultant

Cert No. DC-0285

Trn.Exp.Date 10/30/2015

Expiration Date 10/31/2015

This is not a legal form of official identification



*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Designer Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

October 30, 2014

Course Dates

14-9099-128-226296

Certificate Number

October 30, 2014

Examination Date

October 30, 2015

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887

Telephone 978.658.5272

www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION



This is to certify that
Ryan D Rouillard

State of Maine
Asbestos Abatement Program
Ryan D. Rouillard
Inspector

Cert 1: AI-0495
Trn.Exp.Date 11/20/2015

Management Planner

Cert 2: MP-0194
Trn.2.Exp.Date 11/20/2015

Expiration Date 11/30/2015

This is not a legal form of official identification



*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Management Planner Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

November 20, 2014136

Course Dates

14-9114-136-226296

Certificate Number

November 20, 2014

Examination Date

November 20, 2015

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887

Telephone 978.658.5272

www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION



This is to certify that
Ryan D Rouillard

State of Maine
Asbestos Abatement Program
Ryan D. Rouillard



Inspector
Cert 1: AI-0495
Trn.Exp.Date 11/20/2015
Management Planner
Cert 2: MP-0194
Trn.2.Exp.Date 11/20/2015
Expiration Date 11/30/2015



This is not a legal form of official identification

*has completed the requisite training, and has passed an examination for
reaccreditation as:*

Asbestos Inspector Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

For course participants seeking New York State certification or New York State training reciprocity, the official record of successful completion is the DOH 2832 Certificate of Completion of Asbestos Safety Training.

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

November 20, 2014

Course Dates

14-9104-106-226296

Certificate Number

November 20, 2014

Examination Date

November 20, 2015

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887

Telephone 978.658.5272

www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION



This is to certify that
Ryan D Rouillard

State of Maine
Asbestos Abatement Program

Ryan D. Rouillard

Air Analyst

Cert 1: AA-0461
Trn.Exp.Date 12/19/2015

Air Monitor

Cert 2: AM-0435
Trn.2.Exp.Date 12/19/2015

Expiration Date 12/31/2015

This is not a legal form of official identification



*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Project Monitor Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

*For course participants seeking New York State certification or New York State training reciprocity, the official record of successful completion is the DOH 2832
Certificate of Completion of Asbestos Safety Training.*

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

December 19, 2014

Course Dates

14-9197-174-226296

Certificate Number

December 19, 2014

Examination Date

December 19, 2015

Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887

Telephone 978.558.5272

www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION



State of Maine
Asbestos Abatement Program

Keith D. Allard

Air Analyst

Cert No. AA-0462
Trn.Exp.Date 12/31/2015

Expiration Date 12/31/2015

This is not a legal form of official identification



State of Maine
Asbestos Abatement Program

Keith D. Allard

Inspector

Cert 1: AI-0676
Trn.Exp.Date 03/30/2016

Air Monitor

Cert 2: AM-0555
Trn.2.Exp.Date 03/13/2016

Expiration Date 03/31/2016

This is not a legal form of official identification



Keith D Allard



*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Project Monitor Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

March 13, 2015

Course Dates

15-0112-174-258428

Certificate Number

March 13, 2015

Examination Date

March 13, 2016

Expiration Date

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INSTITUTE FOR ENVIRONMENTAL EDUCATION



State of Maine
Asbestos Abatement Program



Keith D. Allard

Management Planner

Cert No. MP-0195
Trn.Exp.Date 03/30/2016

Expiration Date 03/31/2016

This is not a legal form of official identification



This is to certify that

Keith D Allard



*has completed the requisite training, and has passed an examination for
reaccreditation*

Asbestos Management Planner Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

March 30, 2015

Course Dates

15-0136-136-258428

Certificate Number

March 30, 2015

Examination Date

March 30, 2016

Expiration Date

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INSTITUTE FOR ENVIRONMENTAL EDUCATION



This is to certify that
Keith D Allard

*has completed the requisite training, and has passed an examination for
reaccreditation as:*
Asbestos Inspector Refresher
pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

Course Location

Institute for Environmental Education, Inc.
16 Upton Drive Wilmington, MA 01887

March 30, 2015

Course Dates

15-0138-106-258428

Certificate Number

March 30, 2015

Examination Date

March 30, 2016

Expiration Date

Training Director

State of Maine
Asbestos Abatement Program

Keith D. Allard

Inspector

Cert 1: AI-0676

Trn.Exp.Date 03/30/2016

Air Monitor

Cert 2: AM-0555

Trn.2.Exp.Date 03/13/2016

Expiration Date 03/31/2016

This is not a legal form of official identification



16 Upton Drive, Wilmington, MA 01887

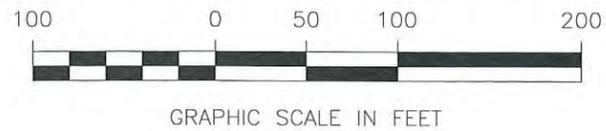
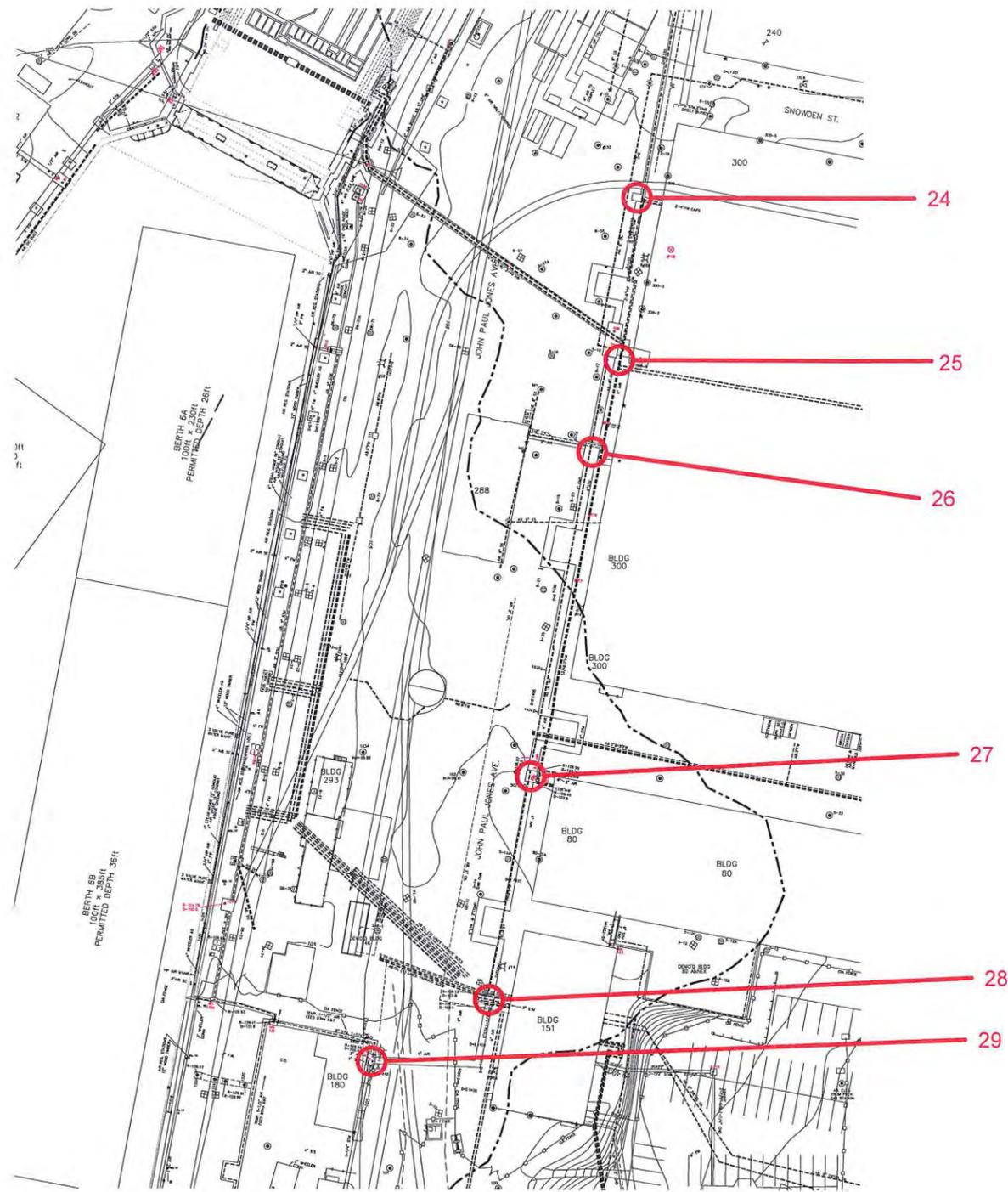
Telephone 978.658.5272

www.ieetrains.com

INSTITUTE FOR ENVIRONMENTAL EDUCATION

APPENDIX D

SITE PLAN - PROJECT #2



Location	Notes
Manhole 24	Metal jacket over foam insulation (flange) - sampled adhesive for ACM/PCB 6 flanges - silver coating on flange insulation - sampled Water in bottom with sediment - sampled
Manhole 25/26	White paper/adhesive associated with foam and metal wrap (west end pipe) sampled for ACM/PCB Sediment from bottom of manhole tested for ACM
Pavement	White masonry concrete expansion joint caulk Dark gray masonry concrete expansion joint caulk
Manhole 27	Steel elbows with gray paint (beyond "arms-length", thus not sampled) Metal jacket over foam insulation - paper on interior of metal pipe - sampled Water drain inside manhole, & sediment on floor is wet
Manhole 28	Open at time of visit; Navy appears to be pumping water out of manhole Metal jackets over foam insulation (4-inch & 6-inch pipes) - sampled paper under metal sheeting with alternative tools as directed by JV Casco Bay. Sump pump present and operating in manhole
Manhole #29	Sheath on 6-inch MAG insulation is labelled "Asbestos - Free" Three (3) 4-inch lines and one (1) 2-inch line Sump pump present but not operating in manhole

Notes: ACM = Asbestos Containing Material; PCB = Poly-Chlorinated Biphenyls

Prepared For: Joint venture - Casco Bay Engineering/CLD Consulting Engineers, Inc.	Project Mngr: GLG	Project No. J3147112	 <small>4 Thomas Drive, Suite 3 Westbrook, ME 04092 PH: (207)828-5374 Fax: (207)828-5374</small>
	Drawn By: MCR	Scale: As shown	
	Checked By: GLG	File No. PSNY total map.dwg	
	Approved By: GLG	Date: August 2015	
PROJECT #2 BUILDING 180-300 eMMRP ENERGY PROJECTS PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE			EXHIBIT

Asbestos and Hazardous Materials Assessment

Project #6 – Dry Dock #2 Compressed Air Piping Repairs
Portsmouth Naval Shipyard
FY16 eMMRP Energy Projects
Kittery, York County, Maine

August 20, 2015

Terracon Project No. J3147116



Prepared for:
Joint Venture Casco Bay Engineering/CLD Consulting Engineers, LLC
Portland, Maine

Prepared by:
Terracon Consultants, Inc.
Westbrook, Maine

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

August 20, 2015



Joint Venture Casco Bay Engineering/CLD Consulting Engineers, LLC
540 Commercial St (South Entry)
Manchester, NH 03101

Attn: Mrs. Carolyn C. Bird, PE
P: (207) 842 2800 x202
E: Carolynb@casco bayengineering.com

Re: Asbestos and Hazardous Materials Assessment
Project #6 – Dry Dock #2 Compressed Air Piping Repairs
Portsmouth Naval Shipyard
FY16 eMMRP Energy Projects
Kittery, York County, Maine
Terracon Project Number: J3147116

Dear Ms. Bird:

Terracon Consultants, Inc. (Terracon) is pleased to submit the attached report for the above referenced site to Joint Venture (JV) Casco Bay Engineering/CLD Consulting Engineers, LLC (JV Casco Bay). The purpose of this report is to present the results of an asbestos survey, lead-containing paint (LCP) sampling, and polychlorinated biphenyls (PCB)-containing materials sampling activities for the Dry Dock #2 system/corridor, performed on June 24, and July 14, and July 23, 2015, at the Portsmouth Navy Shipyard (PNS) located in Kittery, Maine. This survey was conducted in general accordance with Exhibit 7 (Environmental and Hazardous Material Sampling and Testing Requirements), and the scope of work presented in our June 24, 2015 submission for Geotechnical and Environmental Services.

Terracon appreciates the opportunity to provide this service to JV Casco Bay Engineering/CLD Consultants, LLC. If you have any questions regarding this report, please contact the undersigned.

Sincerely,

Terracon Consultants, Inc.

Ryan D. Rouillard
Senior Project Manager

Adrian D. Stanca
N.E. Building Sciences Manager

for Cindy A. Baldwin, CIH, FAIHA
Senior Industrial Hygienist

Terracon Consultants, Inc. 4 Thomas Drive, Suite 3 Westbrook, ME 04092
P (207) 828-5374 F (207) 828-5394 terracon.com

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APPENDIX C LICENSES AND CERTIFICATIONS
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EXECUTIVE SUMMARY

Terracon Consultants, Inc. (Terracon) conducted an asbestos-containing materials (ACM), lead-containing paint (LCP), and polychlorinated biphenyls (PCB) materials survey at the Portsmouth Naval Shipyard (PNS) located in Kittery, Maine. Terracon's survey included sampling of accessible, below-grade utilities and materials within the Dry Dock #2 system/corridor (Project #6). Manholes/vaults were not sampled at depths beyond arms-length from the surface, unless an alternative sampling method was used, as Terracon personnel did not enter manholes due to the Occupational Safety and Health Agency (OSHA) requirements that indicate shut down of the active lines would be necessary (e.g., lockout/tagout). Testing was performed in conjunction with the project's Accident Prevention Plan (APP) and associated Activity Hazard Analysis (AHA) sheets dated June 2, 2015, conforming to rules/regulations and policies set forth by the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic via work order number 1362123 via project number N40085-15-D-6012 for FY16 UEM eMMRP Energy Projects for replacement of below-grade utilities at the Portsmouth Naval Station. The Statement of Architect-Engineer Services, dated October 24, 2014, was provided to Terracon by JV Casco Bay, which identifies the hazardous materials survey and testing required for this project. No other testing of building or Site materials was conducted as part of this scope of work.

The asbestos and hazardous materials survey was conducted on June 24, and July 31, 2015 by Mr. Ryan D. Rouillard and Mr. Keith Allard; both Maine-licensed asbestos inspectors. Collected samples were delivered under chain of custody (COC) to an independent, accredited laboratory for analysis by polarized light microscopy, non-friable, organically-bound (PLM-NOB) for asbestos. Terracon collected 6 suspect ACM bulk samples, 1 suspect LCP sample, and 2 suspect PCB samples from various pipes within vault areas associated with the Dry Dock #2 corridor.

Visual assessment indicated pipes/fittings and valves in inaccessible corridors that contained suspect ACM/LCP/PCB materials. At the time of remediation, should suspect materials be uncovered and accessible, additional testing should be performed to characterize the existing materials appropriately for removal and disposal.

Asbestos was not identified in the following materials tested:

- Black caulk
- Adhesive on metal jacket

A summary of asbestos analytical results are presented in Appendix A.

Suspect lead paint was collected from one surface. Lead was not found at concentrations above the laboratory detection limit. Lead is defined by the U.S. Environmental Protection Agency (USEPA) and the State of Maine as containing concentrations greater than 1.0 milligrams per

Asbestos and Hazardous Materials Assessment

PNS FY16 eMMRP Project #6 Dry Dock #2 ■ Kittery, Maine

August 20, 2015 ■ Terracon Project # J3147116



square centimeter (mg/cm²), 5,000 milligrams per kilogram (mg/kg), or 0.5% by weight (wt). The sample is as follows:

- 05 - Blue paint on pipe, less than (<) 0.010% wt.

OSHA construction rules do not specify safe or acceptable levels of lead in paint for the purposes of occupational exposures. Construction work involving LCP must be completed in accordance with OSHA regulations, not limited to the lead standard, 29 Code of Federal Regulations (CFR) 1926.62. Contractors completing work in areas found to contain lead, or where it is reasonable to assume lead may be present, should be notified of the presence (and potential presence) of lead and proper work protocols should be used.

A summary of lead analytical results are presented in Appendix B.

The USEPA has issued a number of fact sheets indicating that PCBs may be present in caulk, paint, and other sealant materials used in buildings constructed in the period from 1950 through approximately 1980. PCBs were a common additive to caulk because of their water and chemical resistance, durability, and elasticity. PCBs were added as a plasticizer in caulking used to seal joints between masonry units and around windows. PCBs were used in building materials such as paints, caulks, adhesives, mastics, sealants, and specialty coatings. PCBs are a hazardous substance whose management is regulated by the federal Toxic Substances Control Act (TSCA). Terracon collected two samples in Project #6 for laboratory analysis of PCBs. The samples were analyzed for PCBs and percent solids.

Analysis was performed by Alpha Analytical, Inc., a Maine-licensed laboratory for PCB analysis using the USEPA method 8082. PCBs were not identified above laboratory reporting limits. The laboratory report is provided in Appendix B.

ASBESTOS AND HAZARDOUS MATERIALS ASSESSMENT
Project #6 Dry Dock #2 Compressed Air Piping Repairs
Portsmouth Naval Shipyard
Kittery, Maine
Terracon Project Number: J3147116
August 20, 2015

1.0 INTRODUCTION

The Portsmouth Naval Shipyard (PNS) plans to replace below-grade compressed air piping of the Dry Dock #2 (Project #6) at the shipyard located in Kittery, Maine. Terracon Consultants, Inc. (Terracon) has been retained by Joint Venture Casco Bay Engineering-CLD Consulting Engineers, LLC (JV Casco Bay) to perform environmental sampling along the proposed corridor. Figure 1 in Appendix D presents a Site sketch of the appropriate corridor and associated field notes of the planned work within Project #6.

We understand that replacement utilities in vaults and corridors will require pipe/fitting removal for possible off-site disposal (including associated sediment/soil from manholes, vaults, and corridors). There are no abatement records documenting the regulated removal of the known pre-existing asbestos-containing materials (ACMs), lead-containing paint (LCP), or polychlorinated biphenyl (PCB) materials. Thus, contamination at the proposed vault and corridor locations may exist. This Asbestos and Hazardous Materials Assessment has been prepared to summarize sampling and testing activities for the proposed repairs.

At a federal naval facility, which is subject to federal abatement regulations, the State of Maine Department of Environmental Protection (MEDEP) rules and regulations for asbestos control also apply. Additionally, site work that disturbs confirmed ACMs will conform to the U.S. Environmental Protection Agency (USEPA) 40 Code of Federal Regulations (CFR) Part 61 National Emission Standards for Hazardous Pollutants (NESHAP).

1.1 Reliance

This report is for the exclusive use of JV Casco Bay Engineering/CLD Consulting Engineers, LLC for the project being discussed. Reliance by any other party on this report is prohibited without written authorization of Terracon and JV Casco Bay Engineering/CLD Consulting Engineers, LLC.

2.0 SAMPLING AREA DESCRIPTION

PNS plans to replace below-grade compressed air lines in the Dry Dock #2 system/corridor (Project #6) at the shipyard located in Kittery, Maine. As part of the hazardous materials assessment, Terracon performed visual assessment and sampling of underground piping, fittings,

and other materials located in manholes and vaults within the project area. Corridor areas between the manholes and vaults were not observed.

3.0 SCOPE OF WORK

The objective of this survey was to identify the hazardous materials associated with the utilities for the development of appropriate field procedures to be used during replacement activities. Terracon understands the Survey was requested to identify and quantify suspect/presumed ACMs, LCPs, and PCBs for eventual remediation purposes.

Terracon's survey included sampling of accessible, below-grade utilities and materials within the Dry Dock #2 system/corridor (Project #6). Manholes/vaults were not sampled at depths beyond arms-length from the surface, unless an alternative sampling method was used, as Terracon personnel did not enter manholes due to the Occupational Safety and Health Agency (OSHA) requirements that indicate shut down of the active lines would be necessary (e.g., lockout/tagout).

The known inaccessible areas included the following:

- Subsurface vaults and corridor locations associated with underground steam/condensate pipe/fittings (i.e., below-grade utilities) within the Dry Dock #2 project area. The suspect materials/debris were tested in ONLY surficial vault locations; no entry to vaults/tunnels was performed by Terracon.

The primary requirements of the proposed work were as follows:

- Terracon identified proposed sampling locations, arranged for Dig Safe (as needed), and coordinated with the Navy to complete the underground utilities pre-screening.
- Terracon coordinated and organized traffic outages as necessary to accomplish the hazardous materials testing.
- Terracon identified pipe/fitting insulation and associated debris in sediment/soils from the proposed remediation project (Dry Dock #2). Unless materials within the various vaults are homogeneous in nature (i.e., same color, texture, and size per federal and state regulations), assumption of hazardous materials contamination is made for inaccessible vaults and corridors.
- Terracon personnel removed/restored vault covers of the surface to pre-testing conditions, as practical.

3.1 Asbestos Survey

Asbestos survey activities were initiated with visual observation of the vaults/manholes to identify homogeneous areas of suspect ACM. A homogeneous area consists of suspect materials that appear similar throughout in terms of color and texture with consideration given to the date of installation. The assessment was conducted in visually accessible areas of the vaults proposed for utility replacement activities. The following manholes, vaults and associated corridors were not accessible at the time of the Site survey, as they were either locked or fastened-in-place:

- 40B-1 and 40C-1.

3.1.1 Physical Assessment

A physical assessment of each accessible homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. A friable material is defined by the USEPA as a material that can be crumbled, pulverized, or reduced to powder by hand pressure when dry. Friability was unable to be assessed by physically touching suspect materials due to lack of accessibility.

3.1.2 Sample Collection

Based on results of the visual observation, bulk samples of suspect ACM were not able to be collected in general accordance with USEPA sampling protocols. However, samples of suspect materials were collected from randomly selected locations in each homogeneous area. Bulk samples were collected using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

Terracon collected six bulk samples of suspect ACM. A summary of suspect ACM samples collected during the survey is included as Appendix A.

3.1.3 Sample Analysis

Bulk samples were submitted under chain of custody to EMSL Analytical, Inc. (EMSL) of Salem, New Hampshire for analysis by polarized light microscopy (PLM) with dispersion staining techniques per USEPA's *Method for the Determination of Asbestos in Bulk Building Materials* (600/R-93/116), non-friable, organically-bound (PLM-NOB) for asbestos. EMSL Analytical, Inc. is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) Accreditation No. 201051-0.

The laboratory was instructed to analyze samples from each homogeneous area until the first sample containing asbestos was identified (stop positive). The laboratory report for this project is included in Appendix A.

3.2 Lead-Containing Paint Sampling

Terracon visually assessed the pipe/fittings/valves of the site proposed for renovation vaults and performed limited LCP sampling that consisted of collecting paint chip samples from various painted components for laboratory analysis. Observed paint coated surfaces of the site included various painted metal components/surfaces. Terracon collected one paint chip sample was collected from one homogenous painted surface, The paint chip sample was submitted to EMSL of Cinnaminson, New Jersey, a laboratory participating in the Environmental Lead Laboratory Accreditation Program (ELLAP) and analyzed for lead content via USEPA Method SW 846 3050B/7000B using flame atomic absorption spectrophotometry (flame AAS).

The LCP sampling was limited to visible and accessible surfaces described herein. Terracon cannot guarantee a building or property to be lead free, as the possibility exists that LCP coated surfaces may be hidden from sight or in inaccessible locations, or the homogeneous construction areas identified may not be truly homogeneous. It should be understood that in accordance with regulation, the LCP sampling is not considered comprehensive in nature, and the results are not intended to be used to determine lead hazards, develop abatement plans, or prepare detailed cost estimates for abatement. At the time of remediation, should suspect materials be uncovered and accessible, additional testing should be performed to characterize the existing materials appropriately for worker safety, removal, and disposal.

3.3 Polychlorinated Biphenyls Sampling

Terracon visually assessed various suspect PCB materials within the project area and collected two suspect PCB samples from various caulk and adhesive, within accessible Site vault locations.

Each sample was assigned an identification number representative of the location from which it was collected. The material type, location of sample, and descriptors of the material sampled were recorded on field data sheets during the sampling (i.e., chain of custody). In addition, photographs were made of each location sampled to provide a visual record of the sealant materials sampled and their locations within the project area. The samples were placed on ice in coolers and submitted to Alpha Analytical, Inc. (Alpha) for analysis of PCBs by USEPA method 8082 utilizing the manual Soxhlet extraction method (USEPA Method 3540C). Quality Assurance/Quality Control (QA/QC) analytical summaries were provided with the laboratory analytical reports for all samples collected at the Site during this project. These packages included the results of analyses of a duplicate sample, laboratory control samples (LCS), laboratory control duplicate sample (LSCD) and Site-specific matrix spike (MS) and matrix spike duplicate (MSD) samples. A QA/QC Certification Form along with a laboratory Case Narrative summarizing the results of the quality control performance tests employed by the laboratory during the sample analyses is presented at the end of the laboratory reports.

4.0 REGULATORY OVERVIEW

4.1 Asbestos

The asbestos NESHAP (40 CFR Part 61, Subpart M) regulates asbestos fiber emissions and asbestos waste disposal practices. The asbestos NESHAP regulation also requires the identification and classification of existing ACM according to friability prior to demolition or renovation activity. Friable ACM is a material containing more than 1% asbestos that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. All friable ACM is considered regulated asbestos-containing material (RACM).

The asbestos NESHAP regulation classifies ACM as friable, Category I nonfriable ACM or Category II nonfriable ACM. RACM includes all friable ACM, along with Category I and Category II nonfriable ACMs that have become friable; will be or have been subjected to sanding, grinding, cutting, or abrading; or have a high probability of becoming or have become crumbled, pulverized, or reduced to powder in the course of renovation or demolition activity. Category I nonfriable ACM are exclusively asbestos-containing packings, gaskets, resilient floor coverings, resilient floor covering mastics and asphalt roofing products that contain more than 1% asbestos. Category II nonfriable ACM are all other nonfriable materials other than Category I nonfriable ACM that contain more than 1% asbestos.

The MEDEP enforces provisions of the asbestos NESHAP. The owner or operator must provide MEDEP with written notification at least 10 working days prior to the commencement of asbestos abatement activities that will disturb RACM in amounts greater than 25 square feet or 10 linear feet.

The OSHA asbestos standard for construction (29 CFR 1926.1101) regulates workplace exposure to asbestos. The OSHA standard requires that employee exposure to airborne asbestos fibers be maintained below the permissible exposure limits (PELs) of 0.1 asbestos fiber per cubic centimeter of air (0.1 f/cc) as an 8-hour time-weighted average (TWA) or 1.0 f/cc as a 30-minute excursion limit. The OSHA standard classifies construction and maintenance activities that could disturb ACM and specifies work practices and precautions that employers must follow when engaging in each class of regulated work.

4.2 Lead-Containing Paint

Lead is regulated by the USEPA, MEDEP, and OSHA. The USEPA and MEDEP regulate lead use, removal, and disposal, and OSHA regulates lead exposure to workers. The USEPA and MEDEP define lead-based paint (LBP) as paint, varnish, stain, or other applied coating that contains lead equal to or greater than 1.0 milligram per square centimeter (mg/cm²), 5,000 milligrams per kilogram (mg/kg), or 0.5% by dry weight as determined by laboratory analysis; however, OSHA construction rules do not specify safe or acceptable levels of lead in paint for the purposes of occupational exposures. For the purpose of the OSHA lead standard, lead includes

metallic lead, all inorganic lead compounds, and organic lead soaps. A synopsis of the OSHA regulations (29 CFR 1926.62) and the applicability are as follows:

OSHA construction rules do not specify acceptable levels of lead within LCP for the purposes of occupational exposures. Construction work involving LCP must be completed in accordance with OSHA regulations, not limited to the lead standard, 29 CFR 1926.62. Contractors completing work in areas found to contain lead, or where it is reasonable to assume lead may be present, should be notified of the presence (and potential presence) of lead and proper work protocols should be used. The Maine Hazardous Waste regulations require that wastes be characterized prior to disposal. The toxicity characteristic leaching procedure (TCLP), which is the appropriate method for characterizing materials/debris for lead content, involves the collection of samples from representative materials and the analysis of the materials by an accredited laboratory. If the sample results are less than 5.0 milligrams per liter (mg/L) lead, then the waste can be disposed of as non-hazardous construction debris. If the sample results are greater than or equal to 5.0 mg/L lead, then the waste must be disposed of as a hazardous waste.

The OSHA lead standard for construction (29 CFR 1926.62) applies to all construction work where an employee may be occupationally exposed to lead. All work related to construction, alteration, or replace (including painting and decorating) is included. The lead standard applies to any detectable concentration of lead in paint, as even small concentrations of lead can result in unacceptable employee exposures depending upon on the method of removal and other workplace conditions. Under this standard, construction includes, but is not limited to, the following:

- Demolition or salvage of structures where lead or materials containing lead are present;
- Removal or encapsulation of materials containing lead;
- New construction, alteration, replace, or renovation of structures, substrates, or portions containing lead, or materials containing lead;
- Installation of products containing lead;
- Lead contamination/emergency clean-up;
- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and
- Maintenance operations associated with construction activities described above.

4.3 Polychlorinated Biphenyls

PCBs are currently prohibited from being used in caulk and other commodities (USEPA, 40 CFR 761-PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions). However, prior to 1977, PCBs were present in some materials used in the construction of schools and other buildings. Studies have shown that concentrations of PCB can exceed 1%, or 10,000 parts per million (ppm) by weight in some caulk materials.

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USEPA regulates the disposal of PCB materials, as well as soil and other materials contaminated with PCBs, if the concentration of PCBs exceeds 1 ppm. Such materials must be disposed at an appropriate approved or permitted facility. Please note that the material must go to an appropriate asbestos landfill if identified as asbestos-containing.

The Toxic Substances Control Act (TSCA) regulations at 40 CFR 761 provide disposal and cleanup requirements for PCBs. The disposal and cleanup requirements for PCB-contaminated materials depend on whether the material is classified as a PCB bulk product waste or PCB remediation waste. PCB remediation waste is waste containing PCBs as a result of a spill or release such as from a caulk/paint material (date and concentration limits apply), e.g., PCB-contaminated soil, sediments, and concrete. PCB bulk product waste is waste derived from products manufactured to contain PCBs in a non-liquid state at 50 ppm or greater. Typical examples are caulk, paint, and sealants.

PCB contamination in remaining materials must be cleaned down to a concentration of 1 ppm for an unrestricted use and if the concentrations of PCBs in the remediation waste are greater than 50 ppm, the remediation waste must be disposed in a TSCA-permitted facility. However, PCB bulk product waste, even at concentrations of PCBs greater than 50 ppm, can be disposed in a non-hazardous solid waste facility, as long as this disposal is permitted by that state's solid waste regulations.

Since TSCA authority has not been delegated to any of the states, both USEPA and state regulations apply. Knowing your specific state requirements for PCB management is essential if you want to remain in compliance with applicable federal and state regulations.

USEPA regulation 40 CFR 761 defines PCB remediation waste to include contaminated soil, and specifies a clean-up level of less than (<) 1 ppm without further conditions for unrestricted use in high occupancy areas (i.e., areas where individuals may be present for 335 hours or more per year). PCB caulk is defined as a PCB bulk product waste, and its disposal is subject to USEPA regulations under the TSCA (40 CFR761.62).

In order to dispose of PCB bulk product waste in a state-permitted municipal landfill or non-municipal non-hazardous waste landfill, there may be additional sampling, recordkeeping and performance requirements that must be satisfied. Be sure to review 40 CFR 761.62 for specific requirements.

Remediation waste may be managed as bulk product waste *only if the material tested is attached* to the contaminated abutting material at the time the material is designated for disposal. If the material (i.e., caulk or paint) has been removed from the vault/manhole material, the substrate would be considered a PCB remediation waste subject to strict management and disposal requirements at concentrations down to 1 ppm.

5.0 FINDINGS

5.1 Suspect Asbestos-Containing Materials

As stated above, asbestos was not identified in the following materials tested:

- Black caulk
- Adhesive on metal jacket

The selected contractor should properly characterize, remove and dispose of the identified hazardous materials, including materials in inaccessible vaults and corridors. A summary of asbestos analytical results is presented in Appendix A, and a Site Plan depicting the Project #6 corridor is provided in Appendix D.

5.2 Suspect Lead-Containing Paint

A summary of the paint chip analysis results are presented in the following table. A copy of the laboratory report for the paint chip samples is attached in Appendix B.

Summary of Paint Chip Analysis

Sample ID	Color	Substrate	Component	Location	Analytical Result (% wt.)
05	Blue	Metal	Vault	Dry Dock 2	<0.010% wt.

As summarized above, lead was not detected at concentrations above the laboratory detection limits in one painted component/surface.

5.3 Suspect Polychlorinated Biphenyls

Terracon collected one sample for laboratory analysis of PCBs. As shown in the laboratory report (Appendix B), PCBs were not identified above laboratory reporting limits.

6.0 LIMITATIONS/GENERAL COMMENTS

Terracon did not perform sampling which required demolition or destructive activities such as dismantling of equipment or removal of protective coverings, as the systems were energized at the time of the Site survey. Reasonable efforts to access suspect materials within known areas of restricted access (e.g., beneath vault covers and corridors between access points) were made; however, as previously described, confined spaces or areas that may pose a health or safety risk to Terracon personnel were not sampled. Sampling did not include suspect materials that could not be safely reached from the surface.

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The findings presented in this report are based on conditions observed during our survey of the PNS Project #6 vaults only. The information contained in this report is relevant to the date on which this survey was performed, and should not be relied upon to represent conditions at a later date. This report has been prepared on behalf of and exclusively for use by JV Casco Bay Engineering/CLD Consulting Engineers, LLC for specific application to their project as discussed. This report is not a bidding document. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. Terracon does not warrant the work of regulatory agencies, laboratories, or other third parties supplying information that may have been used in the preparation of this report. No warranty, express or implied is made.